

# The Collaborative Research Centre – Template

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0.2.0

## Abstract

The `dfg-crc` bundle provides a LuaLaTeX class and example files for writing a Collaborative Research Centre proposal and its CV section. Structured metadata supplies people, projects, work packages, and funding data to the headings, references, tables, and plots generated by the class. This manual explains how to adapt the examples and use the class.

Why is there a dedicated documentation? “Documentation must be regarded as an integral part of the process of design and coding. A good programming language will encourage and assist the programmer to write clear, self-documenting code, and even perhaps to develop and display a pleasant style of writing.” Hoare 1973, p. 195

This bundle has been last worked on and modified using **LuaHBTeX, Version 1.24.0 (TeX Live 2026) [2026-09-14@23-37-06]**.

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## 1 dfg-crc — Collaborative Research Centre proposal class

Current release: **0.2.0 (2026-09-14)**.

The `dfg-crc` LuaLaTeX class provides the proposal and CV structure for a German Research Foundation (DFG) Collaborative Research Centre (CRC). It uses structured metadata to generate project heads, staff and funding tables, project lists, collaboration plots, Gantt charts, and proposal-wide totals.

This is an independent, unofficial template. It is not published, endorsed, or maintained by the DFG; applicants remain responsible for checking the current DFG forms and programme rules.

The PDF manual combines this introduction with the detailed user and code documentation. Release history is kept separately in `CHANGELOG.md`.

The supplied proposal template is designed for five calendar years and supports one or more applicant universities. The project types `research`, `service`, `mgk`, and `admin` are supported; see the documentation for the corresponding metadata and generated sections.

It is appreciated when in the colophon of your proposal a reference to this template and its author is given.

### 1.1 Requirements

The class requires LuaLaTeX and a LaTeX kernel dated 2022-06-01 or newer. Biber is required for bibliographies. The default setup uses Noto Serif, Roboto, and the example images supplied by the `mwe` bundle. A full TeX Live<sup>1</sup> installation is recommended and contains the class's runtime dependencies.

Repository: <https://gitlab.git.nrw/rpdm/projects-and-services/dfg-crc-template>

Issue tracker: <https://gitlab.git.nrw/rpdm/projects-and-services/dfg-crc-template/-/issues>

### 1.2 Installation

TeX Live and MiKTeX installations obtained after the first CTAN release can install `dfg-crc` through their normal package managers. To install from the CTAN source archive manually, run:

```
luatex crc-proposal-documentation-and-code.ins
```

This generates `dfg-crc.cls`. Move it into a directory searched by TeX, or keep it beside the proposal's main `.tex` file. The complete generated example proposal is maintained in the repository and can be extracted with `make files`.

### 1.3 Start the program from the repository

For a first local compile, generate the derived files and then compile the proposal and CV examples from the `local/` folder.

```
make files
cd local
latexmk -lualatex crc-proposal.tex
latexmk -lualatex crc-cv.tex
```

The class is designed for LuaLaTeX. Use `luatex` or `latexmk -lualatex`; do not call LaTeX with a capital L.

Two-sided pages reserve 30 mm on the binding edge by default: a 25 mm inner margin plus `BCOR=5mm`. Pass a different KOMA `BCOR` class option to adjust the binding correction; `BCOR=8mm` gives 33 mm on the inner edge and a 157 mm text block. The default 160 mm text block leaves a 20 mm outer margin for the rotated thumb index and marginal notes. The 20 mm top and 15 mm bottom margins give the text block 5 mm more height than the previous 20 mm margins; the footer remains included in the page layout. By default, the thumb-index tabs span the text block from top to bottom and divide its current height into equal slots. Set `thumbindex@topmargin` or `thumbindex@bottommargin` to a page-edge distance to override either end. Numbered section and subsection titles start at the same horizontal position after a shared 12 mm number column.

Useful make targets:

```
make files: extracts dfg-crc.cls and the local template files from the documented source.
make update-class TARGET_DIR=/path/to/proposal-worktree: regenerates and copies only dfg-crc.cls into a separate Git worktree.
make update-all TARGET_DIR=/path/to/proposal-worktree: rebuilds and copies both dfg-crc.cls and crc-proposal-documentation-and-code.pdf into that worktree.
make test: compiles the generated template test document.
make
```

---

<sup>1</sup><https://tug.org/texlive/>

`test-direct-costs`: compiles the focused two-pass regression for DFG table 2.1.1. `make test-workpackage-references`: compiles the focused nested-work-package reference and range-formatting regression. `make proposal-example`: compiles the generated local proposal example. `make cv-example`: compiles the generated local CV example. `make check`: runs the test and compiles both examples. `make doc`: builds the implementation and user documentation. `make ctan-check`: builds the curated CTAN archive and verifies a clean installer extraction and minimal LuaLaTeX compile. `make ctan-validate`: runs the official online CTAN validator without submitting the archive.

For a focused project-text build, select the project with `\includeonly` and use these class options:

```
\documentclass[
  fastcompile-project=true,
  fastcompile-project-show-images=false,
  fastcompile-project-show-publications=false,
  fastcompile-project-show-funding-tables=true,
  english
]{dfg-crc}
```

`fastcompile-project` skips metadata loading and most `\addEntry` execution, calculated project heads, generated tables/lists and plots, embedded graphics, and other front-matter work while retaining authored sections, paragraphs, aims, work packages, labels, and citation commands. Skipped generated tables and lists retain the same visible placeholder and log note as ordinary `fastcompile` builds. Set `fastcompile-project-show-images=true` to load the project metadata and render images and generated plots encountered in the selected project while retaining the other fast-mode reductions. Set `fastcompile-project-show-publications=true` when the selected project's publication headings, explicit `\nocite` entries, and bibliography should be included. Use `\printProjectBibliography` for project publication lists; plain `\printbibliography` uses biblatex's normal font and bypasses the project-publication switch.

With `emphasizeEntries=true`, a full project bibliography entry is bold when its `.bib` keywords include the current project ID followed by `-highlight`, for example `B06-highlight`. One such keyword is enough even if two PIs from Project B06 coauthor the entry. An entry may also carry another project's highlight keyword when it should be bold in that project's list. The `B06-project` keyword is optional project metadata; it does not trigger bold type. Other keywords, including CV selectors such as `pabst-A`, can remain in the same field. To use only whole-entry highlighting, set `emphasizeAuthors=false` and `emphasizeEntries=true`.

Wrap optional metadata and front matter with `\dfgIfFastCompileProjectF{...}` so those files are not even read in this mode. With publications disabled, bibliography source files and stale `.bbl` data are also left unread; inline citations display their keys as lightweight drafting markers. The three project-local funding tables remain visible by default. Set `fastcompile-project-show-funding-tables=false` to suppress them too. Focused mode processes their local rows and sums but does not restore or populate proposal-wide overview databases. Compile a document using these options with its own build command; the template Makefile deliberately operates only on the generated test and example documents in `local/`.

## 1.4 Template validation workflow

Run `make check` to regenerate the template files, compile the test document, and compile both local examples. Run `make all` to perform those checks and build the complete implementation and user documentation. These targets use only files maintained or generated by this repository.

GitLab CI runs the same compile-based checks for branches and merge requests. After a successful default-branch pipeline, GitLab Pages publishes the newest generated `local/crc-proposal.pdf`. The Pages site is rebuilt from an empty `public/` directory each time and therefore exposes only the latest dummy proposal, not an archive of earlier PDFs. CI job artifacts retain the current logs and example outputs temporarily for diagnosing failed pipelines.

## 1.5 Updating a separate proposal repository

Edit the maintained `.dtx` source, then install the regenerated class into a separately controlled proposal worktree:

```
make update-class TARGET_DIR=/path/to/proposal-worktree
# Or update both the class and its compiled manual:
make update-all TARGET_DIR=/path/to/proposal-worktree
```

Both targets verify that `TARGET_DIR` is the root of a different Git worktree, copy the requested release files, and show their resulting Git status. `update-class` copies only `dfg-crc.cls`; `update-all` first rebuilds the manual and then copies the class and `crc-proposal-documentation-and-code.pdf`. Neither target overwrites the proposal repository's README, changelog, or licence. They do not store the destination, inspect its remote, commit, or push. Review and commit the updates from inside that proposal repository.

## 1.6 Repository boundary

This repository is intentionally limited to the reusable proposal template. Project-specific source, synchronization configuration, credentials, remote identifiers, and private working copies must remain in separately controlled repositories or local worktrees and must not be added here as submodules.

## 1.7 Structure of the files and folders

The maintained source is `crc-proposal-documentation-and-code.dtx`. Generated files such as `local/dfg-crc.cls`, `local/test.tex`, `local/test-existing-funds-direct-costs.tex`, `local/test-project-collaboration.tex`, `local/test-workpackage-references.tex`, `README.md`, `CHANGELOG.md`, and the local example files are extracted from that source. Edit the `.dtx` for template or documentation changes, then regenerate the derived files with `make files` or by building the documentation.

## 1.8 Generated project templates

The generated `local/content/03_project.tex` is a small master file that loads separate, complete project examples. They are intended to be copied and adapted rather than reduced to a list of headings:

`03_project_A01.tex`: continuing research project (`project-status=C`).

`03_project_A02.tex`: new research project (`project-status=N`).

`03_project_B01.tex`: second continuing research-project example.

`03_project_B02.tex`: ending project (`project-status=E`), including the report bibliography, the three published-result categories, and the staff roster for the ending funding period.

`03_project_Q01.tex`: continuing service project.

`03_project_Q02.tex`: continuing Integrated Research Training Group (`project-type=mgk`), including existing funds, fellowships, and global funds.

`03_project_Q03.tex`: central administrative project with its dedicated documentation and funding structure.

Every example starts with `\printProjectHead{<id>}`. That command already generates the general-information heading, project title, project leaders, and the applicable contract and legal-information blocks from metadata. The source files therefore begin with the first status-specific authored heading: `Summary` for active projects and `Project history` for ending projects.

The generated proposal-wide example follows the February 2026 continuation template, including the ecological-sustainability section, separate coordinating and co-applicant universities, the current legal-issues wording, and one rector, chancellor, or president signature per applicant university.

`bib/`: all bibliography files. `content/`: all files which are part of the actual content of the proposal, e.g. all project textfiles. `figures`: folder contains all figures of the projects. `img`: folder can be used for logo files etc. `metadata`: if you collect all database entries in specific external files, they are placed in this folder (e.g. `dfg-metadata.tex`). `preamble`: all files for the proposal and CV setup, especially `dfg-customization.tex` for customized things or re-newed settings.

## 1.9 Minimal metadata relationship

Most commands resolve data by following ids through the small databases:

```
person.ref-institution-id -> institution.id
institution.ref-affiliation-id -> affiliation.id
project.collaborations -> project.id
```

For example, a person may list one or more institution ids in `ref-institution-id`. Each institution points to its parent affiliation via `ref-affiliation-id`. Once this relationship exists, commands such as `\printList{{Institutions}}{<person id>}` can print the institution and affiliation data without further manual wiring. Each institution can also provide an abbreviation; generated table cells use this compact label while descriptive lists and legends retain the full name.

The same relationship is reused by `RequestedFundingStaff`: when a staff row contains `ref-person-id`, its category and institution are taken from the person's position and `ref-institution-id` fields unless the staff row explicitly overrides them. A row without `ref-person-id` must provide `ref-institution-id`; otherwise the class warns because it cannot resolve the institution or assign existing staff to an affiliation in the proposal-wide overview. Existing non-research staff may omit `field-of-research`; that empty table cell is then greyed out as not applicable without a warning. Empty staff positions are omitted without a warning or an empty line. The job descriptions printed below each requested-funding staff table use flush-left number labels and a hanging indent so continuation lines align with the first line of description text. A normal interword space separates the bold name from the description.

Project collaboration plots follow the comma-separated project ids stored in each project's `collaborations` field. Relations are undirected, so declaring the same pair in both project rows is harmless but unnecessary. Ending, reference-only, and list-excluded project rows remain available elsewhere but are omitted from these plots.

## 1.10 Information retrieval command overview

The following commands can be used directly in proposal text and tables. In the signatures below, square brackets are optional and braces are mandatory. The complete descriptions and examples are in `crc-proposal-documentation-and-code.pdf`.

### 1.10.1 General database access

Command `\getEntry` with [database] {id} {field} [id-field] prints one field from one database row.

Starred command `\getEntry*` with [database] {id} {assignments} [id-field] fetches several fields in one lookup and assigns them without printing. For example, fetch person MM with `\getEntry*[person]{MM}` and pass the third argument `{\theFirstName=firstname,\theLastName=lastname}`.

Command `\compareEntry` with [database] {id} {field} {value} {true} {false} chooses text or code according to a field comparison.

### 1.10.2 People, institutions, and projects

Commands `\getName` and `\getFullName*` with {person-id} print the last name or full name; the star adds the academic degree.

Command `\getPI*` with {person-id-list} [text] prints a linked PI reference; the star includes first names.

Command `\getORCiD` with [database] {person-id} prints a linked, formatted ORCID from a person row.

Command `\getORCiDvalue` with [database] {person-id} stores the unformatted ORCID in `\theORCiDvalue`.

Command `\printList{{Institutions}}{<person-id>}` prints institutions and parent affiliations assigned to a person; add formatting options after the person ID inside the outer braces.

Command `\getPersonInformation` with [database] {person-id-list} prints complete formatted PI/contact-information blocks.

Command `\getPIsWithRole` with [database] {role} [options] prints formatted current-period people carrying a given role. PI-box rows and the following content are separated by 20 pt by default; explicit raster options can override that spacing.

Command `\getPIProject*` with {person-id-list} prints each PI with their assigned projects; the star includes first names.

Command `\getProjectPI*` with {project-id-list} prints each project with its assigned PIs; the star includes first names. By default, the shared first `\getProject` or `\getProjectPI` reference to a project within one section includes its PIs; later references print only the project. Set `projectPIOncePerSection=false` in `\changeSettings` to repeat the PI names.

Command `\getPIofProject` with [properties] {project-id} [delimiter] prints selected PI name properties for one project.

Command `\getProject*` with {project-id-list} [text] prints a linked project reference. The star always prints project identifiers only, independently of `projectPIOncePerSection`. Optional text replaces the displayed project number while retaining its link target and is best used with a single project. A reference-only project is marked and deliberately left unlinked. Multiple projects are joined with commas and a final and in prose, but use compact slash separators inside table cells, for example A02/B01. With the default `projectPIOncePerSection=true`, this command shares `\getProjectPI`'s first-reference PI expansion and per-section state.

Command `\getProjectCount` with [area] prints the active, list-considered project count; omit area for all projects. Any explicit or ID-derived project-area value is accepted.

Command `\printPlot{{collaborations}}{A01}` prints the default full-width arc layout for A01, with project nodes and unlabelled area rules. Its boxes align with the text edge on both sides of a two-sided page. Its caption always appears below the plot; a final optional argument adds caption text there. Add `[arcs=true]` before the plot specification to draw the connecting arcs, or use `[layout=heatmap]` for the heatmap. The optional project-area field creates rows dynamically and falls back to the first character of the project ID. Configure proposal-wide colors with `collaborationAreaColors` and `collaborationAreaPalette` in `\changeSettings`, or use the per-plot area-colors and area-palette options. Gantt charts use the same dispatcher as `\printPlot{{gantt}}{A01}`. Inside a project, omit the ID: `\printPlot{{gantt}}` and `\printPlot{{collaborations}}` use the current project. Options precede the plot specification, for example `\printPlot[caption={Additional details}]{gantt}` or `\printPlot[arcs=true]{collaborations}{B06}`. With an explicit ID, a final optional argument also adds caption text: `\printPlot{{gantt}}{B06}[Additional details]`. The older Gantt and ProjectCollaboration type names remain available. In project source files, `caption={}` marks where optional caption text can be added to either plot; left empty, the default caption is still printed.

Command `\dfgResearchAreasList` with {code} prints a DFG research-area code and its description.

Commands `\getAim` and `\getWP` with [project-id] {id-list} cross-references to project aims or work packages; the current project is the default. `\getWP` places a narrow, unbreakable space after WP or WPs.

### 1.10.3 Person statistics

Command `\getPositionGenderPhaseAmount` with [database] {position} {gender} {period} prints the number of people for one position/gender/period tuple.

Command `\getPositionPhaseTotal` with [database] {position} {period} prints the all-gender total for a position and funding period.

Command `\getGenderPhaseTotal` with [database] {gender} {period} prints the all-position total for a gender and funding period.

Command `\getPositionGenderPhasePercentage` with [database] {position} {gender} {period} prints the rounded integer percentage within one position.

Command `\getGenderPhasePercentage` with [database] {gender} {period} prints the rounded integer percentage across all counted positions.

### 1.10.4 Funding and staff totals

The similarly named funding commands have different scopes: names ending in `RequestedFunding` use the proposal-wide overview by default, while names ending in `RequestedFunds` use project-level funding rows and require a project id.

Command `\getCountRequestedStaff` with [project] {year} {category} prints the requested staff quantity for a category, optionally restricted to a project.

Command `\getSumRequestedFunding` with [database] {year} {type} prints the proposal-wide total for one funding type and one year; {all} as the year totals all five years.

Command `\getTotalSumRequestedFunding` with [database] {year} {type} prints the proposal-wide total with {all} as the type available for a grand total.

Command `\getSumPreviousRequestedFunding` with [database] {year} {fields} prints the previous-period total for one year row, or all rows with {all} as the year.

Command `\getSumRequestedFunds` with [database] {project} {type} {sum-fields} prints the project total for one funding type and one or several sum-yearN fields.

Command `\getTotalSumRequestedFunds` with [database] {project} {sum-fields} prints the project total across all funding types for the supplied sum-yearN fields.

Command `\getSumRequestedFundsInstrumentation` with [project] {sum-fields} prints the instrumentation total, proposal-wide or for the optional project.

Command `\getSumRequestedFundingDirectCosts` with [database] {year} {group} prints the direct-cost total for applicant, participant, other-funds, or all. Its default database is the auxiliary-file-backed `RequestedAndExistingFundingDirectCostsOverview`, and its displayed result is a full euro amount without decimal places.

Command `\getSumExistingFunds` with [database] {project} {sum-fields} prints the existing direct-cost funding for a project and the supplied year fields.

Typical calls are:

```
\getProjectCount[A]                % active A projects
\getSumRequestedFunding{all}{staff} % proposal-wide staff total
\getTotalSumRequestedFunding{all}{all} % proposal-wide grand total
\getSumRequestedFunds{A02}{staff}{sum-year1} % A02 staff total, year 1
\getTotalSumRequestedFunds{A02}{sum-year1} % A02 grand total, year 1
```

Funding entries, including requested instrumentation, use EUR as their input unit. Their tables state `Figures` in EUR and display whole euro amounts with thousands separators. The non-aggregated `existingInstrumentation/cost` field instead uses thousands of EUR and its table states `Figures` in thousands; one decimal place is retained when supplied. Explicitly fractional animal-housing rates also retain decimals, while the other monetary columns in that table remain whole euros.

### 1.10.5 Existing direct-cost support in section 2.1.1

Declare institutional and other existing direct-cost support once, next to the corresponding project table:

```
\addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
  ref-project-id      = {B06},
  ref-affiliation-id  = {aff1},
  financed-by         = {Faculty core support},
  sum = {
    year1 = {5000},
    year2 = {5000},
    year3 = {5000},
    year4 = {5000},
```

```

    year5 = {5000}
  }
}

```

The sums are stored and displayed in euros. Table 2.1.1 therefore prints 5000 as 5,000; monetary values are rounded to the nearest euro for display and never acquire a redundant decimal part. An affiliation listed in `meta/crc.ref-affiliation-id` contributes to the applicant-university column; another affiliation contributes to the other-participating-institutions column; and the special value `other-funds` contributes to Other funds. `financed-by` is the human-readable funding-source description and does not select the aggregate column.

The declarations may remain in project files even though section 2.1.1 comes earlier. They are restored into a separate overview database through the LaTeX auxiliary files. A normal multipass build such as `latexmk` is therefore required after adding or changing a row; no duplicate chapter-2 declaration is needed.

### 1.11 Open-access markers in bibliography entries

The class loads `biblatex-ext-oa` so bibliography entries can show open-access markers in final documents. The DOI API integration is only available with LuaLaTeX. With LuaTeX 1.17.0 or newer, the socket library must also be enabled on the command line, for example with `lualatex -socket`. Provide the contact address required by the API in the customization file:

```

\changeSettings{
  doiAPIMail = researcher@example.org
}

```

The class enables DOI lookups only when `final=true`, `doiAPIMail` is not empty, and `LuaSocket` is available. Otherwise it retains manual open-access annotations without making network requests.

If the API-based open-access request does not work for a publication, add the manual fallback annotation to the relevant `.bib` entry:

```

options          = {openaccess=auto},
doi+an:default   = {=openaccess},

```

### 1.12 Troubleshooting

Use `latexmk -lualatex ...` or `lualatex ....` The command `LaTeX` asks TeX for a format named `LaTeX.fmt` and will usually fail.

If you see `Not allowed in LR mode`, check whether vertical material such as `\vspace`, `\addvspace`, or a paragraph break was inserted inside a table cell that only accepts horizontal material. Prefer the documented commands and options instead of adding raw vertical spacing in table cells.

Unknown database name means the requested database has not been loaded or the database name was misspelled. Check the relevant file in `metadata/` and make sure it is input by the document class.

Missing-key or empty-value warnings mean the row exists, but the requested field is empty. This is intentional for fields where the template needs to alert you, such as missing ORCID values.

If a change has no visible effect, check which `dfg-crc.cls` is being used. Regenerate the class and local examples with `make files`, then compile the relevant example again.

### 1.13 Maintainer release checklist

1. Update `\dfgVersion`, `\dfgVersionDate`, the README release line, changelog, and `dfg-crc.pkg` in one commit.
2. For CTAN updates after the initial release, set `\update{true}` in `dfg-crc.pkg`. Keep the CTAN path `/macros/luatex/latex/dfg-crc`, and omit `\home` when it duplicates the repository URL.
3. Do not include the generated `dfg-crc.cls` in the CTAN archive. CTAN requires files generated from a documented source and installer to be omitted; the PDF manual is an allowed exception.
4. Confirm that `bossert@itc.rwth-aachen.de` is registered as the second address of CTAN member `lukascbossert`. Keep release information in separate Announcement and Note fields; CTAN explicitly accepted that structure for the initial release.
5. Build the documentation and the CTAN archive, then run the portable installer and minimal-class smoke test:

```
make ctan-check
```

6. Run at least one proposal/CV smoke build from `local/`:

```
cd local
latexmk -lualatex -g -halt-on-error crc-cv.tex
```

7. Before a public release, run the complete template check:

```
make check
```

8. Run the official online validator with `make ctan-validate`.

9. Review `git status -short`, `git diff -check`, and the archive file list before committing and tagging the exact release version.

#### 1.14 Support

The current maintainer is Lukas C. Bossert<sup>2</sup>.

#### 1.15 License

This material is subject to the LaTeX Project Public License 1.3c or later. The work has the LPPL maintenance status *maintained*. See `LICENCE.md` for the complete notice.

#### 1.16 LICENCE

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This work may be distributed and/or modified under the conditions of the LaTeX Project Public License, either version 1.3c of this license or any later version. The latest version of this license is in <https://www.latex-project.org/lppl.txt> and version 1.3c or later is part of all distributions of LaTeX version 2005/12/01 or later.

This work has the LPPL maintenance status “maintained”.

The Current Maintainer of this work is Lukas C. Bossert.

This work consists of the source file `crc-proposal-documentation-and-code.dtx`, the installer `crc-proposal-documentation-and-code.ins`, the documentation files `README.md`, `CHANGELOG.md`, and `LICENCE.md`, and the derived files `dfg-crc.cls` and `dfg-crc.pdf`.

---

<sup>2</sup><mailto:bossert@itc.rwth-aachen.de>

## 2 User documentation

The `dfg-crc` class is a starting point for a Collaborative Research Centre proposal and the accompanying CV section. Authors write the proposal chapters and maintain structured records for people, institutions, projects, work packages, and funding. The class uses those records to create project headings, references, tables, collaboration plots, Gantt charts, and totals that stay consistent across the document.

The supplied files include a complete example proposal, example CV, and customization file. Start with the generated examples to see how the source files fit together, then replace their content and metadata with those of your own centre. The sections below explain the file layout, commands, settings, and checks used in that process. Applicants should still compare the result with the current DFG forms and programme rules.

### 2.1 Compiling and generated files

The maintained source of this bundle is `crc-proposal-documentation-and-code.dtx`. Files such as `local/dfg-crc.cls`, `README.md`, `CHANGELOG.md`, and the example files in `local/` are generated from that source. For template or documentation changes, edit the `.dtx` file and regenerate the derived files.

For a first local compile, use LuaLaTeX through `latexmk`:

#### First local compile

```
make files
cd local
latexmk -lualatex crc-proposal.tex
latexmk -lualatex crc-cv.tex
```

The class expects LuaLaTeX. Calling LaTeX with a capital L asks TeX for a format file named `LaTeX.fmt`; use `lualatex` or `latexmk -lualatex` instead.

If a change has no visible effect, check which generated class file is being loaded. Regenerate the class and local examples with `make files`, then compile the relevant example again.

To update a separately controlled proposal worktree, use `make update-class TARGET_DIR=/path/to/proposal-worktree` for the class alone. Use `make update-all TARGET_DIR=/path/to/proposal-worktree` to rebuild the manual and copy both `dfg-crc.cls` and `crc-proposal-documentation-and-code.pdf`. Both targets require the destination to be the root of another Git worktree and report the affected files without committing or pushing them. They leave the destination's README, changelog, and licence unchanged.

### 2.2 Troubleshooting

The class reports missing or inconsistent data in the terminal and the `.log` file. If your editor does not collect those messages, this command shows the class messages together:

#### Show DFG class messages in a log file

```
grep 'Package dfg' <filename>.log
```

**Unknown database name** The database has not been loaded, or the database name was misspelled. Check the relevant metadata file and whether it is input by the class.

**Missing or empty key warnings** The row exists, but the requested field is empty. This is intentional where the template needs to alert the user, for example for missing ORCID values.

**Not allowed in LR mode** Vertical material such as `\vspace`, `\addvspace`, or a paragraph break was inserted in a table place that only accepts horizontal material. Prefer the documented table and list commands, or use options such as `narrow` for compact table output.

**Stale output** Regenerate the class with `make files`, and check whether the document uses the generated class from `local/`.

### 2.3 Release workflow for maintainers

For a new release, update `\dfgVersion` and `\dfgVersionDate` at the top of `crc-proposal-documentation-and-code.dtx`, the release line in the README block, the changelog, and `dfg-crc.pkg`. Keep these values in one release commit.

## Release and CTAN checks

```
make ctan-check
make check
% Optional online validation without submission:
make ctan-validate
```

The first command builds the manual and the curated output/ctan/dfg-crc.zip, verifies its exact allow-list, extracts it in a clean temporary directory, runs the portable installer, and compiles a minimal document against the resulting class. The online target validates but does not submit the archive. Before committing, inspect `git status -short`, run `git diff -check`, and review the ZIP file list.

### 2.4 Metadata, databases and keysets

The core of this template is to work as often and as many times as possible with metadata. All the metadata is written to one or many databases that can be sorted, filtered etc. and passed to the respective tables.

We are collecting information from the database using `datatool`<sup>→CTAN</sup>.

In the template there are some required information that belong to tables or are generally needed. Therefore we provide some predefined databases names and their respective keysets.

Databases We have these databases that are used and picked up by several commands by default:

meta All the metainformation about the proposal

person Everything that is related to a person

project Anything that is related to a project

institution Info about an institution, that is linked to:

affiliation storing info about the affiliation

There are also more databases created on the fly but mainly used for project specific purposes. The examples below use one coherent sample dataset: MM and KM are persons, A01 is a project, IAIS is an institution, and RWTH is the related affiliation.

#### 2.4.1 Keyset person

##### Example keyset to describe a person-entity.

```
\addEntry→P. 21{person}{
  id→P. 22 = {MM},
  firstname→P. 22 = {Max S.},
  lastname→P. 22 = {Doe},
  academicdegree→P. 22 = {Prof. Dr. rer. nat.},
  gender→P. 22 = {m},
  ref-institution-id→P. 22 = {IAIS},
  ref-project-id→P. 22 = {A01},
  role→P. 22 = {PI, spokesperson},
  position→P. 22 = {prof-W3},
  positionText→P. 22 = {Professor of Microbial Systems},
  period→P. 22 = {1},
  name-alias→P. 13 = {{Max Doe}, {M. S. Doe}},
  orcid→P. 13 = {0000-0002-3555-7218},
  email→P. 12 = {max.doe@example.edu},
  phone→P. 12 = {+49 241 80 12345},
  url→P. 12 = {https://example.edu/mm},
  doctorateYear→P. 13 = {1995},
  doctorate→P. 13 = {Dr. rer. nat.},
  financed-by→P. 12 = {RWTH},
  topic→P. 12 = {Host--microbiome interactions},
  category→P. 21 = {prof},
  dateDefense→P. 13 = {1995},
  periodStart→P. 13 = {2025},
  periodEnd→P. 13 = {2029},
  contract-information→P. 12 = {
    C1→P. 12 = {yes},
```

```

C2→P.12 = {no},
C3→P.12 = {no},
C4→P.12 = {yes},
}
}

```

There are several keys you can and should use regarding a person. They are described further done as an example on how to use `\addEntry→P.21` etc.

**email**= $\langle string \rangle$

Provide the email-address of the person.

**url**= $\langle url \rangle$

URL of the persons academic/professional homepage (e.g. institute).

**phone**= $\langle string \rangle$

Provide the phone number of the person.

**financed-by**= $\langle string \rangle$

Describe the source of funding for the person's e.g. position etc.

**topic**= $\langle string \rangle$

Especially for the early career researchers describe their topic of research.

**category**=groupLeader|prof|postDoc|medDoc|PhD|research|  
nonResearch|student|assistant

`category→P.21` is used in various databases. Mostly it is used to state the category of the person, but it is also used then for the early career researchers.

**contract-information**= $\langle key-values \rangle$

Provide information about the person's contractual situation. The  $\langle key-value \rangle$  is further specified with C1, C2, C2a, C2b, C3, C3a, C4, C4a<sup>→P.13</sup>. The generated wording for the yes/no keys C1–C4 is singular/plural sensitive. It is adjusted automatically to match the number of project leaders and institutions represented in the proposal.

**C1**=yes|no

This key collects the answer to *Is the employment of the project leader(s) at the institution(s) indicated contractually secured for the duration of the proposed funding period?*

**C2**=yes|no

This key collects the answer to *Do any of the above mentioned persons hold fixed-term positions?*

**C2a**= $\langle YYYY-MM-DD \rangle$

If key C2 has been answered with  $\langle yes \rangle$ , this question *End date of fixed-term contract:* $\langle YYYY-MM-DD \rangle$  requires  $\langle YYYY-MM-DD \rangle$  as answer, too.

**C2b** $\langle YYYY-MM-DD \rangle$

If key C2 has been answered with  $\langle yes \rangle$ , this question *Further employment is planned until*  $\langle YYYY-MM-DD \rangle$  requires  $\langle YYYY-MM-DD \rangle$  as answer, too.

**C3**=yes|no

This key collects the answer to *Will one or more of the above-mentioned persons retire during the proposed funding period?*

**C3a**= $\langle YYYY-MM-DD \rangle$

If key C3 has been answered with  $\langle yes \rangle$ , this question *anticipated retirement date:*  $\langle YYYY-MM-DD \rangle$  requires  $\langle YYYY-MM-DD \rangle$  as answer, too.

**C4**=yes|no

This key collects the answer to *Funding for the position(s) of the project leader(s) at the institution(s) indicated is covered by core support (state funds or similar):*

**C4a**= $\langle string \rangle$

If key **C4** has been answered with  $\langle no \rangle$ , this key provides type and source of funding.

Following keys are mainly used for the CV-section but are closely tight to the person:

**orcid**= $\langle 0000-0000-0000-0000 \rangle$

The individual string with the ORCID. This value is also required for  $\backslash getORCID^{P.41}$ .

**name-alias**= $\langle string \rangle$

More versions of the person's name. The various aliases for **name-alias** are also described under  $\backslash addboldnames^{P.43}$ .

**doctorateYear**= $\langle YYYY \rangle$

**doctorate**= $\langle string \rangle$

**degree-programme**= $\langle string \rangle$

Providing information about the doctorate.

## 2.4.2 Database entries for a cv

The header of the CV section is (partly) based on the information you parse to the document using the  $\backslash addEntry^{P.21}$  command with the keyset **person**: Keys like **name-alias**, **orcid**, **doctorate**, **degree-programme**, **url**<sup>P.12</sup> are used especially for the CV-section.

Let's assume we have a person with the following information:

Partly person-entity dataset focussing on its CV-entry.

```
\addEntryP.21{person}{
  idP.22           = {MM},
  firstnameP.22      = {Max S.},
  lastnameP.22       = {Doe},
  academicdegreeP.22 = {Prof. Dr. rer. nat.},
  roleP.22          = {PI},
  \ldots
  name-alias        = {{Maxi Doe}, {Maximilian Doe}},
  orcid              = {0000-0002-3555-7218},
  doctorateYear      = {1995},
  doctorate          = {Dr. rer. nat.},
  degree-programme   = {Biology},
  urlP.12           = {https://example.edu/mm},
}
```

This set of information is unique to a person and therefore only needs to be parsed once.

In the cv we need more dedicated information about the person. This is done with a separate keyset so it will not clutter the person-entry too much. You can have multiple of the following entries below for a person. Most important stages should be indicated with **cv-type=mandatory**. If you state **cv-type=supplement** you only need to use the key description, same goes for **cv-type=activities** which will then be in a different section, and last **cv-type=supervision**. There are more sections with further information about the PI. All the information go to the database  $\langle cv \rangle$ .

**ref-person-id**= $\langle id \rangle$

Use the  $\langle id \rangle$  of the person to whom this entry belongs to.

**description**= $\langle string \rangle$

Further description of the current entry.

**cv-type**=mandatory|supplement|activities|supervision|  
distinction|other

Specifying the type of one CV entry with additional information. Each CV of a person needs to have a  $\langle mandatory \rangle$  entry (as part of *Qualification and Career*).

**periodStart**= $\{ \langle date \rangle \}$

(starting date)

**periodEnd**= $\{ \langle date \rangle \}$

(ending date)

**dateDefense**= $\{ \langle date \rangle \}$

(date of the defense of the thesis)

Specifying the time span of an event. The  $\langle date \rangle$  should be given in an IS8601-form.

Some information comes from the block described above, but for the *Stages* you need to describe them separately using the keys `ref-person-id→P.20`, `cv-type`, `periodStart`, `periodEnd`, `name→P.23`, `position→P.22`, `positionText→P.22`, `description→P.20`, `ref-institution-id→P.22`.

Example dataset-entry for a mandatory person-cv-entity.

```
\addEntry→P.21{cv}{
  ref-person-id→P.20      = {MM},
  cv-type→P.13          = {mandatory},
  periodStart→P.13       = {1995},
  periodEnd→P.13        = {1998},
  position→P.22          = {prof-W3},
  positionText→P.22      = {Professor of Microbial Systems},
  description→P.20       = {Established an independent research group on host--microbiome i
  ref-institution-id→P.22 = {IAIS},
}
```

For each stage on the career path repeat the `\addEntry{<cv>}{< ..., type=mandatory, ...>}`-block.

There are five more blocks to which a researcher can provide information. For each block and for each entry within one block you need to create an entry.

supplement: Supplementary Career Information

activities: Activities in the Research System

supervision: Supervision of Researchers in Early Career Phases

distinction: Academic Distinctions

other: Other Information

Here is a more concrete example

Example dataset-entry for a common CV-entity

```
\addEntry→P.21{cv}{
  ref-person-id→P.20      = {MM},
  cv-type→P.13          = {supplement},
  description→P.20       = {Member of the university research council since 2024.},
}
```

`\dfgCV{<person-id>}`

Print the complete CV for one person. The command expects a dedicated `cv-<person-id>` database and combines the header, mandatory career stages, optional CV sections, selected publications, and the data privacy statement.

`\dfgCVsection[<database>]`

Print the CVs for all PIs in the current funding period. The `<database>` defaults to `person`; persons are sorted by lastname and firstname before their CVs are printed with `\dfgCV`.

### 2.4.3 Keyset project

Following keys are required to describe a project.

Example dataset-entry to describe a project-entity.

```
\addEntry→P.21{project}{
  id→P.22 = {A01},
  number→P.23 = {A01},
  name→P.23 = {Microbial metabolism in barrier tissues},
  project-type→P.15 = {research},
  project-status→P.15 = {N},
  project-area→P.15 = {A},
  consider-for-lists→P.15 = {true},
  reference-only→P.15 = {false},
}
```

```

research-area→P.15 = {1.11-01, 1.11-03},
ref-person-id→P.20 = {MM, KM},
collaborations→P.15 = {A02, B01, Q01},
  legal-issues→P.16 = {
    L1→P.16 = {yes},
    L1a→P.16 = {yes},
    L2→P.16 = {no},
    L2a→P.16 = {},
    L3→P.16 = {yes},
    L4→P.16 = {no},
    L5→P.16 = {no},
    L5a→P.16 = {},
    L6→P.16 = {no},
    L7→P.16 = {no},
    L7a→P.16 = {},
  }
}

```

Other required keys are `id→P.22`, `name→P.23`, `number→P.23`, `ref-person-id→P.20`.

Within an `\addEntry→P.21{project}{...}` entry, the `ref-person-id→P.20` field is reserved exclusively for the person or persons who are PIs of that project. Every person listed in this field is interpreted as a project PI; no other person roles are inspected or considered. Persons associated with the project only in another role must therefore not be included in this field.

**project-type**=research|service|mgk|admin

Hereby you specify the type of the project. *research* stands for a classical research project, *service* is service project, *mgk* is an integrated graduate college, *admin* is an administrative project.

**project-status**=N|E|C

Define the status of the project, where *N* means a *new* project, *E* stands for *ending* and *C* for *continuing* project. The generated local proposal contains complete, separate source examples for all three statuses. Continuing projects use “Project progress to date”, new projects use “Research rationale”, and ending projects use the shorter “Project history”, “Published project results”, and “Funding” structure. In every case `\printProjectHead→P.30` supplies the preceding general-information section from metadata.

**project-area**=*area-id*

Assign the project to a collaboration-plot area such as A, B, or Q. Any number of area identifiers is supported. If the key is omitted or empty, the first character of the project ID is used for compatibility with existing metadata (for example, A01 belongs to area A).

**consider-for-lists**=true|false

Control whether the project participates in automatically generated project lists, project overview tables, research-area aggregates, and project counts. The default is `true`. Setting this key to `false` does not remove the database row, so the project remains available to explicit reference commands such as `\getProject→P.26`.

**reference-only**=true|false

Declare that the project exists only so historical or external project ids can be referenced. The default is `false`. A reference-only project is printed without a hyperlink because it has no project section that could provide a link target. In prose it receives the explicit “former project” indicator. Generated tables and lists instead append a compact superscript asterisk and add a local “Former project” legend when at least one such project occurs. This key is independent of `consider-for-lists`: an ending project with a real project section can be excluded from lists without becoming reference-only.

**research-area**=*ticklist*

Collect all research areas (according to the DFG list) in a comma-separated structure.

**collaborations**=*project-id-list*

List the other CRC projects collaborating with this project. Collaborations are treated as undirected and duplicate declarations are collapsed, so the reverse relation does not need to be repeated. The project collaboration plot reads its edges from this field and its nodes from the same `project` database. Its default arc layout shows all active

projects on one axis and highlights the focus project and its direct collaborators. Set `arcs=true` to draw the connecting arcs, or select the optional heatmap layout. Ending, reference-only, and `consider-for-lists=false` projects are omitted, as are edges to those intentionally excluded nodes. All arcs reach one common peak height, so their horizontal span does not imply collaboration strength or weight. Project identifiers are printed inside the nodes, and in the arc layout each project-area rule spans its complete contiguous group of nodes.

**legal-issues**=*<further key-values>*

Provide information about the project's legal issues. The *<key-value>* is further specified with L1, L1a, L2, L2a, L3, L4, L5, L5a, L6, L7, L7a.

**L1**=yes | no

This key records whether the project requires compliance with discipline-specific research ethics guidelines.

**L1a**=yes | no

If key L1 has been answered with *<yes>*, this statement records whether a statement from the responsible ethics committee is required and will be obtained before funding starts.

**L2**=yes | no

This key collects the answer to *clinical trials*

**L2a**=yes | no

If key L2 has been answered with *<yes>*, this statement *A copy of the studies' registration is included with the proposal* requires an answer, too.

**L3**=yes | no

This key collects the answer to *experiments involving vertebrates*

**L4**=yes | no

This key collects the answer to *experiments involving recombinant DNA*

**L5**=yes | no

This key collects the answer to *research involving human embryonic stem cells*

**L5a**=yes | no

If key L5 has been answered with *<yes>*, this statement *Legal authorization has been obtained* requires an answer, too.

**L6**=yes | no

This key collects the answer to *research concerning the Convention on Biological Diversity*

**L7**=yes | no

This key collects the answer to *investigations involving dual use research of concern*

**L7a**=yes | no

If key L7 has been answered with *<yes>*, this statement *A copy of the statement by the institution's research ethics committee is included with the proposal* requires an answer, too.

#### 2.4.4 Keyset institution

An institution describes the organisational unit a person belongs to, for example an institute, department, centre, or clinic. It is linked to its parent affiliation through `ref-affiliation-id`<sup>P.22</sup>. The `abbreviation`<sup>P.17</sup> is the compact, reader-facing label used in generated table cells; the internal `id`<sup>P.22</sup> is never intended as display text. Full institution lists and legends continue to use `name`<sup>P.23</sup>. For compatibility, a missing `abbreviation`<sup>P.17</sup> falls back to `name`<sup>P.23</sup>. The `name`<sup>P.23</sup> key may be left empty when the affiliation itself is the relevant institution-level text; in that case institution-list commands start with the affiliation name.

Example dataset-entry to describe an institution-entity.

```
\addEntryP.21{institution}{
  idP.22 = {IAIS},
  nameP.23 = {Institute for Applied Immunology and Systems Biology},
  abbreviationP.17 = {IAIS},
```

```
ref-affiliation-id→P.22 = {RWTH},
}
```

Institution without a separate institution name.

```
\addEntry→P.21{institution}{
  id→P.22 = {RWTH-main},
  name→P.23 = {},
  abbreviation = {RWTH},
  ref-affiliation-id→P.22 = {RWTH},
}
```

Person with multiple institutions.

```
\addEntry→P.21{person}{
  id→P.22 = {MM},
  firstname→P.22 = {Maria},
  lastname→P.22 = {Sample},
  ref-institution-id→P.22 = {IAIS, RWTH-main},
}
```

In standard institution lists, multiple institutions are printed as separate paragraphs with a small vertical gap. In narrow mode, they are joined inline with semicolons. The `abbreviation` option selects institution abbreviations (with a full-name fallback); generated compact tables enable this option automatically.

#### 2.4.5 Keyset affiliation

Following keys are required to describe an affiliation.

Example dataset-entry to describe an affiliation-entity.

```
\addEntry→P.21{affiliation}{
  id→P.22 = {RWTH},
  name→P.23 = {Rheinisch-Westfälische Technische Hochschule Aachen},
  abbreviation = {RWTH Aachen University},
  addressStreet = {Templergraben 55},
  addressZIP = {52062},
  location = {Aachen},
  country = {Germany}
}
```

**abbreviation**=*⟨string⟩*

In addition to `name→P.23` provide an abbreviated version of this affiliation.

**addressStreet**=*⟨string⟩*

Specify the street of the affiliation.

**addressZIP**=*⟨string⟩*

Specify the ZIP code of the affiliation.

**location**=*⟨string⟩*

Specify the location (city) of the affiliation.

**country**=*⟨string⟩*

Specify the country the affiliation is located at.

### 2.4.6 Keyset funding

Each row represents one funding line. For a staff row, the class can derive the annual amount from the declared personnel category, percentage, and yearly quantity. For other funding types, annual values continue to be supplied with `sum→P.19`.

Complete dataset for a funding entity. Not all keys are always required.

```
\addEntry→P.21[funding]{RequestedFunding}{
  id→P.22                = {A01-staff-prof},
  ref-project-id→P.22    = {A01},
  ref-affiliation-id→P.22 = {RWTH},
  financed-by→P.12       = {DFG},
  funding-type→P.18      = {staff},
  percentage→P.18        = {100},
  category→P.21          = {prof},
  quantity→P.18          = {
    { year1 = {1} },
    { year2 = {1} },
    { year3 = {1} },
    { year4 = {1} },
    { year5 = {1} },
  },
  sum→P.19 = {
    { year1 = {1000} },
    { year2 = {1000} },
    { year3 = {1000} },
    { year4 = {1000} },
    { year5 = {1000} },
  },
  year→P.19              = {2026},
  applicant→P.19         = {5000},
  participant→P.19       = {2000},
  other-funds→P.19      = {0},
  staff→P.19             = {5000},
  costs→P.19            = {1200},
  instrumentation→P.19   = {0},
  fellowships→P.19      = {0},
  globalfunds→P.20      = {0}
}
```

Not all of the above mentioned keys are necessary for each funding table. We will provide examples for the various funding databases and their required keysets.

**funding-type**=staff|costs|fellowships|globalfunds|  
instrumentation

Define the type of this funding according to the predefined set. This is important since different features are activated depending on the value of this key.

**percentage**=⟨number⟩

This is only relevant when `funding-type` is set to `staff`. State the percentage of a full position, for example 100 for a full position or 65 for a 65% position. Integer and decimal values are accepted by the automatic calculation.

**category**=groupLeader|prof|prof-W2|prof-W3|postDoc|medDoc|  
PhD|research|nonResearch|student|assistant

This is only relevant when `funding-type` is set to `staff`. Describe the kind of the required person. Depending on this ⟨category⟩ the matching `salary@...` setting is used. The categories `prof`, `prof-W2`, and `prof-W3` all use `salary@prof→P.33`; the other category names correspond directly to their setting names below.

**quantity**=⟨key=value⟩

This is a key that enables further ⟨key-values⟩ with a predefined subset `year1` through `year5`. State how many positions of the `category→P.21` are required in each year. Decimal quantities are supported, for example `year1={0.5}` for half a position.

**sum**= $\langle key=value \rangle$

This is a key that enables further  $\langle key-values \rangle$  with a predefined subset for the individual years. State the sum for a person for a certain  $category \rightarrow P.21$ . For `funding-type=staff` this key is optional: every omitted yearly sum is calculated from the salary setting for  $category \rightarrow P.21$ ,  $percentage \rightarrow P.18$ , and that year's  $quantity \rightarrow P.18$ . Because the five-year CRC period starts and ends with a half-year, automatically calculated amounts for `year1` and `year5` receive an additional factor of 0.5; `year2` through `year4` use the complete annual rate. The result is rounded to the nearest euro. An explicit yearly sum remains an override, so existing declarations and exceptional personnel costs keep their stated value.

For every omitted staff sum, the class applies

$$\text{round} \left( \text{salary}(\text{category}) \times \frac{\text{percentage}}{100} \times \text{quantity}(\text{year}) \times \text{period-factor}(\text{year}), 0 \right).$$

Here, `period-factor` = 0.5 for `year1` and `year5` and 1 for `year2`–`year4`. Thus the two half-years together count as one complete salary year. The calculation is performed when the row is added and the result is stored in the normal `sum-year1` through `sum-year5` fields. Funding tables therefore use calculated and explicitly supplied amounts in exactly the same way. A missing salary setting, percentage, or valid quantity produces a warning instead of silently inventing an amount.

#### Staff funding with automatically calculated sums.

```
\addEntry $\rightarrow P.21$ [funding]{RequestedFunding}{
  ref-project-id $\rightarrow P.22$  = {A01},
  funding-type $\rightarrow P.18$    = {staff},
  category $\rightarrow P.21$       = {PhD},
  percentage $\rightarrow P.18$     = {65},
  quantity $\rightarrow P.18$       = {
    year1 = {1}, year2 = {1}, year3 = {1},
    year4 = {1}, year5 = {1}
  }
}
```

**year**= $\langle integer \rangle$

State the year as integer. Actually only relevant in combination with `applicant`, `participant`, `other-funds`, `staff`, `costs`, `instrumentation`, `fellowships`, `globalfunds`  $\rightarrow P.20$ .

**applicant**= $\langle integer \rangle$

State the sum of direct costs for the applicant institution.

**participant**= $\langle integer \rangle$

State the sum of direct costs for any other participating (i.e. not-applicant) institution.

**other-funds**= $\langle integer \rangle$

State the sum of direct costs when neither the applicant nor a participating institution is covering the costs.

**staff**= $\langle integer \rangle$

State the  $\langle sum \rangle$  of staff for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with  $category \rightarrow P.21$  etc.

**costs**= $\langle integer \rangle$

State the  $\langle sum \rangle$  of direct costs for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with  $category \rightarrow P.21$  etc.

**instrumentation**= $\langle integer \rangle$

State the  $\langle sum \rangle$  of instrumentation for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with  $category \rightarrow P.21$  etc.

**fellowships**= $\langle integer \rangle$

State the  $\langle sum \rangle$  of staff for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with  $category \rightarrow P.21$  etc.

**globalfunds**=*<integer>*

State the *<sum>* of globalfunds for the previous funding phase. This is a fixed sum and therefore not necessary to calculate the sum like we do with *category*<sup>→P.21</sup> etc.

#### 2.4.7 Keyset **staff**: requested-funding roster

The staff key family also supplies the project-level roster required by the DFG section “Requested funding for staff”. These records use the fixed database RequestedFundingStaff and are independent of the monetary RequestedFunding rows above. The public output call is *\printTable*<sup>→P.28</sup>{RequestedFundingStaff}{A01}}.

Complete staff-roster declaration.

```
\addEntry→P.21[staff]{RequestedFundingStaff}{
  ref-project-id→P.22      = {A01},
  funding-status      = {existing},
  staff-type          = {research},
  ref-person-id       = {MM},
  field-of-research   = {Microbiology},
  commitment→P.21        = {8},
  funding-source      = {State funds},
  description         = {
    Leads the experimental work and supervises the research staff.
  }
}
```

**ref-project-id**=*<project-id>*

Required. Selects the project for which the roster row is printed. The value must match the project argument in the table call. For example, a row with ref-project-id={A01} is selected when A01 is passed as the project argument to *\printTable*<sup>→P.28</sup>.

**funding-status**=existing|requested

**staff-type**=research|nonResearch

These two required keys select one of the four official DFG groups. Empty subgroups are omitted and declaration order is retained within each group. In a project with project-status=E, funding-status=requested denotes staff funded with approved grant money in the ending funding period; the table changes that group label and its job-description heading automatically.

**ref-person-id**=*<string>*

**firstname**=*<string>*

**lastname**=*<string>*

**academic-degree**=*<string>*

**positionText**=*<string>*

A resolvable *ref-person-id* obtains the name, academic degree, position, category, and organisation from the central person fields firstname, lastname, academicdegree, positionText, position, ref-institution-id, and the compatibility fallback ref-affiliation-id. Any explicitly supplied roster field overrides the central value. An empty or omitted *academic-degree* is silently left out of both the roster and the job-description heading. For an unnamed vacancy, use lastname={TBA};firstname may then also be omitted, and both the roster and the job-description lead-in print a clean “TBA” marker. Multiple unnamed vacancies are distinguished by their category, position, field of research, and institution when duplicate records are checked. Either a person reference or at least a last name is required. For existing staff resolved through *ref-person-id*, the lastname is printed in bold in the roster. The position is optional: if positionText remains empty after person lookup, its line and parentheses are omitted without a missing-field warning. The former roster key position remains accepted as a compatibility alias for positionText.

**field-of-research**=*<string>*

**funding-source**=*<string>*

**description**=*<string>*

*field-of-research* supplies its table cell for every roster row. It may be empty or omitted for existing non-research staff; in that case the empty cell receives the tableNoValue background and no missing-field warning is issued. It remains an applicable, warning-checked value for the other three staff groups. *funding-source*

applies only to existing staff; the corresponding cell for requested staff is marked as not applicable. `description` supplies the numbered text below the table and accepts ordinary paragraph material, citations, and other LaTeX commands. Each description is an item in the applicable existing- or requested-staff list. Its number is the flush-left item label; academic degree, first name, last name, and all continuation lines share a consistent hanging indent. The bold name and description are separated by a normal interword space. Missing applicable values are highlighted and reported in the log.

**ref-institution-id**= $\langle id\text{-}list \rangle$

Resolve one or more comma-separated institution ids through the central `institution` database. Each institution's `abbreviation`<sup>→P.17</sup> is printed in the department/institution column; the full `name`<sup>→P.23</sup> is retained in the automatically generated legend together with its parent affiliation. Parent-affiliation abbreviations are checked and explained in first-use order. This key may be omitted when a resolvable `ref-person-id`<sup>→P.20</sup> already supplies `person.ref-institution-id`; a value on the staff row acts as an explicit override. When `ref-person-id`<sup>→P.20</sup> is empty or omitted, `ref-institution-id`<sup>→P.22</sup> must be supplied explicitly. The class warns at declaration time if both keys are empty, because the institution cannot be inherited and an existing staff member could not be assigned to an affiliation in `\OverviewExistingStaffTable`<sup>→P.140</sup>.

**department**= $\langle string \rangle$

Compatibility override for unstructured declarations. When present, this text is printed directly and takes precedence over institution lookup. New declarations should normally use `ref-institution-id`<sup>→P.22</sup>.

**ref-affiliation-id**= $\langle affiliation\text{-}id \rangle$

Compatibility fallback used only when neither `department` nor `ref-institution-id`<sup>→P.22</sup> is supplied. It prints the affiliation abbreviation and adds the affiliation to the legend. New declarations should use `ref-institution-id`<sup>→P.22</sup> so the organisational unit and its parent affiliation remain separate structured data. In particular, this compatibility key does not replace the required `ref-institution-id`<sup>→P.22</sup> on a row that has no `ref-person-id`<sup>→P.20</sup>.

**commitment**= $\langle number \rangle$

Project commitment in hours per week for existing staff. The value may be a non-negative integer or decimal; no artificial upper limit is imposed. For requested staff the table cell is marked as not applicable.

**category**=`prof|groupLeader|postDoc|medDoc|PhD|research|nonResearch|student|assistant|prof-W2|prof-W3`

Required for requested staff unless it can be inherited from `person.position` through `ref-person-id`<sup>→P.20</sup>. Only keys registered in `\g__dfg_dfg_category_names_prop` are accepted, and the table expands each key to the label stored in that property; for example, `postDoc` prints “Postdoctoral researcher”. Existing staff inherit the category for the chapter-2 overview when possible, but may still supply an explicit override; their Category cell in the project-level roster is marked as not applicable.

The table traverses `RequestedFundingStaff` only once for the selected project, then assigns continuous sequence numbers in display order. The same numbers are reused below the table for the two job-description blocks. Missing values, unresolved references, and exact duplicate identities produce warnings and visible placeholders without stopping compilation.

Reuse in chapter 2: overview of existing staff The same declarations also populate the proposal-wide table in section 2.1.2; no separate totals database is needed. The call is `\printTable`<sup>→P.28</sup>{`OverviewExistingStaff`}. It selects only rows with `funding-status={existing}`, counts one person per distinct parent affiliation, and groups the values into the seven categories prescribed by the DFG form. An unnamed or otherwise unreferenced person therefore needs an explicit `ref-institution-id`; omitting both it and `ref-person-id` produces a warning when the roster row is declared. The mappings are `prof`, `prof-W2`, and `prof-W3` to Professors, `groupLeader` to Junior research group leaders, `postDoc` to Postdoctoral researchers, `PhD` to Doctoral researchers, `research` and `medDoc` to Other research staff, `nonResearch` to Non-research staff, and `student` and `assistant` to Student and graduate assistants.

The applicant affiliation or affiliations are read as a comma-separated list from `meta.ref-affiliation-id` and printed first; other affiliations are obtained from each row's `ref-institution-id`. The group heading says `enquoteapplicant university` for one id and `enquoteapplicant universities` for several ids, spanning all corresponding columns. Multiple institutions belonging to the same affiliation count that person only once in that affiliation column. Since the project declarations normally occur after chapter 2, the class transfers the rows through the `.aux` file. The normal multi-pass `latexmk` build therefore fills the table automatically on the next pass.

#### 2.4.8 Adding information to a database

**\addEntry**[ $\langle key\text{-}set \rangle$ ]{ $\langle database \rangle$ }{ $\langle key=value \rangle$ }

Adds an entry to the database  $\langle database \rangle$  with the defined values from  $\langle key=value \rangle$ . An `id` is unique within its database. If a later call reuses the same `id`, the class issues a warning, removes all earlier rows with that `id`, and stores the later entry instead. The same `id` may still be used in a different database. Entries without an `id`, such as ordinary funding and staff rows, remain append-only.

You can omit the key-set-definition if the name of the database is the same as of the key-set, like for  $\langle person \rangle$ . Here is an example how to add some information about a person into the respective database:

Small example of how to add data to a database. Here  $\langle person \rangle$  is the database *and* the keyset.

```
\addEntryP.21{person}{
  id      =MM,
  firstname =Manfred,
  lastname  =Doe
}
```

Internally there is a new row added to the mentioned database (`person`). In case the database has not yet existed it will create it on the fly.

For other databases you can proceed as this:

Small example of how to add data to a database. Here  $\langle VIP \rangle$  is the database *while* using the keyset of  $\langle person \rangle$ .

```
\addEntryP.21[person]{VIP}{
  id      =person1,
  firstname =Kim,
  lastname  =Sample
}
```

In this case the person is stored in the database `VIP` (for whatever reason this is important).

Following keys are available for the  $\langle person \rangle$ -keyset.

**id**= $\langle unique\ string \rangle$

Any kind of a unique string that serves as an `id`, especially for commands like  $\backslash getEntry^{\text{P.24}}$ . Almost all databases require this key.

**firstname**= $\langle string \rangle$

**lastname**= $\langle string \rangle$

**academicdegree**= $\langle string \rangle$

**gender**=f|m|d

**period**=1|2|3

(multi choice!!)

**role**=PI|spokesperson|manager|steering-committee-member|rector

**position**=PhD|postDoc|groupLeader|research|nonResearch|student|prof|prof-W2|prof-W3

**positionText**= $\langle string \rangle$ (Specifying the position of the person, current or in the CV-section for the respective period.)

Personal and individual *required* information about a person.

**ref-institution-id**= $\langle string \rangle$

**ref-affiliation-id**= $\langle string \rangle$

**ref-project-id**= $\langle string \rangle$

Referencing to an external database with its dedicated  $\langle id \rangle$ . **Note:** When you reference using `ref-institution-id`, there is no need to explicitly reference the affiliation with `ref-affiliation-id`.

The institution data is resolved through a two-step relationship. A person stores one or more institution ids in `ref-institution-id`; each institution stores the id of its parent affiliation in `ref-affiliation-id`. Commands such as  $\backslash printList^{\text{P.28}}$  therefore follow this chain:

`person.ref-institution-id`  $\longrightarrow$  `institution.id`  $\longrightarrow$  `institution.ref-affiliation-id`  $\longrightarrow$  `affiliation.id`.

The affiliation id usually does not need to be duplicated in the person entry.

For the database meta there are also dedicated keys. The database meta contains specific information on the meta-level about the CRC. For the meta row with `id=crc`, `ref-affiliation-id` accepts one or more comma-separated affiliation ids, for example `{aff1, aff2}`. These are the applicant or coordinating universities. Their names and locations are resolved in declaration order for the title page and related prose; applicant funding totals include every listed id. Besides `id`, `ref-affiliation-id` there are these dedicated keys:

`name`= $\langle string \rangle$  (applicable to other keysets, too.)  
`nameAddon`= $\langle string \rangle$   
`number`= $\langle integer \rangle$   
`fundingPeriodNumeral`=1|2|3  
`fundedSince`= $\langle YYYY \rangle$   
`fundingYears`= $\langle YYYY1, YYYY2, YYYY3, YYYY4, YYYY5 \rangle$   
`fundingYearsPrevious`= $\langle YYYY1, YYYY2, YYYY3, YYYY4, YYYY5 \rangle$  (applicable to 2nd and 3rd phases)

Specify the core information of a CRC. The key `fundingPeriodNumeral` corresponds to `period`<sup>P.22</sup>.

#### 2.4.9 Retrieving and handling information from a database

**Information retrieval command overview** The following overview groups the public commands by the information they produce. Square-bracket arguments are optional; brace arguments are mandatory. The detailed descriptions below explain formatting, warnings, and fast-compilation behaviour.

##### General database access

`\getEntry` [ $\langle database \rangle$ ] { $\langle id \rangle$ } { $\langle field \rangle$ } [ $\langle id-field \rangle$ ] prints one field from one row.  
`\getEntry*` [ $\langle database \rangle$ ] { $\langle id \rangle$ } { $\langle assignments \rangle$ } [ $\langle id-field \rangle$ ] retrieves several fields in one row lookup and assigns them to macros without printing.  
`\compareEntry` [ $\langle database \rangle$ ] { $\langle id \rangle$ } { $\langle field \rangle$ } { $\langle value \rangle$ } { $\langle true \rangle$ } { $\langle false \rangle$ } selects content according to a field comparison.

##### People, institutions, and projects

`\getName`, `\getFullName` { $\langle person-id \rangle$ } prints a person's lastname or full name; the starred full-name form adds the academic degree.  
`\getPI` \*{ $\langle person-id-list \rangle$ } [ $\langle text \rangle$ ] prints linked PI references; the star includes firstnames.  
`\getORCID`, `\getORCIDvalue` [ $\langle database \rangle$ ] { $\langle person-id \rangle$ }: the first prints a linked, formatted ORCID; the second stores the raw value in `\theORCIDvalue` for later formatting.  
`\printList` {{Institutions}{ $\langle person-id \rangle$ }[options]} prints a person's institutions and their parent affiliations.  
`\getPersonInformation` [ $\langle database \rangle$ ] { $\langle person-id-list \rangle$ } prints complete PI/contact blocks.  
`\getPIsWithRole` [ $\langle database \rangle$ ] { $\langle role \rangle$ } [ $\langle raster-options \rangle$ ] prints current-period people carrying the requested role.  
`\getPIProject`, `\getProjectPI` \*{ $\langle id-list \rangle$ } prints people with their assigned projects, or projects with their assigned people; the starred forms include firstnames.  
`\getPIofProject` [ $\langle properties \rangle$ ] { $\langle project-id \rangle$ } [ $\langle delimiter \rangle$ ] prints selected PI name properties for one project.  
`\getProject` \*{ $\langle project-id-list \rangle$ } [ $\langle text \rangle$ ] prints project references. The starred form always prints project identifiers only. Optional  $\langle text \rangle$  replaces the displayed project number while retaining the link target and is best used with a single project. With `projectPIOncePerSection`<sup>P.33</sup>=true, it shares `\getProjectPI`'s first-reference PI expansion and state. A reference-only project is deliberately not linked. It is marked as "former project" in prose; inside `\printTable` and `\printList` output it receives an asterisk and the generated item receives a local legend.  
`\getProjectCount` [ $\langle area \rangle$ ] prints the number of active, list-considered projects. Omit the area for the total, or pass A, B, or Q.  
`\dfgResearchAreasList` { $\langle code \rangle$ } prints a DFG research-area code and its description.  
`\getAim`, `\getWP` [ $\langle project-id \rangle$ ] { $\langle id-list \rangle$ } cross-references one or more project aims or work packages; the project id defaults to the current project.

##### Person statistics

`\getPositionGenderPhaseAmount` [ $\langle database \rangle$ ] { $\langle position \rangle$ } { $\langle gender \rangle$ } { $\langle period \rangle$ } prints the count for one position/gender/period tuple.  
`\getPositionPhaseTotal` [ $\langle database \rangle$ ] { $\langle position \rangle$ } { $\langle period \rangle$ } prints the all-gender total.  
`\getGenderPhaseTotal` [ $\langle database \rangle$ ] { $\langle gender \rangle$ } { $\langle period \rangle$ } prints the all-position total.  
`\getPositionGenderPhasePercentage` [ $\langle database \rangle$ ] { $\langle position \rangle$ } { $\langle gender \rangle$ } { $\langle period \rangle$ } prints the rounded integer percentage value within a position.  
`\getGenderPhasePercentage` [ $\langle database \rangle$ ] { $\langle gender \rangle$ } { $\langle period \rangle$ } prints the rounded integer percentage value across all counted positions.

##### Funding and staff totals

The near-identical funding names encode two different scopes. Commands using the singular name `RequestedFunding` use the proposal-wide `RequestedFundingOverview` database by default. Commands using the plural name `RequestedFunds` use the project-level `RequestedFunding` database and therefore require a project id. In the signatures below, `<sum-fields>` means one or more fields such as `sum-year1` through `sum-year5`.

`\getCountRequestedStaff` [`<project>`] {`<year>`} {`<category>`} prints the requested staff quantity, optionally restricted to one project.

`\getSumRequestedFunding` [`<database>`] {`<year>`} {`<type>`} prints the proposal-wide total for one funding type; use `year=all` for all five years.

`\getTotalSumRequestedFunding` [`<database>`] {`<year>`} {`<type>`} has the same proposal-wide scope and additionally accepts `type=all` for the grand total.

`\getSumPreviousRequestedFunding` [`<database>`] {`<year>`} {`<fields>`} totals the selected columns in the previous-period database; `year=all` includes every row.

`\getSumRequestedFunds` [`<database>`] {`<project>`} {`<type>`} {`<sum-fields>`} prints a project total for one funding type.

`\getTotalSumRequestedFunds` [`<database>`] {`<project>`} {`<sum-fields>`} prints a project total across all funding types.

`\getSumRequestedFundsInstrumentation` [`<project>`] {`<sum-fields>`} prints the proposal-wide instrumentation total or restricts it to the optional project.

`\getSumRequestedFundingDirectCosts` [`<database>`] {`<year>`} {`<group>`} totals direct costs for applicant, participant, other-funds, or all.

`\getSumExistingFunds` [`<database>`] {`<project>`} {`<sum-fields>`} prints existing direct-cost funding for one project.

For example:

#### Common project-count and funding queries.

```
\getProjectCount[A]                % active A projects
\getSumRequestedFunding{all}{staff} % proposal-wide staff total
\getTotalSumRequestedFunding{all}{all} % proposal-wide grand total
\getSumRequestedFunds{A02}{staff}{sum-year1} % A02 staff total, year 1
\getTotalSumRequestedFunds{A02}{sum-year1} % A02 grand total, year 1
```

You can get any kind of information back from any database using `\getEntry`:

**`\getEntry`** [`<database>`] {`<value of id>`} {`<column>`} [`<alternative id-field>`]

Retrieve and typeset the value of `<column>` from the row whose id-cell equals `<value of id>`.

The optional `<database>` argument selects the `datatool`<sup>→CTAN</sup> database to query; it defaults to `\tmpLocalDB`, which is set by the surrounding context (typically by the table-generating command). The optional `<alternative id-field>` argument names the column that holds the row identifier and defaults to `id`; supply a different name when the row is keyed on something other than the standard id column (for example `ref-project-id` or `number`).

The retrieved value is wrapped in `\dfgShowTag` before being typeset, so when the `showtags`<sup>→P.32</sup> class option is active the output is annotated with a small overlay marker showing the originating database, id, and column. When the option is inactive, the value is typeset plain.

The command performs several checks and emits a warning to the log when something is wrong: a `database-name-not-given` warning if `<database>` is empty, a `database-not-found` warning if no database with the given name exists, and a `missing-key` warning if the row exists but the requested cell is empty or undefined. The last warning is suppressed during `tabularray`<sup>→CTAN</sup>'s measuring phase to avoid duplicate log entries.

When the `fastcompile-project` class option is active, the lookup is skipped entirely and the row identifier is typeset as a quiet grey placeholder. Starred multi-field lookups initialise their destination macros to empty values without touching a database.

Examples:

```
% fetch the lastname of person 42 from the |person| database
\getEntry[person]{42}{lastname}

% fetch the title of the project with number "A1"
\getEntry[project]{A1}{name}[number]

% inside a context where \tmpLocalDB is set to "person":
```

```
\getEntry{42}{firstname}
```

When several columns from the same row are needed, prefer the starred form `\getEntry*`, which performs only a single row lookup.

**`\getEntry*`** [`<database>`] {`<value of id>`} {`<assignments>`} [`<alternative id-field>`]

Starred variant of `\getEntry`. Retrieves multiple columns from the same row in a single lookup and assigns each value to the macro named on the left-hand side of the assignment.

The `<assignments>` argument is a comma-separated list of `<macro> = <column>` pairs. For each pair, the value of `<column>` for the row whose id-cell equals `<value of id>` is stored in `<macro>`. Unlike the unstarred form, this variant does not print anything and does not wrap results in `\dfgShowTag` – the caller is responsible for formatting the retrieved values.

Missing fields trigger the same missing-key warning as the unstarred form (suppressed during tabularray’s measuring phase).

Example:

```
\getEntry*[person]{42}{
    \theFirst  = firstname,
    \theLast   = lastname,
    \theDegree = academicdegree
}
\theDegree\space\theFirst\space\theLast
```

This is preferable over multiple `\getEntry` calls when several fields from the same row are needed: the row is located once instead of once per field.

**`\tmpLocalDB`** {`<database>`}

Define the database locally (e.g. within a group) so you don’t need to repeat it as [`<database>`] for e.g. `\getEntry`<sup>→P.24</sup>.

Here is a concrete example how to do it. It will give you the last name of the person (database person) that has the id MM.

Example how to get data from the database `<person>`.

```
\getEntry[person]{MM}{lastname}
```

You can omit [`<person>`] in this case if `\tmpLocalDB` is defined.

Omit locally the database because it has been defined before.

```
\def\tmpLocalDB{person}
\getEntry{MM}{lastname}
```

To quickly get a name of a person there is a dedicated command:

**`\getName`** {`<id>`}

Get last name of person that has the `<id>`. This sets the database to person.

**`\getFullName*`** {`<id>`}

**`\getFullName`** {`<id>`}

Get the full name of the person with the `<id>`. The starred version adds the academic title in front.

**`\getPI*`** {`<id-list>`}

**`\getPI`** {`<id-list>`}

**`\getPI`** {`<id-list>`} [`<text>`]

Reference one or multiple PIs from the `person` database. The `<id-list>` is a comma-separated list of person ids. By default the command prints the lastname; the starred version also prints the firstname. With the optional `<text>` argument, `<text>` is printed instead, but the hyperlink still points to the PI.

The printed name is typeset bold, coloured with `referencePI`, and linked to the corresponding person's row in `\printTable{ProjectLeaders}`. Each row of that table provides the destination `pi: <id>`.

#### Reference one or multiple PIs.

```
\getPI{MM}
\getPI*{MM, KM}
\getPI{MM}[the spokesperson]
```

#### `\getProject*{<id-list>}[<text>]`

Reference one or multiple projects from the `project` database. The `<id-list>` is a comma-separated list of project ids. By default the command prints the project number; with the optional `<text>` argument, `<text>` is printed instead, but the hyperlink still points to the project. In CV mode the command prints the same text without a hyperlink. The starred form always uses this compact project-only representation, independently of `projectPIOncePerSection`<sup>→P.33</sup> and its first-reference state. Projects declared with `reference-only`<sup>→P.15</sup>=true are never hyperlinked; instead, “former project” is appended to make the missing project section explicit.

The printed project reference is typeset bold and coloured according to the first letter of the project id. Multiple project references are joined as a natural-language list with commas and a final “and”. With `projectPIOncePerSection`<sup>→P.33</sup>=the command behaves like the unstarred `\getProjectPI`<sup>→P.27</sup>: the first reference to each project in a section includes its PIs and later references use the compact project form. Generated tables and lists remain compact.

#### Reference one or multiple projects.

```
\getProject{A01}
\getProject{A01, B02}
\getProject{A01, B02, Q01}
\getProject{A01}[the first project]
\getProject*{A01, B02, Q01}
```

#### `\getProjectCount[<area>]`

Print the number of active projects. A project is active when its `project-status`<sup>→P.15</sup> is C or N and `consider-for-lists`<sup>→P.15</sup> is true and `reference-only`<sup>→P.15</sup> is false. With no optional argument all active projects are counted. Any explicit `project-area`<sup>→P.15</sup> value may be supplied to restrict the result; where that metadata is absent, the first character of the project ID is used. All area totals are computed together on first use and cached for subsequent calls.

#### Count active projects.

```
\getProjectCount
\getProjectCount[A]
\getProjectCount[B]
\getProjectCount[Q]
```

#### `\CRC{<crc-number>}`

#### `\CRC*{<crc-number>}`

#### `\CRC*[<crc-title>]{<crc-number>}`

Print a CRC reference. For the current CRC, identified by the `number`<sup>→P.23</sup> field of the `meta` entry with id `crc`, the unstarred command prints the short form stored in `\thisCRC`; the starred command prints the long form with the CRC title.

For a different CRC number, the unstarred command prints only the short reference, while the starred form prints a long reference. If `<crc-title>` is given, it is used as the title of the external CRC; otherwise the command falls back to the CRC number.

```
\TRR{<trr-number>}
\TRR*{<trr-number>}
\TRR*[<trr-title>]{<trr-number>}
```

Print a CRC/TRR reference. The command follows the same rules as `\CRC`<sup>→P.26</sup>, but uses “CRC/TRR” as the printed programme type.

#### Reference current and external CRCs.

```
\CRC{1382}
\CRC*{1382}
\CRC{999}
\CRC*[External CRC title]{999}
\TRR{999}
\TRR*[External CRC/TRR title]{999}
```

```
\getPIProject*{<person-id-list>}
\getPIProject{<person-id-list>}
```

Print one or multiple PIs together with their assigned projects. The `<person-id-list>` is a comma-separated list of ids from the `person` database. For each PI, the command reads `ref-project-id`<sup>→P.22</sup> from the person entry and prints the referenced projects in parentheses using `\getProject`. The starred version prints firstnames in addition to lastnames.

#### Print PIs with their projects.

```
\getPIProject{MM, KM}
\getPIProject*{MM, KM}
```

```
\getProjectPI*{<project-id-list>}
\getProjectPI{<project-id-list>}
```

Print one or multiple projects together with their assigned PIs. The `<project-id-list>` is a comma-separated list of ids from the `project` database. For each project, the command reads `ref-person-id`<sup>→P.20</sup> from the project entry and prints the referenced PIs in parentheses using `\getPI`<sup>→P.25</sup>.

If a project id is identical to the current project established by `\printProjectHead`<sup>→P.30</sup>, only the project itself is printed, just as with `\getProject`<sup>→P.26</sup>; its PIs are omitted. In a list containing several projects, this exception applies only to the matching project.

By default, PI names are shown only for the first `\getProject`<sup>→P.26</sup> or `\getProjectPI` reference to each project within a section. Both commands share the same remembered state, and a new section resets it. Generated tables and lists remain compact. Set `projectPIOncePerSection`<sup>→P.33</sup>=false with `\changeSettings`<sup>→P.32</sup> to make `\getProject`<sup>→P.26</sup> always compact and `\getProjectPI` always expanded.

The starred version prints firstnames in addition to lastnames.

#### Print projects with their PIs.

```
\getProjectPI{A01, B02}
\getProjectPI*{A01, B02}
```

```
\getPIOfProject [<properties>]{<project-id>}[<delimiter>]
```

Print the PIs assigned to a project. The command reads `ref-person-id`<sup>→P.20</sup> from the project entry and then prints selected person fields from the `person` database. The optional `<properties>` argument is a comma-separated list of fields to print and defaults to `lastname`. Typical values are `academicdegree`, `firstname`, and `lastname`. The optional `<delimiter>` separates multiple PIs and defaults to `\, /\, .`

Print the PIs of a project.

```
\getPIofProject{A01}  
\getPIofProject[firstname,lastname]{A01}{, }
```

**\getPIsWithRole** [*<database>*] {*<role>*} [*<raster-options>*]

Print all persons from *<database>* with the given *<role>* in PI boxes. The database defaults to person. Only persons belonging to the current funding period are shown. Rows of boxes and the content after the raster are separated by 20 pt by default. The optional *<raster-options>* are passed to the underlying `tcolorbox`<sup>CTAN</sup> raster and may override those spacing defaults.

Print all PIs with a given role.

```
\getPIsWithRole{spokesperson}[raster columns=1]  
\getPIsWithRole{steering-committee-member}
```

We can also compare values from a database against anything. This might be more relevant for some use in the backend, but who knows if this becomes handy.

**\compareEntry** [*<database>*] {*<id>*} {*<field>*} {*<value>*} {*<true>*} {*<false>*}

Compare an entry with the *<id>* of *<database>* against *<value>* and show either *<true>* or *<false>*.

For example if you want to have different results when the last name of the person with the id is MM.

Compare a database entry against something.

```
\compareEntry[person]{MM}{lastname}{Doe}  
{Yes, the name is Doe.}  
{No, the name is not Doe.}
```

Or here is some concrete and real world example. We check if a person is coming from the affiliation RWTH. If the person comes from the RWTH, then we display the longname, if not, leave it empty.

```
\compareEntry[MM]{ref-affiliation-id}{RWTH}  
{Rheinisch-Westfälische Technische Hochschule}  
{}
```

## 2.5 Filling tables from the template

In this section we provide some insights how to fill the tables with the required information.

**\printTable** [*<options>*] {*<name>*}

Print one of the predefined template tables. The *<name>* is the table base name without the suffix Table; for example ProjectLeaders calls \ProjectLeadersTable. If *<name>* is a braced list, the first item is used as the table base name and the remaining items are passed as arguments to that table command. The gap above a table is set by `presep=4pt` in the shared \SetTblrOuter call below; adjust that value to change the gap above generated tables.

**\printList** [*<options>*] {*<name>*}

Print one of the predefined template lists. The *<name>* is the list base name without the suffix List; for example ParticipatingInstitutions calls \ParticipatingInstitutionsList. The optional *<options>* are passed to the generated list command. A person's institutions use \printList{{Institutions}{MM}}; that form needs the person ID, while \printList{ParticipatingInstitutions} lists participating institutions across the proposal.

```
\begin{TableEnv}{<column specification>}[<table options>]{<caption>}{<label>}
  <environment content>
\end{TableEnv}
```

Typeset a generic long table using the template’s main table theme. The optional *<table options>* are inserted into the inner `tabularray`<sup>→CTAN</sup> specification and default to an empty option list, so the square brackets may be omitted when no additional options are needed. Table text defaults to `\footnotesize` at theme scope. Consequently, cell-local declarations such as `font=\bfseries` or `font=\itshape` retain the default size; include an explicit size such as `font=\normalsize\bfseries` only when a table or cell should override it.

```
\begin{FundingDirectCostsTable}[<heading>]
  <environment content>
\end{FundingDirectCostsTable}
```

Typeset a three-column breakdown of direct costs. Its optional heading and the table stay together when there is insufficient space left on a page.

```
\printPlot[<options>]{<plot specification>}
```

Print a Gantt or collaboration plot. Use the lowercase type names `gantt` and `collaborations` in the braced specification. The second braced item selects a project, as in `\printPlot{{gantt}}{B06}}` or `\printPlot{{collaborations}}{B06}}`. Omit the project ID inside a project to use its current ID: `\printPlot{{gantt}}` or `\printPlot{{collaborations}}`. Without a current project, give the ID. Place plot options before the specification, for example `\printPlot[arcs=true]{{collaborations}}{B06}}` or `\printPlot[caption={Additional detail}]{{collaborations}}{B06}}`. With an explicit ID, a final optional argument can add caption text, as in `\printPlot{{gantt}}{B06}[Additional detail]`. Captions stay below plots. For either plot type, an empty `caption={}` leaves the default caption intact and serves as a placeholder for additional project-specific text. The former type names `Gantt` and `ProjectCollaboration` and the singular lowercase `collaboration` remain accepted.

The collaboration arc diagram is the default. Select the heatmap with `layout=heatmap`. Heatmap columns use a shared dynamic box width based on the project area with the most projects, and inactive no-collaboration projects have white backgrounds. Project areas are read from the optional `project-area` field of each project entry; if it is absent, the first character of the project ID is used. Rows are created for every distinct area, ordered by area and project ID. The familiar A, B, and Q colors are retained; other areas use a rotating palette. Override individual colors with `area-colors={C=orange,D=violet}` or replace the fallback palette with `area-palette={teal,brown,magenta}` in the plot options. Use `collaborationAreaColors`<sup>→P.33</sup> and `collaborationAreaPalette`<sup>→P.33</sup> in `\changeSettings`<sup>→P.32</sup> to apply the same customization to every collaboration plot.

#### Print predefined tables, lists, and plots.

```
\printTable{ProjectLeaders}
\printList{ParticipatingInstitutions}
\printTable{{Projects}}{A}{Microbiota and metabolic pathways}
\printTable{{RequestedFunding}}{A01}
\printPlot[caption={}][{{collaborations}}{A01}]
\printPlot[caption={}][{{gantt}}{A01}]
% Inside a project, these use the current project ID:
\printPlot{{collaborations}}
\printPlot{{gantt}}
```

```
\printProject{<specification>}
```

Use the unified project-boundary interface. Start a project with its id and finish the active project without repeating that id:

```
\printProject{{Head}}{A01}
\dots
\printProject{{Tail}}
```

The `Head` form delegates to `\printProjectHead`<sup>→P.30</sup>; the `Tail` form delegates to `\printProjectTail`<sup>→P.30</sup>. The original commands remain available as compatibility fallbacks.

**\printProjectHead**{*<project-id>*}

Start the section for one project. The command sets the current project, creates the project heading, resets project-local counters, starts a bibliography refsection, prints the project leaders, and prepares the project-specific thumbindex and headers. Active research and service projects also receive the DFG research-areas heading from their *research-area*<sup>→P.15</sup> metadata; ending, MGK, and administrative projects do not. For every person id in the project's comma-separated *ref-person-id*<sup>→P.20</sup> value, all names stored in *name-alias*<sup>→P.13</sup> are registered as emphasized bibliography names. An empty alias value is ignored.

With *fastcompile-project*<sup>→P.31</sup>, the current-project state, counters, labels, a compact running header containing the project ID, and the optional bibliography refsection are prepared. A light hook-based draft watermark is added to every shipped page; the calculated heading, project-leader cards, contract information, legal-issues table, thumb index, and table-of-contents entry are omitted.

**\printProjectTail**

Finish the current project section. The command closes the bibliography refsection, resets bold bibliography names, restores the table-of-contents depth, and starts a new page. In *fastcompile-project*<sup>→P.31</sup>, it only closes the optional publication refsection and does not force a page break.

**\projectPublicationsHeading**

Print the standard project-publications subsection heading only when *fastcompile-project-show-publications*<sup>→P.31</sup> is enabled.

**\projectNocite**{*<entry keys>*}

Add project publication entries with *\nocite* only when *fastcompile-project-show-publications*<sup>→P.31</sup> is enabled.

**\printProjectBibliography**[*<bibtex options>*]

Print a project bibliography only when *fastcompile-project-show-publications*<sup>→P.31</sup> is enabled. Use these three project-specific commands together so disabling publication output also removes its heading and explicit bibliography work. Project bibliography entries are typeset in *\footnotesize*. With *emphasizeEntries*<sup>→P.35</sup> enabled, an entry carrying the current project's *<project-id>-highlight* keyword is printed in bold. A direct *\printbibliography* call bypasses this formatting, the font setting, and the publication-output switch.

**\printProjectResults**{*<key-value list>*}

Print the three result categories required for an ending project. The keys *quality-assured*, *other*, and *patents* each accept a comma-separated list of bibliography entry keys. Use the literal value *none* when a category produced no results. An omitted or empty key retains a drafting instruction instead, so an unfinished list is not accidentally reported as empty.

Every non-empty category is placed in a separate bibtex reference segment within the reference section opened by *\printProjectHead*. Consequently, category membership is local to the current project. The command also places any pending floats before the result lists.

The combined result-key list is written to the project's auxiliary file. On the next normal  $\LaTeX$  pass, a *projectReport* bibliography uses this list to omit report citations that are printed later as project results. This follows the usual bibtex compilation cycle and does not require the entry keys to be duplicated in the report.

*\begin*{**projectReport**}

*<environment content>*

*\end*{**projectReport**}

Isolate all citations in the project report in their own reference segment and print that segment's bibliography at the end of the environment. Any entries assigned to *\printProjectResults* for the same project are omitted, because they are printed in the later result lists. Place the environment immediately after the report subsection heading and label.

Print the published results of an ending project.

```
\subsection{Report}
\begin{projectReport}
  Report text with a general source \cite{general-source} and a project
  result \cite{article-key}.
\end{projectReport}
```

```

\subsection{Published project results}
\printProjectResults{
  quality-assured = {article-key,book-key},
  other           = {dataset-key,software-key},
  patents         = none
}

```

**\dfgTOCprojectPart** {<letter>} [<label>] {<title>}

Add a project-area heading to the table of contents. The <letter> identifies the project area, <label> defaults to Project area, and <title> is the text printed after the area label.

Wrap a project section.

```

\dfgTOCprojectPart{A}{Microbiota and metabolic pathways}
\printProjectHead{A01}
\ldots
\printProjectTail

```

## 2.6 Adjustments and Customizations

### 2.6.1 Documentclass options

**\documentclass** {<key=value>}

Adjust on a metalevel various options (e.g. `showmarginalia`, `fastcompile`, `fastcompile-project`, `fastcompile-project-show-images`, `fastcompile-project-show-publications`, `fastcompile-project-show-funding-tables`<sup>→P.32</sup>, `showtags`<sup>→P.32</sup>, `showtags-tables`<sup>→P.32</sup>, `skip10pub`<sup>→P.32</sup>, `cv`<sup>→P.32</sup>, `final`<sup>→P.32</sup>, `colorscheme`<sup>→P.32</sup>) for the whole document. Not so much content wise but rather organisational.

**BCOR**=<dim> (initially 5mm)

Reserve binding space on the inner edge of each page. The class passes this KOMA-Script option to geometry as its binding offset. With the default 30 mm nominal inner margin, BCOR=5mm gives 35 mm of inner clearance and a 160 mm text block; BCOR=8mm gives 38 mm and 157 mm.

**showmarginalia**=true|false (initially false.)

Show further information in the marginpar area, esp. total sum in funding tables.

**fastcompile**=true|false (initially false.)

Skip generated tables and lists, role-card grids, Gantt charts, and the CV publication block. Metadata and ordinary database-backed references remain available, making this the less aggressive compatibility mode.

**fastcompile-project**=true|false (initially false.)

Compile authored project text with minimal calculated framing. This mode implies `fastcompile`, does not load metadata files unless `fastcompile-project-show-images` needs project rows, and executes only the three project-local funding entry types when `fastcompile-project-show-funding-tables`<sup>→P.32</sup> is enabled. It replaces the calculated project head with state-only setup, disables title/front-matter helpers when wrapped with `\dfgIfFastCompileProjectF`, and uses draft links. Graphics also default to draft placeholders unless `fastcompile-project-show-images` is enabled. Database references fall back to their IDs so prose remains readable. Apart from the optional project funding tables, generated tables and lists retain the same visible skipped-item notice as `fastcompile`.

**fastcompile-project-show-images**=true|false (initially false.)

Render images and generated plots encountered in the selected project while `fastcompile-project` is active. Project entries from the metadata file are retained for database-backed plots such as `\printPlot{{ProjectCollaboration}}` other metadata entries, calculated headings, generated tables and the remaining fast-mode work stay disabled. With the default value, `graphicx` stays in draft mode, displays image placeholders, and `\printPlot`<sup>→P.29</sup> emits the usual skipped item notice.

**fastcompile-project-show-publications**=true|false (initially false.)

Show or suppress project publication headings, explicit project \nocite lists, project bibliographies, report references, and ending-project result lists while `fastcompile-project` is active. Ordinary and final builds always enable publication output. When this option is false in focused project mode, inline citation commands render compact bibliography-key markers without requesting biber.

**fastcompile-project-show-funding-tables**=true|false (initially true.)

Show or suppress  $??^{\rightarrow P.??}$ , `\RequestedFundingStaffTable→P.177`, and  $??^{\rightarrow P.??}$  while `fastcompile-project→P.31` is active. Focused mode processes only the corresponding project-local `RequestedFunding`, `RequestedFundingStaff`, and `RequestedAndExistingFundingDirectCosts` entries. Local staff-cost and total calculations remain available, but auxiliary-file restoration and proposal-wide overview caches stay disabled. This option has no effect on ordinary or final builds, where these tables are always rendered.

**showtags**=true|false (initially false.)

Annotate direct database values with their database, row identifier, and field, and calculated values with a concise calculation and source-database label. Successive labels alternate between two vertical levels to keep adjacent annotations legible. Both `fastcompile→P.31` and `fastcompile-project→P.31` force this option to false.

**showtags-tables**=true|false (initially true.)

Allow provenance tags inside generated table cells when `showtags` is enabled. Set this to false to retain tags in prose and other output while keeping tables uncluttered. It has no effect when `showtags` is disabled.

**skip10pub**= $\langle true|false \rangle$  (initially false.)

Especially in the CV part, it might take longer to compile the reference list with the 10 most important publications. With this set to  $\langle true \rangle$  the reference list will be skipped.

**colorscheme**=rgb|cmyk (initially cmyk.)

Set the colorscheme according to your needs. For a PDF that is meant for only being displayed on a screen, go with  $\langle rgb \rangle$ , for a printed version choose  $\langle cmyk \rangle$ .

**cv**=true|false (initially false.)

In the document which prints the CVs, set this option to  $\langle true \rangle$ , since it will show additional/needed text and modifications.

**final**=true|false (initially false.)

When your proposal has been finalised and is ready to be submitted, set this option to  $\langle true \rangle$  for the final compilation. The capitalized alias `Final` is accepted for compatibility. This option has consequences for `showmarginalia→P.31`, `showtags`, `fastcompile→P.31`, `fastcompile-project→P.31`, `skip10pub`, `fastcompile-project-show-publications→P.31`, `colorscheme`, and open-access markers in the bibliography. Open-access DOI API lookup is enabled only in final documents when `doiAPIMail→P.33` is non-empty and `LuaSocket` is available.

#### Example configuration for documentclass mit final-flag

```
\documentclass[
  final           =true,
  % sets to false:
  showmarginalia→P.31 =false,
  showtags       =false,
  fastcompile→P.31   =false,
  fastcompile-project→P.31=false,
  fastcompile-project-show-funding-tables=true,
  skip10pub      =false,
  fastcompile-project-show-publications→P.31=true,
  colorscheme    =cmyk
]{dfg-crc}
```

### 2.6.2 Change default settings

In the preamble/`dfg-customization.tex` you can overwrite the default settings of this documentclass.

**\changeSettings**{ $\langle key=value \rangle$ }

Customize fonts, logo paths, colors, `thumbindex→P.33`, and other class defaults. The former `\changeSetting` spelling remains available as a compatibility alias.

The following keys are to be set or changed in `\changeSettings`:

**crcLogoPath**=*<file path>* (initially `example-image-a`)  
**affiliationLogoPath**=*<file path>* (initially `example-image-b`)

Select the image files used by `\crcLogo` and `\affiliationLogo`. As with `\includegraphics`, the file extension may be omitted.

**doiAPIMail**=*<email address>* (initially empty)

Set the contact address required by the DOI API used for automatic open-access markers. Network lookup remains disabled unless this value is non-empty, the document uses `final=true`, and LuaLaTeX has socket support.

**projectPIOncePerSection**=`true|false` (initially `true`)

Show the PIs attached to a project only on that project's first shared `\getProject`<sup>P.26</sup> or `\getProjectPI`<sup>P.27</sup> reference in each section. Later references use the compact project form. Set this to `false` to keep `\getProject`<sup>P.26</sup> compact and repeat the PI names at every `\getProjectPI`<sup>P.27</sup> reference. References to the current project and references in generated tables and lists always remain compact.

**projectsTableInstitutionAbbreviations**=`true|false` (initially `false`)

Control the institution display in `\ProjectsTable` and `\ProjectLeadersTable`. With `true`, both tables use compact institution abbreviations; each projects table is followed by a tightly set legend containing only the abbreviations used in that table, sorted alphabetically by abbreviation. Reusing one abbreviation for different institution names raises a package warning. With `false`, full institution names are printed and no legend is added.

**collaborationAreaColors**=*<color list>* (initially `A=projectA, B=projectB, Q=projectQ`)

**collaborationAreaPalette**=*<color list>* (initially a rotating seven-color palette)

Set collaboration-area colors once for every collaboration plot. `collaborationAreaColors` is a key-value mapping such as `{A=projectA, B=projectB, C=orange}`. Areas absent from that mapping receive colors from `collaborationAreaPalette` in deterministic area order. The corresponding area-colors and area-palette plot options override these settings for one `\printPlot`<sup>P.29</sup> call.

**salary@prof**=*<euros per year>* (initially 123600)

**salary@groupLeader**=*<euros per year>* (initially 102300)

**salary@postDoc**=*<euros per year>* (initially 88200)

**salary@medDoc**=*<euros per year>* (initially 111000)

**salary@PhD**=*<euros per year>* (initially 81600)

**salary@research**=*<euros per year>* (initially 67200)

**salary@nonResearch**=*<euros per year>* (initially 60000)

**salary@student**=*<euros per year>* (initially 1)

**salary@assistant**=*<euros per year>* (initially 1)

Set the annual salary rates used to calculate requested staff funding when a funding entry omits its explicit yearly sums. The professorial rate is shared by the `prof`, `prof-W2`, and `prof-W3` categories.

**animalHousing@mouse**=*<euros per animal and week>* (initially 0.75)

**animalHousing@mouseGnotobiotic**=*<euros per animal and week>* (initially 3.9)

**animalHousing@rat**=*<euros per animal and week>* (initially 1.4)

Set the weekly animal-housing rates used by the upkeep-of-laboratory-animals table. All salary and animal-housing settings accept integer or decimal numbers.

**thumbindex**=`true|false` (initially `true`)

Shows a thumbindex in the outer margin. This can be customized further.

Customize further all about the thumbindex. Modification done in `dfg-customization.tex`.

**thumbindex@pattern**=*<int>* (initially 10)

Define how long the pattern of the `thumbindex` is until it starts again from the top of the page.

**thumbindex@topmargin**=*<dim>* | `auto` (initially `auto`)

**thumbindex@bottommargin**=*<dim>* | `auto` (initially `auto`)

With `auto`, the first tab starts at the top of the text block and the last tab ends at its bottom; the tabs divide the current `\textheight` into `thumbindex@pattern` equal slots. Set either key to a dimension to place that end of the tab stack the specified distance from the corresponding page edge. With the default `auto` values, the dimensions are recalculated for the current page layout, so changes to the text height also change the thumb-index spacing.

**thumbindex@width**= $\langle dim \rangle$  (initially 1.2cm)  
 Define how far a thumb-index tab extends into the outer margin. The default 12 mm tab fits inside the 13 mm marginal column.

**thumbindex@font**= $\langle ticklist \rangle$  (initially `\bfseries\Huge`)  
 Define the  $\langle font \rangle$  style of the text in the thumbindex.

**color@thumbindex@bg**= $\langle colorname \rangle$  (initially black)  
**color@thumbindex@font**= $\langle colorname \rangle$  (initially white)  
 Define the color of the thumbindex: like the background color ( $\langle bg \rangle$ ) or the color of the  $\langle font \rangle$

You can adjust any color in this template. In case you want to reuse a custom color of e.g. your corporate design, set this up first:

```
\definecolor{my-blue}{RGB}{0,84,159}
```

Afterwards you can use `my-blue` to any of the colors below.

**color@reference@boldAuthor**= $\langle colorname \rangle$  (initially black)  
 Define the color of emphasized author names in bibliographies.

**color@reference@PI**= $\langle colorname \rangle$  (initially black)  
 Define the color of references to principal investigators.

**color@reference@WP**= $\langle colorname \rangle$  (initially black)  
 Define the color of references to work packages.

**color@reference@Aim**= $\langle colorname \rangle$  (initially black)  
 Define the color of references to aims.

**color@table@headingsBG**= $\langle colorname \rangle$  (initially blue-50)  
 Define the background color of a table header (i.e. first row).

**color@table@headingsBGalt**= $\langle colorname \rangle$  (initially blue-25)  
 Define an alternative background color of a table header (i.e. for subdividing row).

**color@table@headingsFont**= $\langle colorname \rangle$  (initially black)  
 Define the color for the font in the header rows.

**color@table@rows**= $\langle colorname \rangle$  (initially black-10)  
 Define the color for alternating rows.

**color@table@lines**= $\langle colorname \rangle$  (initially black-10)  
 Define the color for inner table lines.

**color@table@outerLines**= $\langle colorname \rangle$  (initially black)  
 Define the color for outer table lines and both the horizontal rules and dashed vertical grid lines in Gantt charts.

**color@table@noValue**= $\langle colorname \rangle$  (initially black-10)  
 Define the color for cells that are supposed to contain no value.

**color@table@firstColumn**= $\langle colorname \rangle$  (initially black-10)  
 Define the color for the first column. This is currently not supported.

**color@table@firstColumn**= $\langle colorname \rangle$  (initially black)  
 Depending on the color of the table heading, we need to modify the color of the hyperlink since it can be the same as the colorlink from `hyperref` <sup>CTAN</sup>.

**color@table@firstColumn**= $\langle colorname \rangle$  (initially black)  
 Depending on the color of the table heading, we need to modify the color of the hyperlink since it can be the same as the colorlink from `hyperref` <sup>CTAN</sup>.

**color@tags@font**=*<colorname>* (initially red-100)  
**color@tags@line**=*<colorname>* (initially black-50)

Adjust the color of *<font>* or *<line>* when `showmarginalia`<sup>P.31</sup> is activated.

**color@item@i**=*<colorname>* (initially black)

Depending on the color of the table heading, we need to modify the color of the hyperlink since it can be the same as the colorlink from `hyperref`<sup>CTAN</sup>.

**color@font@alternative**=*<colorname>* (initially black-50)

Define the alternative color for headline fonts, especially in the CV section, `cv`<sup>P.32</sup>.

**color@gantt@frame**=*<colorname>* (initially white)  
**color@gantt@default**=*<colorname>* (initially blue-25)  
**color@gantt@alternative**=*<colorname>* (initially green-25)  
**color@gantt@crosshatch**=*<colorname>* (initially black-10)  
**color@gantt@important**=*<colorname>* (initially red)  
**color@gantt@stripe-one**=*<colorname>* (initially blue-25)  
**color@gantt@stripe-two**=*<colorname>* (initially green-25)

Adjust the colors for the various styles of the gantt chart in the project section. The style striped is a alternating combination of `color@gantt@stripe-one` and `color@gantt@stripe-two`.

**biblatexstyleCV**=*<style>* (initially ext-numeric-comp)  
**biblatexstyleFeatureCV**=*<clist>* (initially sorting=none)  
**biblatexstyleProposal**=*<style>* (initially ext-authoryear-ecomp)  
**biblatexstyleFeatureProposal**=*<clist>* (initially dashed=false)

Adjust the citation and bibliography style separately for standalone CVs and proposals. The feature values are comma-separated additional biblatex package options. Options shared by both modes, including `backend=biber`, `autocite=inline`, `defernumbers=true`, `giveninits=true`, the citation-name limits, and `maxbibnames=99`, are supplied by the class. The class selects the CV pair when the document-class option `cv`<sup>P.32</sup> is true and the proposal pair otherwise. The legacy keys `biblatexstyle` and `biblatexstyleFeature` remain available; each applies its value to both modes.

#### Configure CV and proposal bibliographies independently.

```
\changeSettings{
  biblatexstyleCV          = ext-numeric-comp,
  biblatexstyleFeatureCV   = {sorting=none},
  biblatexstyleProposal    = ext-authoryear-ecomp,
  biblatexstyleFeatureProposal = {dashed=false},
}
```

**emphasizeAuthors**=true|false (initially true.)

Emphasize the authors in a e.g. project section when they are authors of a referenced publication.

**emphasizeEntries**=true|false (initially false.)

Bold a complete entry in `\printProjectBibliography` when its Keywords field contains the current project ID followed by `-highlight`. For example, `B06-highlight` applies only to Project B06. This setting is independent of `emphasizeAuthors`, which controls name highlighting. A `B06-project` keyword alone does not trigger bold type. To show only the keyword-selected full entries in bold, use `emphasizeAuthors=false` together with `emphasizeEntries=true`.

**font**=*<name>* (initially Noto Serif)  
**sansfont**=*<name>* (initially Roboto Light)

Define the main font and the sansserif font.

**fontspec**=*<name>* (initially none)  
**sansfontspec**=*<name>* (initially ItalicFont=Roboto-LightItalic,  
 BoldFont=Roboto-Medium,  
 BoldItalicFont=Roboto-Medium-Italic)

Customize font and sansserif font features.

## 2.7 Providing further commands

### 2.7.1 Aims and Workpackages

For writing aims and workpackages we provide some special commands and features, including a gantt-chart.

```
\begin{aims}  
  <environment content>  
\end{aims}
```

Environment to be used in a project section to summarize in a condensed way the aims of the project.

**\addAim**{*<label>*}

Add an aim within the `aims` environment. You can refer to this aim by using `\getAim{<label>}`.

#### Example use of `\addAim`

```
\begin{aims}  
  \addAim{A} Establish the first central objective of the project.  
  \addAim{B} Develop the second central objective of the project.  
  \addAim{C} Validate the results in the final objective.  
\end{aims}
```

In `\getAim{A,B,C}` we define the project objectives.

**\getAim**{*<label>*}

Refer to an aim with the {*<label>*} in the `aims` environment. You can refer to multiple aims, too: `\getAim{A, B, C}`. The default is referencing the aims of the same project. You can also refer to an aim of a different project: `\getAim[<project-id>]{<label>}`.

```
\begin{workpackages}  
  <environment content>  
\end{workpackages}
```

Environment to be used in a project section when workpackages are written. This environment contains all descriptions of the workpackages that are introduced by `\addWP`.

**\addWP**{*<label>*}{*<key=values>*}

Add a workpackage with the {*<label>*} to the list. Further specifications are done using `name`<sup>→P.23</sup>, `description`<sup>→P.20</sup> (text is used for the Gantt chart printed with `\printPlot`<sup>→P.29</sup>), `periodStart`<sup>→P.13</sup>, `periodEnd`<sup>→P.13</sup>, `style`<sup>→P.37</sup>. At the top level, the `name`<sup>→P.23</sup> value is printed as the bold work-package heading. Sub-workpackages do not print a `name`<sup>→P.23</sup>; their authored prose starts directly after the list label. Immediate source whitespace, including a blank line after `\addWP`, is consumed without inserting another space.

#### Example use of `\addWP`

```
\begin{workpackages}  
  \addWP{wp1}{  
    name      = First workpackage,  
    description = {The first workpackage for the Gantt chart},  
    periodStart = 1,  
    periodEnd   = 6,  
    style       = alternative,  
  }  
  
  Here you describe the first workpackage in detail.  
  
  \addWP{wp2}{  
    name      = Second workpackage,  
    description = {The second workpackage for the Gantt chart},  
    periodStart = 7,  
    periodEnd   = 12,  
  }
```

```

        style          = important,
    }
\end{workpackages}
In \getWP{wp1,wp2} we describe the project plan.

```

Furthermore, PI, work-package, and aim references each have an independent color setting. They default to black and are independent of `color@reference@boldAuthor`<sup>→P.34</sup>. Configure them with `\changeSettings`:

```

\changeSettings{
  color@reference@PI   = my-blue,
  color@reference@WP   = my-blue,
  color@reference@Aim  = my-blue
}

```

**\getWP**{*<label>*}

Refer to a workpackage with the `{<label>}` in the `workpackages`<sup>→P.36</sup> environment. You can refer to multiple workpackages, too: `\getWP{wp2, wp3, wp4}`. Consecutive references under the same parent work package are compacted into a range. Its `to` connector uses the surrounding font weight while the WPs prefix and endpoint labels stay bold. A narrow, unbreakable space separates WP or WPs from its number. References under later parent work packages remain separate and are not discarded during compaction.

The default is referencing the workpackage of the same project. You can also refer to a workpackage of a different project: `\getWP[<project-id>]{<label>}`.

While some keys have been described already, here is what is missing so far:

**style**=alternative|crosshatch|important|striped

(initially: default)

Define the style of the bar of this workpackage in the `gantt-chart`.

For customizing the colors of the various styles have a look at: `color@gantt@default`<sup>→P.35</sup>, `color@gantt@alternative`<sup>→P.35</sup>, `color@gantt@crosshatch`<sup>→P.35</sup>, `color@gantt@important`<sup>→P.35</sup>, `color@gantt@stripe-one`<sup>→P.35</sup> and `color@gantt@stripe-two`<sup>→P.35</sup>.

**Gantt and collaboration plots** The same `\printPlot`<sup>→P.29</sup> interface handles both plot types. Inside a project, `\printPlot{{gantt}}` and `\printPlot{{collaborations}}` use the current project ID. Supply another ID when needed: `\printPlot{{gantt}}{B06}` or `\printPlot{{collaborations}}{B06}`. For the active project, the options form `\printPlot[caption={Additional caption text}]{gantt}` appends text to the caption. With an explicit project ID, use `\printPlot{{gantt}}{B06}[Additional caption text]`. Both plot types place captions below the plot. The arc layout is the default, with nodes and unlabelled project-area rules. Use `arcs=true` to draw the connecting arcs, or select the heatmap with `layout=heatmap` in the optional argument before the plot specification. The aliases `heatmap` and `arc-diagram` are also accepted as bare keys. Every displayed arc reaches the same peak height; its span identifies the connected project but does not encode a weight. Project identifiers are printed inside the arc nodes, immediately above rules spanning their complete project areas. Both plot types accept additional caption text after an explicit project ID, for example `\printPlot[arcs=true]{{collaborations}}{A01}[Caption text]`. A collaboration caption always appears below its plot, like the Gantt caption, including when no extra text is given. Both plots retain the complete text width. In the heatmap, the largest project area determines one shared dynamic box width; the measured width of the longest area label determines where its grid starts, and all columns fill the remaining text width. Projects without a collaboration are retained with a white background in both layouts. Rows are ordered deterministically by project-area and project ID. Use `area-colors={C=orange,D=violet}` for explicit mappings or `area-palette={teal,brown,magenta}` to customize colors assigned to all otherwise unmapped areas. The former `\printGantt` command and uppercase plot types remain as compatibility spellings.

## 2.7.2 Thumbindex

In your document you can use the following commands for displaying or switching off a thumbindex *locally*.

**\printThumbIndex**[*<color>*]{*<string>*}

Set the tab's *<color>* and displayed *<string>* for following pages. Place this command before a `\clearpage` if the new tab should appear on the next page.

**\printThumbIndexOff**

Remove the tab from following pages. This changes visibility only.

### **\resetThumbIndex**

Reset the thumb-index slot counter. The next `\printThumbIndex` call starts at the first slot again. This changes only the position counter; use `\printThumbIndexOff` separately if the current tab should be hidden.

### 2.7.3 Boxes

```
\begin{dfgBoxEnv} [<further specifications>]  
  <environment content>  
\end{dfgBoxEnv}
```

Box environment to be used for highlighting things To be used in `content.tex`.

```
\begin{dfgSummaryBox} [<further specifications, e.g. 'title=NN'>]  
  <environment content>  
\end{dfgSummaryBox}
```

Box environment to be used for e.g. summaries that are lists. Use `\item` for bulletpoints. To be used in `content.tex`

#### Example use of a summary box

```
\begin{dfgSummaryBox}[title={Spotlights: Moving Forward}]  
  \item New focus areas in the new funding period  
  \item Best research ever  
\end{dfgSummaryBox}
```

### **\dfgBox** [*<further specifications>*]

Box environment to be used for anything. To be used anywhere in the text.

#### Example of a minimal box

```
\dfgBox[title={Important aspect}]  
{Be aware of researcher's results.}
```

### 2.7.4 Title page and affiliation helpers

#### **\dfgApplicantAffiliationsTF** {*<singular>*} {*<plural>*}

Use *<singular>* when `meta.ref-affiliation-id` contains one applicant affiliation and *<plural>* when it contains several. The title page, applicant-university section heading, bylaws, and declarations use this helper for their grammar. `\theCRCAffiliation` and `\theCRCAffiliationLocation` contain the complete human-readable name and location lists. The first id is the coordinating university and is exposed as `\theCRCCoordinatingAffiliation`; any remaining ids are exposed as `\theCRCOtherApplicantAffiliations`, matching the two separate fields on the DFG title page.

#### **\crcLogo** [*<graphics-options>*]

Print the CRC logo. The optional *<graphics-options>* are passed to `\includegraphics`. The actual file is configured with `crcLogoPath`<sup>P.33</sup> through `\changeSettings` and remains available as `\crcLogoPath`.

#### **\affiliationLogo** [*<graphics-options>*]

Print the affiliation logo. The optional *<graphics-options>* are passed to `\includegraphics`. The actual file is configured with `affiliationLogoPath`<sup>P.33</sup> through `\changeSettings` and remains available as `\affiliationLogoPath`.

#### **\Hrule** [*<key=value>*]

Print a configurable horizontal rule. The available keys are `color`, `above`, `below`, and `thickness`.

#### **\printSignature** [*<database>*] {*<id-description-pairs>*}

Print one signature block for each {*<id>*}{*<description>*} pair. The *<database>* defaults to `person`. Inside *<description>*, `\theAffiliationOfRoleID` contains the person's affiliation id and can be used for further database lookups.

**\printSignaturesWithRole** [*<database>*] { *<role>* } { *<description>* }

Print a signature block for every current-period person with *<role>*. This is used for the rector, chancellor, or president of every applicant university, so a proposal with several applicants does not require a hard-coded list of person ids. Inside *<description>*, `\theAffiliationOfRoleID` refers to the affiliation of the current signatory.

Print signature blocks.

```
\printSignature{
  {spokesperson}{(Spokesperson of \crc)}
  {rector}{(Rector of \getEntry[affiliation]{\theAffiliationOfRoleID}{name})}
}
```

**Automatic singular, plural, and cardinality-dependent output** The class derives the following visible wording and layout from the number of metadata items. These are the places where changing a one-item list to two or more items changes more than the retrieved data itself.

**Project PIs** `\printProjectHead`<sup>P.30</sup> counts the comma-separated PI ids in the project's `ref-person-id`<sup>P.20</sup> field. Exactly one id selects the singular branch; two or more ids select the plural branch. The field is required, so an empty list is invalid metadata; internally it falls back to the singular branch.

This PI count controls all of the following output:

- the heading “Project leader” or “Project leaders”;
- the `\getPersonInformation` layout, which shows one PI in a single card and several PIs in a two-column raster of cards;
- contract question C1, which uses “project leader at the institution” or “project leaders at the institutions”;
- contract question C2, which switches between “Does the above mentioned person hold a fixed-term position?” and “Do any of the above mentioned persons hold fixed-term positions?”;
- contract question C3, which switches between “Will the above mentioned person” and “Will one or more of the above-mentioned persons”;
- contract question C4, which again uses singular or plural “project leader(s)” and “institution(s)”; and
- contract answers, where PI surnames are appended in parentheses only when several PIs must be distinguished. Lists of dates or other follow-up values likewise append surnames when more than one matching PI contributes a value.

**Research areas** In `\printProjectHead`<sup>P.30</sup>, one value in the project's `research-area`<sup>P.15</sup> field produces the heading “Research area”; two or more values produce “Research areas”.

**Applicant affiliations** `\dfgApplicantAffiliationsTF`<sup>P.38</sup> selects its first argument for one id in `meta.ref-affiliation-id` and its second argument for two or more ids. This helper controls:

- whether the title page prints an additional-applicant block;
- “applicant university” or “applicant universities” in the existing-direct-costs table;
- the Chapter 1 heading “Research profile of the applicant university/universities”;
- “coordinating university/universities” in the Chapter 4 bylaws heading; and
- both the noun and verb in the Chapter 5 declaration: “The applicant university confirms” or “The applicant universities confirm”.

On the title page, `??`<sup>P.??</sup> applies the same rule after the first, coordinating affiliation has been removed: exactly two applicant affiliations in total produce “Other applicant university”, while three or more produce “Other applicant universities”.

**Existing-staff overview** `\OverviewExistingStaffTable`<sup>P.140</sup> uses the number of applicant affiliations for its spanning group heading: one applicant id produces “applicant university”, while several produce “applicant universities”. Other affiliation columns do not affect this wording.

**One-, two-, and longer-item lists** Several formatters change punctuation rather than nouns. In prose, `\getPI`<sup>P.25</sup>, `\getProject`<sup>P.26</sup>, `\getProjectPI`<sup>P.27</sup>, and `\getPIProject`<sup>P.27</sup> print one item without a separator, two items with “and”, and three or more with commas plus a final “and”. Project and PI references inside tables instead use compact slash separators. The complete applicant-name, applicant-location, and other-applicant lists exposed by `\theCRCAffiliation`, `\theCRCAffiliationLocation`, and `\theCRCOtherApplicantAffiliations` use the same natural-language rule. `\printList`<sup>P.28</sup> {ResearchAreasFromProjects} uses a comma for exactly two items and a final “and” for lists of three or more.

Fixed text written directly in project content is not altered automatically; authors must choose its singular or plural form themselves.

**Person-specific institution lists** Use `\printList{{Institutions}}{MM}` to print the institutions assigned to person MM. The person ID is required. For a non-default database, use `\printList[database]{{Institutions}}{MM}`;

the database defaults to `person`. Add formatting options after the person ID, as in `\printList{{Institutions}}{MM}[abbreviation]`. The list reads `ref-institution-id`<sup>→P.22</sup> from the person entry and then resolves the referenced entries in the institution and affiliation databases. Options are `abbreviation`, `narrow`, `noaddress`, `nozip`, and `nolocation`.

In the standard layout, every institution prints the institution name, affiliation name, street, ZIP code, location, and country when these values are available. If a person references more than one institution, the entries are separated by a paragraph break with a small vertical gap. If an institution row has an empty `name`<sup>→P.23</sup>, the output starts directly with the affiliation name.

`abbreviation` Use the institution's `abbreviation`<sup>→P.17</sup> instead of its full `name`<sup>→P.23</sup>. If the abbreviation is absent, the full name is used for compatibility.

`narrow` Print a compact inline form. Fields inside one institution are separated by commas and multiple institutions by semicolons. This is useful in narrow CV/table cells.

`noaddress` Omit the street address.

`nozip` Omit the ZIP code.

`nolocation` Omit the location and country.

The former `\dfgInstitutionList` spelling remains as a compatibility alias.

#### Print institutions for a person.

```
\printList{{Institutions}}{MM}
\printList{{Institutions}}{MM}[abbreviation,noaddress,nolocation,nozip,narrow]
```

#### Minimal metadata for institution-list output.

```
\addEntry→P.21{affiliation}{
  id→P.22      = {RWTH},
  name→P.23    = {RWTH Aachen University},
  addressStreet→P.17 = {Templergraben 55},
  addressZIP→P.17   = {52062},
  location→P.17    = {Aachen},
  country→P.17     = {Germany},
}
\addEntry→P.21{institution}{
  id→P.22 = {IAIS},
  name→P.23 = {Institute for Applied Immunology and Systems Biology},
  abbreviation→P.17 = {IAIS},
  ref-affiliation-id→P.22 = {RWTH},
}
\addEntry→P.21{person}{
  id→P.22 = {MM},
  ref-institution-id→P.22 = {IAIS},
}
```

#### One person with multiple institutions.

```
\addEntry→P.21{person}{
  id→P.22 = {MM},
  ref-institution-id→P.22 = {IAIS,RWTH-main},
}

\printList{{Institutions}}{MM}
\printList{{Institutions}}{MM}[abbreviation,narrow,noaddress,nozip,nolocation]
```

**`\checkFile{<file>}`**

Input `<file>` if it exists. If the file is missing, compilation continues and a warning is written to the log. This is used for optional metadata, customization, and content files.

## 2.7.5 ORCID

The ORCID is foremost used in the CV section and stated in the entry of a person. So there is no need for a manual insertion of it. However you can do so using one of two following commands.

**\ORCID**{*<number>*}

Display the ORCID with the given *<number>*. Adding the ORCID logo in front.

**\getORCID**{*<id>*}

Display the ORCID of the person with the given *<id>*. If there is no `orcid`-entry in the database for this person, then a warning will be thrown and you can read about in the `.log`-file.

## 2.8 Best Practises and Suggestions

### 2.8.1 Figures

For inserting figures we highly recommend to use the command from the package `hvfloater`.

**\hvFloat**\* [*<options>*] + {*<floattype>*} {*<floatingobject>*} [*<shortcaption>*] {*<longcaption>*} {*<label>*}

```
\hvFloat[% optional arguments
    capPos    =bottom,
    floatPos  =!t
]
{figure} % defining the environment
{\includegraphics[width=\linewidth]{X01-figure-01}} % figure
[FAIR]% shortcaption
{The FAIR-principles} % long caption
{fig:X01-figure-01} % label
```

## 2.9 Bibliography/Publication

### 2.9.1 Equal contribution

In some cases it is very important to state that two or more authors have contributed equally to a publication. Take the following publication as example:

```
Schneider, K.M.*, C. Elfers*, A. Ghallab, C.V. Schneider,
E.J.C. Galvez, A. Mohs, W. Gui, L.S. Candels, T.H. Wirtz,
S. Zuehlke, M. Spiteller, M. Myllys, A. Roulet, A.
Ouzerdine, B. Lelouvier, K. Kilic, L. Liao, A. Nier, E.
Latz, I. Bergheim, C.A. Thaiss, J.G. Hengstler, T.
Strowig, and C. Trautwein. 2020. Intestinal Dysbiosis
Amplifies Acetaminophen-Induced Acute Liver Injury. Cell.
Mol. Gastroenterol. Hepatol. 11(4):909-933. *equal contribution
```

The first authors have equal contribution. In the bibtex-entry add two lines:

```
author+an      = {1=equal;2=equal},
addendum       = equal,
```

With `author+an` you annotate the authors, the numbers refer to the position of the author in the authors's list. The complete entry of the mentioned example looks like:

```
@article{schneider2020a,
  author      = {Schneider, Kai Markus and Elfers, Carsten and Ghallab,
                Ahmed and Schneider, Carolin Victoria and Galvez, Eric J.C.
                and Mohs, Antje and Gui, Wenfang and Candels, Lena Susanna and
                Wirtz, Theresa Hildegard and Zuehlke, Sebastian and Spiteller,
```

```

Michael and Myllys, Maiju and Roulet, Alain and Ouzerdine,
Amirouche and Lelouvier, Benjamin and Kilic, Konrad and Liao,
Lijun and Nier, Anika and Latz, Eicke and Bergheim, Ina and
Thaiss, Christoph A. and Hengstler, Jan G. and Strowig, Till
and Trautwein, Christian},
author+an      = {1=equal;2=equal},
date           = 2020,
title          = {Intestinal Dysbiosis Amplifies Acetaminophen-Induced Acute
Liver Injury},
volume         = 11,
pages          = {909--933},
language       = {pt},
journal        = {Cellular and Molecular Gastroenterology and Hepatology},
doi            = {10.1016/j.jcmgh.2020.11.002},
number         = 4,
source         = {Crossref},
url            = {https://doi.org/10.1016/j.jcmgh.2020.11.002},
publisher      = {Elsevier BV},
issn           = {2352-345X},
date           = 2021,
addendum      = equal,
}

```

### 2.9.2 Shared last authorship

Very similar to the equal contribution-part there is also a way to specify authors who shared last authorship.

In the bibtex-entry add *two* lines:

```

author+an      = {1=sharedLast;2=sharedLast},
addendum       = sharedLast,

```

Here is a complete example.

```

@Article{roessner2021a,
  Author      = {Roessner, P.M. and Cid, L.Llao and Lupa, E. and Roeder,
T. and Bordas, M. and Schiffers, C. and Arseni, L. and
Gaupel, A.C. and Kilpert, F. and Krottschel, M. and
Arnold, S.J. and Sellner, L. and Colomer, D. and
Stilgenbauer, S. and Dietrich, S. and Lichter, P. and
Izcue, A. and Seiffert, M.},
  Date        = {2021},
  author+an   = {17=sharedLast;18=sharedLast},
  Addendum    = sharedLast,
  Keywords     = {MM-A},
  Title       = {{EOMES} and {IL}-10 regulate antitumor activity of T
regulatory type 1 {CD4(+)} T cells in chronic lymphocytic
leukemia},
  Volume      = {35},
  Pages       = {2311--2324},
  Language    = {en},
  JournalTitle = {Leukemia}
}

```

### 2.9.3 Emphasizing authors

You can have certain authors in bold letters in your bibliography section to highlight e.g. the core people of the proposal.

**Notice:** This feature is automatically triggered (unless switched off, see `emphasizeAuthors`<sup>→P.35</sup>) for the CV section (see 2.4.2). We explain its function for additional use.

To add a person to the (sectioned) bibliography use `\addboldnames`.

**`\addboldnames`** `{\langle nn \rangle, \langle nn \rangle, \langle nn \rangle}`

Displaying authors in an emphasized way.

Notice that for each variation of a person's name you have to add one set of `\langle nn \rangle`. For example you have an author with different spellings in your `.bib`-file, you have to list all of them to get them in bold letters (or adjust the entries in your `.bib`-file).

```
\addboldnames{
  {Max Doe},
  {M. Doe},
  {Doe, Max H.},
  {Doe, Max Heinrich}
}
```

After a (sectioned) bibliography and you do not want to display the before defined authors in bold letters anymore, you can use `\resetboldnames`:

**`\resetboldnames`**

Switch off showing the under `\addboldnames` defined names.

In case you do not need to have authors in bold letters you can disable the feature modification done in `dfg-customization.tex`.

#### 2.9.4 Providing publication information

Providing the most relevant publications is done through the referenced `.bib`-file. Within a bibtex-entry you need to add a keyword with certain values to it preceded with the ID of the person.

- A: Category A – Articles in peer-reviewed journals, contributions to peer-reviewed conferences or to anthology volumes, and book publications
- B: Category B – Any other form of published results

For example:

```
@article{...,
          keywords = {<ID>-A},
}
```

To bold the complete bibliography entry only in Project B06, add its project-specific highlight keyword alongside any publication keywords:

```
@article{...,
          keywords = {pabst-A, B06-highlight},
}
```

This affects project bibliography lists, including project-report references and published-result lists. The same entry is not bolded in other projects unless their own `<project-id>-highlight` keyword is present. Set `emphasizeEntries=true` in `\changeSettings` to enable this feature. Only one highlight keyword per distinct project is needed, even when several PIs from that project coauthor the publication. For a publication to be bold in both B06 and Q04, use each keyword once:

```
@article{...,
          keywords = {pabst-A, B06-highlight, Q04-highlight},
}
```

The optional `B06-project` keyword can record project membership for other workflows, but it does not activate `emphasizeEntries`<sup>P.35</sup>. Existing CV-selection keywords such as `pabst-A` can stay in the same field.

Of course several people can use the same reference for this section:

```
@article{...,
          keywords = {<ID1>-A, <ID2>-B, <ID3>-A},
        }
```

Open-access markers are handled by `biblatex-ext-oa`. If the API-based open-access request does not work for a publication, add the fallback annotation directly to the relevant `.bib` entry:

```
@article{...,
          options      = {openaccess=auto},
          doi+an:default = {=openaccess},
        }
```

### 3 Code Documentation

The following part is meant for developers. Don't worry if you might not understand parts of the code. We try to use as much  $\TeX$ 3 as possible for a more granular data handling.

#### 3.1 Documentclass

The class requires the June 2022 LaTeX kernel, whose native `\ProcessKeyOptions` interface processes class options through `expl3` key families. `\ProvidesExplClass` declares the class to the kernel and simultaneously activates the `expl3` (LaTeX3) syntax, so every line from here onwards may use the `:`, `_` and `@@` conventions of the L3 programming layer.

The `<version>` and `<date>` values come from the single definition at the very top of the `.dtx` file (`\def\dfgVersion` etc.), so a version bump only ever needs to be made in one place.

```
1 \NeedsTeXFormat{LaTeX2e}[2022-06-01]
2 \ProvidesExplClass
3 {dfg-crc}
4 {\dfgVersionDate}
5 {\dfgVersion}
6 {Create DFG Collaborative Research Centre proposals and CVs}
```

##### 3.1.1 Message catalogue

All user-visible diagnostics are declared here once using `\msg_new:nnn` from the L3 message system. Centralising them serves several purposes:

- 1) The exact wording of every log line can be reviewed and updated in one place without searching through the entire code.
- 2) They are bound to the `dfg` module name, so a user can `grep` the `.log` with `grep "Package dfg"` to see a condensed overview.
- 3) Using the L3 message system instead of raw `\PackageWarning` gives consistent formatting, the fileline context via `\msg_line_context:`, and the ability to suppress or redirect messages at a global level with `\msg_redirect_module:nnn`.

The engine check fails early with a direct instruction instead of letting `fontspec` or a later `\directlua` call produce a less helpful error. The next message is emitted when an optional input file (e.g. a metadata or preamble fragment) cannot be found on the search path. Compilation is not aborted, but the user is strongly warned.

```
7 \msg_new:nnn { dfg } { unsupported-engine }
8 {
9   The~dfg-crc~class~requires~LuaLaTeX.^~J
10  Compile~this~document~with~lualatex~or~latexmk~--lualatex.
11 }
12 \sys_if_engine_luatex:F
13 { \msg_fatal:nn { dfg } { unsupported-engine } }
14
15 \msg_new:nnn { dfg } { file-not-found }
16 { File~'#1'~not~found.^~J
17   ~You~can~proceed~without~it~
18   but~it~is~not~recommended.
19 }
```

**database-not-found** Emitted by `\getEntry`<sup>P.24</sup>, `\compareEntry`<sup>P.28</sup> and each table command when the database name passed by the user does not exist in the datatool register. The most common cause is a typo in the database name, or calling a retrieval command before the corresponding `\addEntry`<sup>P.21</sup> block has been processed.

```
20 \msg_new:nnn { dfg } { database-not-found }
21 { Unknown~ database~ name:~ #1^^J^^J
22 Database~'#1'~not~found~\msg_line_context:~
23 Either~you~have~misspelled~it~or~
24 ~the~database~has~not~yet~been~created.
25 }
```

**database-name-not-given** Fired when the optional `(database)` argument of `\getEntry`<sup>P.24</sup> is empty because `\tmpLocalDB` has not been set and no explicit database name was supplied. The message text suggests two remedies: set `\tmpLocalDB` at the top of a section, or pass the database name inline.

```
26 \msg_new:nnn { dfg } { database-name-not-given }
27 { Missing~ database~ name~ for~ entry:~ #1^^J ^^J
28 You~forgot~to~pass~a~database~name~\msg_line_context:~
29 You~can~provide~a~name~with~ e.g.~ '\def\tmpLocalDB{<database>}'
30 ~or~within~entries~like~
31 '\getEntry[<database>]{<id>}{<field>}'.
32 }
```

**biblatex-ext-oa-doiapi-unavailable** Warns when biblatex-ext-oa's DOI API integration cannot be enabled because `socket.http` is not available in the current LuaTeX run. The package is still loaded, so manual BibTeX annotations continue to work.

```
33 \msg_new:nnn { dfg } { biblatex-ext-oa-doiapi-unavailable }
34 { biblatex-ext-oa~ DOI~ API~ lookup~ disabled:~ LuaSocket~ module~
35 'socket.http'~ is~ not~ available~ in~ this~ LuaTeX~ run.~
36 Compile~ with~ '--socket'~ to~ enable~ DOI~ API~ requests.~
37 Open-access~ markers~ still~ work~ from~ manual~ BibTeX~ annotations.
38 }
```

**biblatex-ext-oa-doiapi-email-missing** DOI lookups require a real contact address. An empty default keeps network access opt-in and prevents all users of the class from sharing a placeholder or maintainer address.

```
39 \msg_new:nnn { dfg } { biblatex-ext-oa-doiapi-email-missing }
40 { biblatex-ext-oa~ DOI~ API~ lookup~ disabled:~ no~contact~address~was~set.^^J
41 Set~'doiAPIMail=<address>'~with~\string\changeSettings~to~enable~lookups.
42 Open-access~markers~still~work~from~manual~BibTeX~annotations.
43 }
```

**missing-orcid** Triggered specifically by `\getORCID`<sup>P.41</sup> when the `orcid` field is absent or empty for the requested person. The message body reproduces the exact `\addEntry`<sup>P.21</sup> snippet the user needs to fill in, lowering the barrier to fixing the data.

```
44 \msg_new:nnn { dfg } { missing-orcid }
45 {DB:~'#1';~ID:~'#2';~null/empty:~'orcid'.~^^J^^J
46 The~ORCID~for~the~person~with~the~ID~'#2'~has~not~been~given.~
47 You~asked~for~it~\msg_line_context:~^^J
48 If~the~person~has~an~ORCID, ~go~to~where~you~have~written~^^J
49 \addEntry{#1}{^^J
50 id =#2, ^^J
51 orcid=<INSERT~ORCID~HERE>^^J
52 }
53 }
```

**missing-key** Generic warning for any database field that is null or empty when `\getEntry`<sup>P.24</sup> tries to retrieve it. The check is deliberately suppressed during the tabularray cell-measuring pass (`\lTblrMeasuringBool` is true) to prevent each cell from generating duplicate log entries — tabularray renders each cell twice for width calculation before the final output pass.

```
54 \msg_new:nnn { dfg } { missing-key }
55 {DB:~'#1';~ID:~'#2';~null/empty:~'#3'.~^^J^^J
56 In~ the~ database~ '#1', the~ key~ '#3'~ which~ belongs~ to~ the~ ID~ '#2'~
57 is~ either~ null/not~ given~ or~ simply~ empty.~^^J
58 You~ asked~ for~ it~ \msg_line_context: }
```

**item-skipped** / `\dfgItemSkipped` Tables built from the datatool databases are the most expensive part of each compilation run because they involve full database queries. When either `fastcompile` mode is active, generated table/list commands call `\dfgItemSkipped` instead of rendering the real content. This prints a red placeholder in the

PDF and issues an item-skipped note to the log. The colour red is overridden to white when `final=true`, so the placeholder is invisible in a submission build.

```

59 \msg_new:nnn { dfg } { item-skipped }
60 { Item~ #1~ skipped~ (compile-time).^J
61   To~ see~ the~ item,~ disable~ fast~ compilation^J
62   in~ the~ documentclass-options.^J
63   The~ item~ is~ \msg_line_context: }
64 \NewDocumentCommand{\dfgItemSkipped}{m}{%
65   \msg_note:nne {dfg}{item-skipped}{ #1 }
66   \group_begin:
67   \color{error}
68   Item~ \emph{\normalcolor#1}~ skipped~ due~ to~ faster~ compilation.~\
69   \bool_if:NTF \l_@@_class_fastcompile_project_bool
70   { To~ see~ the~ item,~ set~ \texttt{fastcompile-project=false}~(default)~ }
71   { To~ see~ the~ item,~ set~ \texttt{fastcompile=false}~(default)~ }
72   in~ the~ documentclass-options.
73   \group_end:
74 }

```

**research-area-not-found** The property list `\g_@@_dfg_research_areas_prop` contains every DFG research area code from the official classification list. When a code stored in the `project` database does not appear in that map the formatted label cannot be generated and this warning is raised. The raw code is still printed so the proposal remains compilable.

```

75 \msg_new:nnn { dfg } { research-area-not-found }
76 { Unknown~ research~ area:~ #1^J^J
77   Doublecheck~ the~ research~ area~ in~ the~ database:~^J
78   \addEntry{project}{~^J
79     research-area~ =~ {#1}~^J
80   }
81 }

```

**item-not-matched** Raised as a generic fall-through in `\str_case:VnF` dispatchers where a string value is not matched by any of the expected branches.

```

82 \msg_new:nnn { dfg } { item-not-matched }
83 { The~ string~ '#1'~does~not~match.~^J^J
84   Doublecheck~ your~input!~^J
85   The~ item~ is~ \msg_line_context:
86 }

```

**unknown-key and invalid-value** These two messages are the default handlers wired into the `unknown .code:n` and `\meta{choice} / unknown .code:n` slots of every `\keys_define:nn` block. They give the user immediate feedback in the log whenever a key name is misspelled or a value is outside the permitted set, instead of silently ignoring the input or producing a cryptic low-level TeX error.

```

87 \msg_new:nnn { dfg } { unknown-key }
88 {
89   Key~ '\l_keys_path_str'~ is~ unknown~ and~ being~ ignored.~^J^J
90   You~passed~the~value~'#1'~ to~ that~ key.~^J
91   Doublecheck~for~spelling~errors.~^J
92   The~ item~ is~ \msg_line_context:
93 }

```

Warning issued when a key receives a value outside its set of permitted alternatives. This message is the standard fallback for keys defined with the `l3keys` <sup>CTAN</sup> `.choices:nn` property when their `/unknown` handler delegates to the dispatcher `\person_questions_invalid:n`. The two arguments are the rejected value and a comma-separated list of the values that would have been accepted. The full key path is taken from `\l_keys_path_str`, so the warning identifies not only the offending value but also which key was being set when the error occurred – useful when the same value name (such as `yes` or `1`) is plausible for several keys but only valid for some of them. The warning does not stop processing; the database entry is simply not created for the rejected value, and subsequent keys in the same `\addEntry` <sup>P.21</sup> call continue to be parsed.

```

94 \msg_new:nnn { dfg } { invalid-value }
95 {
96   Invalid~value~'#1'~for~key~'\l_keys_path_str'.~^J^J
97   Allowed~values~are:~'#2'.~^J
98   The~ item~ is~ \msg_line_context:
99 }
100 \msg_new:nnn { dfg } { invalid-project-count-area }

```

```

101 {
102   No~active,~list-considered~projects~were~found~for~area~'#1'~in~
103   \string\getProjectCount;~printing~0.
104 }
105 \msg_new:nnn { dfg } { collaboration-focus-not-found }
106 {
107   Cannot~draw~the~project~collaboration~plot:~focus~project~'#1'~is~not~an~
108   eligible~row~of~the~project~database.
109 }
110 \msg_new:nnn { dfg } { collaboration-target-not-found }
111 {
112   Ignoring~collaboration~'#1--#2':~project~'#2'~is~not~an~eligible~row~of~
113   the~project~database.
114 }
115 \msg_new:nnn { dfg } { plot-current-project-missing }
116 {
117   Cannot~print~the~'#1'~plot:~no~current~project~has~been~set.~Start~a~
118   project~first,~or~pass~an~explicit~project~ID.
119 }

```

Warning issued when a date-typed key receives a value that does not match the ISO-8601 calendar-date shape YYYY-MM-DD. Used by the contract-information helper `\dfg_contract_date:nn` for the fields `C2a`<sup>→P.12</sup>, `C2b`<sup>→P.12</sup>, and `C3a`<sup>→P.12</sup>, all of which are expected to hold dates. The two arguments are the field name and the offending value. The check is purely structural: it verifies that the value consists of four digits, a hyphen, two digits, a hyphen, and two digits, but it does not validate the resulting date as a real calendar entry (so 2025-13-45 passes the format check). When the warning fires, the supplied value is still recorded in the database so the typeset output makes the malformed entry visible; this trades log-cleanliness for ease of locating the source of the problem in the rendered document.

```

120 \msg_new:nnn { dfg } { invalid-date }
121 { Field~'#1'~has~value~'#2'~which~is~not~a~valid~ISO-8601~date~(YYYY-MM-DD). }

```

**Requested-funding staff diagnostics** The staff roster is deliberately permissive at output time: incomplete or unresolved records remain visible in the document while these messages make the underlying metadata problem searchable in the log.

```

122 \msg_new:nnn { dfg } { requested-staff-no-data }
123 { No~RequestedFundingStaff~data~have~been~provided~for~project~'#1'. }
124 \msg_new:nnn { dfg } { requested-staff-required }
125 { RequestedFundingStaff~entry~is~missing~required-metadata:~#1. }
126 \msg_new:nnn { dfg } { requested-staff-institution-required }
127 {
128   RequestedFundingStaff~entry~for~project~'#1'~has~neither~ref-person-id~nor~
129   ref-institution-id.~Provide~ref-institution-id~when~the~person~is~not~
130   referenced;~otherwise~the~institution~cannot~be~resolved.
131 }
132 \msg_new:nnn { dfg } { requested-staff-missing-field }
133 { Project~'#1':~requested-funding~staff~#2~is~missing. }
134 \msg_new:nnn { dfg } { requested-staff-unresolved-person }
135 { Project~'#1':~person~reference~'#2'~cannot~be~resolved. }
136 \msg_new:nnn { dfg } { requested-staff-unresolved-institution }
137 { Project~'#1':~institution~reference~'#2'~cannot~be~resolved. }
138 \msg_new:nnn { dfg } { requested-staff-unresolved-affiliation }
139 { Project~'#1':~affiliation~reference~'#2'~cannot~be~resolved. }
140 \msg_new:nnn { dfg } { requested-staff-missing-abbreviation }
141 { Affiliation~'#1'~has~no~abbreviation;~its~full~name~is~used. }
142 \msg_new:nnn { dfg } { duplicate-institution-abbreviation }
143 {
144   Institution~abbreviation~'#1'~is~assigned~to~different~institutions:~^^J
145   '#2'~and~'#3'~(institution~ids:~#4).~^^J
146   Use~a~unique~abbreviation~for~each~institution.
147 }
148 \msg_new:nnn { dfg } { duplicate-entry-id }
149 {
150   Duplicate~id~'#2'~in~database~'#1'.~^^J
151   The~earlier~row(s)~are~removed;~the~later~entry~replaces~them.~^^J
152   The~replacement~is~\msg_line_context:.
153 }
154 \msg_new:nnn { dfg } { requested-staff-duplicate }

```

```

155 { Duplicate~RequestedFundingStaff~entry~for~#1. }
156 \msg_new:nnn { dfg } { funding-staff-cost-unavailable }
157 { Automatic~staff-cost-calculation~is~not~available~for~#1. }
158 \msg_new:nnn { dfg } { existing-staff-no-data }
159 { No~existing~staff~rows~were~found~in~database~'~#1'. }
160 \msg_new:nnn { dfg } { existing-staff-no-organisation }
161 { Existing~staff~entry~'~#1'~cannot~be~assigned~to~an~affiliation. }

```

`\StartTimer` A simple pair of profiling helpers for measuring how long a stretch of  $\LaTeX$  code takes to execute. Wrap the code under investigation between `\StartTimer` and `\StopTimer{<label>}`; the elapsed time in milliseconds is written to the terminal and the `.log` file, prefixed with the supplied `<label>` so several measurements in one run can be told apart.

Typical use:

```

\StartTimer
\ParticipatingInstitutionsList[count]
\StopTimer{ParticipatingInstitutionsList}

```

producing a line such as

```
TIMING ParticipatingInstitutionsList: 115 ms
```

in the log.

Only one measurement can be in progress at any one time, since the start time is held in a single shared integer variable. For nested or overlapping measurements, define additional counters or switch to the labelled-timer variant.

The implementation uses the kernel-native `expl3` function `\sys_timer:`, which abstracts over the engine-specific timer and avoids an additional package dependency.

```
162 \int_new:N \l_@@_timer_int
```

Storage for the start timestamp. We use an `int` rather than a `tl` so the later subtraction in `\int_eval:n` is unambiguous.

```

163 \NewDocumentCommand { \StartTimer } { } { }
164 {
165   \bool_if:NF \l_@@_class_fastcompile_project_bool
166   { \int_set:Nn \l_@@_timer_int { \sys_timer: } }
167 }

```

`\sys_timer:` expands to the time since job start in *scaled seconds* – units of  $1/65536$  s. We capture that raw value here and convert to milliseconds only at reporting time, to keep the start-up overhead minimal.

```

168 \NewDocumentCommand { \StopTimer } { m }
169 {
170   \bool_if:NF \l_@@_class_fastcompile_project_bool
171   {
172     \iow_term:x
173     {
174       TIMING~#1:~
175       \int_eval:n
176       { ( \sys_timer: - \l_@@_timer_int ) * 1000 / 65536 }
177       \c_space_tl ms
178     }
179   }
180 }

```

The arithmetic computes elapsed scaled-seconds first, then multiplies by 1000 before dividing by 65536. Doing the multiplication first preserves precision: a naive  $(\text{now} - \text{start}) / 65536 * 1000$  would truncate sub-second measurements to zero. The result is an integer count of milliseconds, accurate to roughly  $\pm 1$  ms.

`\iow_term:x` writes to the terminal *and* the log, fully expanding its argument once – which is what makes `\int_eval:n` produce a literal number rather than the unevaluated expression. `\c_space_tl` inserts a real space between the number and the `ms` unit; a literal space there would be consumed by `expl3`'s tokenisation rules.

Note that the reported time is wall-clock and includes any `\typeout`, file I/O, or shell-escape work performed inside the timed block. For tight measurements of pure computation, silence debugging output during the run, and take the second of two consecutive timings to avoid first-run effects such as font caching or `.aux` reads.

### 3.1.2 Documentclass Options

We have very few global options we use from the KOMAscript. But you can use any known option of the KOMAscript `scrbook`.

```

181 \PassOptionsToClass{
182   fontsize =10pt,
183   twoside =true,

```

```

184 BCOR      =5mm,
185 headings  =optiontoheadandtoc,
186 parskip   =half-,
187 numbers   =noenddot,
188 toc        =indentunnumbered
189 }{scrbook}

```

### 3.1.3 Class options (dfg/class key family)

All class-level toggles live in the `dfg/class` key family and are processed via `\ProcessKeyOptions`. They control the two major compilation modes (`fastcompile`<sup>→P.31</sup>, `fastcompile-project`<sup>→P.31</sup>, `final`<sup>→P.32</sup>) plus several debugging and output flags.

The general design principle is that every flag defaults to `false` or to a safe, submission-ready value. Authors enable the helpers they need during drafting and simply remove them (or set `final=true`) before submitting. Setting `final=true` enforces this by hard-resetting all drafting flags to `false` automatically.

```

190 \keys_define:nn { dfg / class }
191 {

```

`final`<sup>→P.32</sup>: Set to `true` immediately before submission. It forces `cmym` colour model (required for print), silently sets `fastcompile=false`, `showtags=false`, `showmarginalia=false` and `skip10pub=false`, and turns the draft-green placeholder colour to white so it is invisible in the output.

```

192 final      .bool_set:N = \l_@@_class_final_bool,
193 final      .initial:n  = false,
194 Final      .meta:n      = { final = #1 },
195 Final      .default:n   = true,

```

`fastcompile`<sup>→P.31</sup>: When `true`, generated tables and lists are replaced by a placeholder. It also suppresses role-card grids, the Gantt chart, and the ten-publications CV block while retaining metadata-backed prose references. Automatically disabled when `final=true`.

```

196 fastcompile .bool_set:N = \l_@@_class_fastcompile_bool,
197 fastcompile .initial:n  = false,

```

`fastcompile-project`<sup>→P.31</sup>: Aggressive project-text drafting mode. It implies `fastcompile`<sup>→P.31</sup>, but additionally prevents metadata rows from being loaded or restored, replaces calculated project headings with a state-only setup, uses draft rendering for graphics and links, and provides literal fallbacks for database-backed references. Authored sections, paragraphs, aims, work packages, labels, and inline citations remain. Automatically disabled when `final=true`.

```

198 fastcompile-project .bool_set:N = \l_@@_class_fastcompile_project_bool,
199 fastcompile-project .initial:n  = false,

```

`fastcompile-project-show-images`<sup>→P.31</sup>: Opt back into real image rendering while aggressive project drafting is active. It has no effect on ordinary builds, where graphics are rendered normally. Final mode resets it to `false` together with the other drafting controls.

```

200 fastcompile-project-show-images .bool_set:N = \l_@@_class_fastcompile_project_show_images_bool,
201 fastcompile-project-show-images .initial:n  = false,

```

`fastcompile-project-show-publications`<sup>→P.31</sup>: Controls the standard project publication heading, explicit project `\nocite` lists, project bibliographies, project-report references, and ending-project result lists during focused project drafting. Ordinary and final builds force it to `true`.

```

202 fastcompile-project-show-publications .bool_set:N = \l_@@_class_fastcompile_project_show_publications_
203 fastcompile-project-show-publications .initial:n  = false,

```

`fastcompile-project-show-funding-tables`<sup>→P.32</sup>: Retain the three project-local funding tables in aggressive project drafting mode. The option defaults to `true` and has no effect outside that mode.

```

204 fastcompile-project-show-funding-tables .bool_set:N = \l_@@_class_fastcompile_project_show_funding_tab
205 fastcompile-project-show-funding-tables .initial:n  = true,

```

`showtags`<sup>→P.32</sup>: Enables provenance overlays for direct database values and concise source labels for calculated values. Both fast-compilation modes and final mode disable it after option processing.

```

206 showtags .bool_set:N = \l_@@_class_showtags_bool,
207 showtags .initial:n  = false,

```

`showtags-tables`<sup>→P.32</sup>: Controls only provenance overlays rendered in table cells. It defaults to `true`, but remains inert unless `showtags`<sup>→P.32</sup> is enabled. Keeping it separate lets authors debug prose without widening or visually overloading dense generated tables.

```

208 showtags-tables .bool_set:N = \l_@@_class_showtags_tables_bool,
209 showtags-tables .initial:n  = true,

```

`showmarginalia`<sup>→P.31</sup>: Enables marginal notes that display running subtotals alongside the funding tables. Useful for cross-checking calculated sums during data entry. Disabled by `final=true`.

```
210 showmarginalia .bool_set:N = \l_@@_class_showmarginalia_bool,
211 showmarginalia .initial:n = false,
```

`skip10pub`<sup>→P.32</sup>: Suppresses the mandatory ten-publication block in each CV section. Because each bibliography list requires a full biber run and can take several seconds per PI, skipping it during early drafting significantly reduces compilation time. Automatically disabled by `final=true`.

```
212 skip10pub .bool_set:N = \l_@@_class_skipTENpublications_bool,
213 skip10pub .initial:n = false,
```

`colorscheme`<sup>→P.32</sup>: Passed directly to `\selectcolormodel` at `\AtBeginDocument`. Use `cmky` for press-quality PDF output (DFG submission default) or `RGB` for on-screen review. Overridden to `cmky` when `final=true`.

```
214 colorscheme .tl_set:N = \l_@@_class_color_model_tl,
215 colorscheme .initial:n = cmky,
```

`cv`<sup>→P.32</sup>: Set to `true` in the standalone CV document (`crc-cv.tex`). When `true`, the class adjusts heading styles and suppresses proposal-specific front matter so the output is a self-contained curriculum vitae suitable for DFG submission.

```
216 cv .bool_set:N = \l_@@_class_cv_bool,
217 cv .initial:n = false,
218 unknown .code:n = { \PassOptionsToClass{\CurrentOption}{scrbook} },
219 }
```

### 3.2 Conditional execution based on class options

The class option `cv` toggles whether the document is rendered as a CV (curriculum vitae) supplement. Internally this is stored in the expl3 boolean `\l_@@_class_cv_bool`. Since end-user document files should not be required to wrap conditional content in `\ExplSyntaxOn/\ExplSyntaxOff`, the following three commands expose the switch through a conventional  $\TeX$  interface.

```
\dfgIfCV \dfgIfCV{<true code>}{<false code>}
```

Executes `<true code>` if the `cv` option is active, otherwise `<false code>`. Use this when both branches need to produce content, for instance to switch between a full bibliography and a short selected-publications list:

```
\dfgIfCV{\printbibliography[heading=none]}{\printshortbib}
```

```
\dfgIfCVT \dfgIfCVT{<true code>}
```

Shorthand for the common case where only the true branch matters. Typical use is gating a section that exists only in the CV variant:

```
\dfgIfCVT{\par\textcolor{tableHeadingsFont}{Appendix:~Research~profiles}}
```

Equivalent to `\dfgIfCV{<true code>}{ }` but avoids the empty second argument and reads more naturally in document source.

```
\dfgIfCVF \dfgIfCVF{<false code>}
```

Mirror image of `\dfgIfCVT`: executes `<false code>` only when the `cv` option is *not* active. Useful for content that belongs in the main proposal but should be suppressed in the CV variant.

None of these commands evaluates its arguments unless the relevant branch is taken, so wrapping expensive or side-effecting code is safe. All three are defined with `\NewDocumentCommand`, so their arguments are read as standard mandatory braced groups and may contain verbatim material only where the underlying typesetting context permits.

```
220 \NewDocumentCommand \dfgIfCV { +m +m }
221 { \bool_if:NTF \l_@@_class_cv_bool {#1} {#2} }
222 \NewDocumentCommand \dfgIfCVT { +m }
223 { \bool_if:NT \l_@@_class_cv_bool {#1} }
224 \NewDocumentCommand \dfgIfCVF { +m }
225 { \bool_if:NF \l_@@_class_cv_bool {#1} }
226
227 \NewDocumentCommand \dfgIfFinalF { +m }
228 { \bool_if:NF \l_@@_class_final_bool {#1} }
229 \NewDocumentCommand \dfgIfFastCompileProject { +m +m }
230 { \bool_if:NTF \l_@@_class_fastcompile_project_bool {#1} {#2} }
231 \NewDocumentCommand \dfgIfFastCompileProjectT { +m }
232 { \bool_if:NT \l_@@_class_fastcompile_project_bool {#1} }
233 \NewDocumentCommand \dfgIfFastCompileProjectF { +m }
234 { \bool_if:NF \l_@@_class_fastcompile_project_bool {#1} }
235 \NewDocumentCommand \dfgIfProjectPublications { +m +m }
236 { \bool_if:NTF \l_@@_class_fastcompile_project_show_publications_bool {#1} {#2} }
```

Unknown options are forwarded by the key handler above, so ordinary KOMA-Script options remain available without processing the class options a second time. Finally process and execute all options and key-values.

```

237 \ProcessKeyOptions[ dfg / class ]
238 % Resolve mode precedence before any package, customisation, metadata, or
239 % auxiliary-file work can observe the drafting booleans.
240 \bool_if:NTF \l_@@_class_final_bool
241 {
242   \bool_set_false:N \l_@@_class_fastcompile_bool
243   \bool_set_false:N \l_@@_class_fastcompile_project_bool
244   \bool_set_false:N \l_@@_class_fastcompile_project_show_images_bool
245   \bool_set_true:N \l_@@_class_fastcompile_project_show_funding_tables_bool
246   \bool_set_false:N \l_@@_class_showtags_bool
247   \bool_set_false:N \l_@@_class_showmarginalia_bool
248   \bool_set_false:N \l_@@_class_skipTENpublications_bool
249   \bool_set_true:N \l_@@_class_fastcompile_project_show_publications_bool
250 }
251 {
252   \bool_if:NTF \l_@@_class_fastcompile_project_bool
253   {
254     \bool_set_true:N \l_@@_class_fastcompile_bool
255     \bool_set_false:N \l_@@_class_showtags_bool
256     \bool_set_false:N \l_@@_class_showmarginalia_bool
257     \bool_set_true:N \l_@@_class_skipTENpublications_bool
258     \PassOptionsToPackage{draft}{hyperref}
259     \PassOptionsToPackage{draft}{microtype}
260   }
261   { \bool_set_true:N \l_@@_class_fastcompile_project_show_publications_bool }
262   \bool_if:NT \l_@@_class_fastcompile_bool
263   { \bool_set_false:N \l_@@_class_showtags_bool }
264 }
265 \LoadClass{scrbook}
266 \PassOptionsToPackage{table}{xcolor} % getting rid of errors and conflicts.
267 \RequirePackage{xcolor}

```

### 3.2.1 Colour palette

All colours follow the RWTH Aachen corporate-identity palette and are defined in all four models at once (cmyk/RGB/HTML/gray) using xcolor's multiple-model syntax. This allows the same symbolic name to be used regardless of the active colour model chosen via colorscheme=.

Each hue comes in five tints named -100 (full) through -10 (near white), matching the official RWTH tint steps. This naming scheme is intentional: table headers, zebra stripes and box backgrounds are all specified in terms of these canonical names (e.g. blue-50, black-10), so a complete rebranding only requires changing the definitions here.

The ORCID brand green is also declared here since it is used by \orcidIcon throughout the document.

```

268 \definecolor{blue-100}{cmyk/RGB/HTML/gray}{1,.50,0,0/0,84,159/00549F/1}% primary
269 \definecolor{blue-75}{cmyk/RGB/HTML/gray}{.75,.38,0,0/64,127,183/407FB7/.75}%
270 \definecolor{blue-50}{cmyk/RGB/HTML/gray}{.45,.14,0,0/142,186,229/8EBAE5/.5}% secondary
271 \definecolor{blue-25}{cmyk/RGB/HTML/gray}{.23,.07,0,0/199,221,242/C7DDF2/.25}%
272 \definecolor{blue-10}{cmyk/RGB/HTML/gray}{.09,.03,0,0/232,241,250/E8F1FA/.1}%
273
274 \definecolor{black-100}{cmyk/RGB/HTML}{0,0,0,1/0,0,0/000000}%
275 \definecolor{black-75}{cmyk/RGB/HTML}{0,0,0,.75/100,101,103/646567}%
276 \definecolor{black-50}{cmyk/RGB/HTML}{0,0,0,.5/156,158,159/9C9E9F}%
277 \definecolor{black-25}{cmyk/RGB/HTML}{0,0,0,.25/207,209,210/CFD1D2}%
278 \definecolor{black-10}{cmyk/RGB/HTML}{0,0,0,.1/236,237,237/ECEDED}%
279
280 \definecolor{green-100}{cmyk/RGB/HTML}{.7,0,1,0/87,171,39/57AB27}%
281 \definecolor{green-75}{cmyk/RGB/HTML}{.52,0,.75,0/141,192,96/8DC060}%
282 \definecolor{green-50}{cmyk/RGB/HTML}{.35,0,.5,0/184,214,152/B8D698}%
283 \definecolor{green-25}{cmyk/RGB/HTML}{.18,0,.25,0/221,235,206/DDEBCE}%
284 \definecolor{green-10}{cmyk/RGB/HTML}{.07,0,.1,0/242,247,236/F2F7EC}%
285
286 \definecolor{red-100}{cmyk/RGB/HTML}{.15,1,1,0/204,7,30/CC071E}%
287 \definecolor{red-75}{cmyk/RGB/HTML}{.11,.75,.75,0/216,92,65/D85C41}%
288 \definecolor{red-50}{cmyk/RGB/HTML}{.8,.5,.5,0/230,150,121/E69679}%
289 \definecolor{red-25}{cmyk/RGB/HTML}{.4,.25,.25,0/243,205,187/F3CDBB}%
290 \definecolor{red-10}{cmyk/RGB/HTML}{.2,.1,.1,0/250,235,227/FAEBE3}%

```

```

291
292 \definecolor{bordeaux-100}{cmyk/RGB/HTML}{.25,1,.70,.20/161,16,53/A11035}%
293 \definecolor{bordeaux-75}{cmyk/RGB/HTML}{.19,.75,.52,15/182,82,86/B65256}%
294 \definecolor{bordeaux-50}{cmyk/RGB/HTML}{.13,.5,.35,.1/205,139,135/CD8B87}%
295 \definecolor{bordeaux-25}{cmyk/RGB/HTML}{.06,.25,.18,.05/229,197,192/E5C5C0}%
296 \definecolor{bordeaux-10}{cmyk/RGB/HTML}{.03,.1,.07,.02/245,232,229/F5E8E5}%
297
298 \definecolor{orcid}{cmyk/RGB}{0.15,0.00,0.59,0.20/174,205,84}

```

Let's start with the common section on packages etc.

### 3.2.2 Customisation key family (dfg/custom)

We provide as much as possible all settings to customize to your desire and needs. The customization is done with key-values, which we set up below.

```

299 \bool_new:N \l_@@_custom_thumbindex_topmargin_set_bool
300 \bool_new:N \l_@@_custom_thumbindex_bottommargin_set_bool
301 \dim_new:N \l_@@_custom_thumbindex_topmargin_dim
302 \dim_new:N \l_@@_custom_thumbindex_bottommargin_dim
303 \keys_define:nn { dfg / custom }
304 {
305   % You can pass any font you like (and |fontspec| will understand or is known to
306   % your system). But since the DFG is requiring Arial, we set this as default.
307   font .tl_set:N = \l_@@_custom_font_tl,
308   fontspec .tl_set:N = \l_@@_custom_fontspec_tl,
309   font .initial:n = Noto Serif,
310   sansfont .tl_set:N = \l_@@_custom_sansfont_tl,
311   sansfontspec .tl_set:N = \l_@@_custom_sansfontspec_tl,
312   sansfont .initial:n = Roboto Light,
313   sansfontspec .initial:n = {
314     ItalicFont=Roboto-LightItalic,
315     BoldFont=Roboto-Medium,
316     BoldItalicFont=Roboto-Medium-Italic},
317   % \paragraph{Logo paths}
318   crcLogoPath .tl_set:N = \l_@@_custom_crc_logo_path_tl,
319   crcLogoPath .initial:n = example-image-a,
320   affiliationLogoPath .tl_set:N = \l_@@_custom_affiliation_logo_path_tl,
321   affiliationLogoPath .initial:n = example-image-b,
322   % \paragraph{Project-reference repetition}
323   projectPIOncePerSection .bool_set:N =
324     \l_@@_custom_project_pi_once_per_section_bool,
325   projectPIOncePerSection .initial:n = true,
326   % Project tables use full institution names by default. Set true for
327   % compact abbreviations and a table-local full-name legend.
328   projectsTableInstitutionAbbreviations .bool_set:N =
329     \l_@@_custom_projects_table_institution_abbreviations_bool,
330   projectsTableInstitutionAbbreviations .initial:n = false,
331   % Collaboration-plot area colors can be set once for the complete proposal.
332   % Per-plot area-colors and area-palette options may override these defaults.
333   collaborationAreaColors .tl_set:N =
334     \l_@@_custom_collaboration_area_colors_tl,
335   collaborationAreaColors .initial:n =
336     { A=projectA, B=projectB, Q=projectQ!75!black },
337   collaborationAreaPalette .code:n =
338     {
339       \clist_if_empty:nF {#1}
340       { \tl_set:Nn \l_@@_custom_collaboration_area_palette_tl {#1} }
341     },
342   collaborationAreaPalette .initial:n =
343     { orange!80!black, violet!75!black, teal!70!black,
344       brown!75!black, magenta!70!black, cyan!70!black, lime!60!black },
345   % \paragraph{DFG salary and animal-housing rates}
346   salary@prof .fp_set:N = \l_@@_custom_salary_prof_fp,
347   salary@prof .initial:n = 123600,
348   salary@groupLeader .fp_set:N = \l_@@_custom_salary_group_leader_fp,
349   salary@groupLeader .initial:n = 102300,
350   salary@postDoc .fp_set:N = \l_@@_custom_salary_postdoc_fp,

```

```

351 salary@postDoc .initial:n = 88200,
352 salary@medDoc .fp_set:N = \l_@@_custom_salary_meddoc_fp,
353 salary@medDoc .initial:n = 111000,
354 salary@PhD .fp_set:N = \l_@@_custom_salary_phd_fp,
355 salary@PhD .initial:n = 81600,
356 salary@research .fp_set:N = \l_@@_custom_salary_research_fp,
357 salary@research .initial:n = 67200,
358 salary@nonResearch .fp_set:N = \l_@@_custom_salary_nonresearch_fp,
359 salary@nonResearch .initial:n = 60000,
360 salary@student .fp_set:N = \l_@@_custom_salary_student_fp,
361 salary@student .initial:n = 1,
362 salary@assistant .fp_set:N = \l_@@_custom_salary_assistant_fp,
363 salary@assistant .initial:n = 1,
364 animalHousing@mouse .fp_set:N = \l_@@_custom_animal_mouse_fp,
365 animalHousing@mouse .initial:n = 0.75,
366 animalHousing@mouseGnotobiotic .fp_set:N =
367 \l_@@_custom_animal_mouse_gnotobiotic_fp,
368 animalHousing@mouseGnotobiotic .initial:n = 3.9,
369 animalHousing@rat .fp_set:N = \l_@@_custom_animal_rat_fp,
370 animalHousing@rat .initial:n = 1.4,
371 % \paragraph{Thumb-index keys}
372 % These keys control the decorative side tab on the outer margin.
373 % The index divides the text block into \meta{pattern} equal-height slots by
374 % default. Explicit page-edge margins can override either end of the stack.
375 % Each call to \cs{printThumbIndex}
376 % advances the slot counter; when it reaches \meta{pattern} it wraps,
377 % creating a repeating stripe aiding chapter navigation.
378 %
379 thumbindex .bool_set:N = \l_@@_custom_thumbindex_bool,
380 thumbindex .initial:n = true,
381 %
382 thumbindex@pattern .int_set:N = \l_@@_custom_thumbindexpattern_int,
383 thumbindex@pattern .initial:n = 10,
384 %
385 thumbindex@topmargin .code:n =
386 {
387 \str_if_eq:nnTF {#1} {auto}
388 { \bool_set_false:N \l_@@_custom_thumbindex_topmargin_set_bool }
389 {
390 \dim_set:Nn \l_@@_custom_thumbindex_topmargin_dim {#1}
391 \bool_set_true:N \l_@@_custom_thumbindex_topmargin_set_bool
392 }
393 },
394 thumbindex@topmargin .initial:n = auto,
395 %
396 thumbindex@bottommargin .code:n =
397 {
398 \str_if_eq:nnTF {#1} {auto}
399 { \bool_set_false:N \l_@@_custom_thumbindex_bottommargin_set_bool }
400 {
401 \dim_set:Nn \l_@@_custom_thumbindex_bottommargin_dim {#1}
402 \bool_set_true:N \l_@@_custom_thumbindex_bottommargin_set_bool
403 }
404 },
405 thumbindex@bottommargin .initial:n = auto,
406 %
407 thumbindex@width .dim_set:N = \l_@@_custom_thumbindex_width_dim,
408 thumbindex@width .initial:n = 1.2cm,
409 %
410 thumbindex@font .tl_set:N = \l_@@_custom_thumbindex_font_tl,
411 thumbindex@font .initial:n = \bfseries\Huge,
412 % \paragraph{Bibliography keys}
413 % |emphasizeAuthors| controls the bold-name mechanism. When true (the
414 % default), it marks every PI's name in bold across all bibliography and
415 % citation lists.
416 % |emphasizeEntries| independently bolds entire project bibliography entries

```

```

417 % with a keyword matching the current project ID plus |-highlight|.
418 % CV and proposal bibliography styles and features are stored separately.
419 %
420 doiAPIMail .tl_set:N = \l_@@_custom_doi_api_mail_tl,
421 doiAPIMail .initial:n = {},
422 %
423 emphasizeAuthors .bool_set:N = \l_@@_custom_emphasize_authors_bool,
424 emphasizeAuthors .initial:n = true,
425 emphasizeEntries .bool_set:N = \l_@@_custom_emphasize_entries_bool,
426 emphasizeEntries .initial:n = false,
427 %
428 biblatexstyleCV .tl_set:N = \l_@@_custom_biblatexstyle_cv_tl,
429 biblatexstyleCV .initial:n = ext-numeric-comp,
430 biblatexstyleFeatureCV .tl_set:N = \l_@@_custom_biblatexfeatures_cv_tl,
431 biblatexstyleFeatureCV .initial:n = {sorting=none},
432 biblatexstyleProposal .tl_set:N = \l_@@_custom_biblatexstyle_proposal_tl,
433 biblatexstyleProposal .initial:n = ext-authoryear-ecomp,
434 biblatexstyleFeatureProposal .tl_set:N = \l_@@_custom_biblatexfeatures_proposal_tl,
435 biblatexstyleFeatureProposal .initial:n = {dashed=false},
436 % Compatibility: the former keys apply the supplied value to both modes.
437 biblatexstyle .code:n =
438 {
439   \tl_set:Nn \l_@@_custom_biblatexstyle_cv_tl {#1}
440   \tl_set:Nn \l_@@_custom_biblatexstyle_proposal_tl {#1}
441 },
442 biblatexstyleFeature .code:n =
443 {
444   \tl_set:Nn \l_@@_custom_biblatexfeatures_cv_tl {#1}
445   \tl_set:Nn \l_@@_custom_biblatexfeatures_proposal_tl {#1}
446 },
447 % \paragraph{Colour keys}
448 % All colour keys store a colour \emph{name} referencing an already-defined
449 % xcolor colour (e.g. \blue-50, \black-10). Actual \cs{colorlet}
450 % bindings happen in \cs{AtBeginDocument} so preamble overrides are
451 % processed first. Groups: |color@gantt@*| for the five bar styles;
452 % |color@table@*| for all table chrome; |color@thumbindex@*| for the
453 % thumb tab; |color@tags@*| for the showtags debug annotations.
454 %
455 color@reference@boldAuthor .tl_set:N = \l_@@_custom_referenceBoldAuthor_tl,
456 color@reference@boldAuthor .initial:n = black,
457 color@reference@PI .tl_set:N = \l_@@_custom_referencePI_tl,
458 color@reference@PI .initial:n = black,
459 color@reference@WP .tl_set:N = \l_@@_custom_referenceWP_tl,
460 color@reference@WP .initial:n = black,
461 color@reference@Aim .tl_set:N = \l_@@_custom_referenceAim_tl,
462 color@reference@Aim .initial:n = black,
463
464 color@gantt@frame .tl_set:N = \l_@@_custom_gantt_frame_tl,
465 color@gantt@frame .initial:n = {white},
466 color@gantt@default .tl_set:N = \l_@@_custom_gantt_default_tl,
467 color@gantt@default .initial:n = {blue-25},
468 color@gantt@alternative .tl_set:N = \l_@@_custom_gantt_alternative_tl,
469 color@gantt@alternative .initial:n = {green-25},
470 color@gantt@crosshatch .tl_set:N = \l_@@_custom_gantt_crosshatch_tl,
471 color@gantt@crosshatch .initial:n = {black-10},
472 color@gantt@important .tl_set:N = \l_@@_custom_gantt_important_tl,
473 color@gantt@important .initial:n = {red},
474 color@gantt@stripe-one .tl_set:N = \l_@@_custom_gantt_stripe_one_tl,
475 color@gantt@stripe-one .initial:n = {blue-25},
476 color@gantt@stripe-two .tl_set:N = \l_@@_custom_gantt_stripe_two_tl,
477 color@gantt@stripe-two .initial:n = {green-25},
478
479 color@table@headingsBG .tl_set:N = \l_@@_custom_tableHeadingsBG_tl,
480 color@table@headingsBG .initial:n = blue-50,
481 color@table@headingsBGalt .tl_set:N = \l_@@_custom_tableHeadingsBGalt_tl,
482 color@table@headingsBGalt .initial:n = black-25,

```

```

483 color@table@headingsFont .tl_set:N = \l_@@_custom_tableHeadingsFont_tl,
484 color@table@headingsFont .initial:n = black,
485 color@table@rows .tl_set:N = \l_@@_custom_tableRows_tl,
486 color@table@rows .initial:n = black-10,
487 color@table@lines .tl_set:N = \l_@@_custom_tableLines_tl,
488 color@table@lines .initial:n = black-10,
489 color@table@outerLines .tl_set:N = \l_@@_custom_tableOuterLines_tl,
490 color@table@outerLines .initial:n = black,
491 color@table@noValue .tl_set:N = \l_@@_custom_tableNoValue_tl,
492 color@table@noValue .initial:n = black-10,
493 color@table@firstColumn .tl_set:N = \l_@@_custom_tableFirstColumn_tl,
494 color@table@firstColumn .initial:n = black,
495 color@table@link .tl_set:N = \l_@@_custom_tableLink_tl,
496 color@table@link .initial:n = black,
497 color@table@contFootHead .tl_set:N = \l_@@_custom_tableContFootHead_tl,
498 color@table@contFootHead .initial:n = black,
499 color@table@caption .tl_set:N = \l_@@_custom_tableCaption_tl,
500 color@table@caption .initial:n = black,
501 color@thumbindex@bg .tl_set:N = \l_@@_custom_thumbIndexBG_tl,
502 color@thumbindex@bg .initial:n = black,
503 color@thumbindex@font .tl_set:N = \l_@@_custom_thumbIndexFont_tl,
504 color@thumbindex@font .initial:n = white,
505 color@tags@font .tl_set:N = \l_@@_custom_colorTagsFont_tl,
506 color@tags@font .initial:n = red-100,
507 color@tags@line .tl_set:N = \l_@@_custom_colorTagsLine_tl,
508 color@tags@line .initial:n = black-50,
509 % The alternative font color which is used e.g. for the CV headline.
510 color@font@alternative .tl_set:N = \l_@@_custom_colorfontalternative_tl,
511 color@font@alternative .initial:n = black-50,
512
513 color@item@i .tl_set:N = \l_@@_custom_color_item_i_tl,
514 color@item@i .initial:n = black,
515 % That's it with the key-values.
516 }

```

Bibliography package options must be fixed before biblatex is loaded. Consequently the customization file is read here, after all custom keys have been declared but before package loading. It is not read a second time at the end of the class.

```

517 \NewDocumentCommand{\changeSettings}{m}
518 { \keys_set:nn { dfg / custom } {#1} }
519 % Compatibility alias for proposals created before the command was pluralised.
520 \NewDocumentCommand{\changeSetting}{m}
521 { \changeSettings{#1} }
522 % Compatibility accessors retained for the funding and animal-cost code.
523 \NewExpandableDocumentCommand{\dfgSalaryProf}{}
524 { \fp_use:N \l_@@_custom_salary_prof_fp }
525 \NewExpandableDocumentCommand{\dfgSalaryGroupLeader}{}
526 { \fp_use:N \l_@@_custom_salary_group_leader_fp }
527 \NewExpandableDocumentCommand{\dfgSalaryPostDoc}{}
528 { \fp_use:N \l_@@_custom_salary_postdoc_fp }
529 \NewExpandableDocumentCommand{\dfgSalaryMedDoc}{}
530 { \fp_use:N \l_@@_custom_salary_meddoc_fp }
531 \NewExpandableDocumentCommand{\dfgSalaryPhD}{}
532 { \fp_use:N \l_@@_custom_salary_phd_fp }
533 \NewExpandableDocumentCommand{\dfgSalaryResearch}{}
534 { \fp_use:N \l_@@_custom_salary_research_fp }
535 \NewExpandableDocumentCommand{\dfgSalaryNonResearch}{}
536 { \fp_use:N \l_@@_custom_salary_nonresearch_fp }
537 \NewExpandableDocumentCommand{\dfgSalaryStudent}{}
538 { \fp_use:N \l_@@_custom_salary_student_fp }
539 \NewExpandableDocumentCommand{\dfgSalaryAssistant}{}
540 { \fp_use:N \l_@@_custom_salary_assistant_fp }
541 \NewExpandableDocumentCommand{\dfgMouseHousing}{}
542 { \fp_use:N \l_@@_custom_animal_mouse_fp }
543 \NewExpandableDocumentCommand{\dfgMouseHousingGnotobiotic}{}
544 { \fp_use:N \l_@@_custom_animal_mouse_gnotobiotic_fp }
545 \NewExpandableDocumentCommand{\dfgRatHousing}{}

```

```

546 { \fp_use:N \l_@@_custom_animal_rat_fp }
547 \file_if_exist:nTF {preamble/dfg-customization.tex}
548 { \ExplSyntaxOff \input{preamble/dfg-customization.tex} \ExplSyntaxOn }
549 { \msg_warning:nnn { dfg } { file-not-found } {preamble/dfg-customization.tex} }
550 \bool_if:NT \l_@@_class_fastcompile_project_bool
551 {
552   \bool_set_false:N \l_@@_custom_thumbindex_bool
553   \bool_set_false:N \l_@@_custom_emphasize_authors_bool
554 }

```

### 3.2.3 Colour binding at document start

The `\AtBeginDocument` hooks below transform the stored colour *names* from the `dfg/custom` key family into live `\colorlet` aliases that the rest of the document uses. Deferring this to `\AtBeginDocument` means the user's `\changeSettings` calls in `dfg-customization.tex` are already in force when the bindings run.

The second `\AtBeginDocument` block handles final-mode side effects: it resets all drafting flags (both fast modes, tags, marginalia, skip-pubs) to false, enables project publications, forces the colour model to `cmymk`, and switches the `color@final@white-or-green` alias from green to white so that any placeholder boxes are invisible in the submitted PDF.

Packages are loaded in an order that avoids common conflicts: `xcolor` is loaded first (with the `table` option forwarded beforehand) because almost every other package depends on it. `tabularray` and its `siunitx` library are set up before `hyperref`; reversing this order breaks `tblr`'s PDF bookmark integration. `hyperref` and `cleveref` are always loaded last (standard LaTeX best practice).

The two-sided A4 layout uses a 25 mm inner margin plus the KOMA-Script BCOR binding correction (initially 5 mm), and a 20 mm outer margin. Geometry applies BCOR as its binding offset, leaving a 160 mm text block at the default setting. The outer margin accommodates a 13 mm note column and a 2 mm separation from the text, with 5 mm spare. On verso pages, the binding and outer margins, notes, and thumb index all switch sides. The top margin is 20 mm and the bottom margin 15 mm. This gives the text block 5 mm more height than the former 20 mm bottom margin while retaining the footer.

```

555 \RequirePackage{multicol}
556 % Defensive definition against lineno/multicol conflict
557 \AtBeginDocument{%
558   \ifpackageloaded{lineno}{%
559     \providecommand*{\@LN@col}[1]{\relax}%
560   }{}%
561 }
562 \RequirePackage{babel}
563 \RequirePackage{geometry}
564 \geometry{
565   a4paper,
566   includefoot,
567   top           =20mm,
568   bottom        =15mm,
569   inner         =25mm,
570   outer         =20mm,
571   bindingoffset =\ta@bcor,
572   marginparsep  =2mm,
573   marginparwidth=13mm,
574   % showframe
575 }

```

We provide a color which is used during the writing process. Since there are several steps that are calculated on the fly we want to be able to see if they match any criteria or if there has been a wrongly inserted number. The following colors can be overwritten in the `dfg-customization.tex`-file. Therefor we load them just before the document starts.

```

576 \AtBeginDocument{
577   \selectcolormodel{\tl_use:N \l_@@_class_color_model_tl}
578   \colorlet{color@item@i}{\l_@@_custom_color_item_i_tl}
579   \colorlet{color@tags@font}{\l_@@_custom_colorTagsFont_tl}
580   \colorlet{color@tags@line}{\l_@@_custom_colorTagsLine_tl}
581   \colorlet{color@font@alternative}{\l_@@_custom_colorfontalternative_tl}
582   \colorlet{color@reference@boldAuthor}{\l_@@_custom_referenceBoldAuthor_tl}
583   \colorlet{tableHeadingsBG}{\l_@@_custom_tableHeadingsBG_tl}
584   \colorlet{tableHeadingsBGalt}{\l_@@_custom_tableHeadingsBGalt_tl}
585   \colorlet{tableHeadingsFont}{\l_@@_custom_tableHeadingsFont_tl}
586   \colorlet{tableRows}{\l_@@_custom_tableRows_tl}
587   \colorlet{tableLines}{\l_@@_custom_tableLines_tl}

```

```

588 \colorlet{tableOuterLines}{\l_@@_custom_tableOuterLines_tl}
589 \colorlet{tableNoValue}{\l_@@_custom_tableNoValue_tl}
590 \colorlet{tableFirstColumn}{\l_@@_custom_tableFirstColumn_tl}
591 \colorlet{tableLink}{\l_@@_custom_tableLink_tl}
592 \colorlet{tableContFootHead}{\l_@@_custom_tableContFootHead_tl}
593 \colorlet{tableCaption}{\l_@@_custom_tableCaption_tl}
594 \colorlet{thumbIndexBG}{\l_@@_custom_thumbIndexBG_tl}
595 \colorlet{thumbIndexFont}{\l_@@_custom_thumbIndexFont_tl}
596 % all for the gantt chart
597 \colorlet{color@gantt@default}{\l_@@_custom_gantt_default_tl}
598 \colorlet{color@gantt@alternative}{\l_@@_custom_gantt_alternative_tl}
599 \colorlet{color@gantt@frame}{\l_@@_custom_gantt_frame_tl}
600 \colorlet{color@gantt@crosshatch}{\l_@@_custom_gantt_crosshatch_tl}
601 \colorlet{color@gantt@important}{\l_@@_custom_gantt_important_tl}
602 \colorlet{color@gantt@stripe-one}{\l_@@_custom_gantt_stripe_one_tl}
603 \colorlet{color@gantt@stripe-two}{\l_@@_custom_gantt_stripe_two_tl}
604
605 % NOTE: The aliases below shadow LaTeX/xcolor standard colour names
606 % (black, red, green). Any subsequently loaded package relying on the
607 % standard red=RGB(255,0,0) will receive bordeaux-100 instead.
608 % Consider using dfg-prefixed aliases if you load additional packages.
609 \colorlet{black}{black-100}
610 \colorlet{blue}{blue-100}
611 \colorlet{blueLight}{blue-50}
612 \colorlet{green}{green-100}
613 \colorlet{greenLight}{green-50}
614 \colorlet{red}{bordeaux-100}
615 \colorlet{redLight}{bordeaux-50}
616 \colorlet{grey}{black-50}
617 \colorlet{greyLight}{black-10}
618
619 \colorlet{projectA}{blue}
620 \colorlet{projectB}{green}
621 \colorlet{projectQ}{grey}
622 \colorlet{error}{red}
623 \colorlet{referencePI}{\l_@@_custom_referencePI_tl}
624 \colorlet{referenceWP}{\l_@@_custom_referenceWP_tl}
625 \colorlet{referenceAim}{\l_@@_custom_referenceAim_tl}
626 % Now closing the AtBeginDocument-part:
627 }

```

Once you set the flag `final` the color (green) is replaced by white so it is ready for submission without indicating the doublechecking aspect. If it stays red you should not proceed to submit the proposal.

```

628 \AtBeginDocument{
629   \bool_if:NTF \l_@@_class_final_bool
630   {
631     \colorlet{color@final@white-or-green}{white}
632     \bool_set_false:N \l_@@_class_showmarginalia_bool
633     \bool_set_false:N \l_@@_class_showtags_bool
634     \bool_set_false:N \l_@@_class_fastcompile_bool
635     \bool_set_false:N \l_@@_class_fastcompile_project_bool
636     \bool_set_false:N \l_@@_class_fastcompile_project_show_images_bool
637     \bool_set_true:N \l_@@_class_fastcompile_project_show_funding_tables_bool
638     \bool_set_false:N \l_@@_class_skipTENpublications_bool
639     \bool_set_true:N \l_@@_class_fastcompile_project_show_publications_bool
640     \selectcolormodel{cmyk}
641   }
642   {
643     \colorlet{color@final@white-or-green}{green}
644   }
645 }
646 \RequirePackage{xspace}
647 \RequirePackage{etoolbox}
648
649 \RequirePackage{ragged2e}
650 \raggedbottom

```

We are getting rid of having the chapter number added to the figure number, same goes for tables.

```

651 \counterwithout{figure}{chapter}
652 \counterwithout{table}{chapter}

653 \RequirePackage{qrcode}
654 \RequirePackage{graphicx}
655 \RequirePackage{mwe}% provides the default example-image-a/b logo placeholders
656 % Set the graphics mode after loading \pkg{graphicx}. This explicitly clears
657 % a previously inherited draft setting when project images are requested and
658 % makes repeated false/true drafting builds deterministic.
659 \bool_if:NT \l_@@_class_fastcompile_project_bool
660 {
661   \bool_if:NTF \l_@@_class_fastcompile_project_show_images_bool
662     { \setkeys{Gin}{draft=false} }
663     { \setkeys{Gin}{draft=true} }
664 }
665 \graphicspath{
666   {figures/}
667   {img/}
668 }
669 \RequirePackage{fontspec}
670 \AtBeginDocument{
671   \setmainfont{\tl_use:N \l_@@_custom_font_tl}[
672     \tl_use:N \l_@@_custom_fontspec_tl
673   ]
674   \setsansfont{\tl_use:N \l_@@_custom_sansfont_tl}[
675     \tl_use:N \l_@@_custom_sansfontspec_tl
676   ]
677 }
678
679 \RequirePackage{fontawesome5}
680 \RequirePackage{microtype}
681 \RequirePackage{enumitem}
682 % customizing bulletpoints
683 \newcommand{\dfgArrowHead}{\faCaretRight}
684 \newcommand{\dfgBulletPoint}{\faCaretRight}
685 \newcommand{\dfgTargetPoint}{\faBullseye}
686 \newcommand{\dfgDefaultPoint}{\faCaretRight}
687 \setlist[enumerate]{nosep}
688 \setlist[description]{
689   %leftmargin=*,
690   leftmargin=*
691 }
692 \setlist[itemize]{
693   nosep,
694   label={\textcolor{color@item@i}{\dfgDefaultPoint}},
695 }
696 \newlist{contractinformation}{itemize}{2}
697 \setlist[contractinformation,1]{
698   nosep,
699   leftmargin=*,
700   label={\textcolor{color@item@i}{\dfgBulletPoint}},
701 }
702 \setlist[contractinformation,2]{
703   nosep,
704   leftmargin=*,
705   label={\textcolor{color@item@i}{\dfgDefaultPoint}},
706 }

```

### 3.2.4 Project-body list environments

**workpackages** A custom enumitem list with WP\, \arabic\*: labels at level 1 and WP\, \meta{parent}\alph\*: at level 2. The resume option at level 1 means the work-package counter continues across multiple projects in the same document, giving each WP a globally unique number for cross-references. Labels are set via cleveref in referenceWP colour. Bold face is scoped to the prefix and label itself so range connectors remain at the surrounding font weight.

**aims** A special enumerate list that automatically wraps its contents in a \dfgBoxEnv frame (the blue highlighted aims box). The before hook also temporarily sets all reference colours to the table heading font colour so that

PI/WP/Aim cross-references inside the aims box are visually consistent with the box style. The after hook closes the box.

```

707 \newlist{workpackages}{enumerate}{3}
708 \setlist[workpackages,1]{
709   % wide=\parindent,
710   leftmargin=0cm,
711   labelindent=*,
712   % leftmargin=*,
713   % labelindent=-3em,
714   % font=\normalfont,
715   % first=\bfseries,
716   topsep=3pt,
717   font=\bfseries,
718   % nosep,
719   label={WP\,\arabic*:.},
720   ref = {\arabic*},
721   resume
722 }
723
724 \setlist[workpackages,2]{
725   ref={\theworkpackagesi\alph*},
726   %wide=\parindent,
727   leftmargin=0cm,
728   labelindent=*,
729   % font=\normalfont,
730   % first=\bfseries,
731   topsep=0pt,
732   font=\bfseries,
733   % nosep,
734   label={WP\,\theworkpackagesi\alph*:.}
735 }

```

**bylaws** A three-level enumitem list styled for the bylaws section of the CRC charter. Level 1 uses  $\S\arabic*$  paragraph signs; level 2 uses  $\thebylawsi.\arabic*$  for sub-paragraphs. Both levels are set nosep to conserve vertical space.

```

736
737 \newlist{bylaws}{enumerate}{3}
738 \setlist[bylaws]{leftmargin=*}
739 \setlist[bylaws,1]{
740   font=\bfseries,
741   first=\bfseries,
742   % after=\normalfont,
743   label={\S\arabic*},
744   % itemsep=.5\baselineskip,
745   nosep
746 }
747 \setlist[bylaws,2]{
748   first=\normalfont,
749   label={\thebylawsi.\arabic*},
750   labelindent=0em,
751 }

```

**A list for the aims within the projects**

```

752 \newcommand{\addAim}[1]{\item\label{\l__tmp_current_project_tl-aim-#1}}
753 \newlist{aims}{enumerate}{1}
754 \setlist[aims,1]{
755   before={\begin{dfgBoxEnv}%
756     [%watermark text={Aims in }
757       left=0mm, right=0pt,
758       colupper=blue,
759     ]
760     \colorlet{referencePI}{tableHeadingsFont}
761     \colorlet{referenceWP}{tableHeadingsFont}
762     \colorlet{referenceAim}{tableHeadingsFont}},
763   after={\end{dfgBoxEnv}},
764   wide=\parindent,

```

```

765 leftmargin=*,
766 % font=\normalfont,
767 % first=\bfseries,
768 topsep=3pt,
769 font=\bfseries,
770 % nosep,
771 label={Aim~ \arabic*},
772 ref = {\arabic*},
773 % resume
774 }

```

### 3.2.5 Page style (headers and footers)

The page style uses `scrlayer-scrpage` with a minimal layout: The outer footer shows the page number in bold sans-serif. The inner footer shows the CRC logo (`\crlLogo`) at 0.5 cm height — this places the logo on every page of the proposal for visual identification without cluttering the headers. Both header and footer use `\markcase=noupper` so section titles are not forced to uppercase in running heads. `\footheight` is set explicitly to suppress the `scrlayer-scrpage` warning about an undersized footer layer.

```

775 \RequirePackage[
776   %headsepline=.5pt,
777   markcase=noupper,
778   %footsepline,
779   autooneside=false, % use left and right marks with a onesided document
780   %automark, % set \leftmark and \rightmark automatically by \section and \subsection
781   draft=false,
782 ]{scrlayer-scrpage}

```

First we clear any presettings so we can apply our own style.

```

783 \clearmainofpairstyles
784 \pagestyle{scrheadings}
785 \setlength{\footheight}{17.5264pt}
786 \renewcommand{\chaptermarkformat}{}
787 \renewcommand{\sectionmarkformat}{}
788 \ofoot*{\pagemark}%Clear the outer foot
789 \ifoot*{\crlLogo[height=0.5cm]}%pagemark in the center only on plain pages
790 \addtokomafont{pagehead}{\normalfont\sffamily}
791 \addtokomafont{pagefoot}{\bfseries}
792 % Mark every shipped page of an aggressive project draft without adding a
793 % package-level watermark dependency. The native background hook keeps the
794 % mark behind authored text and is registered only after final-mode precedence
795 % has been resolved.
796 \bool_if:NT \l_@@_class_fastcompile_project_bool
797 {
798   \AddToHook{shipout/background}[dfg/fastcompile-project-watermark]
799   {
800     \put(0.5\paperwidth,-0.5\paperheight)
801     {
802       \makebox(0,0)
803       {
804         \rotatebox{45}
805         {
806           \textcolor{black!7}
807           {
808             \sffamily\bfseries\fontsize{100}{50}\selectfont
809             FAST~COMPILE
810           }
811         }
812       }
813     }
814   }
815 }

```

Remodelling the footnotes for more pleasant display

```

816 \deffootnote{0em}{0em}{\thefootnotemark\hskip .5em}
817 \renewcommand{\footnoterule}{%
818   % \kern -4.5pt
819   % \hrule width \textwidth height 0.5pt

```

```

820 % \kern 4pt
821 }

```

### 3.2.6 Heading fonts (KOMA-Script customisation)

All heading sizes and weights are re-declared here to achieve a compact, dense layout that conserves space on the tightly page-budgeted DFG forms: `disposition` is reset to `\normalfont` (KOMA default is bold) so all heading levels start from the same base. Chapter headings (section dividers) are set at 20 pt bold to stand out without the very large spacing of `\Huge`. Sections use 12 pt bold type; subsections and subsubsections use 10 pt type for a compact hierarchy. Numbered section and subsection titles use the same 12 mm number column, so the title text begins at one horizontal position throughout the project information block. This also gives wrapped titles a matching hang indent. The TOC is configured to omit chapter page numbers (they would be meaningless given the DFG form structure) and to show section entries with a dash-style page separator. Project TOC entries deliberately use only their compact project number, so the fixed number column remains narrow and ordinary section titles are not pushed unnecessarily far to the right.

```

822 \setkomafont{title}{\Huge\bfseries}
823 % \setkomafont{disposition}{\normalfont}
824 \setkomafont{disposition}{\normalfont\sfseries}
825 \setkomafont{descriptionlabel}{\normalfont\bfseries}
826 %\setkomafont{chapter}{\huge\bfseries}
827 %\setkomafont{section}{\normalsize\bfseries}
828 %\setkomafont{subsection}{\normalsize}
829 %\setkomafont{subsubsection}{\normalsize}
830 \setkomafont{chapter}{\fontsize{20}{10}\selectfont\bfseries}
831 \setkomafont{section}{\fontsize{12}{10}\selectfont\bfseries}
832 \setkomafont{subsection}{\fontsize{10}{10}\selectfont}
833 \setkomafont{subsubsection}{\fontsize{10}{10}\selectfont}
834 \renewcommand*{\sectionformat}{\makebox[12mm][l]{\thesection\autodot}}
835 \renewcommand*{\subsectionformat}{\makebox[12mm][l]{\thesubsection\autodot}}
836 \setkomafont{footnotenum}{\normalfont\sfseries}
837 \setkomafont{pageheadfoot}{\normalfont\footnotesize\sfseries}

```

Adjusting the style for the table of contents. First we want to have the `\normalfont` for the chapter entries

```

838 \addtokomafont{chapterentry}{\normalfont}

839 \RedeclareSectionCommands[
840   font=\usekomafont{subsection},
841   % before skip=1pt,
842   % after skip=.5pt
843 ]{subsubsection}
844
845 \RedeclareSectionCommands[
846   tocraggedpagenumber,
847   toclinefill=\tocpageseparator,
848   tocindent=0em,
849   tocnumwidth=4em,
850   tocpagenumberbox=\tocpagenumberbox,% <- added
851   % tocpagenumberformat=\textsf,
852   before skip= 0ex,
853   after skip= 0.01ex
854 ]{section, subsection, subsubsection}
855
856 \RedeclareSectionCommands[
857   tocbefore skip=2ex,
858   tocentryformat=\bfseries\large,
859 ]{section}
860
861 \newcommand\tocgobble[1]{}% <- added
862 \newcommand\tocpageseparator{\normalsize\bfseries\,\mbox{\color{\l_@@_custom_tableLines_tl}---}}
863 \newcommand\tocpagenumberbox[1]{\mbox{\#1}}% <- added
864 % no page number for chapters in TOC
865 \RedeclareSectionCommands[
866   tocraggedpagenumber,
867   toclinefill           =\tocgobble,
868   tocindent             =0em,
869   tocnumwidth           =4em,

```

```

870   tocpagenumberbox      =\tocgobble,% <- added
871   % tocpagenumberformat =\textsf,
872   beforesep            = 0ex,
873   afterskip             =0.1ex,
874   tocentryformat        =\bfseries\Large\sfamily,
875 ]{chapter}

```

the depth of chapter is configurable, so using this is instead of a absolute number is recommended

```

876 \setcounter{secnumdepth}{\subsectionocdepth}
877 \setcounter{tocdepth}{\subsectionocdepth}

```

### 3.2.7 ORCID display commands

Two commands render ORCID identifiers:

`\ORCID{<0000-0000-0000-0000>}` Inline use: renders the ORCID icon followed by the ID as a hyperlink. Intended for manual insertion in text.

`\getORCID[<db>]{<id>}` Database-driven use: looks up the `orcid` field from the `person` database for the given person ID and renders `\ORCID` automatically. If the field is missing, a `missing-orcid` warning is raised instead of silently omitting the identifier. The warning is suppressed during the `tabularray` measuring pass (`\lTblrMeasuringBool`) to avoid duplicates.

The ORCID brand green (`orcid` colour) is defined in the colour palette section above. The icon uses the `academicons` `\aiOrcid` glyph.

```

878 \RequirePackage{pifont}
879 \RequirePackage{academicons}
880 % =====
881 % ORCID commands
882 % =====
883
884 % Store the ORCID value pulled from the database.
885 \providecommand{\theORCIDValue}{}
886
887 % --- Icon -----
888 \NewDocumentCommand{\orcidIcon}{}
889 {{\sfamily\textcolor{orcid}{\aiOrcid}}}
890
891 % --- Pure value-only lookup (no immediate output) -----
892 % Fetch the ORCID value from the database into \theORCIDValue.
893 % Useful when the value has already been loaded by a previous multi-fetch step,
894 % or when formatting is needed later.
895 \NewDocumentCommand{\getORCIDvalue}{O{person} m}
896 {%
897   % #1: Database (default is person)
898   % #2: Person id
899   \bool_if:NTF \l_@@_class_fastcompile_project_bool
900   { \cs_set:Npn \theORCIDValue { } }
901   { \DTLgetvalueforkey{\theORCIDValue}{orcid}{#1}{id}{#2} }%
902 }
903
904 % --- Formatting a preloaded ORCID value -----
905 % Expects \theORCIDValue to be set (for example via \getORCIDvalue or
906 % per \getEntry*{...}{id}{\theORCIDValue=orcid, ...}).
907 \NewDocumentCommand{\formatORCID}{O{person} m}
908 {%
909   % #1: Database (for warnings / tag overlay)
910   % #2: Person id (for warnings / tag overlay)
911   \DTLifnulloreempty{\theORCIDValue}
912   {%
913     \bool_if:NF \lTblrMeasuringBool
914     { \msg_warning:nnee {dfg}{missing-orcid}{#1}{#2} }%
915     \mbox{~} % if no orcid present
916   }
917   {%
918     \orcidIcon\,%
919     \dfgShowTag{#2}{orcid}
920     {\href{https://orcid.org/\theORCIDValue}{\theORCIDValue}}[#1]%
921   }%

```

```

922 }
923
924 % --- Convenience command: fetch + format in a single call -----
925 % Keep the same API as the original \getORCiD so existing calls continue
926 % to work.
927 \NewDocumentCommand{\getORCiD}{O{person} m}
928 {%
929   % #1: Database (default is person)
930   % #2: Person id
931   \bool_if:NF \l_@@_class_fastcompile_project_bool
932   {
933     \getORCiDvalue[#1]{#2}%
934     \formatORCiD[#1]{#2}%
935   }
936 }
937
938 % --- Inline variant for literal ORCiD values -----
939 % For direct values without database lookup.
940 \NewDocumentCommand{\ORCiD}{m}
941 {( \raisebox{-1pt}{\orcidIcon}\, \href{https://orcid.org/#1}{#1}) }

```

### 3.2.8 siunitx configuration

siunitx options must be forwarded with `\PassOptionsToPackage` *before* the package is implicitly loaded by `\UseTblrLibrary{siunitx}`, otherwise they arrive too late.

Key choices: `group-minimum-digits=4`: numbers with 4+ digits get a thousands separator (so 88200 formats as 88,200 EUR). `group-separator={, }`: European style comma separator. `table-auto-round=true`: silently rounds values to fit the `table-format` without requiring `\num` wrappers everywhere. `drop-zero-decimal=true`: suppresses redundant decimal zeros in numeric and EUR cells while retaining genuinely fractional values such as explicit animal-housing rates. `mode=match`: inherits the surrounding text font, so numbers in tables match the `\footnotesize` row font automatically. `text-family-to-math=true`, `text-series-to-math=true`: pass the current font family and series into math mode, keeping bold/italic numbers consistent with their surrounding text.

```

942 \PassOptionsToPackage{
943   mode = match,
944   propagate-math-font = true,
945   % reset-math-version = false,
946   % reset-text-family = false,
947   % reset-text-series = false,
948   % reset-text-shape = false,
949   text-family-to-math = true,
950   text-series-to-math = true,
951   tight-spacing = true,
952   group-minimum-digits = 4, % --> 1.234 instead of 1234
953   group-separator = {, }, % for "12.345" instead of "12 345" %
954   table-format = 6,
955   table-alignment-mode = format,
956   table-auto-round = true,
957   drop-zero-decimal = true,
958   locale = UK,
959   input-decimal-markers = {.,},
960   output-decimal-marker = {.,},
961   input-ignore = {, },
962   parse-numbers = true
963 }{siunitx}

```

This is the package for our tables and we are using quite a bunch of additional libraries.

```

964 \RequirePackage{tabularray}
965 \UseTblrLibrary{booktabs}
966 \UseTblrLibrary{diagbox}
967 \UseTblrLibrary{siunitx}
968 \UseTblrLibrary{counter}
969 \UseTblrLibrary{functional}

```

### 3.2.9 tabularray setup and table themes

tabularray renders each cell *twice*: once in a hidden measuring pass to determine column widths, and once for final output. This means every database query, numeric calculation or warning inside a cell body would be executed twice.

The global boolean `\g_@@_tblr_inside_bool` (toggled via environment hooks) lets code detect the measuring pass so it can skip expensive side effects (e.g. the missing-key warning is suppressed when `\lTblrMeasuringBool` is true).

```
970 \bool_new:N \g_@@_tblr_inside_bool
971 % -- Hook into the beginning and ending of the tblr environment -----
972 \AddToHook{env/tblr/begin}{\bool_set_true:N \g_@@_tblr_inside_bool}
973 \AddToHook{env/tblr/end}{\bool_set_false:N \g_@@_tblr_inside_bool}
```

### 3.2.10 Custom table definition

**Base Table Theme** Defines the shared templates and outer settings used by all table themes. The table font size is established as an ambient declaration here instead of through a `rows={font=...}` property. A more specific cell property such as `font=\bfseries` replaces a row font property, but it inherits an ambient `\footnotesize`; an explicit size in the cell property can still override the default.

```
974 % Reduce tabularray's default 1.5\bigskipamount above every generated table.
975 % Change presep here to adjust the gap before tables printed by \printTable.
976 \SetTblrOuter[tblr]{label=none,entry=none,presep=4pt}
977 % For long tables:
978 \cs_new_protected:Npn \mytblr_basecode: {
979   \footnotesize
980   % Continuous head/footer templates (use ~ for spaces)
981   \DeclareTblrTemplate {conthead-text}{default}{%
982     \normalfont\color{tableContFootHead}%
983     \sffamily\footnotesize%
984     \ldots~continuing~from~previous~page.%
985   }
986   \DeclareTblrTemplate {contfoot-text}{default}{%
987     \normalfont\color{tableContFootHead}%
988     \sffamily\footnotesize%
989     Continue~on~the~following~page~\ldots%
990   }
991   % Caption continuation uses conthead
992   \DeclareTblrTemplate {capcont}{default}{%
993     \UseTblrTemplate{conthead-text}{default}%
994   }
995   % Keep all text rendered below a table at least at footnote size.
996   \SetTblrStyle{note-tag}{font=\footnotesize}
997   \SetTblrStyle{note-sep}{font=\footnotesize}
998   \SetTblrStyle{note-text}{font=\footnotesize}
999   \SetTblrStyle{remark-tag}{font=\footnotesize}
1000  \SetTblrStyle{remark-sep}{font=\footnotesize}
1001  \SetTblrStyle{remark-text}{font=\footnotesize}
1002  % Left-align tables
1003  \RenewDocumentCommand \TblrAlignLeft {} {\RaggedRight}%
1004  % Common outer settings
1005 }
```

**Table themes** Three named `tblr` themes are provided. All inherit the shared `\mytblr_basecode: helper` (continuous head/footer templates, left alignment) via a direct call at theme definition time.

**plain:** minimal two-rule + alternating-row look used for simple supplementary tables (e.g. the direct-costs breakdown).

```
1006 \NewTblrTheme{plain}{
1007   \mytblr_basecode:
1008   % plain-only inner tweaks:
1009   \SetTblrInner{
1010     % Keep row metrics independent of descenders such as p, q, f.
1011     stretch = 1,
1012     rowsep = .667pt,
1013     row{even}={bg=tableRows},
1014     width=\linewidth,
1015     hline{1,Z}={1pt,fg=tableOuterLines},
1016   }
1017 }
```

**main:** the full-featured style used by all DFG data tables. Adds a styled first-row header (blue background, bold sans-serif text), a midrule below row 1, caption fonts, and row continuation labels for long tables that span multiple pages.

```
1018 \RenewDocumentCommand \TblrAlignLeft {} {\RaggedRight}
```

```

1019 \NewTblrTheme{main}{
1020   \mytblr_basecode:
1021   % main-only styles & inner grid:
1022   \SetTblrStyle{caption-tag}{font=\bfseries\footnotesize\sfamily,tableCaption}
1023   \SetTblrStyle{caption-text}{tableCaption,
1024     font=\footnotesize}
1025   \SetTblrInner{%
1026     row{odd}={bg=tableRows},
1027     width=\linewidth,
1028     hline{1,Z}={1pt,fg=tableOuterLines},
1029     rowhead      = 1,
1030     width        = \textwidth,
1031     hline{1,Z}   = {
1032       1pt,
1033       fg =tableOuterLines
1034     },
1035     hline{2} = {1pt, fg=tableOuterLines}, % midrule
1036     % Keep row metrics independent of descenders such as p, q, f.
1037     stretch  = .9,
1038     rowsep    = .5pt,
1039     row{1}    = {
1040       bg      = tableHeadingsBG,
1041       fg      = tableHeadingsFont,
1042       font    = \bfseries,
1043       align   = {c},
1044       valign  = {t},
1045       guard
1046     },
1047   }%
1048   % \SetTblrInner{
1049   %   rows={ht=.5\baselineskip},
1050   %   rowsep      = 0pt,
1051   % }
1052 }

```

**requestedFundingStaff:** caption styling for the staff roster without a table-wide row background. This lets the roster mark individual non-applicable cells with the `tableNoValue` background.

```

1053 \NewTblrTheme{requestedFundingStaff}{
1054   \mytblr_basecode:
1055   \SetTblrStyle{caption-tag}{font=\bfseries\footnotesize\sfamily,tableCaption}
1056   \SetTblrStyle{caption-text}{tableCaption,\footnotesize}
1057 }

```

A generic long-table environment. Its second argument supplies additional `tabularray` options and defaults to an empty option list.

```

1058 \NewDocumentEnvironment{TableEnv}{ m O{} m m }
1059 {
1060   % #1: colspec
1061   % #2: further options
1062   % #3: caption
1063   % #4: label
1064   \vspace*{-1.5\baselineskip}%
1065   \DefTblrTemplate{firsthead}{default}%
1066   {\addtocounter{table}{-1}%
1067     \captionof{table}{\InsertTblrText{entry}}%
1068     {\InsertTblrText{caption}\vspace*{-1.5em}}}%
1069   \begin{tblr}{%
1070     % expand=\tblrbody,
1071     theme=main,
1072     label  ={\#4},
1073     caption={\#3},
1074     long
1075   }{%
1076     colspec ={\#1},
1077     row{2-Z}={font=\RaggedRight},
1078     rowhead = 1, %<- first row is head
1079     #2 %<- in case we need further adjustments

```

```

1080   }
1081 }
1082 {\end{tblr}}

```

At the final part of projects the costs must be listed more granularly. Keep the optional heading and the unbreakable table in one minipage, so the heading cannot be left alone at a page boundary.

```

1083 \NewDocumentEnvironment{FundingDirectCostsTable}{O{}}
1084 {\par\noindent
1085   \begin{minipage}{\linewidth}
1086   \tl_if_blank:nF {#1}
1087     {\noindent\textbf{\sffamily#1}\par}
1088   \begin{tblr}{%
1089     theme=plain, label=none, entry=none}{
1090     colspec={
1091       X[t]
1092       t{.5cm,halign={right}}
1093       Q[t,si={table-format=9}]
1094     },
1095   }
1096 }
1097 {\end{tblr}}
1098 \end{minipage}\par}
1099
1100 \RequirePackage{caption}
1101 \captionsetup{%
1102   % format=llapx,
1103   hypcap=false,
1104   format=plain,
1105   singlelinecheck=off,
1106   labelsep={colon}, % saving space
1107   %justification=RaggedRight,
1108   font={footnotesize,sf},
1109   labelfont={
1110     sf,
1111     bf, % bold face
1112   }
1113 }
1114 % KOMA's caption name also applies to figures boxed by hvFloat.
1115 \renewcaptionname{english}{\figurename}{Fig.}
1116 \RequirePackage{pgfgantt}
1117 \RequirePackage{placeins}
1118 \RequirePackage{hvfloat} % load after tabulararray!!
1119 \hvFloatSet{capPos=bottom,capVPos=top,floatPos=!hb}% this are the default values.
1120 \RequirePackage{marginalia}
1121 \marginaliasetup{
1122   xsep=0pt,
1123   width=13mm,
1124   style=\raggedleft\footnotesize,
1125   pos=auto,
1126 }
1127 \bool_if:NTF \l_@@_class_cv_bool
1128 {
1129   \tl_set_eq:NN \l_@@_custom_biblatexstyle_active_tl
1130     \l_@@_custom_biblatexstyle_cv_tl
1131   \tl_set_eq:NN \l_@@_custom_biblatexfeatures_active_tl
1132     \l_@@_custom_biblatexfeatures_cv_tl
1133 }
1134 {
1135   \tl_set_eq:NN \l_@@_custom_biblatexstyle_active_tl
1136     \l_@@_custom_biblatexstyle_proposal_tl
1137   \tl_set_eq:NN \l_@@_custom_biblatexfeatures_active_tl
1138     \l_@@_custom_biblatexfeatures_proposal_tl
1139 }
1140 \RequirePackage[
1141   backend=biber,
1142   % using the most common style and also saving space.

```

```

1143 % style=ext-numeric, % taken from biblatex-ext
1144 % just in case we want to switch the style.
1145 % style=ext-alphabetic,
1146 %style=ext-authornumber-ecomp,
1147 style=\l_@@_custom_biblatexstyle_active_tl,
1148 %introcite=label,
1149 autocite=inline,
1150 defernumbers=true, % reset numbered bibliography for each chapter
1151 giveninits=true, % abbreviate the first names
1152 maxcitenames=1,
1153 mincitenames=1,
1154 maxbibnames=99, % show up to 6 authors of an bib entry (et al. thereafter)
1155 %nohashothers=true,
1156 %uniquelist=true,
1157 %uniquename=allfull,
1158 %labeldatepartes=true
1159 \l_@@_custom_biblatexfeatures_active_tl
1160 ]{biblatex}

```

In final documents, biblatex-ext-oa can mark open-access publications directly in the bibliography. Draft documents do not load the package, so they avoid DOI API checks and related warnings. The DOI API backend is useful, but biblatex-ext-oa-doiapi and the doiapi option can only be used with LuaLaTeX. With LuaTeX binaries from version 1.17.0 onwards, the LuaSocket module `socket.http` is exposed only when LuaTeX is started with the command-line option `--socket`. If we always passed `doiapi=true` in final mode, a normal final compile without `--socket` would abort while loading biblatex-ext-oa-doiapi.

After a user opts in with a contact address, the guard asks LuaTeX whether `require("socket.http")` succeeds. The result is written back into the temporary expl3 string `\l_tmpa_str` as the literal text `true` or `false`. The Lua code is written without TeX-relevant whitespace, because expl3 ignores spaces while tokenising this part of the class source; semicolons keep the Lua syntax unambiguous after docstrip has generated the `.cls` file.

Automatic lookup is enabled only when LuaSocket is available and the user has supplied a non-empty `doiAPIMail`<sup>→P.33</sup>. The address is passed to `\SetDOIAPIMail`; the class never sends a placeholder or maintainer address on behalf of its users. If either prerequisite is missing, the class emits a specific warning and loads biblatex-ext-oa with `doiapi=false` so manual BibTeX annotations such as `doi+an:default = {openaccess}` continue to work.

The TikZ symbol package draws the open-access symbols. The `oanet` symbol is the open-access symbol from open-access.net (<https://open-access.net/>), logo by Medien + Design, Center for Digital Systems, Competence Center for E-Learning and Multimedia, Freie Universität Berlin, CC BY 4.0 (<https://creativecommons.org/licenses/by/4.0/>).

```

1161 \cs_new_protected:Npn \l_@@_biblatex_oa_load_without_api:
1162 {
1163   \RequirePackage[
1164     doiapi=false,
1165     symbolpackage=tikz,
1166     symbol=oanet]{biblatex-ext-oa}
1167 }
1168
1169 \bool_if:NT \l_@@_class_final_bool
1170 {
1171   \tl_if_blank:VTF \l_@@_custom_doi_api_mail_tl
1172   {
1173     \msg_info:nn { dfg } { biblatex-ext-oa-doiapi-email-missing }
1174     \l_@@_biblatex_oa_load_without_api:
1175   }
1176   {
1177     \str_set:Nx \l_tmpa_str
1178     {
1179       \directlua
1180       {if (pcall(require,"socket.http"))then;tex.sprint("true");else;tex.sprint("false");end}
1181     }
1182     \str_if_eq:VnTF \l_tmpa_str { true }
1183     {
1184       \RequirePackage[
1185         doiapi=true,
1186         symbolpackage=tikz,
1187         symbol=oanet]{biblatex-ext-oa}
1188       \ExecuteBibliographyOptions{openaccess=doiapi}
1189       \exp_args:NV \SetDOIAPIMail \l_@@_custom_doi_api_mail_tl

```

```

1190     }
1191     {
1192         \msg_warning:nn { dfg } { biblatex-ext-oa-doiapi-unavailable }
1193         \@@_biblatex_oa_load_without_api:
1194     }
1195 }
1196 }
1197 % A project-text build with publication processing disabled must not require a
1198 % matching biber run merely to keep inline source references readable. Replace
1199 % the common single-citation commands with quiet key markers; enabling
1200 % |fastcompile-project-show-publications| restores biblatex's normal commands unchanged.
1201 \bool_if:nTF
1202 {
1203     \l_@@_class_fastcompile_project_bool
1204     && ! \l_@@_class_fastcompile_project_show_publications_bool
1205 }
1206 {
1207     % Do not register bibliography data sources or parse a stale full-build
1208     % .bbl. Keep biblatex's ordinary initialisation and refsection setup, but
1209     % replace its data-file stage with the minimum empty-section state.
1210     \cs_set_protected:Npn \blx@bblfile
1211     {
1212         \blx@secinit
1213         \blx@generate@bbl@mdfivesum@notfound
1214         \global\togglefalse{blx@bbldone}
1215         \csnumgdef{blx@labelnumber@the\c@refsection}{0}
1216     }
1217     \NewDocumentCommand{\dfgFastCitation}{m}
1218     { { \color{black-50}\scriptsize\ttfamily [#1]} }
1219     \RenewDocumentCommand{\autocite}{s o o m}
1220     { \dfgFastCitation{#4} }
1221     \RenewDocumentCommand{\cite}{s o o m}
1222     { \dfgFastCitation{#4} }
1223     \RenewDocumentCommand{\parencite}{s o o m}
1224     { \dfgFastCitation{#4} }
1225     \RenewDocumentCommand{\textcite}{s o o m}
1226     { \dfgFastCitation{#4} }
1227     \RenewDocumentCommand{\footcite}{s o o m}
1228     { \dfgFastCitation{#4} }
1229     \RenewDocumentCommand{\smartcite}{s o o m}
1230     { \dfgFastCitation{#4} }
1231     \RenewDocumentCommand{\nocite}{m} { }
1232     % Ignore citation requests restored from auxiliary files produced by a full
1233     % proposal build. The fast source commands above do not write replacements.
1234     \cs_set_protected:Npn \abx@aux@cite #1#2 { }
1235     \cs_set_protected:Npn \abx@aux@segm #1#2#3 { }
1236     \cs_set_protected:Npn \abx@aux@nocite #1#2 { }
1237     % This mode deliberately has no bibliography work, so do not advertise a
1238     % biber rerun in the end-of-document logreq record.
1239     \AtEndDocument
1240     {
1241         \global\let\blx@rerun@biber\relax
1242         \global\togglefalse{blx@runbiber}
1243     }
1244 }
1245 {
1246     \addbibresource{bib/dfg-base.bib}
1247     % The conversion workflow stores bibliography entries that still need
1248     % review separately. Load that file when present without requiring it for
1249     % normal template installations.
1250     \IfFileExists{bib/conversion-missing.bib}
1251     { \addbibresource{bib/conversion-missing.bib} }
1252     {}
1253     \addbibresource{bib/dfg-strings.bib}
1254 }

```

The `\AtEveryBibitem` hook strips fields that are irrelevant for a funding proposal (URL, month, note, ISSN/ISBN,

language) from every entry, keeping the reference list compact. These fields are cleared during output only; the .bib source files are unchanged. A second part of the hook selects the full-entry bold face. The project bibliography wrapper sets a local keyword only while it prints a project list; biblatex groups each item, so the font change does not leak into the following entry. The hook runs after \bibfont and before the entry's fields are printed.

```

1255 \tl_new:N \l_@@_bibentry_highlight_keyword_tl
1256 \AtEveryBibitem{
1257   \clearfield{url}
1258   \clearfield{month}
1259   \clearfield{note}
1260   \clearfield{issn}
1261   \clearfield{isbn}
1262   \clearlist{language}
1263   \tl_if_empty:NF \l_@@_bibentry_highlight_keyword_tl
1264   {
1265     \exp_args:NV \ifkeyword \l_@@_bibentry_highlight_keyword_tl
1266     {\bfseries}{}
1267   }}

```

### 3.2.11 Shared authorship annotations

The `annotate` field in .bib entries supports two special values: `equal` (for equal-first-author contributions) and `sharedlast` (for shared last authorship). When present, `\mkbibnamefamily` appends an asterisk `*` after the family name via `\addendumasterisk`. The asterisk is only printed inside bibliography environments (`\ifbibliography`), not in inline citations.

Use in .bib: `add addendum = equal` or `addendum = sharedlast` (no `{}`) to the affected author's annotation field.

```

1268 \newcommand{\addendumasterisk}{\ifbibliography{*}{} }
1269 \newcommand{\addendumhashtag}{\ifbibliography{\textsuperscript{\#}{} }}
1270 % There is also the possibility that authors share the last authorship.
1271 % with the bib-string 'lastShared' we can get it work.
1272 \renewcommand*{\mkbibnamefamily}[1]{%
1273   \ifitemannotation{equal} % first check for equal contribution
1274   {#1\addendumasterisk}% add a * for those authors
1275   {
1276     % Then we check for "shared last authorship"
1277     \ifitemannotation{sharedlast}%
1278     {#1\addendumhashtag}% adding a symbol
1279     {#1}% do nothing for any one else.
1280   }}
1281 % \subsubsection{datatool: database backend}
1282 %
1283 % \pkg{datatool} provides the |DTL*| commands that are the actual in-memory
1284 % database engine behind the keyset-based metadata system. \pkg{csquotes}
1285 % is loaded just before it because \cs{blockquote} is used in the
1286 % documentation abstract and the class patches \cs{mkccitation} to suppress
1287 % the extra parentheses that csquotes adds around \cs{autocite} results.
1288 \RequirePackage{csquotes}
1289 \renewcommand{\mkccitation}[1]{ (#1) }
1290 \RequirePackage{datatool}

```

loading tikz at least for the thumb index.

```

1291 \RequirePackage{tikz}
1292 \ExplSyntaxOff
1293 \usetikzlibrary{calc}
1294 \usetikzlibrary{shapes.misc}
1295 \usetikzlibrary{patterns,patterns.meta}
1296 \ExplSyntaxOn

```

loading these two packages last

```

1297 \RequirePackage{hyperref}
1298 \RequirePackage{cleveref}
1299 % enumitem creates a dedicated counter for each custom-list level but does not
1300 % expose the parent relation to cleveref. Register that relation so nested
1301 % work-package references sort by parent first and ranges never cross parents.
1302 \apptocmd{\cref@resetby}
1303   {\cref@ifstreql{#1}{workpackagesii}{\def#2{workpackagesi}}{}}

```

```

1304 {}
1305 {\PackageError{dfg}
1306   {Unable~to~register~the~nested~work~package~counter}
1307   {Nested~work~package~references~may~be~sorted~incorrectly.}}
1308 \crefname{workpackagesi}{\color{referenceWP}\textbf{WP}}{\color{referenceWP}\textbf{WPs}}
1309 \creflabelformat{workpackagesi}{\color{referenceWP}#2\textbf{#1}#3}
1310 \crefname{workpackagesii}{\color{referenceWP}\textbf{WP}}{\color{referenceWP}\textbf{WPs}}
1311 \creflabelformat{workpackagesii}{\color{referenceWP}#2\textbf{#1}#3}
1312
1313 \crefname{aimsi}{\bfseries\color{referenceAim}Aim}{\bfseries\color{referenceAim}Aims}
1314 \creflabelformat{aimsi}{\color{referenceAim}#2\color{referenceAim}\bfseries#1\color{referenceAim}#3}
1315
1316
1317
1318 % \subsubsection{Preamble end: global metadata extraction and hyperref}
1319 %
1320 % The \cs{AfterEndPreamble} hook fires after all user preamble code
1321 % (including |dfg-customization.tex| and all \cs{addEntry} calls) but
1322 % before \cs{begin}|{document}|. This is the earliest point at which
1323 % the |meta| database is guaranteed to be fully populated.
1324 %
1325 % The block extracts the five core CRC fields into named macros
1326 % (\cs{theCRCName}, \cs{theCRCNumber}, \cs{theCRCAffiliation}, etc.)
1327 % that are used in headers, footers, and the hyperref PDF metadata. It
1328 % treats |meta.ref-affiliation-id| as a comma-separated list: the public
1329 % affiliation macros contain human-readable name and location lists, while
1330 % \cs{theApplicantID} retains the normalized id list for database filters. It
1331 % also derives \cs{theFundingPeriodNumeralPrevious} by subtracting 1 from
1332 % \cs{theFundingPeriodNumeral}, which is used in the gender equality tables
1333 % to reference the previous funding period.
1334 %
1335 % The \cs{hypersetup} call here (rather than in the preamble) avoids
1336 % needing the user to duplicate CRC metadata in a separate hypersetup block.
1337 \clist_new:N \l_@@_applicant_affiliation_id_clist
1338 \seq_new:N \l_@@_applicant_affiliation_name_seq
1339 \seq_new:N \l_@@_applicant_affiliation_location_seq
1340 \seq_new:N \l_@@_other_applicant_affiliation_name_seq
1341 \tl_new:N \l_@@_applicant_affiliation_name_tl
1342 \tl_new:N \l_@@_applicant_affiliation_location_tl
1343
1344 \cs_new_protected:Npn \@@_set_applicant_affiliation_metadata:
1345 {
1346   \DTLifnulloreempty{\theApplicantID}
1347   { \clist_clear:N \l_@@_applicant_affiliation_id_clist }
1348   {
1349     \clist_set:Nx \l_@@_applicant_affiliation_id_clist
1350     { \theApplicantID }
1351     \clist_remove_duplicates:N \l_@@_applicant_affiliation_id_clist
1352   }
1353   \tl_set:Nx \l_tmpa_tl
1354   { \clist_use:Nn \l_@@_applicant_affiliation_id_clist {,} }
1355   \cs_set:Npx \theApplicantID { \exp_not:V \l_tmpa_tl }
1356   \cs_set_eq:NN \theAffiliationValue \theApplicantID
1357   \seq_clear:N \l_@@_applicant_affiliation_name_seq
1358   \seq_clear:N \l_@@_applicant_affiliation_location_seq
1359   \clist_map_inline:Nn \l_@@_applicant_affiliation_id_clist
1360   {
1361     \DTLifdbexists{affiliation}
1362     {
1363       \DTLgetvalueforkey{\l_@@_applicant_affiliation_name_tl}
1364       {name}{affiliation}{id}{##1}
1365       \DTLgetvalueforkey{\l_@@_applicant_affiliation_location_tl}
1366       {location}{affiliation}{id}{##1}
1367     }
1368   }
1369   \tl_set:Nn \l_@@_applicant_affiliation_name_tl {##1}

```

```

1370     \tl_clear:N \l_@@_applicant_affiliation_location_tl
1371 }
1372 \DTLifnulllorempty{\l_@@_applicant_affiliation_name_tl}
1373 { \tl_set:Nn \l_@@_applicant_affiliation_name_tl {##1} }
1374 { }
1375 \tl_set:Ne \l_tmpb_tl
1376 {
1377     \exp_not:N \dfgShowTag{##1}{name}
1378     {\exp_not:V \l_@@_applicant_affiliation_name_tl}[affiliation]
1379 }
1380 \seq_put_right:NV \l_@@_applicant_affiliation_name_seq \l_tmpb_tl
1381 \DTLifnulllorempty{\l_@@_applicant_affiliation_location_tl}
1382 { }
1383 {
1384     \seq_if_in:NVF \l_@@_applicant_affiliation_location_seq
1385     \l_@@_applicant_affiliation_location_tl
1386     {
1387         \tl_set:Ne \l_tmpb_tl
1388         {
1389             \exp_not:N \dfgShowTag{##1}{location}
1390             {\exp_not:V \l_@@_applicant_affiliation_location_tl}
1391             [affiliation]
1392         }
1393         \seq_put_right:NV \l_@@_applicant_affiliation_location_seq
1394         \l_tmpb_tl
1395     }
1396 }
1397 }
1398 \cs_set:Npn \theCRCAffiliation
1399 {
1400     \seq_use:Nnnn \l_@@_applicant_affiliation_name_seq
1401     {~and~} {,~} {,~and~}
1402 }
1403 \cs_set:Npn \theCRCAffiliationLocation
1404 {
1405     \seq_use:Nnnn \l_@@_applicant_affiliation_location_seq
1406     {~and~} {,~} {,~and~}
1407 }
1408 \seq_set_eq:NN \l_@@_other_applicant_affiliation_name_seq
1409 \l_@@_applicant_affiliation_name_seq
1410 \seq_pop_left:NnF \l_@@_other_applicant_affiliation_name_seq \l_tmpa_tl
1411 { \tl_clear:N \l_tmpa_tl }
1412 \cs_set:Npn \theCRCCoordinatingAffiliation
1413 { \seq_item:Nn \l_@@_applicant_affiliation_name_seq {1} }
1414 \cs_set:Npn \theCRCOtherApplicantAffiliations
1415 {
1416     \seq_use:Nnnn \l_@@_other_applicant_affiliation_name_seq
1417     {~and~} {,~} {,~and~}
1418 }
1419 }
1420
1421 \NewExpandableDocumentCommand{\dfgApplicantAffiliationsTF}{m m}
1422 {
1423     \int_compare:nNnTF
1424     { \clist_count:N \l_@@_applicant_affiliation_id_clist } > {1}
1425     {#2}
1426     {#1}
1427 }
1428
1429 \NewExpandableDocumentCommand{\dfgOtherApplicantAffiliationsTF}{m m}
1430 {
1431     \int_compare:nNnTF
1432     { \clist_count:N \l_@@_applicant_affiliation_id_clist } > {2}
1433     {#2}
1434     {#1}
1435 }

```

```

1436
1437 \NewDocumentCommand{\dfgCRCName}{}
1438 { \dfgShowTag{crc}{name}{\theCRCName}[meta] }
1439 \NewDocumentCommand{\dfgCRCNameAddon}{}
1440 { \dfgShowTag{crc}{nameAddon}{\theCRCNameAddon}[meta] }
1441 \NewDocumentCommand{\dfgCRCNumber}{}
1442 { \dfgShowTag{crc}{number}{\theCRCNumber}[meta] }
1443 \NewDocumentCommand{\dfgFundingPeriodText}{}
1444 { \dfgShowTag{crc}{fundingPeriodText}{\theFundingPeriodText}[meta] }
1445 \NewDocumentCommand{\dfgFundingPeriodNumeral}{}
1446 { \dfgShowTag{crc}{fundingPeriodNumeral}{\theFundingPeriodNumeral}[meta] }
1447 \NewDocumentCommand{\dfgFundingYear}{m}
1448 {
1449   \dfgShowTag{crc}{fundingYear#1}
1450   {
1451     \int_case:nnF {#1}
1452     {
1453       {1}{\tmpYearOne}
1454       {2}{\tmpYearTwo}
1455       {3}{\tmpYearThree}
1456       {4}{\tmpYearFour}
1457       {5}{\tmpYearFive}
1458     }
1459     {#1}
1460   } [meta]
1461 }
1462 \NewDocumentCommand{\dfgFundingYearPrevious}{m}
1463 {
1464   \dfgShowTag{crc}{fundingYearPrevious#1}
1465   {
1466     \int_case:nnF {#1}
1467     {
1468       {1}{\tmpYearPreviousOne}
1469       {2}{\tmpYearPreviousTwo}
1470       {3}{\tmpYearPreviousThree}
1471       {4}{\tmpYearPreviousFour}
1472       {5}{\tmpYearPreviousFive}
1473     }
1474     {#1}
1475   } [meta]
1476 }
1477
1478 \AfterEndPreamble{
1479   \bool_if:NTF \l_@@_class_fastcompile_project_bool
1480   {
1481     \clist_clear:N \l_@@_applicant_affiliation_id_clist
1482     \cs_set:Npn \theApplicantID { }
1483     \cs_set:Npn \theCRCName { CRC~project~draft }
1484     \cs_set:Npn \theCRCNameAddon { }
1485     \cs_set:Npn \theCRCNumber { draft }
1486     \cs_set:Npn \theFundingPeriodNumeral { 1 }
1487     \cs_set:Npn \theFundingPeriodText { draft }
1488     \cs_set:Npn \theAffiliationValue { }
1489     \cs_set:Npn \theCRCAffiliation { }
1490     \cs_set:Npn \theCRCAffiliationLocation { }
1491     \cs_set:Npn \theCRCCoordinatingAffiliation { }
1492     \cs_set:Npn \theCRCOtherApplicantAffiliations{ }
1493     \cs_set:Npn \tmpYearOne { Year~1 }
1494     \cs_set:Npn \tmpYearTwo { Year~2 }
1495     \cs_set:Npn \tmpYearThree { Year~3 }
1496     \cs_set:Npn \tmpYearFour { Year~4 }
1497     \cs_set:Npn \tmpYearFive { Year~5 }
1498     \cs_set:Npn \tmpYearPreviousOne { Previous~year~1 }
1499     \cs_set:Npn \tmpYearPreviousTwo { Previous~year~2 }
1500     \cs_set:Npn \tmpYearPreviousThree { Previous~year~3 }
1501     \cs_set:Npn \tmpYearPreviousFour { Previous~year~4 }

```

```

1502     \cs_set:Npn \tmpYearPreviousFive           { Previous~year~5 }
1503 }
1504 {
1505   \DTLgetvalueforkey{\theApplicantID}{ref-affiliation-id}{meta}{id}{crc}%
1506   \DTLgetvalueforkey{\theCRCName}{name}{meta}{id}{crc}% getting Title of CRC
1507   \DTLgetvalueforkey{\theCRCNameAddon}{nameAddon}{meta}{id}{crc}% getting name addon of CRC
1508   \DTLgetvalueforkey{\theCRCNumber}{number}{meta}{id}{crc}% getting number of CRC
1509   \DTLgetvalueforkey{\theFundingPeriodNumeral}{fundingPeriodNumeral}{meta}{id}{crc}% getting period of CRC
1510   \DTLgetvalueforkey{\theFundingPeriodText}{fundingPeriodText}{meta}{id}{crc}% getting period of CRC
1511   \@@_set_applicant_affiliation_metadata:
1512   \DTLgetvalueforkey{\tmpYearOne} {fundingYear1}{meta}{id}{crc}%
1513   \DTLgetvalueforkey{\tmpYearTwo} {fundingYear2}{meta}{id}{crc}%
1514   \DTLgetvalueforkey{\tmpYearThree}{fundingYear3}{meta}{id}{crc}%
1515   \DTLgetvalueforkey{\tmpYearFour} {fundingYear4}{meta}{id}{crc}%
1516   \DTLgetvalueforkey{\tmpYearFive} {fundingYear5}{meta}{id}{crc}%
1517
1518   \DTLgetvalueforkey{\tmpYearPreviousOne} {fundingYearPrevious1}{meta}{id}{crc}%
1519   \DTLgetvalueforkey{\tmpYearPreviousTwo} {fundingYearPrevious2}{meta}{id}{crc}%
1520   \DTLgetvalueforkey{\tmpYearPreviousThree}{fundingYearPrevious3}{meta}{id}{crc}%
1521   \DTLgetvalueforkey{\tmpYearPreviousFour} {fundingYearPrevious4}{meta}{id}{crc}%
1522   \DTLgetvalueforkey{\tmpYearPreviousFive} {fundingYearPrevious5}{meta}{id}{crc}%
1523 }
1524
1525
1526 \providecommand{\thisCRC}
1527 {CRC\,\texorpdfstring
1528   {\dfgShowTag{crc}{number}}{\theCRCNumber}[meta]}
1529 {\theCRCNumber}\xspace}
1530 % Shared implementation for the user-level \CRC and \TRR commands.
1531 % #1 is the star boolean, #2 the optional title, #3 the printed programme
1532 % type, and #4 the CRC/TRR number to print and compare with the current CRC.
1533 % Current CRCs use \thisCRC in the unstarred form; starred current references
1534 % include the CRC title from the metadata unless an explicit title is given.
1535 % External CRCs/TRRs always print the requested number and add the optional
1536 % title when one is supplied.
1537 \cs_new_protected:Npn \@@_crc_print:nnnn #1 #2 #3 #4
1538 {
1539   \tl_if_eq:NnTF \theCRCNumber {#4}
1540   {
1541     \IfBooleanTF{#1}
1542     {
1543       #3\, #4
1544       \IfValueTF{#2}
1545       { \ \textit{#2} }
1546       { \ \textit{\dfgShowTag{crc}{name}}{\theCRCName}[meta]} }
1547     }
1548     {
1549       \thisCRC
1550       \IfValueTF{#2}
1551       { \ \textit{#2} }
1552     }
1553   }
1554   {
1555     #3\, #4
1556     \IfValueTF{#2}
1557     { \ \textit{#2} }
1558   }
1559 }
1560
1561 % User-level wrappers around \@@_crc_print:nnnn. They differ only in the
1562 % printed programme type.
1563 \NewDocumentCommand{\CRC}{s o m}
1564 {
1565   \@@_crc_print:nnnn {#1} {#2} {CRC} {#3}
1566 }
1567

```

```

1568 \NewDocumentCommand{\TRR}{s o m}
1569 {
1570   \@_crc_print:nnnn {#1} {#2} {CRC/TRR} {#3}
1571 }
1572 %\DTLgetvalueforkey{\theNameSpokespersonPosition}{position}{VIP}{specialRole}{spokesperson}% getting
1573 %\DTLgetvalueforkey{\theNameSpokespersonName}{name}{VIP}{specialRole}{spokesperson}% getting Title o
1574 %\DTLgetvalueforkey{\theNameSpokespersonNameFirst}{nameFirst}{VIP}{specialRole}{spokesperson}% getti
1575 \newcommand{\theFundingPeriodNumeralPrevious}{%
1576   \number\numexpr\theFundingPeriodNumeral-1\relax%
1577 }
1578 % hyperref options
1579 \hypersetup{
1580   % unicode = true,
1581   pdftitle = {\theCRCName.\space\theCRCNameAddon}, % - title (PDF meta)
1582   pdfsubject = {\crc}, % - subject (PDF meta)
1583   pdfauthor = {CRC\,\theCRCNumber~ \theCRCName}, % - author (PDF meta)
1584   % pdfauthorshorttitle = {\theNameSpokespersonPosition},
1585   % pdfcopyright = {Copyright (c) \thisCRC All rights reserved.},
1586   pdfhighlight = /N,
1587   pdfdisplaydoctitle = true,
1588   pdflang = {en},
1589   % pdfcaptionwriter = {\theNameSpokespersonNameFirst \theNameSpokespersonName},
1590   % pdfencoding = auto,
1591   pdfproducer = {LuaLaTeX},
1592   % pdflicenseurl = {http://creativecommons.org/licenses/by-nc-nd/4.0/},
1593   % plainpages = false, % -
1594   colorlinks = true, % -Colours links instead of ugly boxes
1595   urlcolor = blue, %Colour for external hyperlinks
1596   linkcolor = black,%rwthBlue, %Colour of internal links
1597   citecolor = black, %Colour of citations
1598   % linkbordercolor=rwthRed,
1599   linktoc = page,
1600   pdfborder = {0 0 0}, % -
1601   breaklinks = true, % - allow line break inside links
1602   bookmarksnumbered = true, %
1603   bookmarksopenlevel = 1,
1604   bookmarksopen = true, %
1605   bookmarksdepth = 3,
1606   % final = true, % = true, only for web documents.
1607   % hypertexnames = false,
1608   % pageanchor=false,
1609   %https://tex.stackexchange.com/questions/623377/how-to-increase-the-setting-dest-names-size-
   using-lualatex-on-tl-2021
1610 }
1611 }

```

### 3.2.12 \changeSettings

`\changeSettings{⟨key=value,...⟩}` is the public command used to customise the document class beyond its defaults. It delegates directly to `\keys_set:nn{dfg/custom}{\meta{key=value,...}}`.

It should be called inside `preamble/dfg-customization.tex` so that all customisations are centralised. Examples:

#### Typical changeSettings call

```

% \changeSettings{
%   font = Arial,
%   crcLogoPath = img/logo-crc,
%   affiliationLogoPath = img/logo-affiliation,
%   doiAPIMail = researcher@example.org,
%   projectPIOOncePerSection = true,
%   collaborationAreaColors = {A=projectA,B=projectB,Q=projectQ},
%   collaborationAreaPalette = {orange,violet,teal,brown},
%   salary@postDoc = 90000,
%   animalHousing@mouse = 0.80,

```

```

% thumbindex = false,
% biblatexstyleCV = ext-numeric-comp,
% biblatexstyleFeatureCV = {sorting=none},
% biblatexstyleProposal = ext-authoryear-ecomp,
% biblatexstyleFeatureProposal = {dashed=false},
% color@table@rows = blue-10,
% }
%

```

The command is defined before biblatex is loaded so bibliography package options from the customization file take effect in time.

### 3.2.13 Thumb index implementation

The thumb index is a series of colour tabs printed on the outer margin of each page to help readers navigate between chapters or project sections. Each tab occupies one slot in a vertical grid that repeats with a period equal to `thumbindex@pattern` (default: 10).

**Geometry calculation:** `\thumb_compute_height`: calculates the slot height as  $(\text{\cs{paperheight}} - \text{topmargin} - 1)$ . In the default auto mode, the margins are derived from the current text-block position and `\textheight`, so the slot height is  $\text{\textheight} / \text{pattern}$ . The calculation runs when the tab is drawn, allowing later layout changes to affect the thumb-index grid.

**Placement:** `\thumb_place_node:nnnn` draws an absolutely-positioned TikZ node on the current page using `remember picture, overlay`. Its reference point is (current page.north west/east) – followed by  $(0, \text{topmargin} + \text{height} * (\text{index} - 1/2))$ , centering each tab in its slot. The rectangular tab has 7pt rounded corners and is shifted 7pt past the page boundary, clipping the outer corners while retaining the configured visible depth. Its label is rotated 90 degrees in opposite directions on facing pages so the tab stays within the marginal column.

**Call pattern:** `\printThumbIndex[⟨colour⟩]{⟨label⟩}` increments the slot counter, wrapping at `pattern`, then injects the node into both the header and footer layers via `\lehead/\lohead` so the tab appears on the page regardless of which `scrlayer-scrpage` style is active. The optional colour argument allows project-specific hues (typically the `projectA`, `projectB`, `projectQ` aliases).

`\printThumbIndexOff` clears the header/footer layers to suppress the tab on pages where no thumb index is desired (e.g. the bibliography). `\resetThumbIndex` resets the slot counter so that the next `\printThumbIndex` call starts at the first slot again. This is useful when a manually inserted section should begin a new thumb-index sequence.

```

1612 \int_new:N \l_thumb_index_int
1613 \int_zero:N \l_thumb_index_int

```

The effective margins follow the current text block unless overridden with explicit page-edge dimensions. Calculate them when drawing each tab rather than at class load time, when page geometry may not yet be final.

```

1614 \dim_new:N \l_thumb_height_dim
1615 \dim_new:N \l_thumb_topmargin_dim
1616 \dim_new:N \l_thumb_bottommargin_dim
1617 \cs_new_protected:Npn \thumb_compute_height:
1618 {
1619   \bool_if:NTF \l_@@_custom_thumbindex_topmargin_set_bool
1620   { \dim_set_eq:NN \l_thumb_topmargin_dim
1621     \l_@@_custom_thumbindex_topmargin_dim }
1622   {
1623     \dim_set:Nn \l_thumb_topmargin_dim
1624     { 1in + \voffset + \topmargin + \headheight + \headsep }
1625   }
1626   \bool_if:NTF \l_@@_custom_thumbindex_bottommargin_set_bool
1627   { \dim_set_eq:NN \l_thumb_bottommargin_dim
1628     \l_@@_custom_thumbindex_bottommargin_dim }
1629   {
1630     \dim_set:Nn \l_thumb_bottommargin_dim
1631     {
1632       \paperheight
1633       - ( 1in + \voffset + \topmargin + \headheight + \headsep )
1634       - \textheight
1635     }
1636   }
1637   \dim_set:Nn \l_thumb_height_dim
1638   {

```

```

1639      ( \paperheight - \l_thumb_topmargin_dim
1640        - \l_thumb_bottommargin_dim )
1641      / \l_@@_custom_thumbindexpattern_int
1642    }
1643  }

```

defining now the layout of the thumb index. Be aware of the stripped spaces in the LaTeX3 environment.

```

1644 \tikzset
1645 {
1646   thumb/.style=
1647   {
1648     fill    = thumbIndexBG ,      % colour may be changed later
1649     text    = thumbIndexFont,
1650     minimum~ height = \dim_use:N \l_thumb_height_dim,
1651     minimum~ width  = \dim_eval:n
1652     { \l_@@_custom_thumbindex_width_dim + 7pt },
1653     outer~ sep      = 0pt,
1654     font            = \tl_use:N \l_@@_custom_thumbindex_font_tl,
1655     inner~ sep      = 1mm,
1656   }
1657 }

```

we need a couple of helper commands though. The <even/odd> macros are now tiny wrappers around a single protected function that does the arithmetic in expl3.

```

1658 \cs_new_protected:Npn \thumb_place_node:nnnn #1#2#3#4
1659 {
1660   % #1 = west|east      (anchor direction)
1661   % #2 = shift past the page edge
1662   % #3 = label rotation
1663   % #4 = node contents
1664   \thumb_compute_height:
1665   \begin{tikzpicture}[remember~ picture,overlay]
1666     \node[
1667       thumb,
1668       anchor =#1,
1669       rectangle,
1670       rounded~ corners=7pt,
1671       xshift  =#2
1672     ]
1673     % -----
1674     % absolute position = (current page.north <west/east>) -
1675     %                      (0 , vertical offset)
1676     % The whole thing must be inside $ ... $.
1677     % -----
1678     at
1679     ($ (current~page.north~ #1)~ --
1680       (0,\dim_eval:n{
1681         \l_thumb_topmargin_dim
1682         + \l_thumb_height_dim * (\l_thumb_index_int - 1)
1683         + \l_thumb_height_dim / 2
1684       }) $)
1685     {\rotatebox[origin=c]{#3}{#4}};
1686   \end{tikzpicture}
1687 }
1688
1689 \NewDocumentCommand{\evenpageletterthumb}{m}
1690 { \thumb_place_node:nnnn {west}{-7pt}{90}{#1} }
1691 \NewDocumentCommand{\oddpageletterthumb}{m}
1692 { \thumb_place_node:nnnn {east}{7pt}{-90}{#1} }

```

Now the key command \printThumbIndex.

```

1693 \NewDocumentCommand{\printThumbIndex}{ O{thumbIndexBG} m }
1694 {
1695   % #1 (optional) - colour definition used when no project is given
1696   % #2 (mandatory) - the letter (or any material) to be printed
1697
1698   \bool_if:NT \l_@@_custom_thumbindex_bool

```

```

1699 {
1700   \colorlet{thumbIndexBG}{#1}
1701
1702   % ---- reset index if we have reached the bottom of the column ----
1703   \int_compare:nNnT { \l_thumb_index_int } = { \l_@@_custom_thumbindexpattern_int }
1704   { \int_zero:N \l_thumb_index_int }
1705
1706   % ---- step to the *next* position -----
1707   \int_incr:N \l_thumb_index_int
1708
1709   % ---- actually place the thumb on the current page -----
1710   %   (the same node is put into both the header and the foot, so it
1711   %   appears on the page no matter which page-style you use)
1712   \lehead[\evenpageletterthumb{#2}]{\evenpageletterthumb{#2}}
1713   \lohead[\oddpagelatterthumb{#2}]{\oddpagelatterthumb{#2}}
1714 }
1715 }
1716 \NewDocumentCommand{\resetThumbIndex}{}
1717 {
1718   \int_zero:N \l_thumb_index_int
1719 }
1720 \NewDocumentCommand{\printThumbIndexOff}{}
1721 {
1722   \lehead[]{}
1723   \lohead[]{}
1724 }

```

### 3.2.14 Bold-author mechanism

The DFG requires that the names of all CRC project leaders are printed in bold in every bibliography list so reviewers can immediately identify the investigators' output. This is technically non-trivial because biblatex does not natively support singling out individual author names.

The implementation uses a hash-based approach:

- 1) For each PI, `\addboldnames`<sup>→P.43</sup> is called with their name as it appears in the .bib file (and all common aliases via `name-alias`<sup>→P.13</sup>). Each name is written as a `\misc dataonly` entry to an auxiliary .bib file.
- 2) During the `\AfterPreamble` pass, the cite command `\nhblx@getmethehash` processes each entry and extracts its biblatex internal hash (a fingerprint stable across style changes) into the list `\nhblx@boldhashes`.
- 3) The name wrapper `boldifhashinlist` applies `\mkboldifhashinlist` to every printed author name; if the author's hash appears in the list, the name is wrapped in `\mkbibbold` and coloured with `color@reference@boldAuthor`.

The mechanism is only activated when `emphasizeAuthors=true` (the default). Fallback no-op definitions of `\addboldnames`<sup>→P.43</sup> and `\resetboldnames`<sup>→P.43</sup> are provided via `\providecommand` so that content files compile correctly even if the feature is disabled.

`\addboldnames`<sup>→P.43</sup> should be called in the preamble of both the proposal document and the standalone CV document, typically inside `preamble/dfg-customization.tex`. For displaying certain authors in bold letters, `emphasizeAuthors`<sup>→P.35</sup> (for the switch) and `\addboldnames`<sup>→P.43</sup> (for the addition of authors).

```

1725 \int_new:N \g_@@_boldnames_int
1726 \iow_new:N \g_@@_boldnames_iow
1727 \prop_new:N \g_@@_boldnames_hashes_prop
1728 \tl_new:N \l_@@_boldnames_name_tl
1729
1730 \bool_if:NT \l_@@_custom_emphasize_authors_bool
1731 {
1732   % ----- Auxiliary .bib file -----
1733
1734   \tl_const:Nn \c_@@_boldnames_bibfile_tl { bib/\jobname-boldAuthors.bib }
1735   \iow_open:Nn \g_@@_boldnames_iow { \c_@@_boldnames_bibfile_tl }
1736   \iow_now:Nn \g_@@_boldnames_iow { @comment{Auto-generated~file} }
1737   \AtEndDocument { \iow_close:N \g_@@_boldnames_iow }
1738   \addbibresource{\c_@@_boldnames_bibfile_tl}
1739
1740   % ----- Writing a single name -----
1741   %
1742   % We need:
1743   % - the entry KEY (nhblx@name<N>) fully expanded
1744   % - the AUTHOR field written verbatim (so \"a etc. survive)

```

```

1745 %
1746 % \iow_now:Nn → no expansion
1747 % \iow_now:Nx → full expansion (breaks accents in names)
1748 % \iow_now:Nn + \exp_not:n on the name = best of both via \iow_now:Nx
1749
1750 \cs_new_protected:Npn \@@_boldnames_write:n #1
1751 {
1752   \int_gincr:N \g_@@_boldnames_int
1753   % Stash the name so it survives the x-expansion intact.
1754   \tl_set:Nn \l_@@_boldnames_name_tl { #1 }
1755   \iow_now:Nx \g_@@_boldnames_iow
1756   {
1757     @misc{nhblx@name@\int_use:N \g_@@_boldnames_int,
1758       author~=\exp_not:V \l_@@_boldnames_name_tl},
1759     options~=\{dataonly=true},
1760   }
1761 }
1762 % Schedule hash extraction after biblatex has loaded the entry.
1763 \exp_args:Nx \AfterPreamble
1764 {
1765   \exp_not:N \hbox_set:Nn \exp_not:N \l_tmpa_box
1766   { \exp_not:N \nhblx@getmethehash
1767     { nhblx@name@ \int_use:N \g_@@_boldnames_int } }
1768 }
1769 }
1770
1771 % ----- User-level commands -----
1772
1773 \NewDocumentCommand \addboldnames { m }
1774 { \clist_map_function:nN { #1 } \@@_boldnames_write:n }
1775
1776 \NewDocumentCommand \resetboldnames { }
1777 { \prop_gc_clear:N \g_@@_boldnames_hashes_prop }
1778
1779 % ----- biblatex glue -----
1780
1781 \DeclareNameFormat{nhblx@hashextract}
1782 {
1783   \prop_gput:Nen \g_@@_boldnames_hashes_prop { \thefield{hash} } { }
1784 }
1785
1786 \DeclareCiteCommand{\nhblx@getmethehash}
1787 {}{ \printnames[nhblx@hashextract][1-999]{author} }{}{}
1788
1789 \cs_new_protected:Npn \@@_boldnames_mark:n #1
1790 {
1791   \prop_if_in:NtF \g_@@_boldnames_hashes_prop { \thefield{hash} }
1792   { \mkbibbold { \textcolor{color@reference@boldAuthor} { #1 } } }
1793   { #1 }
1794 }
1795
1796 \cs_set_eq:NN \mkboldifhashinlist \@@_boldnames_mark:n
1797
1798 \DeclareNameWrapperFormat{boldifhashinlist}
1799 { \renewcommand*{\mkbibcompletename}{\mkboldifhashinlist} #1 }
1800
1801 \DeclareNameWrapperAlias{sortname}{default}
1802 \DeclareNameWrapperAlias{default}{boldifhashinlist}
1803 }
1804

```

We need the fallback of the commands in case the functionality isn't used at all.

```

1805 \providecommand { \addboldnames } [1] { }
1806 \providecommand { \resetboldnames } { }

```

### 3.2.15 Database infrastructure and key families

All structured data in the proposal (people, projects, institutions, funding entries, ...) is stored in datatool databases at compile time. Each database is created lazily: `\addEntry`<sup>P.21</sup> checks whether the named database already exists and creates it if not, eliminating the need for explicit initialisation calls.

The central mechanism relies on the L3 variable `\l_@@_database_name_tl`, which holds the name of the currently-active database while a `\keys_set:nn` call is in progress. Every `.code:n` handler in a keyset calls `\DTLnewdbentry` with that variable as the database name, so no explicit database name is needed inside the keyset definition itself.

The token list is reset in each call to `\addEntry`<sup>P.21</sup> and is wrapped in a `\group_begin:/end:` pair to prevent it from leaking across independent `\addEntry`<sup>P.21</sup> calls.

**Input validation strategy** Choice-valued keys (e.g. `gender`<sup>P.22</sup>, `project-type`<sup>P.15</sup>) use `.choices:nn` with an unknown `.code:n` handler wired to the `dfg/invalid-value` message. Free-text keys accept any input. Required keys are marked with `.value\_required:n = true` so that omitting them produces an immediate error rather than a silent empty database field.

```
1807 \tl_new:N \l_@@_database_name_tl
```

**Keyset meta** The meta database holds exactly one row with `id=crc` that describes the CRC itself. Its fields are read in `\AfterEndPreamble` to populate the global macros used in headers, footers, and PDF metadata (`\theCRCname`, `\theCRCnumber`, `\theCRCAffiliation`, etc.).

The `fundingYears`<sup>P.23</sup> and `fundingYearsPrevious`<sup>P.23</sup> keys accept a comma-separated list of calendar years (one per funding year) and expand them into individually named fields `fundingYear1...fundingYear5`, which are used e.g. as column headers in the Gantt chart title row.

`fundingPeriodNumeral`<sup>P.23</sup> (1, 2 or 3) drives all period-filtered queries: only personnel with a matching period entry are included in the project leader table and the gender equality analysis.

```
1808 \keys_define:nn { meta }{
1809   id               .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
1810   id               .value_required:n = true,
1811   name             .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
1812   nameAddon        .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{nameAddon}{#1},
1813   number           .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{number}{#1},
1814   fundingPeriodNumeral .choices:nn = { 1 , 2 , 3 }
1815   {
1816     % store the numeral itself
1817     \DTLnewdbentry{\l_@@_database_name_tl}{fundingPeriodNumeral}{#1}
1818     % map numeral → text without a property list
1819     \int_case:nnF {#1}
1820     {
1821       { 1 } { \DTLnewdbentry{\l_@@_database_name_tl}{fundingPeriodText}{first} }
1822       { 2 } { \DTLnewdbentry{\l_@@_database_name_tl}{fundingPeriodText}{second} }
1823       { 3 } { \DTLnewdbentry{\l_@@_database_name_tl}{fundingPeriodText}{third} }
1824     }
1825     {
1826       % fallback (should not happen because of the .choices clause)
1827       \msg_warning:nnnn { staff } { invalid-value }
1828       { #1 } { 1 , 2 , 3 }
1829     }
1830   } ,
1831   fundingPeriodNumeral / unknown .code:n =
1832   {
1833     \msg_warning:nnnn { staff } { invalid-value }
1834     { #1 } { 1 , 2 , 3 }
1835   } ,
1836   fundedSince       .code:n      = \DTLnewdbentry{\l_@@_database_name_tl}{fundedSince}{#1},
1837   fundingYears      .code:n      =
1838   {
1839     \seq_set_from_clist:Nn \l_meta_funding_years_seq {#1}
1840     %--- create the individual entries -----
1841     \int_zero_new:N \l_tmpa_int
1842     \seq_map_inline:Nn \l_meta_funding_years_seq
1843     {
1844       \int_incr:N \l_tmpa_int
1845       \DTLnewdbentry
1846       {\l_@@_database_name_tl}
1847       {fundingYear\int_use:N \l_tmpa_int}
```

```

1848     {##1}
1849   }
1850 },
1851 fundingYearsPrevious .code:n =
1852   {
1853     \seq_set_from_clist:Nn \l_meta_funding_years_previous_seq {#1}
1854
1855     %--- create the individual entries -----
1856     \int_zero_new:N \l_tmpa_int
1857     \seq_map_inline:Nn \l_meta_funding_years_previous_seq
1858     {
1859       \int_incr:N \l_tmpa_int
1860       \DTLnewdbentry
1861       {\l_@@_database_name_tl}
1862       {fundingYearPrevious\int_use:N \l_tmpa_int}
1863       {##1}
1864     }
1865   },
1866   ref-affiliation-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
1867 }

```

**Keyset GenderEquality** This keyset is used to populate the `\GenderEqualityStaffTable` and `\GenderEqualityProjectTable`. Each row stores one position-level target for the upcoming funding period alongside the previous period's objective for comparison.

The live counts (current numbers of female/male/diverse staff per position and period) are *computed* at render time from the person database — they are not entered manually. Only the percentage-female objective values need to be provided here.

```

1868 \keys_define:nn { GenderEquality }{
1869   position .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{position}{#1},
1870   previous-objective-percentage-female .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{previous-
1871   objective-percentage-female}{#1},
1872   status-quo-number-female .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{status-
1873   quo-number-female}{#1},
1874   status-quo-percentage-female .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{status-
1875   quo-percentage-female }{#1},
1876   future-objective-percentage-female .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{future-
1877   objective-percentage-female}{#1},
1878 }

```

**Multi-value helper:** `\__dfg_set_filtered_clist:Nnn` Several keys (role, period) accept comma-separated lists rather than a single choice. The private helper `\__dfg_set_filtered_clist:Nnn{\meta{result}}{\meta{valid}}{\meta{input}}` iterates over the input list, drops any item that is not in the valid list (and emits an invalid-value warning for it), and stores the cleaned result in a clist variable. This is used instead of `.choices:nn` because the standard choices handler only accepts a single value.

```

1875 \clist_new:N \l_@@_person_tmp_period_clist
1876 \clist_new:N \l_@@_person_tmp_role_clist
1877 \clist_new:N \l_@@_keys_tmp_clist
1878 \cs_new_protected:Npn \__set_filtered_clist:Nnn #1#2#3
1879 {
1880   % #1: clist variable in which valid values are stored
1881   % #2: clist of valid values
1882   % #3: clist of given values
1883   % function assumes none of the values contain braces or '#' tokens
1884   \clist_set:Nn \l_@@_keys_tmp_clist {#2}
1885   \clist_clear:N #1
1886   \clist_map_inline:nn {#3}
1887   {
1888     \clist_if_in:NnTF \l_@@_keys_tmp_clist {##1}
1889     { \clist_put_right:Nn #1 {##1} }
1890     { \msg_warning:nnnn { dfg } { invalid-value } {#3} {#2} }
1891   }
1892 }

```

**Keyset project** One row per CRC sub-project. The `id`<sup>→P.22</sup> is the short project letter (e.g. A01); `number`<sup>→P.23</sup> is the DFG-assigned project number; `name`<sup>→P.23</sup> is the full project title. `project-type`<sup>→P.15</sup> and `project-status`<sup>→P.15</sup> control how the project appears in tables and are choice-validated.

The `research-area`<sup>→P.15</sup> key is a tick-list of DFG classification codes in the form 1.11-01 (see the property list in Section ??). Multiple codes are passed as a brace-grouped comma list.

The `ref-person-id`<sup>→P.20</sup> and `collaborations`<sup>→P.15</sup> values are comma lists. Whitespace surrounding individual IDs is ignored and the canonical, space-free list is stored in the database. Thus `{clavel,vonBergen,just}` and `{clavel, vonBergen, just}` are equivalent for every later consumer. The optional `project-area` key controls the area row in collaboration plots. When omitted, the first character of the project ID is used as a fallback.

The `legal-issues`<sup>→P.16</sup> sub-keyset mirrors the questions from the DFG online portal's project-information form (L1<sup>→P.16</sup>-L7<sup>→P.16</sup>). Nested key-value parsing is triggered via a single `legal-issues={...}` block.

```

1893 \cs_new_protected:Npn \@@_new_clist_dbentry:nnn #1#2#3
1894 {
1895   \clist_set:Nn \l_tmpa_clist {#3}
1896   \exp_args:NnnV \DTLnewdbentry {#1} {#2} \l_tmpa_clist
1897 }
1898
1899 \bool_new:N \l_@@_project_consider_for_lists_bool
1900 \bool_new:N \l_@@_project_reference_only_bool
1901 \bool_new:N \g_@@_project_count_ready_bool
1902
1903 \keys_define:nn { project }{
1904   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
1905   id .value_required:n = true,
1906   number .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{number}{#1},
1907   number .value_required:n = true,
1908   name .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
1909   project-type .choices:nn = { research, service, mgk, admin } {\DTLnewdbentry{\l_@@_da
type}{#1}},
1910   project-type / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value }{ #1 }{rese
1911   project-type .value_required:n = true,
1912   project-status .choices:nn = { N,E,C } {\DTLnewdbentry{\l_@@_database_name_tl}{proje
status}{#1}},
1913   project-status / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value }{ #1 }{N,E,
1914   project-status .value_required:n = true,
1915   consider-for-lists .choices:nn = { true, false }
1916     { \str_if_eq:nnTF {#1} {true}
1917       { \bool_set_true:N \l_@@_project_consider_for_lists_bool }
1918       { \bool_set_false:N \l_@@_project_consider_for_lists_bool } },
1919   consider-for-lists / unknown .code:n =
1920     { \msg_warning:nnnn { dfg } { invalid-value }{ #1 }{true,false} },
1921   consider-for-lists .value_required:n = true,
1922   reference-only .choices:nn = { true, false }
1923     { \str_if_eq:nnTF {#1} {true}
1924       { \bool_set_true:N \l_@@_project_reference_only_bool }
1925       { \bool_set_false:N \l_@@_project_reference_only_bool } },
1926   reference-only / unknown .code:n =
1927     { \msg_warning:nnnn { dfg } { invalid-value }{ #1 }{true,false} },
1928   reference-only .value_required:n = true,
1929   research-area .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{research-
area}{#1},
1930   project-area .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{project-
area}{#1},
1931   ref-person-id .code:n =
1932     \@@_new_clist_dbentry:nnn {\l_@@_database_name_tl} {ref-person-id} {#1},
1933   collaborations .code:n =
1934     \@@_new_clist_dbentry:nnn {\l_@@_database_name_tl} {collaborations} {#1},
1935   legal-issues .code:n = { \keys_set:nn { project / legal-issues } { #1 } }
1936 }

```

The `legal-issues` key in a project entry accepts a sub-keyset that maps each legal-issue question to a value. The questions fall into two groups, which are handled differently:

**Main questions** (L1<sup>→P.16</sup>, L2<sup>→P.16</sup>, L3<sup>→P.16</sup>, L4<sup>→P.16</sup>, L5<sup>→P.16</sup>, L6<sup>→P.16</sup>, L7<sup>→P.16</sup>) Each must be answered with exactly yes or no. Any other value triggers a warning via `\person_questions_invalid:n`, and no database entry is created.

**Sub-questions** (L1a<sup>→P.16</sup>, L2a<sup>→P.16</sup>, L5a<sup>→P.16</sup>, L7a<sup>→P.16</sup>) These are conditional follow-ups whose answer only matters when the corresponding main question was answered with yes. Sub-questions accept yes, no, or an empty

value. An empty value records an empty cell in the database, which the typesetting code treats as “not answered” and consequently does not render in the legal-issues table.

The asymmetry exists because forcing every sub-question to be answered would require authors to fill in irrelevant follow-ups whenever the parent question is no – for example, providing an answer to “has legal authorization been obtained” for a project that does not involve human embryonic stem cells in the first place. Allowing an empty value lets the data file mirror the structure of the questionnaire: only the relevant cells need to be filled in.

Internally, the main questions use the `l3keys→CTAN.choices:nn` property, which natively rejects values outside the allowed set. The sub-questions cannot use `.choices:nn` directly because that property does not accept the empty string as a choice; they instead dispatch through the helper `\dfg_legal_subq:nn`, which inspects the supplied value and creates a database entry when the value is yes, no, or empty, and warns otherwise.

Example of a complete legal-issues block in a project entry:

#### Example entries for legal-issues

```
% legal-issues = {
%   L1 = {yes},
%   L1a = {yes},           % L1 was true, follow-up answered
%   L2 = {no},
%   L2a = {},             % L2 was false, follow-up irrelevant
%   L3 = {yes},
%   L4 = {no},
%   L5 = {no},
%   L5a = {},
%   L6 = {yes},
%   L7 = {yes},
%   L7a = {yes}
% }
%
```

The empty values for `L2a→P.16` and `L5a→P.16` are valid: they correspond to follow-ups whose parent question was answered no, so no follow-up information is required or rendered.

```
1937 \keys_define:nn { project / legal-issues }
1938 {
1939   % main questions: must be yes/no
1940   L1 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L1} {#1} },
1941   L2 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L2} {#1} },
1942   L3 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L3} {#1} },
1943   L4 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L4} {#1} },
1944   L5 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L5} {#1} },
1945   L6 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L6} {#1} },
1946   L7 .choices:nn = { yes, no } { \DTLnewdbentry{\l_@@_database_name_tl}{L7} {#1} },
1947   %
1948   % sub-questions: yes / no / empty all allowed
1949   L1a .code:n = { \dfg_legal_subq:nn {L1a} {#1} },
1950   L2a .code:n = { \dfg_legal_subq:nn {L2a} {#1} },
1951   L5a .code:n = { \dfg_legal_subq:nn {L5a} {#1} },
1952   L7a .code:n = { \dfg_legal_subq:nn {L7a} {#1} },
1953   %
1954   % unknown handlers (only need them for the binary keys)
1955   L1 / unknown .code:n = { \person_questions_invalid:n {#1} },
1956   L2 / unknown .code:n = { \person_questions_invalid:n {#1} },
1957   L3 / unknown .code:n = { \person_questions_invalid:n {#1} },
1958   L4 / unknown .code:n = { \person_questions_invalid:n {#1} },
1959   L5 / unknown .code:n = { \person_questions_invalid:n {#1} },
1960   L6 / unknown .code:n = { \person_questions_invalid:n {#1} },
1961   L7 / unknown .code:n = { \person_questions_invalid:n {#1} },
1962 }
1963
1964 % Sub-question handler: accepts yes, no, or empty.
1965 \cs_new_protected:Npn \dfg_legal_subq:nn #1#2
1966 {
```

```

1967 \tl_if_blank:nTF {#2}
1968 { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{ } }
1969 {
1970 \str_case:nnF {#2}
1971 {
1972 { yes } { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{yes} }
1973 { no } { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{no} }
1974 }
1975 { \person_questions_invalid:n {#2} }
1976 }
1977 }

```

**Keyset person** The person database is the central personnel registry for the proposal. Every PI, manager, steering committee member and early-career researcher who appears in any table must have a row here.

**Key semantics:** `role`<sup>→P.22</sup>: A filterable comma list of roles. The supported values (PI, spokesperson, manager, steering-committee-member, rector) are validated against a fixed list using the multi-value helper so that multiple roles per person are permitted. `position`<sup>→P.22</sup>: A single choice describing the employment category (prof-W2, prof-W3, postDoc, PhD, etc.). Used in the gender equality and staff cost tables. `period`<sup>→P.22</sup>: Comma list of funding periods (1, 2, 3) in which this person is active. All period-filtered queries (e.g. the project-leaders table) use this field. `name-alias`<sup>→P.13</sup>: Brace-grouped list of name variants as the author name appears in .bib files. These are passed to `\addboldnames` so all spelling variants are highlighted consistently. `contract-information`<sup>→P.12</sup>: Sub-keyset (C1<sup>→P.12</sup>-C4a<sup>→P.13</sup>) for the four employment-contract questions required in the DFG project header. Internally stored as fields Q1-Q4a.

```

1978 \keys_define:nn { person }{
1979 unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1}},
1980 unknown .default:V = \c_novalue_tl,
1981 id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
1982 id .value_required:n = true,
1983 firstname .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{firstname}{#1},
1984 firstname .value_required:n = true,
1985 lastname .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{lastname}{#1},
1986 lastname .value_required:n = true,
1987 academicdegree .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{academicdegree}{#1},
1988 gender .choices:nn = { m , f , d } {\DTLnewdbentry{\l_@@_database_name_tl}{gender}{#1}},
1989 gender / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value }{ #1 }{ m,f,d }},
1990 gender .value_required:n = true,
1991 ref-affiliation-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
1992 ref-institution-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-institution-id}{#1},
1993 ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},

```

With `role`<sup>→P.22</sup> we want to differentiate between various people so we easily can get the necessary person into the right table. Roles can be e.g. PI, service etc.

```

1994 role .code:n = {\_@@_set_filtered_clist:Nnn \l_@@_person_tmp_role_clist {
1995 PI,~ spokesperson,~ manager,~ steering-committee-member,~ rector
1996 } {#1}
1997 \exp_args:Nne \DTLnewdbentry{\l_@@_database_name_tl}{role}
1998 { \clist_use:N \l_@@_person_tmp_role_clist}},

```

`position` is also bound to a value list

```

1999 position .choices:nn = {
2000 PhD, postDoc, groupLeader, research,
2001 nonResearch, student, prof,
2002 prof-W2, prof-W3 }
2003 {\DTLnewdbentry{\l_@@_database_name_tl}{position}{#1}},
2004 position / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value }{ #1 }{
2005 PhD,~ postDoc,~ groupLeader,~ research,~
2006 nonResearch,~ student,~ prof,~ prof-W2,~ prof-W3 }},
2007 positionText .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{positionText}{#1},

```

we need to figure out in which funding period the person was active.

```

2008 period .code:n = {
2009 \_@@_set_filtered_clist:Nnn \l_@@_person_tmp_period_clist { 1, 2, 3 } {#1}
2010 \exp_args:Nne \DTLnewdbentry{\l_@@_database_name_tl}{period}
2011 { \clist_use:N \l_@@_person_tmp_period_clist }
2012 },

```

The following keys are used for the CV section (additionally position). We start with name-alias which is used to get the author's name in bold letters into the publications list. Write all aliases of the author according to their appearance in the .bib-file. Encapsulate each with one pair of {}.

```

2013 name-alias .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name-alias}{#1}},
2014 orcid .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{orcid}{#1},
2015 email .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{email}{#1},
2016 phone .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{phone}{#1},
2017 url .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{url}{#1},
2018 doctorateYear .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{doctorateYear}{#1},
2019 doctorate .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{doctorate}{#1},
2020 degree-programme .code:n =
2021 \DTLnewdbentry{\l_@@_database_name_tl}{degree-programme}{#1},

```

Following part is for the early career researchers

```

2022 financed-by .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{financed-by}{#1},
2023 topic .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{topic}{#1},
2024 category .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{category}{#1},
2025 dateDefense .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{dateDefense}{#1},
2026 periodStart .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodStart}{#1},
2027 periodEnd .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodEnd}{#1},

```

For the PI we need to have information regarding their contract situation. Those questions are asked in the Header section of each project.

```

2028 contract-information .code:n = { \keys_set:nn { person / contract-information } { #1 } }
2029 }

```

Helper: \person\_questions\_invalid:n Small private helper used as the unknown .code:n handler for every boolean choice key in the contract-information and project/legal-issues key families. It fires dfg/invalid-value with the allowed set hard-coded to yes, no.

```

2030 \cs_new_protected:Npn \person_questions_invalid:n #1
2031 { \msg_warning:nnnn { dfg } { invalid-value } {#1} { yes , no } }
2032
2033
2034 \keys_define:nn { person / contract-information }
2035 {
2036   %--- yes/no questions -----
2037   C1 .choices:nn = { yes , no }
2038     { \DTLnewdbentry{\l_@@_database_name_tl}{C1}{#1} },
2039   C1 / unknown .code:n = { \person_questions_invalid:n {#1} },
2040
2041   C2 .choices:nn = { yes , no }
2042     { \DTLnewdbentry{\l_@@_database_name_tl}{C2}{#1} },
2043   C2 / unknown .code:n = { \person_questions_invalid:n {#1} },
2044
2045   C3 .choices:nn = { yes , no }
2046     { \DTLnewdbentry{\l_@@_database_name_tl}{C3}{#1} },
2047   C3 / unknown .code:n = { \person_questions_invalid:n {#1} },
2048
2049   C4 .choices:nn = { yes , no }
2050     { \DTLnewdbentry{\l_@@_database_name_tl}{C4}{#1} },
2051   C4 / unknown .code:n = { \person_questions_invalid:n {#1} },
2052
2053   %--- free-form follow-ups (may be empty) -----
2054   C2a .code:n = { \dfg_contract_date:nn {C2a} {#1} },
2055   C2b .code:n = { \dfg_contract_date:nn {C2b} {#1} },
2056   C3a .code:n = { \dfg_contract_date:nn {C3a} {#1} },
2057   C4a .code:n = { \dfg_contract_text:nn {C4a} {#1} },
2058 }
2059
2060 % Date follow-up: allows empty or ISO-8601 (YYYY-MM-DD).
2061 \cs_new_protected:Npn \dfg_contract_date:nn #1#2
2062 {
2063   \tl_if_blank:nTF {#2}
2064   { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{ } }
2065   {
2066     \dfg_is_iso_date:nTF {#2}
2067     { \DTLnewdbentry{\l_@@_database_name_tl}{#1}{#2} }

```

```

2068     {
2069         \msg_warning:nnnn { dfg } { invalid-date } {#1} {#2}
2070         \DTLnewdbentry{\l_@@_database_name_tl}{#1}{#2}
2071     }
2072 }
2073 }
2074
2075 % Plain-text follow-up: allows empty or any string.
2076 \cs_new_protected:Npn \dfg_contract_text:nn #1#2
2077 {
2078     \DTLnewdbentry{\l_@@_database_name_tl}{#1}{#2}
2079 }
2080
2081 % Format check: YYYY-MM-DD where Y/M/D are digits.
2082 % Doesn't validate calendar correctness (e.g. Feb 30) -- just shape.
2083 \prg_new_protected_conditional:Npnn \dfg_is_iso_date:n #1 { TF , T , F }
2084 {
2085     \regex_match:nnTF { \A \d{4} - \d{2} - \d{2} \Z } {#1}
2086     { \prg_return_true: }
2087     { \prg_return_false: }
2088 }

```

**Keyset `cv`** The `cv` database holds supplementary career information for each PI beyond what is already stored in the person row. Multiple entries per person are permitted; each entry is identified by `ref-person-id` and a `cv-type`<sup>P.13</sup> that governs where in the printed CV the item appears.

```

2089 \keys_define:nn { cv }{
2090     id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
2091     ref-person-id.code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-person-id}{#1},
2092     cv-type .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{type}{#1},
2093     cv-type .choices:nn = {mandatory, supplement,
2094         activities, supervision,
2095         distinction, other }
2096     { \DTLnewdbentry{\l_@@_database_name_tl}{type}{#1}},
2097     % Backward-compatibility alias for the former misspelling.
2098     cv-type / distinction .code:n = { \DTLnewdbentry{\l_@@_database_name_tl}{type}{distinction}},
2099     cv-type / unknown .code:n = { \msg_warning:nnnn { dfg } { invalid-value } { #1 } {
2100         mandatory,~ supplement,~
2101         activities,~ supervision,~
2102         distinction,~ other }},
2103     positionText .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{positionText}{#1},
2104     position .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{position}{#1},
2105     ref-institution-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-institution-id}{#1},
2106     description .code:n =
2107     \DTLnewdbentry{\l_@@_database_name_tl}{description}{#1},
2108     periodStart .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodStart}{#1},
2109     periodEnd .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodEnd}{#1},
2110 }

```

**Keysets `affiliation` and `institution`** The template distinguishes between two levels of organisational unit: `affiliation`: A *university* or equivalent top-level organisation, described by its full name, abbreviation, and postal address. Referenced from person rows via `ref-affiliation-id`. `institution`: A *department, institute or centre* within an affiliation (e.g. IT Center RWTH Aachen). Referenced from person rows via `ref-institution-id` and from affiliation via `ref-affiliation-id`.

This two-level model allows the same address block to be reused across multiple people without duplicating data, and the same university to appear under different institute names for different projects.

```

2111 \keys_define:nn { affiliation }
2112 {
2113     id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
2114     id .value_required:n = true,
2115     name .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
2116     abbreviation .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{abbreviation}{#1},
2117     addressStreet .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{addressStreet}{#1},
2118     addressZIP .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{addressZIP}{#1},
2119     location .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{location}{#1},
2120     country .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{country}{#1},
2121 }

```

```

2122 \keys_define:nn { institution }
2123 {
2124   id      .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
2125   id      .value_required:n = true,
2126   name    .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
2127   abbreviation .code:n =
2128   \DTLnewdbentry{\l_@@_database_name_tl}{abbreviation}{#1},
2129   ref-affiliation-id .code:n =
2130   \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
2131 }
2132
2133 % Resolve the compact reader-facing institution label once. Older metadata
2134 % without an abbreviation remains usable by falling back to the full name.
2135 \tl_new:N \l_@@_institution_label_field_tl
2136 \cs_new_protected:Npn \@@_institution_abbreviation_or_name:nN #1#2
2137 {
2138   \tl_clear:N #2
2139   \tl_set:Nn \l_@@_institution_label_field_tl { abbreviation }
2140   \datatool_if_has_key:nnTF { institution } { abbreviation }
2141   {
2142     \DTLgetvalueforkey{#2}{abbreviation}{institution}{id}{#1}
2143   }
2144   { }
2145   \DTLifnulllorempty{#2}
2146   {
2147     \tl_set:Nn \l_@@_institution_label_field_tl { name }
2148     \DTLgetvalueforkey{#2}{name}{institution}{id}{#1}
2149   }
2150   { }
2151 }

```

**Keyset funding** One funding row represents a single requested-funding line item, such as one FTE of PhD salary across five years, or a one-off equipment purchase. The same keyset is also used for *existing* and *previous* funding entries in the relevant tables.

funding-type: [staff](#)<sup>→P.19</sup>: Personnel costs. Activates the restricted category validation (only staff-position names are accepted). [costs](#)<sup>→P.19</sup>: Direct project costs (consumables, travel, etc.). [fellowships](#)<sup>→P.19</sup>: Stipend payments. [globalfunds](#)<sup>→P.20</sup>: Funds requested at the CRC level (coordination). [instrumentation](#)<sup>→P.19</sup>: Equipment purchases.

[quantity](#)<sup>→P.18</sup> and [sum](#)<sup>→P.19</sup>: both accept a funding/year sub-keyset {year1={n}, year2={n}, ...}. The token-list variable `\l_funding_sum_quantity_tl` is set to the key name (quantity or sum) before the sub-parse so the `year\meta{n}` handlers can construct the correct database field name (quantity-year1, sum-year2, etc.) without extra parameters.

```

2152 \str_new:N \l_@@_funding_tmp_type_str
2153 \tl_new:N \l_funding_sum_quantity_tl
2154 \keys_define:nn { funding / year }
2155 {
2156   year1 .code:n =
2157   { \DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year1}{#1}},
2158   year2 .code:n =
2159   { \DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year2}{#1}},
2160   year3 .code:n =
2161   { \DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year3}{#1}},
2162   year4 .code:n =
2163   { \DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year4}{#1}},
2164   year5 .code:n =
2165   { \DTLnewdbentry{\l_@@_database_name_tl}{\tl_use:N \l_funding_sum_quantity_tl-year5}{#1}},
2166 }
2167
2168 \keys_define:nn { funding }
2169 {
2170   id      .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
2171   id      .value_required:n = true,
2172   ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},
2173   ref-affiliation-id .code:n =
2174   \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
2175   financed-by .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{financed-by}{#1},

```

```

2176 funding-type .choices:nn = {
2177     staff,~ costs,~ fellowships,~ globalfunds,~ instrumentation }
2178 {
2179     \str_set:Nn \l_@@_funding_tmp_type_str {#1}
2180     \DTLnewdbentry{\l_@@_database_name_tl}{type}{#1}
2181 },
2182 funding-type / unknown .code:n = {\msg_warning:nnnn { dfg } { invalid-value }{ #1 }}{
2183     staff,~ costs,~ fellowships,~ globalfunds,~ instrumentation }},
2184 funding-type .value_required:n = true,
2185 percentage .code:n =
2186 \DTLnewdbentry{\l_@@_database_name_tl}{percentage}{#1},
2187 quantity .code:n = {
2188     \tl_set:Nn \l_funding_sum_quantity_tl {quantity}
2189     \keys_set:nn { funding / year } { #1 }
2190 },
2191 sum .code:n = {
2192     \tl_set:Nn \l_funding_sum_quantity_tl {sum}
2193     \keys_set:nn { funding / year } { #1 }
2194 },
2195 category .code:n =
2196 {
2197     \str_if_eq:VnTF \l_@@_funding_tmp_type_str { staff }
2198     {% staff → restricted choices
2199     \str_if_in:nnTF {groupLeader, prof , postDoc,medDoc,%
2200         PhD,research,nonResearch,student,assistant%
2201     }
2202     {#1}
2203     {
2204         \DTLnewdbentry{\l_@@_database_name_tl}{category}{#1}
2205     }
2206     {
2207         \msg_warning:nnnn { dfg } { invalid-value }{ #1 }
2208         {%
2209             prof,~ groupLeader,~ postDoc,~ medDoc,~
2210             PhD,~ research,~ nonResearch,~ student,~ assistant
2211         }
2212     }
2213 }
2214 {
2215     % non-staff → unrestricted
2216     \DTLnewdbentry{\l_@@_database_name_tl}{category}{#1}
2217 }
2218 },
2219 % following keys are especially for the previous fundings
2220 year .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{year}{#1}},
2221 applicant .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{applicant}{#1}},
2222 participant .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{participant}{#1}},
2223 other-funds .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{other-funds}{#1}},
2224 staff .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{staff}{#1}},
2225 costs .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{costs}{#1}},
2226 instrumentation .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{instrumentation}{#1}},
2227 fellowships .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{fellowships}{#1}},
2228 globalfunds .code:n = {\DTLnewdbentry{\l_@@_database_name_tl}{globalfunds}{#1}},
2229 }

```

A keyset for instrumentation. The flat cost field belongs to the informational existingInstrumentation list, is expressed in thousands of EUR, and is never included in funding totals. The nested sum fields are requested-funding amounts expressed in full EUR.

```

2230 \keys_define:nn { instrumentation }{
2231     ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},
2232     quantity .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{quantity}{#1},
2233     instrument .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{instrument}{#1},
2234     company .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{company}{#1},
2235     year .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{year}{#1},
2236     cost .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{cost}{#1},
2237     financed-by .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{financed-by}{#1},

```

```

2238     description      .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{description}{#1},
2239     sum .code:n = {
2240         \tl_set:Nn \l_funding_sum_quantity_tl {sum}
2241         \keys_set:nn { funding / year } { #1 }
2242     },
2243 }

```

**Keyset `staff`** The `staffkey` family serves two related personnel data shapes. Its `year1`–`year5` subkeys store the head-count plan per position category for `\OverviewOfFundsRequestedForStaffTable`. The flat keys added below store the named and unnamed staff roster required by the DFG project template in the fixed `RequestedFundingStaff` database. All keys remain optional at the parser level so the older overview declarations continue to work unchanged; database-specific validation supplies useful warnings for roster entries.

The `position` <sup>→P.22</sup> sub-keyset holds named keys for each staff category (`postDoc`, `PhD`, `research`, etc.); each key’s value is the number of FTEs for a specific year. `\l_staff_year_tl` is set to `year1`–`year5` before each sub-parse so the handlers can construct the correct field name (e.g. `postDoc-year2`) without extra parameters.

```

2244 \tl_new:N \l_staff_year_tl          % will hold "year1", "year2", ...
2245 \keys_define:nn { staff / position }{
2246     postDoc      .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{postDoc-\tl_use:N \l_staff_year_tl}{#1},
2247     PhD          .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{PhD-\tl_use:N \l_staff_year_tl}{#1},
2248     research     .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{research-\tl_use:N \l_staff_year_tl}{#1},
2249     nonResearch  .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{
2250         {nonResearch-\tl_use:N \l_staff_year_tl}{#1},
2251     student      .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{student-\tl_use:N \l_staff_year_tl}{#1},
2252 }
2253
2254 \cs_new_protected:Npn \@@_staff_set_category:n #1
2255 {
2256     \prop_if_in:NnTF \g_@@_dfg_category_names_prop {#1}
2257     { \DTLnewdbentry{\l_@@_database_name_tl}{category}{#1} }
2258     {
2259         \msg_warning:nnnn { dfg } { invalid-value } {#1}
2260         { a~key~registered~in~\token_to_str:N \g_@@_dfg_category_names_prop }
2261     }
2262 }
2263
2264 \keys_define:nn { staff }{
2265     unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1} },
2266     unknown .default:V = \c_novalue_tl,
2267     ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},
2268     funding-status .choices:nn = { existing, requested }
2269     { \DTLnewdbentry{\l_@@_database_name_tl}{funding-status}{#1} },
2270     funding-status / unknown .code:n =
2271     { \msg_warning:nnnn { dfg } { invalid-value } {#1} { existing,~requested } },
2272     staff-type .choices:nn = { research, nonResearch }
2273     { \DTLnewdbentry{\l_@@_database_name_tl}{staff-type}{#1} },
2274     staff-type / unknown .code:n =
2275     { \msg_warning:nnnn { dfg } { invalid-value } {#1} { research,~nonResearch } },
2276     ref-person-id .code:n =
2277     \DTLnewdbentry{\l_@@_database_name_tl}{ref-person-id}{#1},
2278     firstname .code:n =
2279     \DTLnewdbentry{\l_@@_database_name_tl}{firstname}{#1},
2280     lastname .code:n =
2281     \DTLnewdbentry{\l_@@_database_name_tl}{lastname}{#1},
2282     academic-degree .code:n =
2283     \DTLnewdbentry{\l_@@_database_name_tl}{academic-degree}{#1},
2284     positionText .code:n =
2285     \DTLnewdbentry{\l_@@_database_name_tl}{positionText}{#1},
2286     position .code:n =
2287     \DTLnewdbentry{\l_@@_database_name_tl}{positionText}{#1},
2288     field-of-research .code:n =
2289     \DTLnewdbentry{\l_@@_database_name_tl}{field-of-research}{#1},
2290     ref-institution-id .code:n =
2291     \DTLnewdbentry{\l_@@_database_name_tl}{ref-institution-id}{#1},
2292     ref-affiliation-id .code:n =
2293     \DTLnewdbentry{\l_@@_database_name_tl}{ref-affiliation-id}{#1},
2294     department .code:n =

```

```

2295 \DTLnewdbentry{\l_@@_database_name_tl}{department}{#1},
2296 commitment .code:n =
2297 {
2298   \regex_match:nnTF { \A \d+ (?: \. \d+ )? \Z }
2299   {#1}
2300   { \DTLnewdbentry{\l_@@_database_name_tl}{commitment}{#1} }
2301   { \msg_warning:nnnn { dfg } { invalid-value } {#1}
2302     { non-negative~integer~or~decimal } }
2303 },
2304 category .code:n = \@@_staff_set_category:n {#1},
2305 funding-source .code:n =
2306 \DTLnewdbentry{\l_@@_database_name_tl}{funding-source}{#1},
2307 description .code:n =
2308 \DTLnewdbentry{\l_@@_database_name_tl}{description}{#1},
2309 year1 .code:n = {
2310   \tl_set:Nn \l_staff_year_tl {year1}
2311   \keys_set:nn { staff / position } { #1 }
2312 },
2313 year2 .code:n = {
2314   \tl_set:Nn \l_staff_year_tl {year2}
2315   \keys_set:nn { staff / position } { #1 }
2316 },
2317 year3 .code:n = {
2318   \tl_set:Nn \l_staff_year_tl {year3}
2319   \keys_set:nn { staff / position } { #1 }
2320 },
2321 year4 .code:n = {
2322   \tl_set:Nn \l_staff_year_tl {year4}
2323   \keys_set:nn { staff / position } { #1 }
2324 },
2325 year5 .code:n = {
2326   \tl_set:Nn \l_staff_year_tl {year5}
2327   \keys_set:nn { staff / position } { #1 }
2328 },
2329 }
2330
2331 % Pre-create every roster column once. Datatool can otherwise report an
2332 % unknown column when an optional key is omitted by every row in the database.
2333 \bool_new:N \g_@@_requested_funding_staff_schema_ready_bool
2334 \cs_new_protected:Npn \@@_requested_funding_staff_ensure_schema:
2335 {
2336   \bool_if:NF \g_@@_requested_funding_staff_schema_ready_bool
2337   {
2338     \clist_map_inline:nn
2339     {
2340       ref-project-id, funding-status, staff-type, ref-person-id,
2341       firstname, lastname, academic-degree, positionText, field-of-research,
2342       ref-institution-id, ref-affiliation-id, department, commitment, category,
2343       funding-source, description
2344     }
2345     {
2346       \DTLifhaskey { RequestedFundingStaff } {##1}
2347       { }
2348       { \DTLaddcolumn { RequestedFundingStaff } {##1} }
2349     }
2350     \bool_gset_true:N \g_@@_requested_funding_staff_schema_ready_bool
2351   }
2352 }
2353
2354 \tl_new:N \l_@@_requested_funding_staff_validate_project_tl
2355 \tl_new:N \l_@@_requested_funding_staff_validate_status_tl
2356 \tl_new:N \l_@@_requested_funding_staff_validate_type_tl
2357 \tl_new:N \l_@@_requested_funding_staff_validate_person_tl
2358 \tl_new:N \l_@@_requested_funding_staff_validate_lastname_tl
2359 \tl_new:N \l_@@_requested_funding_staff_validate_institution_tl
2360 \keys_define:nn { dfg / requested-funding-staff-validation }

```

```

2361 {
2362   ref-project-id .tl_set:N =
2363     \l_@@_requested_funding_staff_validate_project_tl,
2364   funding-status .tl_set:N =
2365     \l_@@_requested_funding_staff_validate_status_tl,
2366   staff-type .tl_set:N =
2367     \l_@@_requested_funding_staff_validate_type_tl,
2368   ref-person-id .tl_set:N =
2369     \l_@@_requested_funding_staff_validate_person_tl,
2370   lastname .tl_set:N =
2371     \l_@@_requested_funding_staff_validate_lastname_tl,
2372   ref-institution-id .tl_set:N =
2373     \l_@@_requested_funding_staff_validate_institution_tl,
2374   unknown .code:n = { }
2375 }
2376
2377 \cs_new_protected:Npn
2378   \@@_requested_funding_staff_warn_missing_institution:
2379 {
2380   \msg_warning:nne { dfg } { requested-staff-institution-required }
2381     { \l_@@_requested_funding_staff_validate_project_tl }
2382 }
2383
2384 \cs_new_protected:Npn \@@_requested_funding_staff_validate:n #1
2385 {
2386   \tl_clear:N \l_@@_requested_funding_staff_validate_project_tl
2387   \tl_clear:N \l_@@_requested_funding_staff_validate_status_tl
2388   \tl_clear:N \l_@@_requested_funding_staff_validate_type_tl
2389   \tl_clear:N \l_@@_requested_funding_staff_validate_person_tl
2390   \tl_clear:N \l_@@_requested_funding_staff_validate_lastname_tl
2391   \tl_clear:N \l_@@_requested_funding_staff_validate_institution_tl
2392   \keys_set:nn { dfg / requested-funding-staff-validation } {#1}
2393   \tl_if_blank:VT \l_@@_requested_funding_staff_validate_project_tl
2394     { \msg_warning:nnn { dfg } { requested-staff-required }
2395       { ref-project-id } }
2396   \tl_if_blank:VT \l_@@_requested_funding_staff_validate_status_tl
2397     { \msg_warning:nnn { dfg } { requested-staff-required }
2398       { funding-status } }
2399   \tl_if_blank:VT \l_@@_requested_funding_staff_validate_type_tl
2400     { \msg_warning:nnn { dfg } { requested-staff-required }
2401       { staff-type } }
2402   \bool_lazy_all:nT
2403   {
2404     { \tl_if_blank_p:V \l_@@_requested_funding_staff_validate_person_tl }
2405     { \tl_if_blank_p:V \l_@@_requested_funding_staff_validate_lastname_tl }
2406   }
2407   { \msg_warning:nnn { dfg } { requested-staff-required }
2408     { ref-person-id~or~lastname } }
2409   \bool_lazy_all:nT
2410   {
2411     { \tl_if_blank_p:V \l_@@_requested_funding_staff_validate_person_tl }
2412     { \tl_if_blank_p:V \l_@@_requested_funding_staff_validate_institution_tl }
2413   }
2414   { \@@_requested_funding_staff_warn_missing_institution: }
2415 }

```

A keyset for the upkeep of laboratory animals.

```

2416 \keys_define:nn { UpkeepLaboratoryAnimals }{
2417   ref-project-id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{ref-project-id}{#1},
2418   species .choices:nn = { mouse, mouse-gnotobiotic, rat }
2419     { \DTLnewdbentry{\l_@@_database_name_tl}{species}{#1}},
2420   species / unknown .code:n = { \msg_warning:nnnn { dfg } { invalid-value } { #1 } {
2421     smouse, ~ mouse-gnotobiotic, ~ rat } },
2422   species .value_required:n = true,
2423   quantity .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{quantity}{#1},
2424   weeks-kept .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{weeks-kept}{#1},
2425   purchasing-costs .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{purchasing-costs}{#1},

```

```

2426 requested-funds .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{requested-funds}{#1},
2427 existing-funds .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{existing-funds}{#1},
2428 }

```

**Keyset gantt** Each row in a `gantt-\meta{project}` database describes one Gantt bar. Bars share their `id`<sup>P.22</sup> with the corresponding work-package label, so `\addWP` automatically creates a matching Gantt entry when called.

`periodStart`<sup>P.13</sup> and `periodEnd`<sup>P.13</sup> are quarter numbers (1–16 for a standard 5-year CRC period). Setting both to the same value suppresses the bar, allowing a work-package item to exist in the list without occupying space in the chart.

`style`<sup>P.37</sup> selects one of five visual styles for the bar. Unknown styles fall back to default with a warning, so the chart always compiles.

```

2429 \keys_define:nn { gantt }{
2430   id .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{id}{#1},
2431   id .value_required:n = true,
2432   name .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{name}{#1},
2433   description .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{description}{#1},
2434   periodStart .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodStart}{#1},
2435   periodEnd .code:n = \DTLnewdbentry{\l_@@_database_name_tl}{periodEnd}{#1},
2436   style .choices:nn = { crosshatch, striped, important, alternative, default }
2437     {\DTLnewdbentry{\l_@@_database_name_tl}{style}{#1}},
2438   style / unknown .code:n = {
2439     \msg_warning:nnnn { dfg } { invalid-value }{ #1
2440     }{crosshatch, striped, important, alternative, default }
2441     \DTLnewdbentry{\l_@@_database_name_tl}{style}{default}
2442   },
2443 }

```

### 3.2.16 Core data-access commands

The following commands form the primary user-facing API for reading and writing the datatool databases. Together with the keyset definitions above they provide a strongly-typed, validated interface that prevents malformed data from silently entering the proposal.

`\dfgShowTag` and `\dfgShowCalculatedTag` Direct values use `db:id:field`; aggregates use the concise form `calc:command [db]`. Successive labels alternate between two vertical levels. The complete marker has zero width, height, and depth in both prose and tables, so annotations cannot change line spacing or table-row height. When `showtags-tables`<sup>P.32</sup> is false, the wrapper returns its value unchanged while a `tblr` cell is being rendered. The begin-document specialisation keeps the normal `showtags=false` path as cheap as the unannotated output.

```

2444 \NewDocumentCommand{\dfgShowTag}{ m m m o }
2445 {%
2446   % #1: id
2447   % #2: field of database
2448   % #3: value from database field
2449   % #4: custom field (optional, e.g. database name)
2450   \bool_if:NTF \l_@@_class_showtags_bool
2451   { \texorpdfstring{\@@_show_tag_direct:nnnn {#1}{#2}{#3}{#4}}{#3} }
2452   { #3}%
2453 }
2454
2455 \NewDocumentCommand{\dfgShowCalculatedTag}{ m m +m }
2456 {%
2457   % #1: calculation command or label
2458   % #2: contributing database(s)
2459   % #3: calculated value
2460   \bool_if:NTF \l_@@_class_showtags_bool
2461   { \texorpdfstring{\@@_show_tag_value:nn { calc:#1~[#2] } {#3}}{#3} }
2462   { #3}%
2463 }
2464
2465 \cs_new_protected:Npn \@@_show_tag_direct:nnnn #1#2#3#4
2466 {
2467   \IfNoValueTF{#4}
2468   { \@@_show_tag_value:nn { #1:#2 } {#3} }
2469   { \@@_show_tag_value:nn { #4:#1:#2 } {#3} }
2470 }
2471
2472 \cs_new_protected:Npn \@@_show_tag_value:nn #1#2

```

```

2473 {
2474   \bool_if:nTF
2475     { \g_@@_tblr_inside_bool && ! \l_@@_class_showtags_tables_bool }
2476     {#2}
2477     { \@@_show_tag_overlay:nn {#1}{#2} }
2478 }
2479
2480 \bool_new:N \g_@@_show_tag_upper_bool
2481 \bool_new:N \l_@@_show_tag_leftward_bool
2482 \dim_new:N \l_@@_show_tag_raise_dim
2483
2484 \cs_new_protected:Npn \@@_show_tag_overlay:nn #1#2
2485 {
2486   % #1: preformatted provenance label
2487   % #2: displayed value
2488   \group_begin:
2489     \bool_if:NTF \g_@@_show_tag_upper_bool
2490       { \dim_set:Nn \l_@@_show_tag_raise_dim { 1.30em } }
2491       { \dim_set:Nn \l_@@_show_tag_raise_dim { .9em } }
2492     \bool_gset_inverse:N \g_@@_show_tag_upper_bool
2493     \leavevmode
2494     \smash{%
2495       \vbox to \z@ {%
2496         \vss
2497         \color{color@tags@line}%
2498         \bool_if:NTF \l_@@_show_tag_leftward_bool
2499           {%
2500             \llap{%
2501               \raise \l_@@_show_tag_raise_dim \hbox{%
2502                 \fontsize{4}{0}\selectfont
2503                 \ttfamily
2504                 #1\,%
2505               }%
2506               \vrule
2507             }%
2508           }
2509           {%
2510             \rlap{%
2511               \vrule
2512               \raise \l_@@_show_tag_raise_dim \hbox{%
2513                 \fontsize{4}{0}\selectfont
2514                 \ttfamily
2515                 \,%
2516                 #1%
2517               }%
2518             }%
2519           }%
2520         }%
2521       \textcolor{color@tags@font}{#2}%
2522     \group_end:
2523   }
2524 }
2525
2526 % Aggregated monetary tables use full euro amounts. Guarded tagged cells must
2527 % invoke \cs{TblrNum} explicitly so they still use the current column's
2528 % |table-format| for a common SI field width; outside tables \cs{num} provides
2529 % ordinary inline output. Marginalia temporarily clear the table-context
2530 % boolean and therefore remain unpadded. The informational
2531 % existing-instrumentation cost and the animal-housing rate are formatted
2532 % separately because their source units and precision differ from aggregated
2533 % funding values.
2534 \cs_new_protected:Npn \@@_show_table_number:n #1
2535 {
2536   \bool_if:NTF \g_@@_tblr_inside_bool
2537     { \TblrNum{#1} }
2538     { \num{#1} }

```

```

2539 }
2540
2541 \cs_new_protected:Npn \@@_show_eur:n #1
2542 {
2543   \bool_if:NTF \g_@@_tblr_inside_bool
2544     { \TblrNum{#1} }
2545     {
2546       \num[
2547         round-mode = places,
2548         round-precision = 0
2549       ]{#1}
2550     }
2551 }
2552
2553 % Existing-instrumentation costs are supplied in thousands of EUR and are not
2554 % included in any funding aggregate. Match the DFG table's one-decimal
2555 % precision while still suppressing a redundant trailing zero.
2556 \cs_new_protected:Npn \@@_show_existing_instrumentation_cost:n #1
2557 {
2558   \bool_if:NTF \g_@@_tblr_inside_bool
2559     { \TblrNum{#1} }
2560     {
2561       \num[
2562         round-mode = places,
2563         round-precision = 1
2564       ]{#1}
2565     }
2566 }
2567
2568 \cs_new_protected:Npn \@@_show_calculated_number:nnN #1#2#3
2569 {
2570   \dfgShowCalculatedTag{#1}{#2}
2571   { \exp_args:NV \@@_show_eur:n #3 }
2572 }
2573
2574 \AtBeginDocument{%
2575   \bool_if:NTF \l_@@_class_showtags_bool
2576   {%
2577     \RenewDocumentCommand{\dfgShowTag}{ m m m o }
2578     { \texorpdfstring{\@@_show_tag_direct:nnnn {#1}{#2}{#3}{#4}}{#3} }%
2579     \RenewDocumentCommand{\dfgShowCalculatedTag}{ m m +m }
2580     { \texorpdfstring{\@@_show_tag_value:nn { calc:#1~[#2] } {#3}}{#3} }%
2581   }
2582   {%
2583     \RenewDocumentCommand{\dfgShowTag}{ m m m o }
2584     { #3}%
2585     \RenewDocumentCommand{\dfgShowCalculatedTag}{ m m +m }
2586     { #3}%
2587   }%
2588 }
2589

```

`\addEntry` `\addEntry` [*⟨keys⟩*] {*⟨database⟩*} {*⟨key-values⟩*} Adds a new row to the database named *⟨database⟩*, populated by setting the keys defined under the key-path *⟨keys⟩* from *⟨key-values⟩*. If *⟨keys⟩* is omitted, it defaults to the database name (*⟨database⟩*).

The `cv` database receives special treatment: entries are only recorded when the boolean `\l_dfg_class_cv_bool` is true (i.e. when a CV is actually being produced). Otherwise the entry is skipped and a warning is issued, so that bibliography-style CV entries can be left in the source unconditionally without polluting non-CV builds.

The internal helper `__dfg_add_entry:nnn` performs the actual insertion and is shared between both branches to avoid code duplication.

Funding declarations for `RequestedFunding` may occur in project files, after the proposal-wide overview tables have already been printed. Such entries are additionally written to the current LaTeX auxiliary file and restored on the following run into `RequestedFundingOverview`. Entries encountered before `\begin{document}` are copied into that overview database immediately. Consequently the declarations remain next to their project text, while overview tables have access to the complete data set after the usual additional LaTeX run. A sep-

arate database prevents the restored rows from duplicating the live rows used by the project tables. The same forward-data mechanism copies RequestedFundingStaff declarations to RequestedFundingStaffOverview and RequestedAndExistingFundingDirectCosts declarations to RequestedAndExistingFundingDirectCostsOverview. Chapter 2 can therefore aggregate the existing staff and institutional direct-cost support declared later in the individual project chapters without a second user-maintained database.

**Funding aggregate indexes** The funding databases remain the authoritative row store. In addition, every funding declaration updates two LaTeX3 property lists: one for monetary sums grouped by database, project, funding type, and year field; and one for staff quantities grouped by database, project, category, and year field. Each index also stores the corresponding all-project and all-type aggregate where applicable.

Both live declarations and rows restored from auxiliary files pass through the same registration function. The indexes therefore remain correct as later project files add entries; there is no one-shot cache to invalidate. Summary cells perform a property lookup instead of traversing the growing database. Detailed project tables still read their source rows, but collect all five funding types in one project-filtered traversal rather than five.

**Complete-proposal benchmark** The 149-page complete proposal was measured on 2026-07-17 with LuaHBTeX from TeX Live 2026. Times below are for one final LuaLaTeX pass and compare the same proposal data before and after the aggregate-index refactor. Absolute values depend on the machine and document contents; the important result is that lookup time no longer grows through repeated full database sums.

| Operation                   | Before    | After    | Reduction |
|-----------------------------|-----------|----------|-----------|
| Staff overview              | 135.745 s | 6.975 s  | 94.9 %    |
| Instrumentation overview    | 5.239 s   | 0.636 s  | 87.9 %    |
| 21 requested-funding tables | 90.444 s  | 28.831 s | 68.1 %    |
| 19 existing-funding tables  | 23.277 s  | 6.605 s  | 71.6 %    |
| Combined                    | 254.705 s | 43.047 s | 83.1 %    |

This saves approximately 211.7 seconds per LuaLaTeX pass. The monitored three-pass make complete-proposal release build completed in 33 minutes 21 seconds, so the funding changes account for approximately 10 minutes 35 seconds of avoided work across that build.

```

2590 \tl_new:N \l_@@_add_entry_id_tl
2591 \tl_new:N \l_@@_add_entry_existing_row_tl
2592
2593 \keys_define:nn { dfg / add-entry-id-probe }
2594 {
2595   id .tl_set:N = \l_@@_add_entry_id_tl,
2596   unknown .code:n = { }
2597 }
2598
2599 \cs_new_protected:Npn \@@_add_entry_replace_duplicate_id:n #1
2600 {
2601   \tl_clear:N \l_@@_add_entry_id_tl
2602   \keys_set:nn { dfg / add-entry-id-probe } {#1}
2603   \tl_if_blank:VF \l_@@_add_entry_id_tl
2604   {
2605     \DTLifhaskey { \l_@@_database_name_tl } { id }
2606     {
2607       \DTLgetrowforkey
2608         { \l_@@_add_entry_existing_row_tl }
2609         { \l_@@_database_name_tl }
2610         { id }
2611         { \l_@@_add_entry_id_tl }
2612       \tl_if_blank:VF \l_@@_add_entry_existing_row_tl
2613       {
2614         \msg_warning:nnee { dfg } { duplicate-entry-id }
2615         { \l_@@_database_name_tl }
2616         { \l_@@_add_entry_id_tl }
2617         \DTLforeach { \l_@@_database_name_tl }
2618           { \l_tmpa_tl = id }
2619         {
2620           \str_if_eq:VVT \l_tmpa_tl \l_@@_add_entry_id_tl
2621           { \DTLremovecurrentrow }
2622         }
2623       }
2624     }

```

```

2625     { }
2626 }
2627 }
2628
2629 \cs_new_protected:Npn \@@_add_entry:nnn #1#2#3
2630 {
2631   % #1: keys      #2: database      #3: key-values
2632   \group_begin:
2633   \tl_set:Nn \l_@@_database_name_tl {#2}
2634   \DTLifdbexists {#2}
2635   { }
2636   { \DTLaction [ name = \l_@@_database_name_tl ] { new } }
2637   \@@_add_entry_replace_duplicate_id:n {#3}
2638   \bool_lazy_all:nT
2639   {
2640     { \str_if_eq_p:nn {#1} { staff } }
2641     { \str_if_eq_p:nn {#2} { RequestedFundingStaff } }
2642   }
2643   {
2644     \@@_requested_funding_staff_ensure_schema:
2645     \@@_requested_funding_staff_validate:n {#3}
2646   }
2647   \DTLaction [ name = \l_@@_database_name_tl ] { new~row }
2648   \str_if_eq:nnT {#1} { project }
2649   {
2650     \bool_set_true:N \l_@@_project_consider_for_lists_bool
2651     \bool_set_false:N \l_@@_project_reference_only_bool
2652   }
2653   \exp_args:Ne \keys_set:nn {#1} {#3}
2654   \str_if_eq:nnT {#1} { project }
2655   {
2656     \bool_if:NTF \l_@@_project_consider_for_lists_bool
2657       { \DTLnewdbentry{\l_@@_database_name_tl}{consider-for-lists}{true} }
2658       { \DTLnewdbentry{\l_@@_database_name_tl}{consider-for-lists}{false} }
2659     \bool_if:NTF \l_@@_project_reference_only_bool
2660       { \DTLnewdbentry{\l_@@_database_name_tl}{reference-only}{true} }
2661       { \DTLnewdbentry{\l_@@_database_name_tl}{reference-only}{false} }
2662     \bool_gset_false:N \g_@@_project_count_ready_bool
2663   }
2664   \bool_lazy_all:nT
2665   {
2666     { \str_if_eq_p:nn {#1} { funding } }
2667     { \str_if_eq_p:Vn \l_@@_funding_tmp_type_str { staff } }
2668   }
2669   { \@@_funding_complete_staff_sums:n {#3} }
2670   \group_end:
2671 }
2672
2673 % Funding tables repeatedly ask for the same sums, sometimes hundreds of
2674 % times while tabularray measures a table. Keep the datatool databases as
2675 % the row store, but maintain compact aggregate indexes alongside them.
2676 % The key layout is
2677 %
2678 %   database / project-or-__ALL__ / type-or-__ALL__ / field
2679 %
2680 % for monetary sums and
2681 %
2682 %   database / project-or-__ALL__ / category / quantity-field
2683 %
2684 % for requested staff quantities. Values are added when an entry is
2685 % declared, so a lookup never has to traverse a datatool database and the
2686 % index cannot become stale when later project files add more rows.
2687 \prop_new:N \g_@@_funding_sum_prop
2688 \prop_new:N \g_@@_funding_staff_quantity_prop
2689 \fp_new:N \l_@@_funding_cache_fp
2690 \tl_new:N \l_@@_funding_cache_key_tl

```

```

2691 \tl_new:N \l_@@_funding_cache_value_tl
2692 \tl_new:N \l_@@_funding_cache_project_tl
2693 \tl_new:N \l_@@_funding_cache_type_tl
2694 \tl_new:N \l_@@_funding_cache_category_tl
2695 \tl_new:N \l_@@_funding_cache_percentage_tl
2696 \tl_new:N \l_@@_funding_salary_command_tl
2697 \tl_new:N \l_@@_funding_salary_value_tl
2698 \tl_new:N \l_@@_funding_cache_sum_one_tl
2699 \tl_new:N \l_@@_funding_cache_sum_two_tl
2700 \tl_new:N \l_@@_funding_cache_sum_three_tl
2701 \tl_new:N \l_@@_funding_cache_sum_four_tl
2702 \tl_new:N \l_@@_funding_cache_sum_five_tl
2703 \tl_new:N \l_@@_funding_cache_quantity_one_tl
2704 \tl_new:N \l_@@_funding_cache_quantity_two_tl
2705 \tl_new:N \l_@@_funding_cache_quantity_three_tl
2706 \tl_new:N \l_@@_funding_cache_quantity_four_tl
2707 \tl_new:N \l_@@_funding_cache_quantity_five_tl
2708 \bool_new:N \l_@@_funding_calculation_store_bool
2709 \bool_new:N \l_@@_funding_calculation_ready_bool
2710 \bool_new:N \l_@@_funding_calculation_needed_bool
2711
2712 \prop_new:N \g_@@_funding_salary_commands_prop
2713 \prop_gset_from_keyval:Nn \g_@@_funding_salary_commands_prop
2714 {
2715     prof = dfgSalaryProf,
2716     groupLeader = dfgSalaryGroupLeader,
2717     postDoc = dfgSalaryPostDoc,
2718     medDoc = dfgSalaryMedDoc,
2719     PhD = dfgSalaryPhD,
2720     research = dfgSalaryResearch,
2721     nonResearch = dfgSalaryNonResearch,
2722     student = dfgSalaryStudent,
2723     assistant = dfgSalaryAssistant,
2724     prof-W2 = dfgSalaryProf,
2725     prof-W3 = dfgSalaryProf
2726 }
2727
2728 \keys_define:nn { dfg / funding-cache / sum }
2729 {
2730     year1 .tl_set:N = \l_@@_funding_cache_sum_one_tl,
2731     year2 .tl_set:N = \l_@@_funding_cache_sum_two_tl,
2732     year3 .tl_set:N = \l_@@_funding_cache_sum_three_tl,
2733     year4 .tl_set:N = \l_@@_funding_cache_sum_four_tl,
2734     year5 .tl_set:N = \l_@@_funding_cache_sum_five_tl,
2735     unknown .code:n = { }
2736 }
2737
2738 \keys_define:nn { dfg / funding-cache / quantity }
2739 {
2740     year1 .tl_set:N = \l_@@_funding_cache_quantity_one_tl,
2741     year2 .tl_set:N = \l_@@_funding_cache_quantity_two_tl,
2742     year3 .tl_set:N = \l_@@_funding_cache_quantity_three_tl,
2743     year4 .tl_set:N = \l_@@_funding_cache_quantity_four_tl,
2744     year5 .tl_set:N = \l_@@_funding_cache_quantity_five_tl,
2745     unknown .code:n = { }
2746 }
2747
2748 \keys_define:nn { dfg / funding-cache }
2749 {
2750     ref-project-id .tl_set:N = \l_@@_funding_cache_project_tl,
2751     funding-type .tl_set:N = \l_@@_funding_cache_type_tl,
2752     category .tl_set:N = \l_@@_funding_cache_category_tl,
2753     percentage .tl_set:N = \l_@@_funding_cache_percentage_tl,
2754     sum .code:n =
2755     { \keys_set:nn { dfg / funding-cache / sum } {#1} },
2756     quantity .code:n =

```

```

2757     { \keys_set:nn { dfg / funding-cache / quantity } {#1} },
2758     unknown .code:n = { }
2759 }
2760
2761 \cs_new_protected:Npn \l_@@_funding_capture:n #1
2762 {
2763   \tl_clear:N \l_@@_funding_cache_project_tl
2764   \tl_clear:N \l_@@_funding_cache_type_tl
2765   \tl_clear:N \l_@@_funding_cache_category_tl
2766   \tl_clear:N \l_@@_funding_cache_percentage_tl
2767   \tl_clear:N \l_@@_funding_cache_sum_one_tl
2768   \tl_clear:N \l_@@_funding_cache_sum_two_tl
2769   \tl_clear:N \l_@@_funding_cache_sum_three_tl
2770   \tl_clear:N \l_@@_funding_cache_sum_four_tl
2771   \tl_clear:N \l_@@_funding_cache_sum_five_tl
2772   \tl_clear:N \l_@@_funding_cache_quantity_one_tl
2773   \tl_clear:N \l_@@_funding_cache_quantity_two_tl
2774   \tl_clear:N \l_@@_funding_cache_quantity_three_tl
2775   \tl_clear:N \l_@@_funding_cache_quantity_four_tl
2776   \tl_clear:N \l_@@_funding_cache_quantity_five_tl
2777   \keys_set:nn { dfg / funding-cache } {#1}
2778 }
2779
2780 \cs_new_protected:Npn \l_@@_funding_calculation_needed:NN #1#2
2781 {
2782   \bool_lazy_all:nT
2783   {
2784     { \tl_if_blank_p:V #1 }
2785     { ! \tl_if_blank_p:V #2 }
2786   }
2787   { \bool_set_true:N \l_@@_funding_calculation_needed_bool }
2788 }
2789
2790 \cs_new_protected:Npn \l_@@_funding_calculate_one:NNnn #1#2#3#4
2791 {
2792   % #1 sum tl, #2 quantity tl, #3 database field, #4 period factor
2793   \bool_lazy_all:nT
2794   {
2795     { \tl_if_blank_p:V #1 }
2796     { ! \tl_if_blank_p:V #2 }
2797     { \bool_if_p:N \l_@@_funding_calculation_ready_bool }
2798   }
2799   {
2800     \exp_args:NnV \regex_match:nnTF
2801     { \A \d+ (? : \. \d+ )? \Z } #2
2802     {
2803       \tl_set:Nx #1
2804       {
2805         \fp_eval:n
2806         {
2807           round(
2808             \l_@@_funding_salary_value_tl
2809             * \l_@@_funding_cache_percentage_tl / 100
2810             * #2
2811             * #4,
2812             0
2813           )
2814         }
2815       }
2816       \bool_if:NT \l_@@_funding_calculation_store_bool
2817       {
2818         \exp_args:Nnne \DTLnewdbentry
2819         { \l_@@_database_name_tl } {#3} { \tl_use:N #1 }
2820       }
2821     }
2822   }

```

```

2823     \bool_if:NT \l_@@_funding_calculation_store_bool
2824     {
2825         \msg_warning:nne { dfg } { funding-staff-cost-unavailable }
2826         { project~'\l_@@_funding_cache_project_tl',~#3:~invalid~quantity~'#2' }
2827     }
2828 }
2829 }
2830 }
2831
2832 \cs_new_protected:Npn \l_@@_funding_calculate_staff_sums:
2833 {
2834     \str_if_eq:VnT \l_@@_funding_cache_type_tl { staff }
2835     {
2836         \bool_set_false:N \l_@@_funding_calculation_needed_bool
2837         \l_@@_funding_calculation_needed:NN
2838         \l_@@_funding_cache_sum_one_tl \l_@@_funding_cache_quantity_one_tl
2839         \l_@@_funding_calculation_needed:NN
2840         \l_@@_funding_cache_sum_two_tl \l_@@_funding_cache_quantity_two_tl
2841         \l_@@_funding_calculation_needed:NN
2842         \l_@@_funding_cache_sum_three_tl \l_@@_funding_cache_quantity_three_tl
2843         \l_@@_funding_calculation_needed:NN
2844         \l_@@_funding_cache_sum_four_tl \l_@@_funding_cache_quantity_four_tl
2845         \l_@@_funding_calculation_needed:NN
2846         \l_@@_funding_cache_sum_five_tl \l_@@_funding_cache_quantity_five_tl
2847         \bool_if:NT \l_@@_funding_calculation_needed_bool
2848         {
2849             \bool_set_true:N \l_@@_funding_calculation_ready_bool
2850             \prop_get:NVNTF \g_@@_funding_salary_commands_prop
2851             \l_@@_funding_cache_category_tl \l_@@_funding_salary_command_tl
2852             {
2853                 \cs_if_exist:cTF { \l_@@_funding_salary_command_tl }
2854                 { \tl_set:Nx \l_@@_funding_salary_value_tl
2855                     { \use:c { \l_@@_funding_salary_command_tl } } }
2856                 { \bool_set_false:N \l_@@_funding_calculation_ready_bool }
2857             }
2858             { \bool_set_false:N \l_@@_funding_calculation_ready_bool }
2859             \exp_args:NnV \regex_match:nnF
2860             { \A \d+ (?: \. \d+ )? \Z }
2861             \l_@@_funding_cache_percentage_tl
2862             { \bool_set_false:N \l_@@_funding_calculation_ready_bool }
2863             \exp_args:NnV \regex_match:nnF
2864             { \A \d+ (?: \. \d+ )? \Z }
2865             \l_@@_funding_salary_value_tl
2866             { \bool_set_false:N \l_@@_funding_calculation_ready_bool }
2867             \bool_lazy_all:nT
2868             {
2869                 { \bool_if_p:N \l_@@_funding_calculation_store_bool }
2870                 { ! \bool_if_p:N \l_@@_funding_calculation_ready_bool }
2871             }
2872             {
2873                 \msg_warning:nne { dfg } { funding-staff-cost-unavailable }
2874                 {
2875                     project~'\l_@@_funding_cache_project_tl',~category~
2876                     '\l_@@_funding_cache_category_tl',~percentage~
2877                     '\l_@@_funding_cache_percentage_tl'
2878                 }
2879             }
2880             \l_@@_funding_calculate_one:NNnn
2881             \l_@@_funding_cache_sum_one_tl
2882             \l_@@_funding_cache_quantity_one_tl { sum-year1 } { 0.5 }
2883             \l_@@_funding_calculate_one:NNnn
2884             \l_@@_funding_cache_sum_two_tl
2885             \l_@@_funding_cache_quantity_two_tl { sum-year2 } { 1 }
2886             \l_@@_funding_calculate_one:NNnn
2887             \l_@@_funding_cache_sum_three_tl
2888             \l_@@_funding_cache_quantity_three_tl { sum-year3 } { 1 }

```

```

2889 \@@_funding_calculate_one:NNnn
2890 \l_@@_funding_cache_sum_four_tl
2891 \l_@@_funding_cache_quantity_four_tl { sum-year4 } { 1 }
2892 \@@_funding_calculate_one:NNnn
2893 \l_@@_funding_cache_sum_five_tl
2894 \l_@@_funding_cache_quantity_five_tl { sum-year5 } { 0.5 }
2895 }
2896 }
2897 }
2898
2899 \cs_new_protected:Npn \@@_funding_complete_staff_sums:n #1
2900 {
2901 \bool_set_true:N \l_@@_funding_calculation_store_bool
2902 \@@_funding_capture:n {#1}
2903 \@@_funding_calculate_staff_sums:
2904 }
2905
2906 \cs_new_protected:Npn \@@_funding_cache_add:Nnn #1#2#3
2907 {
2908 \tl_set:Nx \l_@@_funding_cache_key_tl {#2}
2909 \tl_set:Nx \l_@@_funding_cache_value_tl {#3}
2910 \tl_if_blank:VF \l_@@_funding_cache_value_tl
2911 {
2912 \prop_get:NVNTF #1
2913 \l_@@_funding_cache_key_tl \l_@@_funding_cache_value_tl
2914 {
2915 \fp_set:Nn \l_@@_funding_cache_fp
2916 { \l_@@_funding_cache_value_tl + (#3) }
2917 }
2918 { \fp_set:Nn \l_@@_funding_cache_fp {#3} }
2919 \prop_gput:Nvx #1 \l_@@_funding_cache_key_tl
2920 { \fp_to_decimal:N \l_@@_funding_cache_fp }
2921 }
2922 }
2923
2924 \cs_new_protected:Npn \@@_funding_cache_sum_year:nnn #1#2#3
2925 {
2926 % #1 database, #2 field, #3 value
2927 \tl_if_blank:VF \l_@@_funding_cache_type_tl
2928 {
2929 \@@_funding_cache_add:Nnn \g_@@_funding_sum_prop
2930 {#1/\l_@@_funding_cache_project_tl/
2931 \l_@@_funding_cache_type_tl/#2} {#3}
2932 \@@_funding_cache_add:Nnn \g_@@_funding_sum_prop
2933 {#1/___ALL___/\l_@@_funding_cache_type_tl/#2} {#3}
2934 }
2935 \@@_funding_cache_add:Nnn \g_@@_funding_sum_prop
2936 {#1/\l_@@_funding_cache_project_tl/___ALL___/#2} {#3}
2937 \@@_funding_cache_add:Nnn \g_@@_funding_sum_prop
2938 {#1/___ALL___/___ALL___/#2} {#3}
2939 }
2940
2941 \cs_new_protected:Npn \@@_funding_cache_quantity_year:nnn #1#2#3
2942 {
2943 % #1 database, #2 field, #3 value
2944 \@@_funding_cache_add:Nnn \g_@@_funding_staff_quantity_prop
2945 {#1/\l_@@_funding_cache_project_tl/
2946 \l_@@_funding_cache_category_tl/#2} {#3}
2947 \@@_funding_cache_add:Nnn \g_@@_funding_staff_quantity_prop
2948 {#1/___ALL___/\l_@@_funding_cache_category_tl/#2} {#3}
2949 }
2950
2951 \cs_new_protected:Npn \@@_funding_cache_entry:nn #1#2
2952 {
2953 \group_begin:
2954 \bool_set_false:N \l_@@_funding_calculation_store_bool

```

```

2955 \@@_funding_capture:n {#2}
2956 \@@_funding_calculate_staff_sums:
2957 \tl_if_blank:VF \l_@@_funding_cache_project_tl
2958 {
2959   \@@_funding_cache_sum_year:nnn {#1} {sum-year1}
2960   {\l_@@_funding_cache_sum_one_tl}
2961   \@@_funding_cache_sum_year:nnn {#1} {sum-year2}
2962   {\l_@@_funding_cache_sum_two_tl}
2963   \@@_funding_cache_sum_year:nnn {#1} {sum-year3}
2964   {\l_@@_funding_cache_sum_three_tl}
2965   \@@_funding_cache_sum_year:nnn {#1} {sum-year4}
2966   {\l_@@_funding_cache_sum_four_tl}
2967   \@@_funding_cache_sum_year:nnn {#1} {sum-year5}
2968   {\l_@@_funding_cache_sum_five_tl}
2969   \str_if_eq:VnT \l_@@_funding_cache_type_tl {staff}
2970   {
2971     \tl_if_blank:VF \l_@@_funding_cache_category_tl
2972     {
2973       \@@_funding_cache_quantity_year:nnn {#1} {quantity-year1}
2974       {\l_@@_funding_cache_quantity_one_tl}
2975       \@@_funding_cache_quantity_year:nnn {#1} {quantity-year2}
2976       {\l_@@_funding_cache_quantity_two_tl}
2977       \@@_funding_cache_quantity_year:nnn {#1} {quantity-year3}
2978       {\l_@@_funding_cache_quantity_three_tl}
2979       \@@_funding_cache_quantity_year:nnn {#1} {quantity-year4}
2980       {\l_@@_funding_cache_quantity_four_tl}
2981       \@@_funding_cache_quantity_year:nnn {#1} {quantity-year5}
2982       {\l_@@_funding_cache_quantity_five_tl}
2983     }
2984   }
2985 }
2986 \group_end:
2987 }
2988
2989 \cs_new_protected:Npn \@@_funding_sum_set:Nnnnn #1#2#3#4#5
2990 {
2991   % #1 result, #2 database, #3 project, #4 type, #5 field list
2992   \fp_zero:N \l_@@_funding_cache_fp
2993   \clist_map_inline:nn {#5}
2994   {
2995     \tl_set:Nx \l_@@_funding_cache_key_tl {#2/#3/#4/##1}
2996     \prop_get:NVNT \g_@@_funding_sum_prop
2997       \l_@@_funding_cache_key_tl \l_@@_funding_cache_value_tl
2998     {
2999       \fp_add:Nn \l_@@_funding_cache_fp
3000       { \l_@@_funding_cache_value_tl }
3001     }
3002   }
3003   \tl_set:Nx #1 { \fp_to_decimal:N \l_@@_funding_cache_fp }
3004 }
3005
3006 \bool_new:N \g_@@_document_started_bool
3007
3008 \AtBeginDocument
3009 { \bool_gset_true:N \g_@@_document_started_bool }
3010
3011 % This command is deliberately public and free of expl3 punctuation because
3012 % it is written to, and subsequently read from, LaTeX .aux files.
3013 \NewDocumentCommand \dfgRestoreRequestedFunding { +m }
3014 {
3015   \bool_if:NF \l_@@_class_fastcompile_project_bool
3016   {
3017     \@@_add_entry:nnn { funding } { RequestedFundingOverview } {#1}
3018     \@@_funding_cache_entry:nn { RequestedFundingOverview } {#1}
3019   }
3020 }

```

```

3021
3022 % This public command is written to the auxiliary file. Keep its name free of
3023 % expl3 punctuation so LaTeX can read it before the document body starts.
3024 \cs_new_protected:Npn \@@_requested_funding_staff_overview_ensure_schema:
3025 {
3026   \DTLifdbexists { RequestedFundingStaffOverview }
3027   { }
3028   { \DTLaction [ name = RequestedFundingStaffOverview ] { new } }
3029   \clist_map_inline:nn
3030   {
3031     ref-project-id, funding-status, staff-type, ref-person-id,
3032     firstname, lastname, academic-degree, positionText, field-of-research,
3033     ref-institution-id, ref-affiliation-id, department, commitment, category,
3034     funding-source, description
3035   }
3036   {
3037     \DTLifhaskey { RequestedFundingStaffOverview } {##1}
3038     { }
3039     { \DTLaddcolumn { RequestedFundingStaffOverview } {##1} }
3040   }
3041 }
3042
3043 \NewDocumentCommand \dfgRestoreRequestedFundingStaff { +m }
3044 {
3045   \bool_if:NF \l_@@_class_fastcompile_project_bool
3046   {
3047     \@@_requested_funding_staff_overview_ensure_schema:
3048     \@@_add_entry:nnn { staff } { RequestedFundingStaffOverview } {#1}
3049   }
3050 }
3051
3052 \bool_if:NF \l_@@_class_fastcompile_project_bool
3053 { \@@_requested_funding_staff_overview_ensure_schema: }
3054
3055 % Existing direct-cost rows are normally declared in the individual project
3056 % descriptions, after section 2.1.1 has already been typeset. Mirror them to
3057 % a dedicated overview database so that the project table keeps using its live
3058 % rows without counting the restored rows twice.
3059 \cs_new_protected:Npn
3060 \@@_requested_and_existing_direct_costs_overview_ensure_schema:
3061 {
3062   \DTLifdbexists { RequestedAndExistingFundingDirectCostsOverview }
3063   { }
3064   { \DTLaction [ name = RequestedAndExistingFundingDirectCostsOverview ] { new } }
3065   \clist_map_inline:nn
3066   {
3067     ref-project-id, ref-affiliation-id, financed-by,
3068     sum-year1, sum-year2, sum-year3, sum-year4, sum-year5
3069   }
3070   {
3071     \DTLifhaskey { RequestedAndExistingFundingDirectCostsOverview } {##1}
3072     { }
3073     { \DTLaddcolumn { RequestedAndExistingFundingDirectCostsOverview } {##1} }
3074   }
3075 }
3076
3077 % This public command is written to the auxiliary file. Its name deliberately
3078 % contains no expl3 punctuation so that LaTeX can read it at the start of the
3079 % following run.
3080 \NewDocumentCommand \dfgRestoreRequestedAndExistingFundingDirectCosts { +m }
3081 {
3082   \bool_if:NF \l_@@_class_fastcompile_project_bool
3083   {
3084     \@@_requested_and_existing_direct_costs_overview_ensure_schema:
3085     \@@_add_entry:nnn { funding }
3086     { RequestedAndExistingFundingDirectCostsOverview } {#1}

```

```

3087     }
3088 }
3089
3090 \bool_if:NF \l_@@_class_fastcompile_project_bool
3091 { \@@_requested_and_existing_direct_costs_overview_ensure_schema: }
3092
3093 % Keep the overview tables usable on the first run, before any project-local
3094 % entries have reached the auxiliary files. A newly created database has no
3095 % columns, so establish the RequestedFunding schema explicitly: otherwise
3096 % sorting or filtering an empty overview raises ``No sort columns'' and
3097 % ``Unknown column key'' errors. No placeholder row is required.
3098 \bool_if:NF \l_@@_class_fastcompile_project_bool
3099 {
3100     \DTLifdbexists { RequestedFundingOverview }
3101     { }
3102     {
3103         \DTLaction [ name = RequestedFundingOverview ] { new }
3104         \DTLaddcolumn { RequestedFundingOverview } { ref-project-id }
3105         \DTLaddcolumn { RequestedFundingOverview } { type }
3106         \DTLaddcolumn { RequestedFundingOverview } { category }
3107         \DTLaddcolumn { RequestedFundingOverview } { percentage }
3108         \DTLaddcolumn { RequestedFundingOverview } { quantity-year1 }
3109         \DTLaddcolumn { RequestedFundingOverview } { quantity-year2 }
3110         \DTLaddcolumn { RequestedFundingOverview } { quantity-year3 }
3111         \DTLaddcolumn { RequestedFundingOverview } { quantity-year4 }
3112         \DTLaddcolumn { RequestedFundingOverview } { quantity-year5 }
3113         \DTLaddcolumn { RequestedFundingOverview } { sum-year1 }
3114         \DTLaddcolumn { RequestedFundingOverview } { sum-year2 }
3115         \DTLaddcolumn { RequestedFundingOverview } { sum-year3 }
3116         \DTLaddcolumn { RequestedFundingOverview } { sum-year4 }
3117         \DTLaddcolumn { RequestedFundingOverview } { sum-year5 }
3118     }
3119 }
3120
3121 \cs_new_protected:Npn \@@_cache_requested_funding:n #1
3122 {
3123     \bool_if:NTF \g_@@_document_started_bool
3124     {
3125         \iow_now:Nx \@auxout
3126         {
3127             \token_to_str:N \dfgRestoreRequestedFunding
3128             { \exp_not:n {#1} }
3129         }
3130     }
3131     { \dfgRestoreRequestedFunding{#1} }
3132 }
3133
3134 \cs_new_protected:Npn \@@_cache_requested_funding_staff:n #1
3135 {
3136     \bool_if:NTF \g_@@_document_started_bool
3137     {
3138         \iow_now:Nx \@auxout
3139         {
3140             \token_to_str:N \dfgRestoreRequestedFundingStaff
3141             { \exp_not:n {#1} }
3142         }
3143     }
3144     { \dfgRestoreRequestedFundingStaff{#1} }
3145 }
3146
3147 \cs_new_protected:Npn
3148 \@@_cache_requested_and_existing_direct_costs:n #1
3149 {
3150     \bool_if:NTF \g_@@_document_started_bool
3151     {
3152         \iow_now:Nx \@auxout

```

```

3153     {
3154         \token_to_str:N \dfgRestoreRequestedAndExistingFundingDirectCosts
3155         { \exp_not:n {#1} }
3156     }
3157 }
3158 { \dfgRestoreRequestedAndExistingFundingDirectCosts{#1} }
3159 }
3160
3161 % Focused project builds retain the project rows needed by generated plots when
3162 % images are enabled, plus the rows needed by the three local funding tables.
3163 % In particular, do not populate or restore any proposal-wide overview database
3164 % through the auxiliary file.
3165 \cs_new_protected:Npn \@@_fast_project_add_entry:nnn #1#2#3
3166 {
3167     \bool_if:NT \l_@@_class_fastcompile_project_show_images_bool
3168     {
3169         \str_if_eq:nnT {#1/#2} {/project}
3170         { \@@_add_entry:nnn {project} {project} {#3} }
3171         \str_if_eq:nnT {#1} {gantt}
3172         { \@@_add_entry:nnn {#1} {#2} {#3} }
3173     }
3174     \bool_if:NT \l_@@_class_fastcompile_project_show_funding_tables_bool
3175     {
3176         \str_case:nn {#1/#2}
3177         {
3178             {funding/RequestedFunding}
3179             {
3180                 \@@_add_entry:nnn {#1} {#2} {#3}
3181                 \@@_funding_cache_entry:nn {#2} {#3}
3182             }
3183             {staff/RequestedFundingStaff}
3184             { \@@_add_entry:nnn {#1} {#2} {#3} }
3185             {funding/RequestedAndExistingFundingDirectCosts}
3186             { \@@_add_entry:nnn {#1} {#2} {#3} }
3187         }
3188     }
3189 }
3190
3191 \NewDocumentCommand \addEntry { O{} m m }
3192 {
3193     \bool_if:NTF \l_@@_class_fastcompile_project_bool
3194     { \@@_fast_project_add_entry:nnn {#1} {#2} {#3} }
3195     {
3196         \tl_if_eq:nnTF {#1} { cv }
3197         { \bool_if:NTF \l_@@_class_cv_bool
3198         { \@@_add_entry:nnn {#1} {#2} {#3} }
3199         { \msg_warning:nnn { dfg } { cv-entry-omitted } {#2} } }
3200     {% default behaviour: use #2 as family if #1 is empty
3201     \tl_if_empty:nTF {#1}
3202     { \@@_add_entry:nnn {#2} {#2} {#3} }
3203     {
3204         \@@_add_entry:nnn {#1} {#2} {#3}
3205         \str_if_eq:nnT {#1} { funding }
3206         { \@@_funding_cache_entry:nn {#2} {#3} }
3207         \bool_lazy_all:nT
3208         {
3209             { \str_if_eq_p:nn {#1} { funding } }
3210             { \str_if_eq_p:nn {#2} { RequestedFunding } }
3211         }
3212         { \@@_cache_requested_funding:n {#3} }
3213         \bool_lazy_all:nT
3214         {
3215             { \str_if_eq_p:nn {#1} { staff } }
3216             { \str_if_eq_p:nn {#2} { RequestedFundingStaff } }
3217         }
3218         { \@@_cache_requested_funding_staff:n {#3} }

```

```

3219 \bool_lazy_all:nT
3220 {
3221     { \str_if_eq_p:nn {#1} { funding } }
3222     { \str_if_eq_p:nn {#2} { RequestedAndExistingFundingDirectCosts } }
3223 }
3224 { \@@_cache_requested_and_existing_direct_costs:n {#3} }
3225 }
3226 }
3227 }
3228 }

```

Issued by `\addEntry` when an entry is targeted at the `cv` database but no CV is being produced (`\l_dfg_class_cv_bool` is false). The omitted entry's key-value data is included in the message to aid debugging.

```

3229 \msg_new:nnn { dfg } { cv-entry-omitted }
3230 {
3231     CV~entry~omitted:~no~CV~is~being~created.^~J
3232     Entry~data:~'~{#1}'~.
3233 }

```

There is a shortcut to define a database for e.g. a whole command to avoid all the time to write something like `\getEntry[<person>]{<MM>}{<lastname>}`. So you can define `\tmpLocalDB` with the database name.

```

3234 \str_set:Nn \tmpLocalDB {}

```

`\getEntry`<sup>P.24</sup> The primary read command: `\getEntry[<db>]{<id-value>}{<field>}[<id-field>]`.

- 1) #1: Database name (default: `\tmpLocalDB`).
- 2) #2: The value to look up in the `id-field` column.
- 3) #3: The field whose value is to be returned.
- 4) #4: The name of the ID column (default: `id`); change this to look up rows by a field other than the primary key.

The guard logic runs in order: If `fastcompile-project`<sup>P.31</sup>=`true`, replace the output with a literal identifier placeholder to skip the query entirely. If #1 is empty (`\tmpLocalDB` not set), warn and abort. If the database does not exist, warn and abort. Retrieve the value; if null/empty, warn (but only outside the `tabularray` measuring pass to avoid duplicate messages). Output via `\dfgShowTag` so that `showtags`<sup>P.32</sup> annotations are applied automatically.

**PDF-bookmark note (FIXME):** When #3 contains LaTeX commands, the value may produce garbage in PDF bookmarks. Wrapping the output in `\texorpdfstring` would fix this but requires knowing at definition time what the field contains, which is not possible. A workaround is to use `\texorpdfstring` at the call site for fields that appear in section headings.

```

3235 %\getEntry [<DB>]{<id-value>}{<field>} [ <id-column>]
3236 %   single field, prints with \dfgShowTag wrapping
3237 %
3238 %\getEntry* [<DB>]{<id-value>}{<assignments>} [ <id-column>]
3239 %   multi-field, assigns to macros, no printing
3240 \NewDocumentCommand \dfgFastReference { m }
3241 { { \color{black-50}\ttfamily #1 } }
3242
3243 \cs_new_protected:Npn \@@_fast_clear_assignment:w #1 = #2 \q_stop
3244 { \cs_set:Npn #1 { } }
3245
3246 \cs_new_protected:Npn \@@_fast_clear_assignments:n #1
3247 {
3248     \clist_map_inline:nn {#1}
3249     { \@@_fast_clear_assignment:w ##1 \q_stop }
3250 }
3251
3252 \NewDocumentCommand{\getEntry}{s O{\tmpLocalDB} m m O{id}}
3253 {%
3254     \bool_if:NTF \l_@@_class_fastcompile_project_bool
3255     {
3256         \IfBooleanTF{#1}
3257         { \@@_fast_clear_assignments:n {#4} }
3258         { \dfgFastReference{#3} }
3259     }
3260     {
3261         \IfBooleanTF{#1}
3262         { \@@_get_entry_multi:nnnn {#2}{#3}{#4}{#5} }
3263         { \@@_get_entry_single:nnnn {#2}{#3}{#4}{#5} }%

```

```

3264     }
3265 }
3266
3267 % --- single-field (your existing behaviour, lightly cleaned) -----
3268 \cs_new_protected:Nn \@@_get_entry_single:nnnn
3269 {
3270   % #1 db, #2 id-value, #3 field, #4 id-column
3271   \tl_if_blank:nTF {#1}
3272   { \msg_warning:nne {dfg}{database-name-not-given}{#2-/#3} }
3273   {%
3274     \DTLifdbexists{#1}
3275     {%
3276       \DTLgetvalueforkey{\thevalue}{#3}{#1}{#4}{#2}%
3277       \DTLifnulllorempty{\thevalue}
3278       {%
3279         \bool_if:NF \lTblrMeasuringBool
3280         { \msg_warning:nneee {dfg}{missing-key}{#1}{#2}{#3} }%
3281       }
3282       { \dfgShowTag{#2}{#3}{\thevalue}[#1] }%
3283     }
3284     { \msg_warning:nne {dfg}{database-not-found}{#1} }%
3285   }%
3286 }
3287
3288 % --- multi-field: hoists checks out of per-field loop -----
3289 \cs_new_protected:Nn \@@_get_entry_multi:nnnn
3290 {
3291   \tl_if_blank:nTF {#1}
3292   { \msg_warning:nne {dfg}{database-name-not-given}{#2-/-multi} }
3293   {%
3294     \tl_set:Nx \l_tmpa_tl {#1}%
3295     \tl_set:Nx \l_tmpb_tl {#2}%
3296     \DTLifdbexists{\l_tmpa_tl}
3297     {%
3298       % \typeout{DEBUG:~about~to~assign~from~\l_tmpa_tl~for~id~\l_tmpb_tl}%
3299       \use:x
3300       {
3301         \exp_not:N \DTLassignfirstmatch
3302         { \exp_not:N \l_tmpa_tl }
3303         { \exp_not:n {#4} }
3304         { \exp_not:N \l_tmpb_tl }
3305         { \exp_not:n {#3} }
3306       }%
3307       % \typeout{DEBUG:~done.~theLastName~==~\theLastName}%
3308     }
3309     { \msg_warning:nne {dfg}{database-not-found}{\l_tmpa_tl} }%
3310   }%
3311 }
3312
3313 \cs_new_protected:Npn \@@_check_empty:w #1 = #2 \q_stop #3#4
3314 {
3315   % #1: target macro tokens, #2: field name, #3: db, #4: id
3316   \exp_args:NV \DTLifnulllorempty #1
3317   { \msg_warning:nneee {dfg}{missing-key}{#3}{#4}{#2} }
3318   { }%
3319 }
3320
3321 \cs_new_protected:Nn \@@_check_empty:nnn
3322 {
3323   % #1 db, #2 id, #3 single "\macro = field" pair
3324   \@@_check_empty:w #3 \q_stop {#1}{#2}%
3325 }
3326

```

Sometimes you need to get the last name of a person in the text. Here is how to do it, `\getName` <sup>→ P. 25</sup>.

```

3327 \NewDocumentCommand{\getName}{m}{\getEntry[person]{#1}{lastname}}

```

Sometimes you need to get the full name of a person in the text. Here is how to do it, `\getFullName`<sup>P.25</sup>.

```

3328 \NewDocumentCommand{\getFullName}{s m}
3329 {%
3330   \bool_if:NTF \l_@@_class_fastcompile_project_bool
3331   { \dfgFastReference{#2} }
3332   {
3333     % #1: starred -> include academic degree
3334     % #2: person id
3335     \getEntry*[person]{#2}{
3336       \theAcademicDegree = academicdegree,
3337       \theFirstName      = firstname,
3338       \theLastName       = lastname
3339     }%
3340     \IfBooleanT{#1}
3341     {
3342       \DTLifnulllorempty{\theAcademicDegree}{}
3343       { \dfgShowTag{#2}{academicdegree}{\theAcademicDegree}[person]\space}
3344     }%
3345     \dfgShowTag{#2}{firstname}{\theFirstName}[person]\space
3346     \dfgShowTag{#2}{lastname}{\theLastName}[person]
3347   }
3348 }

```

`\compareEntry`<sup>P.28</sup> `\compareEntry`<sup>P.28</sup> [`<db>`] {`<id>`} {`<field>`} {`<value>`} {`<true>`} {`<false>`} reads `<field>` from the row with the given `<id>` and executes `<yes>` if it matches `<value>`, otherwise `<no>`. It is used throughout the tables to branch on e.g. project type or status without repeating the full `\DTLgetvalueforkey/if` pattern.

The internal implementation `\dfg_compare_entry:nnnnnn` runs the same three guard checks as `\getEntry`<sup>P.24</sup> (empty DB name, non-existent DB), then uses `\exp_args:Nx` to fully expand `\thevalue` before the `\tl_if_eq:nnTF` test, ensuring that stored macro values are resolved correctly.

```

3349 \cs_new_protected:Npn \dfg_compare_entry:nnnnnn #1#2#3#4#5#6
3350 {
3351   \bool_if:NTF \l_@@_class_fastcompile_project_bool
3352   {#6}
3353   {
3354     \tl_if_blank:NTF {#1}
3355     { \msg_warning:nnn { dfg } { database-name-not-given } {#1} }
3356     {
3357       \DTLifdbexists{#1}
3358       {
3359         \DTLgetvalueforkey{\thevalue}{#3}{#1}{id}{#2}%
3360         \str_if_eq:eeTF { \thevalue } {#4}
3361         {#5}
3362         {#6}
3363       }
3364       { \msg_warning:nnn { dfg } { database-not-found } {#1} }
3365     }
3366   }
3367 }
3368
3369 \NewDocumentCommand \compareEntry { O{\tmpLocalDB} m m m m m }
3370 {
3371   \dfg_compare_entry:nnnnnn {#1}{#2}{#3}{#4}{#5}{#6}
3372 }

```

### 3.2.17 Table and list dispatch (`\printTable`, `\printList`)

Rather than requiring the user to call `\ProjectLeadersTable`, `\OverviewOfFundsRequestedForStaffTable`, etc. directly, two thin dispatchers are provided: `\printTable` [`<opts>`] {`<name>`} and `\printList` [`<opts>`] {`<name>`}.

They synthesise the command name by appending `Table` or `List` to the `<name>` argument (using `\cs:w...\cs_end:`), then pass the optional argument through if present. This pattern means new tables can be added to the class without any change to user-facing call sites.

All three commands check `fastcompile` first and emit a `\dfgItemSkipped` placeholder instead of running the real command when compilation speed is prioritised. Focused project mode makes narrow exceptions when `fastcompile-project-show-funding-tables=true`: the three project-local funding tables are rendered from their retained local rows; when `fastcompile-project-show-images=true`, plots are rendered from retained

project metadata. During real rendering the commands also establish the compact former-project context: reference-only projects receive an asterisk, and a local legend is added only if at least one such project was encountered. A `\rowNumber` counter is reset before each table for use in zebra-stripe logic inside individual table implementations.

```

3373
3374 \tl_new:N \l_tblr_body_tl          % token list that will hold the rows
3375
3376 \bool_new:N \l_@@_former_project_compact_bool
3377 \bool_new:N \g_@@_former_project_seen_bool
3378
3379 \cs_new_protected:Npn \@@_former_project_note:
3380 {
3381   \smallskip
3382   \noindent
3383   {\normalfont\normalcolor\footnotesize
3384     \textsuperscript{*}\,Former~project}\par
3385 }
3386
3387 \cs_new_protected:Npn \@@_former_project_context:n #1
3388 {
3389   \bool_set_true:N \l_@@_former_project_compact_bool
3390   % Table cells and list implementations introduce their own groups, so the
3391   % occurrence flag must be latched globally for the duration of this context.
3392   \bool_gset_false:N \g_@@_former_project_seen_bool
3393   #1
3394   \bool_if:NT \g_@@_former_project_seen_bool
3395     { \@@_former_project_note: }
3396   \bool_set_false:N \l_@@_former_project_compact_bool
3397   \bool_gset_false:N \g_@@_former_project_seen_bool
3398 }
3399
3400 \cs_new_protected:Npn \@@_print_thing:nnnn #1#2#3#4 {
3401   \bool_if:NTF \l_@@_class_fastcompile_bool
3402     { \@@_print_thing_skipped:nn {#1} {#3} }
3403     {%
3404       \@@_former_project_context:n
3405       {
3406         #4%
3407         \StartTimer
3408         \@@_print_thing_call:nnn {#1} {#2} {#3}%
3409         \StopTimer { \@@_print_thing_label:n {#3} }%
3410       }
3411     }
3412 }
3413
3414 \cs_new_protected:Npn \@@_print_thing_call:nnn #1#2#3 {
3415   \tl_if_head_is_group:nTF {#3}
3416     { \@@_print_thing_split:nnw {#1} {#2} #3 \empty \q_stop }
3417     { \cs:w #3 #1 \cs_end: #2 }
3418 }
3419
3420 \cs_new_protected:Npn \@@_print_thing_split:nnw #1#2#3#4 \q_stop {
3421   \cs:w #3 #1 \cs_end: #2 #4
3422 }
3423
3424 \cs_new:Npn \@@_print_thing_label:n #1 {
3425   \tl_if_head_is_group:nTF {#1}
3426     { \@@_print_thing_label_aux:w #1 \empty \q_stop }
3427     { #1 }
3428 }
3429
3430 \cs_new:Npn \@@_print_thing_label_aux:w #1#2 \q_stop {
3431   #1 \tl_if_blank:nF {#2} { - \@@_print_thing_label_tail:n {#2} }
3432 }
3433
3434 \cs_new:Npn \@@_print_thing_label_tail:n #1 {
3435   \tl_if_head_eq_charcode:nNTF {#1} [

```

```

3436     { \@@_print_thing_label_skip_optional:w #1 \q_stop }
3437     { \tl_head:n {#1} }
3438 }
3439
3440 \cs_new:Npn \@@_print_thing_label_skip_optional:w [#1]#2 \q_stop {
3441     \tl_head:n {#2}
3442 }
3443
3444 \cs_new_protected:Npn \@@_print_thing_skipped:nn #1#2 {
3445     \dfgItemSkipped { \@@_print_thing_label:n {#2} #1 }
3446 }
3447
3448 \cs_new:Npn \@@_print_table_name:n #1
3449 {
3450     \tl_if_head_is_group:nTF {#1}
3451     { \@@_print_table_name_aux:w #1 \q_stop }
3452     {#1}
3453 }
3454
3455 \cs_new:Npn \@@_print_table_name_aux:w #1#2 \q_stop {#1}
3456
3457 \prg_new_protected_conditional:Npnn
3458     \@@_print_table_if_fast_project_funding:n #1 { TF }
3459 {
3460     \bool_lazy_all:nTF
3461     {
3462         { \l_@@_class_fastcompile_project_bool }
3463         { \l_@@_class_fastcompile_project_show_funding_tables_bool }
3464     }
3465     {
3466         \str_case_e:nnF { \@@_print_table_name:n {#1} }
3467         {
3468             {RequestedFunding} { \prg_return_true: }
3469             {RequestedFundingStaff} { \prg_return_true: }
3470             {RequestedAndExistingFundingDirectCosts} { \prg_return_true: }
3471         }
3472         { \prg_return_false: }
3473     }
3474     { \prg_return_false: }
3475 }
3476
3477 \cs_new_protected:Npn \@@_print_table_dispatch:nn #1#2
3478 {
3479     \@@_print_table_if_fast_project_funding:nTF {#2}
3480     {
3481         \@@_former_project_context:n
3482         {
3483             \setcounter{rowNumber}{0}
3484             \@@_print_thing_call:nnn {Table} {#1} {#2}
3485         }
3486     }
3487     { \@@_print_thing:nnnn {Table} {#1} {#2} {\setcounter{rowNumber}{0}} }
3488 }
3489
3490 \NewDocumentCommand{\printTable}{ o +m }{%
3491     \IfNoValueTF {#1}
3492     { \@@_print_table_dispatch:nn { } {#2} }
3493     { \@@_print_table_dispatch:nn { [#1] } {#2} }%
3494 }
3495
3496 % Person-specific institution lists also run inside tables and PI cards.
3497 % Call their formatter directly so a nested list does not reset the outer
3498 % former-project context; this also preserves its focused-build output.
3499 \cs_new_protected:Npn \@@_print_list_dispatch:nn #1#2
3500 {
3501     \str_if_eq:eeTF { \@@_print_table_name:n {#2} } { Institutions }

```

```

3502     { \@@_print_thing_call:nnn { List } {#1} {#2} }
3503     { \@@_print_thing:nnnn { List } {#1} {#2} { } }
3504 }
3505
3506 \NewDocumentCommand{\printList}{ o +m }{%
3507     \IfNoValueTF {#1}
3508     { \@@_print_list_dispatch:nn { } {#2} }
3509     { \@@_print_list_dispatch:nn { [#1] } {#2} }%
3510 }
3511
3512 \cs_new_protected:Npn \@@_print_plot_dispatch:nn #1#2
3513 {
3514     \bool_lazy_all:nTF
3515     {
3516         { \l_@@_class_fastcompile_project_bool }
3517         { \l_@@_class_fastcompile_project_show_images_bool }
3518     }
3519     {
3520         \@@_former_project_context:n
3521         { \@@_print_thing_call:nnn {Plot} {#1} {#2} }
3522     }
3523     { \@@_print_thing:nnnn {Plot} {#1} {#2} { } }
3524 }
3525
3526 \NewDocumentCommand{\printPlot}{ o +m }{%
3527     \IfNoValueTF {#1}
3528     { \@@_print_plot_dispatch:nn { } {#2} }
3529     { \@@_print_plot_dispatch:nn { [#1] } {#2} }%
3530 }
3531
3532 \newcounter{rowNumber}

```

### 3.2.18 Data tables

All tables follow the same three-phase pattern: **Body accumulation:** A `\DTLforeach*` loop iterates over the relevant database (filtered and sorted as required) and appends one `tblr` row to the token list `\l_tblr_body_tl` via `\tl_gput_right:Nx`. Using a global token list and `:Nx` (full expansion) ensures that database values are resolved at loop time rather than at `tblr` rendering time. **Table opening:** `\begin{tblr}` with the main theme, `expand=\l_tblr_body_tl`, `long` (for page-breaking), and a column spec tailored to the specific table. **Header row + body:** A literal first row provides column headings; `\l_tblr_body_tl` follows as the data rows.

**ProjectLeadersTable** Lists all PIs who are active in the current funding period (`\theFundingPeriodNumeral`), sorted by last name. The filter applies two conditions simultaneously: `period`<sup>→P.22</sup> must contain the current numeral and `role`<sup>→P.22</sup> must contain `PI`. The first cell of every row defines the hyperlink destination `pi:<id>` used by `\getPI`.

```

3533
3534 % Use the same institution formatter as the CV section. The public
3535 % \InstitutionsList maps institution ids through \_@@_one_institution:n
3536 % and uses \par\medskip between multiple institutions in the standard layout.
3537 % Keep the institution label in sync with the ProjectsTable display setting.
3538 \NewDocumentCommand{\dfgPLInstitutionList}{m}{%
3539     \bool_if:NTF \l_@@_custom_projects_table_institution_abbreviations_bool
3540     { \printList{{Institutions}}{#1}[abbreviation] }
3541     { \printList{{Institutions}}{#1} }
3542 }
3543
3544 \int_new:N \l_@@_pl_iter_int
3545
3546 % Keep the hyperref command protected while tabularray expands the assembled
3547 % table body. It is executed only when the corresponding name cell is typeset.
3548 \cs_new_protected:Npn \@@_pi_target:n #1
3549 { \hypertarget{pi:#1}{} }
3550
3551 \NewDocumentCommand{\ProjectLeadersTable}{}{%
3552     \def\tblrbody{}%
3553
3554     \StartTimer
3555     \DTLsort*{lastname}{person}%

```

```

3556 \StopTimer{ProjectLeaderTable-sort}
3557
3558 \int_zero:N \l_@@_pl_iter_int
3559
3560 \StartTimer
3561 \DTLforeach*[
3562   \DTLisinlist{\theFundingPeriodNumeral}{\period}
3563   \and
3564   \DTLisinlist{PI}{\role}
3565 ]{person}{
3566   \id           = id,
3567   \role         = role,
3568   \lastname     = lastname,
3569   \firstname    = firstname,
3570   \academicdegree = academicdegree,
3571   \period       = period,
3572   \refProjectId = ref-project-id,
3573   \refInstitutionId = ref-institution-id,
3574   \doctorateYear = doctorateYear,
3575   \gender       = gender
3576 }{%
3577   \int_incr:N \l_@@_pl_iter_int
3578   \protected@edef\tblrbody{\tblrbody
3579 {\noexpand\@@_pi_target:n{\id}%
3580  {\noexpand{\color{referencePI}}\bfseries
3581   \noexpand\dfgShowTag{\id}{lastname}{\lastname}[person]},~
3582   \noexpand\dfgShowTag{\id}{firstname}{\firstname}[person]}
3583   \noexpand\
3584   \noexpand\dfgShowTag{\id}{academicdegree}{\academicdegree}[person]}
3585   \noexpand& \noexpand\dfgShowTag{\id}{gender}{\gender}[person]
3586   \noexpand& \noexpand\dfgShowTag{\id}{doctorateYear}{\doctorateYear}[person]
3587   \noexpand& {\noexpand\dfgPLInstitutionList{\id}}
3588   \noexpand& \noexpand\getProject{\refProjectId}
3589   \noexpand\
3590  }%
3591 }
3592 \StopTimer{PL-loop}
3593 \iow_term:x { PL-iterations:~ \int_use:N \l_@@_pl_iter_int }
3594
3595 \StartTimer
3596 \begin{tblr}[
3597   theme = main,
3598   expand = \tblrbody,
3599   long
3600 ]{
3601   colspec = {t{3.5cm}t{1cm}t{1.6cm}X[t]t{1.3cm}},
3602   column{1} = { fg = referencePI, halign = l },
3603   column{2} = { halign = c },
3604   column{3} = { halign = c },
3605   column{4} = { halign = l },
3606   column{5} = { halign = c },
3607   rowhead = 1,
3608   row{1} = {
3609     bg      = tableHeadingsBG,
3610     fg      = tableHeadingsFont,
3611     font    = \footnotesize\bfseries,
3612     halign = c,
3613     valign = t,
3614     guard
3615     },
3616   }
3617 Project~ leader
3618 & Gender
3619 & {Doctorate           \\\ obtained~ in}
3620 & {Home~ institution, \\\ location}
3621 & Project(s)          \\\

```

```

3622     \tblrbody
3623     \end{tblr}
3624     \StopTimer{PL-render}
3625 }

```

After the list of the PIs we need to have an aggregated list of the participating institutions.

```

3626 \prop_new:N \l_@@_inst_to_aff_prop
3627 \prop_new:N \l_@@_inst_name_prop
3628 \prop_new:N \l_@@_inst_seen_prop
3629 \prop_new:N \l_@@_aff_seen_prop
3630 \prop_new:N \l_@@_aff_to_insts_prop % values are seq names (tl)
3631 \prop_new:N \l_@@_aff_name_prop
3632 \seq_new:N \l_@@_affiliations_seq
3633 \seq_new:N \l_@@_aff_sort_seq
3634 \seq_new:N \l_@@_inst_sort_seq
3635 \tl_new:N \l_@@_output_tl
3636 \tl_new:N \l_@@_aff_label_tl
3637 \int_new:N \l_@@_seq_counter_int
3638 \cs_generate_variant:Nn \seq_set_from_clist:Nn { Ne , NV }
3639
3640 % Append an institution name to the per-affiliation seq.
3641 % Lazily creates the seq on first use and stores its name in the prop.
3642 \cs_new_protected:Npn \@@_append_inst:nn #1#2 {
3643   \prop_get:NnNTF \l_@@_aff_to_insts_prop {#1} \l_tmpd_tl
3644   {%
3645     % \l_tmpd_tl now holds the seq's csname; append to it
3646     \seq_put_right:cn { \l_tmpd_tl } {#2}%
3647   }
3648   {%
3649     \int_incr:N \l_@@_seq_counter_int
3650     \tl_set:Nx \l_tmpd_tl
3651     { \l_@@_inst_seq_ \int_use:N \l_@@_seq_counter_int _seq }%
3652     \seq_new:c { \l_tmpd_tl }%
3653     \seq_put_right:cn { \l_tmpd_tl } {#2}%
3654     \prop_put:NnV \l_@@_aff_to_insts_prop {#1} \l_tmpd_tl
3655   }
3656 }
3657 \cs_generate_variant:Nn \@@_append_inst:nn { VV }
3658
3659 \cs_new_protected:Npn \@@_collect_pi_institution:n #1
3660 {
3661   \tl_if_blank:nF {#1}
3662   {
3663     \prop_if_in:NnF \l_@@_inst_seen_prop {#1}
3664     {%
3665       \prop_put:Nnn \l_@@_inst_seen_prop {#1} {1}%
3666       \prop_get:NnNT \l_@@_inst_to_aff_prop {#1} \l_tmpb_tl
3667       {%
3668         \prop_get:NnNT \l_@@_inst_name_prop {#1} \l_tmpe_tl
3669         {
3670           \tl_set:Ne \l_tmpe_tl
3671           {
3672             \exp_not:N \dfgShowTag {#1}{name}
3673             {\exp_not:N \l_tmpe_tl}[institution]
3674           }
3675           \@@_append_inst:VV \l_tmpb_tl \l_tmpe_tl
3676         }%
3677         \prop_if_in:NVF \l_@@_aff_seen_prop \l_tmpb_tl
3678         {%
3679           \prop_put:NVn \l_@@_aff_seen_prop \l_tmpb_tl {1}%
3680           \seq_put_right:NV \l_@@_affiliations_seq \l_tmpb_tl
3681         }%
3682       }%
3683     }%
3684   }
3685 }
3686

```

```

3687 \NewDocumentCommand{\ParticipatingInstitutionsList}{ O{count} }
3688 {%
3689   % #1: alpha: affiliations are ordered alphabetically
3690   % #1: count: by count
3691   \prop_clear:N \l_@@_inst_to_aff_prop
3692   \prop_clear:N \l_@@_inst_name_prop
3693   \prop_clear:N \l_@@_inst_seen_prop
3694   \prop_clear:N \l_@@_aff_seen_prop
3695   \prop_clear:N \l_@@_aff_to_insts_prop
3696   \seq_clear:N \l_@@_affiliations_seq
3697   \tl_clear:N \l_@@_output_tl
3698   \int_zero:N \l_@@_seq_counter_int
3699
3700   % --- 1. One pass over institution: id -> aff-id, id -> name -----
3701   \DTLforeach*{institution}{
3702     \l_tmpa_tl = id,
3703     \l_tmpb_tl = ref-affiliation-id,
3704     \l_tmpc_tl = name
3705   }{%
3706     \prop_put:NVV \l_@@_inst_to_aff_prop \l_tmpa_tl \l_tmpb_tl
3707     \prop_put:NVV \l_@@_inst_name_prop \l_tmpa_tl \l_tmpc_tl
3708   }
3709
3710   % --- 2. One pass over person: collect active PI institutions -----
3711   \DTLforeach*[
3712     \DTLisinlist{\theFundingPeriodNumeral}{\pPeriod} \and
3713     \DTLisinlist{PI}{\pRole}
3714   ]{person}{ \l_tmpa_tl = ref-institution-id , \pPeriod=period, \pRole=role }{%
3715     \seq_set_from_clist:NV \l_tmpa_seq \l_tmpa_tl
3716     \seq_map_inline:Nn \l_tmpa_seq
3717     { \@@_collect_pi_institution:n {##1} }%
3718   }
3719
3720   % --- 3a. Precompute affiliation display names -----
3721   \prop_clear:N \l_@@_aff_name_prop
3722   \seq_map_inline:Nn \l_@@_affiliations_seq {%
3723     \getEntry*[affiliation]{##1}{ \l_tmpa_tl = name }%
3724     \prop_put:NnV \l_@@_aff_name_prop {##1} \l_tmpa_tl
3725   }
3726
3727   % --- 3b. Sort affiliations according to requested order -----
3728   \str_case:nnF {#1}
3729   {
3730     { alpha }
3731     {%
3732       \seq_sort:Nn \l_@@_affiliations_seq
3733       {%
3734         \prop_get:NnN \l_@@_aff_name_prop {##1} \l_tmpa_tl
3735         \prop_get:NnN \l_@@_aff_name_prop {##2} \l_tmpb_tl
3736         \str_compare:eNeTF { \l_tmpa_tl } < { \l_tmpb_tl }
3737         { \sort_return_same: }
3738         { \sort_return_swapped: }%
3739       }%
3740     }
3741     { count }
3742     {%
3743       \seq_sort:Nn \l_@@_affiliations_seq
3744       {%
3745         \prop_get:NnN \l_@@_aff_to_insts_prop {##1} \l_tmpc_tl
3746         \prop_get:NnN \l_@@_aff_to_insts_prop {##2} \l_tmpd_tl
3747         \int_compare:nNnTF
3748         { \seq_count:c { \l_tmpc_tl } } > { \seq_count:c { \l_tmpd_tl } }
3749         { \sort_return_same: }
3750         {%
3751           \int_compare:nNnTF
3752           { \seq_count:c { \l_tmpc_tl } } < { \seq_count:c { \l_tmpd_tl } }

```

```

3753         { \sort_return_swapped: }
3754     }%
3755     % equal counts → alphabetical tiebreak
3756     \prop_get:NnN \l_@@_aff_name_prop {##1} \l_tmpa_tl
3757     \prop_get:NnN \l_@@_aff_name_prop {##2} \l_tmpb_tl
3758     \str_compare:eNeTF { \l_tmpa_tl } < { \l_tmpb_tl }
3759     { \sort_return_same: }
3760     { \sort_return_swapped: }%
3761 }%
3762 }%
3763 }%
3764 }
3765 }
3766 {%
3767 \msg_warning:nnn { @@ } { unknown-order }
3768 { Unknown~order~'#1';~using~'alpha'. }%
3769 \seq_sort:Nn \l_@@_affiliations_seq
3770 {%
3771 \prop_get:NnN \l_@@_aff_name_prop {##1} \l_tmpa_tl
3772 \prop_get:NnN \l_@@_aff_name_prop {##2} \l_tmpb_tl
3773 \str_compare:eNeTF { \l_tmpa_tl } < { \l_tmpb_tl }
3774 { \sort_return_same: }
3775 { \sort_return_swapped: }%
3776 }%
3777 }
3778
3779 % --- 4. Emit output -----
3780 \bool_set_true:N \l_tmpa_bool
3781 \seq_map_inline:Nn \l_@@_affiliations_seq {%
3782 \bool_if:NTF \l_tmpa_bool
3783 { \bool_set_false:N \l_tmpa_bool }
3784 { \tl_put_right:Nn \l_@@_output_tl {\par} }%
3785 \getEntry*[affiliation]{##1}{
3786 \theAffName = name,
3787 \theAffLocation = location
3788 }%
3789 \prop_get:NnN \l_@@_aff_to_insts_prop {##1} \l_tmpd_tl
3790 \seq_set_eq:Nc \l_@@_inst_sort_seq { \l_tmpd_tl }%
3791 \seq_sort:Nn \l_@@_inst_sort_seq
3792 {%
3793 \str_compare:nNnTF {####1} < {####2}
3794 { \sort_return_same: }
3795 { \sort_return_swapped: }%
3796 }%
3797 \tl_set:Nx \l_@@_aff_label_tl { \seq_use:Nn \l_@@_inst_sort_seq {\} }%
3798 \tl_put_right:Nx \l_@@_output_tl {%
3799 { \exp_not:N \usekomafont{subsubsection}
3800 \exp_not:N \dfgShowTag {##1}{name}
3801 { \exp_not:N \theAffName }[affiliation]
3802 \exp_not:n {\space{}}
3803 \exp_not:N \dfgShowTag {##1}{location}
3804 { \exp_not:N \theAffLocation }[affiliation]
3805 \exp_not:n {\} }%
3806 \exp_not:N \l_@@_aff_label_tl \exp_not:n {\} }%
3807 }%
3808 }
3809 \tl_use:N \l_@@_output_tl
3810 }
3811

```

Very similar to the table for the PIs we need one table for the projects. First we start with a helper command to get for each referenced person the required data.

```

3812 \NewDocumentCommand{\getPersonInformation}{O{person} m}
3813 {%
3814 % #1: database
3815 % #2: comma-separated list of person ids
3816 \def\tmpLocalDB{#1}%

```

```

3817 \seq_clear:N \l_tmpa_seq
3818 \seq_set_from_clist:Ne \l_tmpa_seq {#2}%
3819 \bool_if:NTF \l_@@_project_one_PI_bool
3820 {%
3821 % Single-PI mode: no boxing, just emit each entry inline
3822 \bool_set_true:N \l_tmpa_bool
3823 \seq_map_inline:Nn \l_tmpa_seq
3824 {%
3825 \bool_if:NTF \l_tmpa_bool
3826 { \bool_set_false:N \l_tmpa_bool }
3827 { ~ }%
3828 \__getperson_one:n {##1}%
3829 }%
3830 }
3831 {%
3832 % Multi-PI mode: lay out as a 2-column raster
3833 \begin{tcbrafter}[
3834 raster~ columns=2,
3835 raster~ equal~ height=rows,
3836 raster~ column~ skip=4pt,
3837 raster~ row~ skip=10pt,
3838 PIbox
3839 ]
3840 \seq_map_inline:Nn \l_tmpa_seq
3841 {%
3842 \__getperson_one:n {##1}%
3843 }%
3844 \end{tcbrafter}
3845 }%
3846 }
3847
3848 \cs_new_protected:Npn \__getperson_one:n #1
3849 {%
3850 \getEntry*[\tmpLocalDB]{#1}{
3851 \theFirstName = firstname,
3852 \theLastName = lastname,
3853 \theAcademicDegree = academicdegree,
3854 \thePhone = phone,
3855 \theEmail = email,
3856 \theInstitution = ref-institution-id,
3857 \theORCID = orcid
3858 }%
3859 \begin{tcolorbox}[PIbox,title={
3860 \bfseries
3861 \dfgShowTag{#1}{firstname}{\theFirstName}[\tmpLocalDB]\space
3862 \color{referencePI}
3863 \dfgShowTag{#1}{lastname}{\theLastName}[\tmpLocalDB]
3864 \normalfont\normalcolor,\space
3865 \dfgShowTag{#1}{academicdegree}{\theAcademicDegree}[\tmpLocalDB]]
3866 \ifdefempty{\theORCID}{\mbox{~}\!\!\!.75\baselineskip}{\getORCID{#1}\!\!\}
3867 \ifdefempty{\theInstitution}{\printList{{Institutions}{#1}}\newline}
3868 \ifdefempty{\thePhone}{\mbox{\faPhone\space}
3869 \dfgShowTag{#1}{phone}{\thePhone}[\tmpLocalDB]\quad}}
3870 \ifdefempty{\theEmail}{\mbox{\faEnvelope\space}
3871 \dfgShowTag{#1}{email}{\theEmail}[\tmpLocalDB]]}
3872 \end{tcolorbox}
3873 }
3874 }
3875 }
3876
3877 % =====
3878 % Precompute compact project-table data per person
3879 % =====
3880
3881 % --- Shared allocations outside each function -----
3882 \prop_new:N \g_@@_proj_pi_prop

```

```

3883 \bool_new:N \g_@@_proj_pi_built_bool
3884 \prop_new:N \g_@@_aff_narrow_prop
3885 \prop_new:N \g_@@_inst_narrow_prop
3886 \prop_new:N \g_@@_proj_pi_institution_ids_prop
3887 \prop_new:N \g_@@_projects_table_institution_abbreviation_prop
3888 \prop_new:N \g_@@_projects_table_institution_name_prop
3889 \prop_new:N \g_@@_projects_table_abbreviation_owner_id_prop
3890 \prop_new:N \g_@@_projects_table_abbreviation_owner_name_prop
3891 \prop_new:N \g_@@_projects_table_abbreviation_warned_prop
3892 \tl_new:N \l_@@_projects_table_legend_tl
3893 \seq_new:N \l_@@_projects_table_institution_ids_seq
3894 \seq_new:N \l_@@_projects_table_sorted_institution_ids_seq
3895 \clist_new:N \l_@@_projects_table_institution_ids_clist
3896 \tl_new:N \l_@@_projects_table_institution_abbreviation_tl
3897
3898 \cs_new_protected:Npn \@@_projects_table_collect_person_institutions:n #1
3899 {
3900   \prop_get:NnNT \g_@@_proj_pi_institution_ids_prop {#1} \l_tmpa_tl
3901   {
3902     \clist_set:NV \l_@@_projects_table_institution_ids_clist \l_tmpa_tl
3903     \clist_map_inline:Nn \l_@@_projects_table_institution_ids_clist
3904     {
3905       \seq_if_in:NnF \l_@@_projects_table_institution_ids_seq {##1}
3906       { \seq_put_right:Nn \l_@@_projects_table_institution_ids_seq {##1} }
3907     }
3908   }
3909 }
3910
3911 \cs_new_protected:Npn \@@_projects_table_collect_institutions:n #1
3912 {
3913   \bool_if:NT \l_@@_custom_projects_table_institution_abbreviations_bool
3914   {
3915     \clist_map_function:nN {#1}
3916     \@@_projects_table_collect_person_institutions:n
3917   }
3918 }
3919
3920 \cs_new_protected:Npn \@@_projects_table_institution_legend:
3921 {
3922   \bool_if:NT \l_@@_custom_projects_table_institution_abbreviations_bool
3923   {
3924     \tl_clear:N \l_@@_projects_table_legend_tl
3925     \seq_set_eq:NN \l_@@_projects_table_sorted_institution_ids_seq
3926     \l_@@_projects_table_institution_ids_seq
3927     \seq_sort:Nn \l_@@_projects_table_sorted_institution_ids_seq
3928     {
3929       \prop_get:NnN \g_@@_projects_table_institution_abbreviation_prop
3930       {##1} \l_tmpa_tl
3931       \prop_get:NnN \g_@@_projects_table_institution_abbreviation_prop
3932       {##2} \l_tmpb_tl
3933       \str_compare:eNeTF
3934       { \str_casefold:V \l_tmpa_tl }
3935       >
3936       { \str_casefold:V \l_tmpb_tl }
3937       { \sort_return_swapped: }
3938       { \sort_return_same: }
3939     }
3940     \seq_map_inline:Nn \l_@@_projects_table_sorted_institution_ids_seq
3941     {
3942       \prop_get:NnN \g_@@_projects_table_institution_abbreviation_prop
3943       {##1} \l_tmpa_tl
3944       \prop_get:NnN \g_@@_projects_table_institution_name_prop
3945       {##1} \l_tmpb_tl
3946       \DTLifnulloreempty{\l_tmpa_tl}{}
3947       {
3948         \tl_if_blank:VF \l_@@_projects_table_legend_tl

```

```

3949         { \tl_put_right:Nn \l_@@_projects_table_legend_tl { ;~ } }
3950     \tl_put_right:Nx \l_@@_projects_table_legend_tl
3951     {
3952         \exp_not:N \textbf { \exp_not:V \l_tmpa_tl }
3953         \c_space_tl = \c_space_tl
3954         \exp_not:V \l_tmpb_tl
3955     }
3956 }
3957 }
3958 \tl_if_blank:VF \l_@@_projects_table_legend_tl
3959 {
3960     \par\vspace{.15\baselineskip}
3961     {\tiny\RaggedRight\setlength{\parskip}{0pt}\noindent
3962     \textit{Institution~abbreviations:}\space
3963     \tl_use:N \l_@@_projects_table_legend_tl
3964     \par
3965     }
3966 }
3967 }
3968 }
3969
3970
3971 % Helper for render-time formatting
3972 \NewDocumentCommand{\dfgPIformat}{mmm}{%
3973     % #1 = person id, #2 = firstname, #3 = lastname
3974     \dfgShowTag{#1}{firstname}{#2}[person]\space
3975     {\color{referencePI}\bfseries
3976     \dfgShowTag{#1}{lastname}{#3}[person],}\space
3977 }
3978
3979 % Precompute once: store only the tokens, not \color & \bfseries directly
3980 \cs_new_protected:Npn \l_@@_proj_pi_build: {
3981     \bool_if:NF \g_@@_proj_pi_built_bool {
3982         \bool_gset_true:N \g_@@_proj_pi_built_bool
3983
3984         % Pass 1+2: precompute institution strings (as before)
3985         \prop_new:N \l_@@_aff_narrow_prop
3986         \DTLforeach*{affiliation}{
3987             \l_tmpa_tl = id,
3988             \l_tmpb_tl = name
3989         }{%
3990             \prop_put:NVV \l_@@_aff_narrow_prop \l_tmpa_tl \l_tmpb_tl
3991         }
3992
3993         \prop_new:N \l_@@_inst_narrow_prop
3994         \DTLforeach*{institution}{
3995             \l_tmpa_tl = id,
3996             \l_tmpb_tl = name,
3997             \l_tmpe_tl = ref-affiliation-id,
3998             \l_@@_projects_table_institution_abbreviation_tl = abbreviation
3999         }{%
4000             \prop_gput:NVV \g_@@_projects_table_institution_abbreviation_prop
4001                 \l_tmpa_tl \l_@@_projects_table_institution_abbreviation_tl
4002             \prop_gput:NVV \g_@@_projects_table_institution_name_prop
4003                 \l_tmpa_tl \l_tmpb_tl
4004             \DTLifnulloreempty{\l_@@_projects_table_institution_abbreviation_tl}{}
4005             {
4006                 \prop_get:NVNTF \g_@@_projects_table_abbreviation_owner_name_prop
4007                     \l_@@_projects_table_institution_abbreviation_tl \l_tmpe_tl
4008                 {
4009                     \tl_if_eq:NNF \l_tmpe_tl \l_tmpb_tl
4010                     {
4011                         \prop_if_in:NVF \g_@@_projects_table_abbreviation_warned_prop
4012                             \l_@@_projects_table_institution_abbreviation_tl
4013                     }
4014                     \prop_get:NVN \g_@@_projects_table_abbreviation_owner_id_prop

```

```

4015         \l_@@_projects_table_institution_abbreviation_tl \l_tmpf_tl
4016         \msg_warning:nneeee { dfg } { duplicate-institution-abbreviation }
4017         { \l_@@_projects_table_institution_abbreviation_tl }
4018         { \l_tmpe_tl }
4019         { \l_tmpb_tl }
4020         { \l_tmpf_tl,~\l_tmpe_tl }
4021         \prop_gput:Nv \g_@@_projects_table_abbreviation_warned_prop
4022         \l_@@_projects_table_institution_abbreviation_tl { 1 }
4023     }
4024 }
4025 }
4026 {
4027     \prop_gput:Nv \g_@@_projects_table_abbreviation_owner_id_prop
4028     \l_@@_projects_table_institution_abbreviation_tl \l_tmpe_tl
4029     \prop_gput:Nv \g_@@_projects_table_abbreviation_owner_name_prop
4030     \l_@@_projects_table_institution_abbreviation_tl \l_tmpb_tl
4031 }
4032 }
4033 \bool_if:NTF
4034 \l_@@_custom_projects_table_institution_abbreviations_bool
4035 {
4036     \@@_institution_abbreviation_or_name:nN
4037     { \l_tmpe_tl } \l_tmpf_tl
4038 }
4039 {
4040     \tl_set:Nn \l_@@_institution_label_field_tl { name }
4041     \DTLgetvalueforkey{\l_tmpf_tl}{name}{institution}{id}{\l_tmpe_tl}
4042 }
4043 \prop_get:NvNT \l_@@_aff_narrow_prop \l_tmpe_tl \l_tmpe_tl {%
4044     \tl_set:Nx \l_tmpe_tl
4045     {
4046         \exp_not:N \dfgShowTag
4047         { \exp_not:N \l_tmpe_tl }
4048         { \exp_not:N \l_@@_institution_label_field_tl }
4049         { \exp_not:N \l_tmpf_tl } [institution]
4050     , ~
4051     \exp_not:N \dfgShowTag
4052     { \exp_not:N \l_tmpe_tl } {name}
4053     { \exp_not:N \l_tmpe_tl } [affiliation]
4054     }
4055     \prop_put:Nv \l_@@_inst_narrow_prop \l_tmpe_tl \l_tmpe_tl
4056 }
4057 }
4058
4059 % Pass 3: per Person die ganze Zelle vorberechnen, mit \dfgPIformat
4060 \DTLforeach*{person}{
4061     \l_tmpe_tl = id,
4062     \l_tmpb_tl = firstname,
4063     \l_tmpe_tl = lastname,
4064     \l_tmpe_tl = ref-institution-id
4065 }{%
4066 \prop_gput:Nv \g_@@_proj_pi_institution_ids_prop
4067     \l_tmpe_tl \l_tmpe_tl
4068     \tl_clear:N \l_tmpe_tl
4069     \tl_put_right:Nx \l_tmpe_tl {%
4070         \exp_not:N \dfgPIformat
4071         { \exp_not:N \l_tmpe_tl }
4072         { \exp_not:N \l_tmpb_tl }
4073         { \exp_not:N \l_tmpe_tl } {%
4074     }%
4075     % Institutions, separator ";"~"
4076     \seq_set_from_clist:Nv \l_tmpe_seq \l_tmpe_tl
4077     \bool_set_true:N \l_tmpe_bool
4078     \seq_map_inline:Nn \l_tmpe_seq {%
4079         \bool_if:NTF \l_tmpe_bool
4080         { \bool_set_false:N \l_tmpe_bool }

```

```

4081     { \tl_put_right:Nn \l_tmpe_tl { ;~ } }%
4082     \prop_get:NnNT \l_@@_inst_narrow_prop {##1} \l_tmpf_tl
4083     { \tl_put_right:NV \l_tmpe_tl \l_tmpf_tl }%
4084     }
4085     \prop_gput:NVV \g_@@_proj_pi_prop \l_tmpe_tl \l_tmpe_tl
4086     }
4087   }
4088 }
4089
4090 % Schneller Drop-in
4091 \NewDocumentCommand{\dfgFastPIinProjectsTable}{m}{%
4092   \@@_proj_pi_build:
4093   \seq_set_from_clist:Nn \l_tmpe_seq {##1}%
4094   \bool_set_true:N \l_tmpe_bool
4095   \seq_map_inline:Nn \l_tmpe_seq {%
4096     \bool_if:NTF \l_tmpe_bool
4097     { \bool_set_false:N \l_tmpe_bool }
4098     { \newline }%
4099     \prop_get:NnNT \g_@@_proj_pi_prop {##1} \l_tmpeb_tl
4100     { \tl_use:N \l_tmpeb_tl }%
4101   }
4102 }
4103
4104 \NewDocumentCommand{\dfgPIinProjectsTable}{O{person} m}
4105 {%
4106   % #1: database
4107   % #2: comma-separated list of person ids
4108   \def\tmpLocalDB{##1}%
4109   \seq_clear:N \l_tmpe_seq
4110   \seq_set_from_clist:Nn \l_tmpe_seq {##2}%
4111   \bool_set_true:N \l_tmpe_bool
4112   \seq_map_inline:Nn \l_tmpe_seq
4113   {%
4114     \bool_if:NTF \l_tmpe_bool
4115     { \bool_set_false:N \l_tmpe_bool }
4116     { \newline }%
4117     \__pi_in_projects_one:n {##1}%
4118   }%
4119 }
4120
4121 \cs_new_protected:Npn \__pi_in_projects_one:n #1
4122 {%
4123   \getEntry*[\tmpLocalDB]{##1}{
4124     \theAcademicDegree = academicdegree,
4125     \theFirstName = firstname,
4126     \theLastName = lastname
4127   }%
4128   \group_begin:
4129   %%\theAcademicDegree\space%
4130   \dfgShowTag{##1}{firstname}{\theFirstName}[\tmpLocalDB]\space
4131   \color{referencePI}\bfseries
4132   \dfgShowTag{##1}{lastname}{\theLastName}[\tmpLocalDB], \space
4133   \normalfont\normalcolor
4134   \printList{{Institutions}{##1}[abbreviation,noaddress,nolocation,nozip,narrow]}%
4135   \group_end:
4136 }
4137 \NewDocumentCommand{\ProjectsTable}{mm}
4138 {%
4139   \def\tblrbody{}%
4140   \clist_clear:N \l_@@_research_area_clist
4141   \tl_clear:N \l_tmpe_tl
4142   \clist_clear:N \l_tmpe_clist
4143   \seq_clear:N \l_tmpeb_seq
4144   \seq_clear:N \l_tmpe_seq
4145   \seq_clear:N \l_@@_projects_table_institution_ids_seq
4146   \@@_proj_pi_build:

```

```

4147
4148 \StartTimer
4149 \DTLsort{number}{project}%
4150 \StopTimer{Proj-#1-sort}
4151
4152 \int_zero:N \l_tmpa_int
4153
4154 \StartTimer
4155 \DTLforeach*[
4156 \DTLisPrefix{\pNumber}{#1}
4157 \and
4158 \not\DTLisSeq{\pConsiderForLists}{false}
4159 ]{project}{
4160 \pID = id,
4161 \pNumber = number,
4162 \pName = name,
4163 \pStatus = project-status,
4164 \pType = project-type,
4165 \pConsiderForLists = consider-for-lists,
4166 \l_tmpa_clist = research-area,
4167 \pRefPersonId = ref-person-id
4168 }{%
4169 \int_incr:N \l_tmpa_int
4170 \exp_args:N \@@_projects_table_collect_institutions:n \pRefPersonId
4171 % --- reset ALL flags each iteration -----
4172 \bool_set_false:N \l_@@_project_type_research_bool
4173 \bool_set_false:N \l_@@_project_type_service_bool
4174 \bool_set_false:N \l_@@_project_type_mgk_bool
4175 \bool_set_false:N \l_@@_project_type_admin_bool
4176
4177 \bool_set_false:N \l_@@_project_status_N_bool
4178 \bool_set_false:N \l_@@_project_status_E_bool
4179 \bool_set_false:N \l_@@_project_status_C_bool
4180
4181
4182 \str_case:Vn {\pStatus}
4183 {
4184 {N}{ \bool_set_true:N \l_@@_project_status_N_bool }
4185 {E}{ \bool_set_true:N \l_@@_project_status_E_bool }
4186 {C}{ \bool_set_true:N \l_@@_project_status_C_bool }
4187 }
4188
4189 \str_case:Vn {\pType}{
4190 {research}{ \bool_set_true:N \l_@@_project_type_research_bool }
4191 {service}{ \bool_set_true:N \l_@@_project_type_service_bool }
4192 {mgk}{ \bool_set_true:N \l_@@_project_type_mgk_bool }
4193 {admin}{ \bool_set_true:N \l_@@_project_type_admin_bool }
4194 }
4195
4196 \bool_if:nT
4197 { \l_@@_project_type_research_bool && ! \l_@@_project_status_E_bool }
4198 {%
4199 \clist_sort:Nn \l_tmpa_clist
4200 { \fp_compare:nTF {##1 < ##2} {\sort_return_swapped:} {\sort_return_same:} }%
4201 \seq_set_from_clist:NN \l_tmpa_seq \l_tmpa_clist
4202 \seq_set_map:NNn \l_tmpa_seq \l_tmpa_seq
4203 {%
4204 \prop_if_in:NnTF \g_@@_dfg_research_areas_prop {##1}
4205 { ##1 }
4206 { \textcolor{error}{\textbf{##1}}} }%
4207 }%
4208 }
4209
4210 \protected@edef\tblrbody{\tblrbody
4211 \noexpand\getProject{\pID}
4212 & {\noexpand\dfgShowTag{\pID}{project-status}{\pStatus}[project]}

```

```

4213      & \noexpand\dfgShowTag{\pID}{name}{\pName}[project]
4214      &
4215      \bool_if:nT
4216      { \l_@@_project_type_research_bool && ! \l_@@_project_status_E_bool }
4217      { {\noexpand\dfgShowTag{\pID}{research-area}
4218        {\seq_use:Nn \l_tmpb_seq {\}}}[project]} }
4219      & \dfgFastPIinProjectsTable{\pRefPersonId}
4220      \\
4221      }%
4222      }
4223      \StopTimer{Proj-#1-loop}
4224      \iow_term:x { Proj-#1-iterations:~ \int_use:N \l_tmpa_int }
4225
4226      \StartTimer
4227      \begin{tblr}[
4228        theme = main,
4229        expand = \tblrbody,
4230        caption = {Project~area~#1~--~#2},
4231        long
4232      ]{
4233        colspec = {t{1.1cm}t{0.7cm}X[t]t{1.2cm}X[t]},
4234        rowhead = 1,
4235        column{2,4} = {halign=c},
4236        column{1} = {font=\Large\bfseries, fg=tableFirstColumn,valign=m},
4237        column{3,5} = {font=\footnotesize\raggedright},
4238        row{1} = {
4239          bg = tableHeadingsBG,
4240          fg = tableHeadingsFont,
4241          font = \footnotesize\bfseries,
4242          halign = c,
4243          valign = t,
4244          guard
4245        },
4246      }
4247      Project
4248      & {Status}
4249      & Title
4250      & {\mbox{Research}} \\area}
4251      & Project\space leader(s),\space institute(s),\space location(s) \\
4252      \tblrbody
4253      \end{tblr}
4254      \@@_projects_table_institution_legend:
4255      \StopTimer{Proj-#1-render}
4256      }

```

Project overview table `\projectOverviewTable` produces the compact project list used on the proposal’s final page. Current and new projects remain in project-number order; ending projects (status E) are moved to the end. The status marker is omitted for current projects and printed after the project number for all other statuses.

Project-leader names are resolved while the table body is assembled. This avoids repeating database lookups during tabularray’s measuring and rendering passes. All three headings use the canonical dark blue at a larger size; the cell-specific rule ensures that the first heading (“Project”) is not overridden by the first-column styling. The final-page source can therefore remain deliberately small: `\pagestyle{empty}` followed by `\printTable{projectOverview}`.

```

4257 \tl_new:N \l_@@_project_overview_body_tl
4258 \tl_new:N \l_@@_project_overview_ending_body_tl
4259 \tl_new:N \l_@@_project_overview_id_tl
4260 \tl_new:N \l_@@_project_overview_number_tl
4261 \tl_new:N \l_@@_project_overview_name_tl
4262 \tl_new:N \l_@@_project_overview_status_tl
4263 \tl_new:N \l_@@_project_overview_consider_for_lists_tl
4264 \tl_new:N \l_@@_project_overview_person_ids_tl
4265 \tl_new:N \l_@@_project_overview_leaders_tl
4266 \tl_new:N \l_@@_project_overview_project_cell_tl
4267 \seq_new:N \l_@@_project_overview_person_seq
4268
4269 \cs_new_protected:Npn \@@_project_overview_set_leaders:n #1
4270 {

```

```

4271 \tl_clear:N \l_@@_project_overview_leaders_tl
4272 \seq_set_from_clist:Nn \l_@@_project_overview_person_seq {#1}
4273 \seq_map_indexed_inline:Nn \l_@@_project_overview_person_seq
4274 {
4275   \DTLgetvalueforkey{\l_tmpa_tl}{firstname}{person}{id}{##2}
4276   \DTLgetvalueforkey{\l_tmpb_tl}{lastname}{person}{id}{##2}
4277   \int_compare:nNnT {##1} > {1}
4278     { \tl_put_right:Nn \l_@@_project_overview_leaders_tl { \newline } }
4279   \tl_if_blank:VF \l_tmpa_tl
4280   {
4281     \tl_put_right:Ne \l_@@_project_overview_leaders_tl
4282     {
4283       \exp_not:N \dfgShowTag {##2}{firstname}
4284       {\exp_not:V \l_tmpa_tl}[person]
4285       \exp_not:N \space
4286     }
4287   }
4288   \tl_put_right:Ne \l_@@_project_overview_leaders_tl
4289   {
4290     \exp_not:N \hyperlink { pi:\exp_not:n {##2} }
4291     {
4292       \exp_not:N \textbf
4293       {
4294         \exp_not:N \color { referencePI }
4295         \exp_not:N \dfgShowTag {##2}{lastname}
4296         {\exp_not:V \l_tmpb_tl}[person]
4297       }
4298     }
4299   }
4300 }
4301 }
4302
4303 \cs_new_protected:Npn \@@_project_overview_append_row:N #1
4304 {
4305   \exp_args:NV \@@_project_overview_set_leaders:n
4306   \l_@@_project_overview_person_ids_tl
4307   \tl_set:Ne \l_@@_project_overview_project_cell_tl
4308   {
4309     \exp_not:N \getProject
4310     { \exp_not:V \l_@@_project_overview_id_tl }
4311   }
4312   \str_if_eq:VnF \l_@@_project_overview_status_tl { C }
4313   {
4314     \tl_if_blank:VF \l_@@_project_overview_status_tl
4315     {
4316       \tl_put_right:Ne \l_@@_project_overview_project_cell_tl
4317       {
4318         \exp_not:N \,
4319         \exp_not:N \dfgShowTag
4320         {\exp_not:V \l_@@_project_overview_id_tl}{project-status}
4321         {\exp_not:V \l_@@_project_overview_status_tl}[project]
4322       }
4323     }
4324   }
4325   \tl_put_right:Ne #1
4326   {
4327     { \exp_not:V \l_@@_project_overview_project_cell_tl }
4328     & {
4329       \exp_not:N \dfgShowTag
4330       {\exp_not:V \l_@@_project_overview_id_tl}{name}
4331       {\exp_not:V \l_@@_project_overview_name_tl}[project]
4332     }
4333     & { \exp_not:V \l_@@_project_overview_leaders_tl }
4334     \exp_not:N \\
4335   }
4336 }

```

```

4337
4338 \cs_new_protected:Npn \@@_project_overview_collect:
4339 {
4340   \DTLsort{number}{project}
4341   \DTLforeach*{project}
4342   {
4343     \l_@@_project_overview_id_tl      = id,
4344     \l_@@_project_overview_number_tl  = number,
4345     \l_@@_project_overview_name_tl    = name,
4346     \l_@@_project_overview_status_tl  = project-status,
4347     \l_@@_project_overview_consider_for_lists_tl = consider-for-lists,
4348     \l_@@_project_overview_person_ids_tl = ref-person-id
4349   }
4350   {
4351     \str_if_eq:VnF \l_@@_project_overview_consider_for_lists_tl { false }
4352     {
4353       \str_if_eq:VnTF \l_@@_project_overview_status_tl { E }
4354       { \@@_project_overview_append_row:N \l_@@_project_overview_ending_body_tl }
4355       { \@@_project_overview_append_row:N \l_@@_project_overview_body_tl }
4356     }
4357   }
4358   \tl_put_right:NV \l_@@_project_overview_body_tl
4359   \l_@@_project_overview_ending_body_tl
4360 }
4361
4362 \cs_new_protected:Npn \@@_project_overview_typeset:
4363 {
4364   \par\vspace*{-5\baselineskip}
4365   \begin{center}
4366     \crcLogo[height=1cm]
4367   \end{center}
4368   \enlargethispage{3\baselineskip}
4369   \begin{tblr}[
4370     theme = main,
4371     expand = \l_@@_project_overview_body_tl
4372   ]{
4373     vspan      = even,
4374     rowsep     = 1pt,
4375     rows       = {ht=2\baselineskip,valign=m},
4376     colspec    = {m{1.5cm}X[m]m{4cm}},
4377     rowhead    = 1,
4378     column{1}  = {font=\Large\bfseries, fg=tableFirstColumn},
4379     column{2,3} = {font=\raggedright},
4380     row{1}     = {font=\large\bfseries, fg=tableHeadingsFont},
4381   }
4382   Project
4383   & Title
4384   & Project\space leader(s) \\\
4385   \l_@@_project_overview_body_tl
4386   \end{tblr}
4387 }
4388
4389 \NewDocumentCommand{\projectOverviewTable}{}
4390 {
4391   \group_begin:
4392   \DTLifdbexists{project}
4393   {
4394     \tl_clear:N \l_@@_project_overview_body_tl
4395     \tl_clear:N \l_@@_project_overview_ending_body_tl
4396     \@@_project_overview_collect:
4397     \@@_project_overview_typeset:
4398   }
4399   { \msg_warning:nnn { dfg } { database-not-found } { project } }
4400   \group_end:
4401 }

```

We turn now to the part to get the research areas aggregated.

```

4402 \clist_new:N \l_@@_research_area_clist % new clist name
4403 \clist_new:N \l_@@_research_area_final_clist % new clist name
4404 \NewDocumentCommand{\ResearchAreasFromProjectsList}{o}{
4405   % #1: IDs of project to be excluded
4406   \clist_clear:N \l_@@_research_area_clist
4407   \tl_clear:N \l_tmpa_tl
4408
4409   \DTLforeach[
4410     % exclude mentioned projects (for whatsoever reason)
4411     \not\DTLisinlist{\pNumber}{#1}% 1st condition
4412     \and
4413     \not\DTLiseq{\pConsiderForLists}{false}
4414   ]
4415   {project}{%
4416     \pNumber      =number,
4417     \pType        =project-type,
4418     \pConsiderForLists=consider-for-lists,
4419     \l_tmpa_tl    =research-area%
4420   }{%
4421     % Quite heavy but it works to skip the research area for non-research projects
4422     \bool_set_false:N \l_@@_project_type_research_bool
4423     \bool_set_false:N \l_@@_project_type_service_bool
4424     \bool_set_false:N \l_@@_project_type_mgk_bool
4425     \bool_set_false:N \l_@@_project_type_admin_bool
4426
4427     \str_case:Vn {\pType}{
4428       {research}{ \bool_set_true:N \l_@@_project_type_research_bool }
4429       {service} { \bool_set_true:N \l_@@_project_type_service_bool }
4430       {mgk}     { \bool_set_true:N \l_@@_project_type_mgk_bool }
4431       {admin}   { \bool_set_true:N \l_@@_project_type_admin_bool }
4432     }
4433     \bool_lazy_any:nT {{ \l_@@_project_type_research_bool }}
4434     {\clist_put_right:NV \l_@@_research_area_clist { \l_tmpa_tl }}%
4435   }
4436   \clist_remove_duplicates:N \l_@@_research_area_clist
4437   % sorting and faking that the numbers are floats.... HACK
4438   \clist_sort:Nn \l_@@_research_area_clist
4439   { \fp_compare:nTF { ##1 < ##2 } { \sort_return_swapped: } { \sort_return_same: } }
4440
4441   \clist_map_inline:Nn \l_@@_research_area_clist {
4442     \clist_put_right:NV \l_@@_research_area_final_clist { \dfgResearchAreasList{##1}}
4443   }
4444
4445   \dfgShowCalculatedTag{ResearchAreasFromProjectsList}{project}
4446   {
4447     \clist_use:Nnnn \l_@@_research_area_final_clist {,~}{,~}{,~and~}%
4448     .%final dot.
4449   }
4450 }
4451 % \subsubsection{DFG research area classification}
4452 % \label{sec:research-areas}
4453 % The DFG publishes an official hierarchical subject classification list;
4454 % a project must declare which areas its work belongs to. The global
4455 % property list \cs{g_@@_dfg\_research\_areas\_prop} maps every
4456 % classification code (e.g. \ |2.11-01|) to its English label.
4457 %
4458 % Usage: supply one or more codes as a comma-separated value in the
4459 % |research-area| key of an \refCom{addEntry}{{project}} block.
4460 % \cs{printResearchAreas} then looks up and formats them as a
4461 % natural-language list.
4462 %
4463 % \textbf{Sorting note:} the codes are numeric strings with a hyphen
4464 % (\ |2.11-01|), which cannot be compared as plain integers. The sort
4465 % in \cs{printResearchAreas} uses \cs{fp\_compare:nTF} after stripping
4466 % the hyphen suffix - a known workaround for the absence of a

```

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4467 % lexicographic sort in expl3 for this mixed format.
4468 \prop_new:N \g_@@_dfg_research_areas_prop
4469 \prop_gset_from_keyval:Nn \g_@@_dfg_research_areas_prop
4470 {
4471   1.11-01 = {Prehistory~and~World~Archaeology},
4472   1.11-02 = {Greek~and~Latin~Philology},
4473   1.11-03 = {Ancient~History},
4474   1.11-04 = {Classical,~Roman,~Christian~and~Islamic~Archaeology},
4475   1.11-05 = {Egyptology~and~Ancient~Near~Eastern~Studies},
4476
4477   1.12-01 = {Medieval~History},
4478   1.12-02 = {Early~Modern~History},
4479   1.12-03 = {Modern~and~Contemporary~History},
4480   1.12-04 = {History~of~Science},
4481
4482   1.13-01 = {Art~History},
4483   1.13-02 = {Musicology},
4484   1.13-03 = {Theatre~and~Media~Studies},
4485
4486   1.14-01 = {General~and~Comparative~Linguistics,~Experimental~Linguistics,~Typology,~Non-European~Lan
4487   1.14-02 = {Individual~Linguistics,~Historical~Linguistics},
4488   1.14-03 = {Applied~Linguistics,~Computational~Linguistics},
4489
4490   1.15-01 = {German~Medieval~Studies~(Medieval~German~Literature)},
4491   1.15-02 = {German~Literary~and~Cultural~Studies~(Modern~German~Literature)},
4492   1.15-03 = {European~and~American~Literary~and~Cultural~Studies},
4493   1.15-04 = {General~and~Comparative~Literary~Studies;~Cultural~Studies},
4494
4495   1.16-01 = {Social~and~Cultural~Anthropology~and~Ethnology},
4496   1.16-02 = {Asian~Studies},
4497   1.16-03 = {African,~American~and~Oceania~Studies},
4498   1.16-04 = {Islamic~Studies,~Arabian~Studies,~Semitic~Studies},
4499   1.16-05 = {Religious~Studies~and~Jewish~Studies},
4500
4501   1.17-01 = {Protestant~Theology},
4502   1.17-02 = {Roman~Catholic~Theology},
4503
4504   1.18-01 = {History~of~Philosophy},
4505   1.18-02 = {Theoretical~Philosophy},
4506   1.18-03 = {Practical~Philosophy},
4507
4508   1.21-01 = {General~Education~and~History~of~Education},
4509   1.21-02 = {General~and~Domain~Specific~Teaching~and~Learning},
4510   1.21-03 = {Education~Systems~and~Educational~Institutions},
4511   1.21-04 = {Educational~Research~on~Socialisation,~Welfare~and~Professionalism},
4512
4513   1.22-01 = {General,~Cognitive~and~Mathematical~Psychology},
4514   1.22-02 = {Biological~Psychology~and~Cognitive~Neuroscience},
4515   1.22-03 = {Developmental~and~Educational~Psychology},
4516   1.22-04 = {Social~Psychology,~Industrial~and~Organisational~Psychology},
4517   1.22-05 = {Personality~Psychology,~Clinical~and~Medical~Psychology,~Methodology},
4518
4519   1.23-01 = {Sociological~Theory},
4520   1.23-02 = {Empirical~Social~Research},
4521   1.23-03 = {Communication~Sciences},
4522   1.23-04 = {Political~Science},
4523
4524   1.24-01 = {Economic~Theory},
4525   1.24-02 = {Economic~Policy,~Applied~Economics},
4526   1.24-03 = {Accounting~and~Finance},
4527   1.24-04 = {Management~and~Marketing},
4528   1.24-05 = {Operations~Management~and~Computer~Science~for~Business~Administration},
4529   1.24-06 = {Statistics~and~Econometrics},
4530   1.24-07 = {Economic~and~Social~History},
4531
4532   1.25-01 = {Principles~of~Law~and~Jurisprudence},

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4533 1.25-02 = {Private~Law},
4534 1.25-03 = {Public~Law},
4535 1.25-04 = {Criminal~Law},
4536 1.25-05 = {Criminology},
4537
4538 2.11-01 = {Biochemistry},
4539 2.11-02 = {Biophysics},
4540 2.11-03 = {Cell~Biology},
4541 2.11-04 = {Structural~Biology},
4542 2.11-05 = {General~Genetics~and~Functional~Genome~Biology},
4543 2.11-06 = {Developmental~Biology},
4544 2.11-07 = {Bioinformatics~and~Theoretical~Biology},
4545
4546 2.12-01 = {Evolution~and~Systematics~of~Plants~and~Fungi},
4547 2.12-02 = {Ecology~and~Biodiversity~of~Plants~and~Ecosystems},
4548 2.12-03 = {Organismic~Interactions,~Chemical~Ecology~and~Microbiomes~of~Plant~Systems},
4549 2.12-04 = {Plant~Physiology},
4550 2.12-05 = {Plant~Biochemistry~and~Biophysics},
4551 2.12-06 = {Plant~Cell~and~Developmental~Biology},
4552 2.12-07 = {Plant~Genetics~and~Genomics},
4553
4554 2.13-01 = {Systematics~and~Morphology~(Zoology)},
4555 2.13-02 = {Evolution,~Anthropology},
4556 2.13-03 = {Ecology~and~Biodiversity~of~Animals~and~Ecosystems,~Organismic~Interactions},
4557 2.13-04 = {Sensory~and~Behavioural~Biology},
4558 2.13-05 = {Animal~Physiology~and~Biochemistry},
4559 2.13-06 = {Evolutionary~Cell~and~Developmental~Biology~(Zoology)},
4560
4561 2.21-01 = {Metabolism,~Biochemistry~and~Genetics~of~Microorganisms},
4562 2.21-02 = {Microbial~Ecology~and~Applied~Microbiology},
4563 2.21-03 = {Medical~Microbiology~and~Mycology,~Hygiene,~Molecular~Infection~Biology},
4564 2.21-04 = {Virology},
4565 2.21-05 = {Immunology},
4566 2.21-06 = {Parasitology~and~Biology~of~Tropical~Infectious~Disease~Pathogens},
4567
4568 2.22-01 = {Epidemiology~and~Medical~Biometry~/~Statistics},
4569 2.22-02 = {Public~Health,~Healthcare~Research,~Social~and~Occupational~Medicine},
4570 2.22-03 = {Human~Genetics},
4571 2.22-04 = {Anatomy~and~Physiology},
4572 2.22-05 = {Nutritional~Sciences},
4573 2.22-06 = {Pathology},
4574 2.22-07 = {Medical~Informatics~and~Medical~Bioinformatics},
4575 2.22-08 = {Pharmacy},
4576 2.22-09 = {Pharmacology},
4577 2.22-10 = {Toxicology,~Laboratory~Medicine},
4578 2.22-11 = {Anaesthesiology},
4579 2.22-12 = {Cardiology,~Angiology},
4580 2.22-13 = {Pneumology,~Thoracic~Surgery},
4581 2.22-14 = {Hematology,~Oncology},
4582 2.22-15 = {Gastroenterology},
4583 2.22-16 = {Nephrology},
4584 2.22-17 = {Endocrinology,~Diabetology,~Metabolism},
4585 2.22-18 = {Rheumatology},
4586 2.22-19 = {Dermatology},
4587 2.22-20 = {Pediatric~and~Adolescent~Medicine},
4588 2.22-21 = {Gynaecology~and~Obstetrics},
4589 2.22-22 = {Clinical~Immunology~and~Allergology},
4590 2.22-23 = {Reproductive~Medicine,~Urology},
4591 2.22-24 = {Biogerontology~and~Geriatric~Medicine},
4592 2.22-25 = {General~and~Visceral~Surgery},
4593 2.22-26 = {Cardiac~and~Vascular~Surgery},
4594 2.22-27 = {Orthopaedics,~Traumatology,~Reconstructive~Surgery},
4595 2.22-28 = {Dentistry,~Oral~Surgery},
4596 2.22-29 = {Otolaryngology,~Phoniatrics~and~Audiology},
4597 2.22-30 = {Radiology},
4598 2.22-31 = {Clinical~Infectiology~and~Tropical~Medicine},

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4599 2.22-32 = {Medical~Physics,~Biomedical~Technology},  
 4600 2.22-33 = {Nuclear~Medicine,~Radiotherapy,~Radiobiology},  
 4601  
 4602 2.23-01 = {Developmental~Neurobiology},  
 4603 2.23-02 = {Molecular~Biology~and~Physiology~of~Neurons~and~Glial~Cells},  
 4604 2.23-03 = {Experimental~and~Theoretical~Network~Neuroscience},  
 4605 2.23-04 = {Cognitive,~Systems~and~Behavioural~Neurobiology},  
 4606 2.23-05 = {Experimental~Models~for~the~Understanding~of~Nervous~System~Diseases},  
 4607 2.23-06 = {Molecular~and~Cellular~Neurology~and~Neuropathology},  
 4608 2.23-07 = {Clinical~Neurology;~Neurosurgery~and~Neuroradiology},  
 4609 2.23-08 = {Human~Cognitive~and~Systems~Neuroscience},  
 4610 2.23-09 = {Biological~Psychiatry},  
 4611 2.23-10 = {Clinical~Psychiatry,~Psychotherapy,~Child~and~Adolescent~Psychiatry},  
 4612 2.23-11 = {Ophthalmology},  
 4613  
 4614 2.31-01 = {Soil~Sciences},  
 4615 2.31-02 = {Plant~Breeding~and~Plant~Pathology},  
 4616 2.31-03 = {Plant~Cultivation,~Plant~Nutrition,~Agricultural~Technology},  
 4617 2.31-04 = {Ecology~of~Land~Use},  
 4618 2.31-05 = {Agricultural~Economics,~Agricultural~Policy,~Agricultural~Sociology},  
 4619 2.31-06 = {Forestry},  
 4620 2.31-07 = {Animal~Breeding,~Animal~Nutrition,~Animal~Husbandry},  
 4621  
 4622 3.11-01 = {Inorganic~Molecular~Chemistry~~~Synthesis~and~Characterisation},  
 4623 3.11-02 = {Organic~Molecular~Chemistry~~~Synthesis~and~Characterisation},  
 4624  
 4625 3.12-01 = {Solid~State~and~Surface~Chemistry,~Material~Synthesis},  
 4626 3.12-02 = {Physical~Chemistry~of~Solids~and~Surfaces,~Material~Characterisation},  
 4627  
 4628 3.13-01 = {Physical~Chemistry~of~Molecules,~Liquids~and~Interfaces,~Biophysical~Chemistry},  
 4629  
 4630 3.14-01 = {Analytical~Chemistry},  
 4631  
 4632 3.15-01 = {Biological~and~Biomimetic~Chemistry},  
 4633 3.15-02 = {Food~Chemistry},  
 4634  
 4635 3.16-01 = {Preparatory~and~Physical~Chemistry~of~Polymers},  
 4636 3.16-02 = {Experimental~and~Theoretical~Physics~of~Polymers},  
 4637 3.16-03 = {Polymer~Materials},  
 4638  
 4639 3.17-01 = {Theoretical~Chemistry:~Electron~Structure,~Dynamics,~Simulation},  
 4640 3.17-02 = {Theoretical~Chemistry:~Molecules,~Materials,~Surfaces},  
 4641  
 4642 3.21-01 = {Experimental~Condensed~Matter~Physics},  
 4643 3.21-02 = {Theoretical~Condensed~Matter~Physics},  
 4644  
 4645 3.22-01 = {Statistical~Physics,~Nonlinear~Dynamics,~Complex~Systems,~Soft~and~Fluid~Matter,~Biological~Physics},  
 4646  
 4647 3.23-01 = {Optics,~Quantum~Optics~and~Physics~of~Atoms,~Molecules~and~Plasmas},  
 4648  
 4649 3.24-01 = {Nuclear~and~Elementary~Particle~Physics,~Quantum~Mechanics,~Relativity,~Fields},  
 4650  
 4651 3.25-01 = {Astrophysics~and~Astronomy},  
 4652  
 4653 3.31-01 = {Mathematics},  
 4654  
 4655 3.41-01 = {Atmospheric~Science},  
 4656 3.41-02 = {Oceanography},  
 4657  
 4658 3.42-01 = {Geology},  
 4659 3.42-02 = {Palaeontology},  
 4660  
 4661 3.43-01 = {Geophysics},  
 4662 3.43-02 = {Geodesy,~Photogrammetry,~Remote~Sensing,~Geoinformatics,~Cartography},  
 4663  
 4664 3.44-01 = {Mineralogy,~Petrology~and~Geochemistry},

4665  
4666 3.45-01 = {Physical~Geography},  
4667 3.45-02 = {Human~Geography},  
4668  
4669 3.46-01 = {Hydrogeology, ~Hydrology, ~Limnology, ~Urban~Water~Management, ~Water~Chemistry, ~Integrated~W  
4670  
4671 4.11-01 = {Metal~Cutting~and~Abrasive~Manufacturing~Engineering},  
4672 4.11-02 = {Primary~Shaping~and~Reshaping~Technology, ~Additive~Manufacturing},  
4673 4.11-03 = {Joining~and~Separation~Technology},  
4674 4.11-04 = {Plastics~Engineering},  
4675 4.11-05 = {Production~Systems, ~Operations~Management, ~Quality~Management~and~Factory~Planning},  
4676 4.11-06 = {Production~Automation~and~Assembly~Technology},  
4677  
4678 4.12-01 = {Engineering~Design, ~Machine~Elements, ~Product~Development},  
4679 4.12-02 = {Mechanics},  
4680 4.12-03 = {Lightweight~Construction, ~Textile~Technology},  
4681 4.12-04 = {Acoustics},  
4682  
4683 4.21-01 = {Chemical~and~Thermal~Process~Engineering},  
4684 4.21-02 = {Technical~Chemistry},  
4685 4.21-03 = {Mechanical~Process~Engineering},  
4686 4.21-04 = {Biological~Process~Engineering},  
4687 4.21-05 = {Systems~Process~Engineering},  
4688  
4689 4.22-01 = {Energy~Process~Engineering},  
4690 4.22-02 = {Technical~Thermodynamics},  
4691 4.22-03 = {Fluid~Mechanics},  
4692 4.22-04 = {Hydraulic~and~Turbo~Engines~and~Piston~Engines},  
4693  
4694 4.31-01 = {Metallurgical, ~Thermal~and~Thermomechanical~Treatment~of~Materials},  
4695 4.31-02 = {Materials~in~Sintering~Processes~and~Generative~Manufacturing~Processes},  
4696 4.31-03 = {Coating~and~Surface~Technology},  
4697 4.31-04 = {Mechanical~Properties~of~Metallic~Materials~and~their~Microstructural~Origins},  
4698 4.31-05 = {Glass, ~Ceramics~and~Derived~Composites},  
4699 4.31-06 = {Polymeric~and~Biogenic~Materials~and~Derived~Composites},  
4700  
4701 4.32-01 = {Synthesis~and~Properties~of~Functional~Materials},  
4702 4.32-02 = {Biomaterials},  
4703 4.32-03 = {Thermodynamics~and~Kinetics~as~well~as~Properties~of~Phases~and~Microstructure~of~Materia  
4704 4.32-04 = {Computer~Aided~Design~of~Materials~and~Simulation~of~Materials~Behaviour~from~Atomic~to~M  
4705  
4706 4.41-01 = {Automation, ~Mechatronics, ~Control~Systems, ~Intelligent~Technical~Systems, ~Robotics},  
4707 4.41-02 = {Measurement~Systems},  
4708 4.41-03 = {Microsystems},  
4709 4.41-04 = {Traffic~and~Transport~Systems, ~Intelligent~and~Automated~Traffic},  
4710 4.41-05 = {Human~Factors, ~Ergonomics, ~Human~Machine~Systems},  
4711 4.41-06 = {Biomedical~Systems~Technology},  
4712  
4713 4.42-01 = {Electronic~Semiconductors, ~Components~and~Circuits, ~Integrated~Systems, ~Sensor~Technology  
4714 4.42-02 = {Communication~Technology~and~Networks, ~High~Frequency~Technology~and~Photonic~Systems, ~Si  
4715 4.42-03 = {Electrical~Energy~Systems, ~Power~Management, ~Power~Electronics, ~Electrical~Machines~and~D  
4716 4.42-04 = {Hardware~Systems~and~Architectures~for~Information~Technology~and~Artificial~Intelligence,  
4717  
4718 4.43-01 = {Theoretical~Computer~Science},  
4719 4.43-02 = {Software~Engineering~and~Programming~Languages},  
4720 4.43-03 = {Security~and~Dependability, ~Operating, ~Communication~and~Distributed~Systems},  
4721 4.43-04 = {Artificial~Intelligence~and~Machine~Learning~Methods},  
4722 4.43-05 = {Image~and~Language~Processing, ~Computer~Graphics~and~Visualisation, ~Human~Computer~Intera  
4723 4.43-06 = {Data~Management, ~Data~Intensive~Systems, ~Computer~Science~Methods~in~Business~Informatics  
4724 4.43-07 = {Computer~Architecture, ~Embedded~and~Massively~Parallel~Systems},  
4725  
4726 4.51-01 = {Architecture, ~Building~and~Construction~History, ~Construction~Research, ~Sustainable~Build  
4727 4.51-02 = {Urbanism, ~Spatial~Planning, ~Transportation~and~Infrastructure~Planning, ~Landscape~Plannin  
4728 4.51-03 = {Construction~Material~Sciences, ~Chemistry, ~Building~Physics},  
4729 4.51-04 = {Structural~Engineering, ~Building~Informatics~and~Construction~Operation},  
4730 4.51-05 = {Applied~Mechanics, ~Statics~and~Dynamics},

```

4731 4.51-06 = {Geotechnics,~Hydraulic~Engineering},
4732
4733 }
4734
4735 \NewDocumentCommand{\dfgResearchAreasList}{m}{
4736   % #1: area-list
4737   \prop_if_in:NnTF \g_@@_dfg_research_areas_prop {#1}
4738   {
4739     % key exists → fetch the description and typeset it
4740     \prop_get:NnN \g_@@_dfg_research_areas_prop {#1} \l_tmpa_tl
4741     \textbf{#1}:~\l_tmpa_tl
4742   }
4743   {
4744     % key missing → same fallback as your original macro
4745     \textcolor{error}{\textbf{#1}:~ research~ area~ not~ found}
4746     \msg_warning:nne { dfg } { research-area-not-found }{#1}
4747   }
4748 }

```

### We turn to the early career phases

```

4749 \str_new:N \l_@@_row_color_str
4750 \NewDocumentCommand{\EarlyCareerResearchersTable}{ O{EarlyCareerResearcher} }{%
4751   \def\dfgLocalDB{#1}
4752   \DTLifdbexists{\dfgLocalDB}{%
4753     \DTLsort*{ref-project-id, lastname}{\dfgLocalDB}%
4754     \def\tblrbody{}%
4755     \DTLforeach*{\dfgLocalDB}{%
4756       \pRefProjectID=ref-project-id,%
4757       \pLastname=lastname,%
4758       \pFirstname=firstname,%
4759       \pFinancedBy=financed-by,%
4760       \pTopic=topic,%
4761       \pCategory=category,%
4762       \pPeriodStart=periodStart,%
4763       \pPeriodEnd=periodEnd%
4764     }{
4765       \str_case:en {\pCategory}{
4766         {MD}{\str_set:Nn \l_@@_row_color_str {green!10} }
4767         {PhD}{\str_set:Nn \l_@@_row_color_str {blue!10} }
4768       }
4769       \DTLgetvalueforkey{\theProjectNumber}{number}{project}{id}{\pRefProjectID}
4770       \protected@edef\tblrbody{\tblrbody
4771         \SetRow{\l_@@_row_color_str}
4772           \datatool_if_null:NTF {\theProjectNumber}{\pRefProjectID}{\getProject{\pRefProjectID}}
4773           & \noexpand\dfgShowTag{\pRefProjectID/\pLastname}{lastname}
4774           {\pLastname}[\dfgLocalDB],~
4775           \noexpand\dfgShowTag{\pRefProjectID/\pLastname}{firstname}
4776           {\pFirstname}[\dfgLocalDB]
4777           & \noexpand\dfgShowTag{\pRefProjectID/\pLastname}{financed-by}
4778           {\pFinancedBy}[\dfgLocalDB]
4779           & \noexpand\dfgShowTag{\pRefProjectID/\pLastname}{topic}
4780           {\pTopic}[\dfgLocalDB]
4781         &
4782         {
4783           \ifdefempty{\pPeriodEnd}{since~}{ }
4784           \noexpand\dfgShowTag{\pRefProjectID/\pLastname}{periodStart}
4785           {\pPeriodStart}[\dfgLocalDB]
4786           \ifdefempty{\pPeriodEnd}{ }{--\ }
4787           \noexpand\dfgShowTag{\pRefProjectID/\pLastname}{periodEnd}
4788           {\pPeriodEnd}[\dfgLocalDB]} }
4789       \\\
4790     } }%
4791   \begin{tblr}[%
4792     theme=main,
4793     expand=\tblrbody,
4794     remark{Note}={Row~colours~indicate~category~of~doctoral~candidates:~
4795       \textcolor{blue}{Dr.\, rer.\, nat.},~

```

```

4796         \textcolor{green}{Dr.\,med.}.~
4797         \textbf{RS}~==~Rising~Star.~
4798         Doctoral~candidates~with~highlighted~names~have~obtained~the~doctoral~degree.~
4799         MD~denotes~medical~students~supported~by~DFG~stipends~for~up~to~6~months.
4800     },
4801     long
4802   ]{
4803     colspec = {t{.8cm}t{3cm}t{1.2cm}X[t]t{1.8cm}},
4804     rowhead = 1,
4805     column{1} = {
4806         font={\bfseries},
4807         fg = {tableFirstColumn}
4808     },
4809     % row{even}={bg=tableRows},
4810     column{4} = {font={\footnotesize\itshape}},
4811     row{1} = {
4812         bg          = tableHeadingsBG,
4813         fg          = tableHeadingsFont,
4814         font        = \footnotesize\bfseries,
4815         halign      = {c},
4816         valign      = {t},
4817         guard
4818     },
4819   }
4820   Project %
4821   & Surname,~ first~ name %
4822   & {Type~ of~          \\ funding} %
4823   & Topic %
4824   & Duration \\
4825   \tblrbody
4826   \end{tblr}}
4827   {
4828     Database~ \texttt{#1}~ missing.
4829     \msg_warning:nne { dfg } { database-not-found }{ #1 }
4830   }
4831 }

```

Following now the section about diversity and equity. Before that there is a command to get proper position names based on a property list.

```

4832
4833 \prop_new:N \g_@@_dfg_position_names_prop
4834 \prop_gset_from_keyval:Nn \g_@@_dfg_position_names_prop
4835 {
4836   PhD          = {Doctoral~researchers},
4837   postDoc      = {Postdoctoral~researchers},
4838   groupLeader  = {Research~ group~ leaders,~
4839     junior~ research~ group~ leaders,~
4840     junior~ professors},
4841   research     = {Other~ research~ staff},
4842   nonResearch  = {Non-research~ staff},
4843   student      = {Student~ and~ graduate~ assistants},
4844   prof         = {Professors},
4845   prof-W2      = {Professors~ W2/C3},
4846   prof-W3      = {Professors~ W3/C4}
4847 }
4848 \prop_new:N \g_@@_dfg_category_names_prop
4849 \prop_gset_from_keyval:Nn \g_@@_dfg_category_names_prop
4850 {
4851   PhD          = {Doctoral~researcher},
4852   postDoc      = {Postdoctoral~researcher},
4853   medDoc       = {Medical~doctoral~researcher},
4854   groupLeader  = {(Jr.)~ Research~ group~ leader},
4855   research     = {Other~ research~ staff},
4856   nonResearch  = {Non-research~ staff},
4857   student      = {Student/graduate~ assistant},
4858   assistant    = {Research~assistant},
4859   prof         = {Professor},

```

```

4860   prof-W2      = {Professor~ (W2/C3)},
4861   prof-W3      = {Professor~ (W3/C4)},
4862 }
4863 \cs_generate_variant:Nn \prop_if_in:NnTF { NeTF }
4864
4865 \NewDocumentCommand{\dfgPositionName}{m}{%
4866   \prop_if_in:NeTF \g_@@_dfg_position_names_prop {#1}
4867   {
4868     \prop_get:NeN \g_@@_dfg_position_names_prop {#1} \l_tmpa_tl
4869     \l_tmpa_tl
4870   }
4871   {
4872     \textcolor{error}{mismatch:~#1}
4873     \msg_warning:nne { dfg } { item-not-matched }{ #1 }
4874   }
4875 }
4876 \NewDocumentCommand{\dfgCategoryName}{m}{%
4877   \prop_if_in:NeTF \g_@@_dfg_category_names_prop {#1}
4878   {
4879     \prop_get:NeN \g_@@_dfg_category_names_prop {#1} \l_tmpa_tl
4880     \l_tmpa_tl
4881   }
4882   {
4883     \textcolor{error}{mismatch:~#1}
4884     \msg_warning:nne { dfg } { item-not-matched }{ #1 }
4885   }
4886 }
4887 \NewDocumentCommand{\GenderEqualityStaffTable}{ O{GenderEqualityStaff} }{%
4888   \def\dfgLocalDB{#1}
4889   \DTLifdbexists{\dfgLocalDB}{%
4890     \tl_clear:N \l_tblr_body_tl
4891     \DTLforeach*[
4892       \DTLiseq{PhD}{\pPosition}
4893       \OR
4894       \DTLiseq{postDoc}{\pPosition}
4895     ]{\dfgLocalDB}{%
4896       \pPosition=position,%
4897       \pPrevObjPctFemale=previous-objective-percentage-female,%
4898       \pStatusQuoNumFemale=status-quo-number-female,%
4899       \pStatusQuoPctFemale=status-quo-percentage-female,%
4900       \pFutureObjPctFemale=future-objective-percentage-female%
4901     }{
4902       \tl_gput_right:Nx \l_tblr_body_tl
4903       {
4904         \dfgShowTag{\pPosition}{position}
4905         {\dfgPositionName{\pPosition}}[\dfgLocalDB] &
4906         \dfgShowTag{\pPosition}{previous-objective-percentage-female}
4907         {\pPrevObjPctFemale}[\dfgLocalDB] &
4908         \dfgShowTag{\pPosition}{status-quo-number-female}
4909         {\pStatusQuoNumFemale}[\dfgLocalDB] &
4910         \dfgShowTag{\pPosition}{status-quo-percentage-female}
4911         {\pStatusQuoPctFemale}[\dfgLocalDB] &
4912         \dfgShowTag{\pPosition}{future-objective-percentage-female}
4913         {\pFutureObjPctFemale}[\dfgLocalDB] \\
4914       }
4915     }
4916     \begin{tblr}{%
4917       theme=main,
4918       note{a}={Reference~ date:~ proposal~ for~ \dfgFundingPeriodText\space~ funding~ period},
4919       expand=\l_tblr_body_tl,
4920       long
4921     }{
4922       vspan=even,
4923       %row{Z}= {font={\footnotesize\bfseries}},
4924       colspec = {
4925         X[m] % position

```

```

4926         m{2cm} % proportion
4927         m{2cm} % number
4928         m{2cm} % female
4929         m{3cm}
4930     },
4931     hspan=minimal, % !!!!! https://tex.stackexchange.com/a/637391/98739
4932     vline{3} = {3-3}{1pt,solid,fg={tableLines}},
4933     vline{5} = {1-3}{1pt,solid,fg={tableLines}},
4934     hline{4} = {1pt,solid,fg={tableLines}},
4935     % hline{Y} = {1pt,solid,fg={tableOuterLines}},
4936     hline{2} = {wd=0pt},
4937     rowhead = 3,
4938     column{2-5}={halign={c}},
4939     % column{1} = {font={\bfseries}},
4940     % fg = {rwthBlue}},
4941     row{2-3} = {
4942         guard,
4943         valign={t},
4944         font={\footnotesize\bfseries},
4945         fg={tableHeadingsFont},
4946         bg={white}},
4947     }
4948     \SetCell[r=3]{c} % empty
4949     & \SetCell[c=3]{c} Second~ funding~ period %
4950     & %
4951     & %
4952     & Third~ funding~ period \\
4953     % empty
4954     & {Objective~ [\unit{\percent}]}
4955     & \SetCell[c=2]{c}{Status~ Quo\TblrNote{a}}
4956     &
4957     & {Objective~ [\unit{\percent}]} \\
4958     % empty
4959     & % empty
4960     & Number
4961     & [\unit{\percent}]
4962     & f \\
4963     \tl_use:N \l_tblr_body_tl
4964     % Total
4965     % & % objective
4966     % & % number
4967     % & % percentage
4968     % & % objective \\
4969     \end{tblr}}
4970     {
4971         Database~ \texttt{#1}~ missing.
4972         \msg_warning:nne { dfg } { database-not-found }{ #1 }
4973     }
4974 }

4975 \int_new:N \l_@@_count_int
4976 \int_new:N \l_@@_total_int
4977 \int_new:N \l_@@_tmp_int
4978 \int_new:N \l_@@_tmp_total_int
4979 \int_new:N \l_@@_tmp_position_int
4980 \int_new:N \l_@@_tmp_gender_int
4981 \int_new:N \l_@@_percent_int

```

Cached counting infrastructure: A single pass over the person database fills a property list with one count per (position, gender, phase) triple. All user-facing commands then read from this prop list in  $O(1)$  instead of doing a fresh full-table scan per call. This replaces 100 full database walks per gender table with 1.

```

4982 \prop_new:N \g_@@_counts_prop
4983 \tl_new:N \l_@@_count_key_tl
4984 \tl_new:N \l_@@_count_phase_tl
4985 \tl_new:N \l_@@_count_db_tl

```

Compute counts for ALL (position, gender) combinations in one pass. Stores them in `\g_@@_counts_prop` with key

```

"<position>/<gender>". \dfg_compute_counts:nn {<db>} {<phase>}.
4986 \cs_new_protected:Npn \dfg_compute_counts:nn #1#2
4987 {
4988   % Skip if already computed for this (db, phase).
4989   \tl_set:Nx \l_tmpa_tl { #1 | #2 }
4990   \tl_if_eq:NNF \l_tmpa_tl \l_@@_count_phase_tl
4991   {
4992     \tl_set:Nx \l_@@_count_phase_tl { #1 | #2 }
4993     \prop_gc_clear:N \g_@@_counts_prop
4994     \DTLforeach*[
4995       \DTLisinlist{#2}{\pPeriod}
4996       \and
4997       \DTLisinlist{PI}{\pRole}
4998     ]{#1}{
4999       \pPosition = position,
5000       \pGender   = gender,
5001       \pPeriod   = period,
5002       \pRole     = role
5003     }{
5004       \tl_set:Nx \l_@@_count_key_tl { \pPosition | \pGender }
5005       \prop_get:NVNTF \g_@@_counts_prop \l_@@_count_key_tl \l_tmpb_tl
5006       {
5007         \int_set:Nn \l_@@_count_int { \l_tmpb_tl + 1 }
5008         \prop_gput:NVx \g_@@_counts_prop \l_@@_count_key_tl
5009         { \int_use:N \l_@@_count_int }
5010       }
5011       {
5012         \prop_gput:NVn \g_@@_counts_prop \l_@@_count_key_tl { 1 }
5013       }
5014     }
5015   }
5016 }
5017 % O(1) lookup. Returns 0 for unknown keys.
5018 % \dfg_count_lookup:nn {<position>} {<gender>} -> integer literal
5019 \cs_new:Npn \dfg_count_lookup:nn #1#2
5020 {
5021   \prop_if_in:NnTF \g_@@_counts_prop { #1 | #2 }
5022   { \prop_item:Nn \g_@@_counts_prop { #1 | #2 } }
5023   { 0 }
5024 }
5025
5026 % Set <int> to count for (position, gender) - uses cache.
5027 % \dfg_count_position_set:Nnnnn <int> {<db>} {<position>} {<gender>} {<phase>}
5028 \cs_new_protected:Npn \dfg_count_position_set:Nnnnn #1#2#3#4#5
5029 {
5030   \prop_if_in:NnTF \g_@@_dfg_position_names_prop {#3}
5031   {
5032     \dfg_compute_counts:nn {#2} {#5}
5033     \int_set:Nn #1 { \dfg_count_lookup:nn {#3} {#4} }
5034   }
5035   {
5036     \textcolor{error}{mismatch:~#3}
5037     \msg_warning:nne { dfg } { item-not-matched }{ #3 }
5038   }
5039 }
5040
5041 % Sum across all genders for one position.
5042 % \dfg_total_position_set:Nnnn <int> {<db>} {<position>} {<phase>}
5043 \cs_new_protected:Npn \dfg_total_position_set:Nnnn #1#2#3#4
5044 {
5045   \dfg_compute_counts:nn {#2} {#4}
5046   \int_set:Nn #1
5047   {
5048     \dfg_count_lookup:nn {#3} {f}
5049     + \dfg_count_lookup:nn {#3} {m}
5050     + \dfg_count_lookup:nn {#3} {d}

```

```

5051 }
5052 }
5053
5054 % Sum across all positions for one gender.
5055 % \dfg_total_gender_set:Nnnn <int> {<db>} {<gender>} {<phase>}
5056 \cs_new_protected:Npn \dfg_total_gender_set:Nnnn #1#2#3#4
5057 {
5058   \dfg_compute_counts:nn {#2} {#4}
5059   \int_set:Nn #1
5060   {
5061     \dfg_count_lookup:nn {postDoc} {#3}
5062     + \dfg_count_lookup:nn {groupLeader} {#3}
5063     + \dfg_count_lookup:nn {prof-W2} {#3}
5064     + \dfg_count_lookup:nn {prof-W3} {#3}
5065   }
5066 }
5067
5068 % Grand total across all positions and genders.
5069 % \dfg_total_position_gender_set:Nnn <int> {<db>} {<phase>}
5070 \cs_new_protected:Npn \dfg_total_position_gender_set:Nnn #1#2#3
5071 {
5072   \dfg_compute_counts:nn {#2} {#3}
5073   \int_zero:N #1
5074   \clist_map_inline:nn {postDoc, groupLeader, prof-W2, prof-W3}
5075   {
5076     \clist_map_inline:nn { f , m , d }
5077     {
5078       \int_add:Nn #1 { \dfg_count_lookup:nn {##1} {###1} }
5079     }
5080   }
5081 }

```

You can get the count of PIs of a certain position, gender and funding phase.

```

5082 \NewDocumentCommand{\getPositionGenderPhaseAmount}{ O{person} m m m }
5083 {
5084   % #1: database
5085   % #2: position
5086   % #3: gender
5087   % #4: phase
5088   \dfg_count_position_set:Nnnnn \l_@@_tmp_int {#1} {#2} {#3} {#4}
5089   \dfgShowCalculatedTag{\getPositionGenderPhaseAmount}{#1}
5090   { \int_use:N \l_@@_tmp_int }
5091 }

```

This command sums up a certain gender column based on a funding phase.

```

5092 \NewDocumentCommand{\getPositionPhaseTotal}{ O{person} m m }
5093 {
5094   % #1: database
5095   % #2: position
5096   % #3: phase
5097
5098   \dfg_total_position_set:Nnnn \l_@@_total_int {#1} {#2} {#3}
5099
5100   % no macro supplied → print the total
5101   \dfgShowCalculatedTag{\getPositionPhaseTotal}{#1}
5102   { \int_use:N \l_@@_total_int }
5103 }

```

This command sums up a certain gender column based on a funding phase.

```

5104 \NewDocumentCommand{\getGenderPhaseTotal}{ O{person} m m }
5105 {
5106   % #1: database
5107   % #2: gender
5108   % #3: phase
5109   \dfg_total_gender_set:Nnnn \l_@@_total_int {#1} {#2} {#3}
5110
5111   % % no macro supplied → print the total

```

```

5112 \dfgShowCalculatedTag{getPositionGenderPhasePercentage}{#1}
5113 { \int_use:N \l_@@_total_int }
5114 }

```

This will get you the percentage of a certain position, gender and phase. Mainly for the table below, but can be used anywhere.

```

5115 \NewDocumentCommand{\getPositionGenderPhasePercentage}{O{person} m m m}
5116 {
5117   % #1: database
5118   % #2: position
5119   % #3: gender
5120   % #4: phase
5121
5122   \dfg_total_position_set:Nnnn \l_@@_total_int {#1} {#2} {#4}
5123
5124   % --- number of the requested gender -----
5125   \dfg_count_position_set:Nnnnn \l_@@_tmp_int {#1}{#2}{#3}{#4}
5126
5127   % --- avoid division by zero -----
5128   \dfgShowCalculatedTag{getPositionGenderPhasePercentage}{#1}
5129   {
5130     \int_compare:nNnTF { \l_@@_total_int } = { 0 }
5131     { 0 }
5132     {
5133       % --- integer percentage (rounded) -----
5134       \int_set:Nn \l_@@_percent_int
5135       { \fp_eval:n { round( 100 * \l_@@_tmp_int / \l_@@_total_int ) } }
5136
5137       % print the integer together with the percent sign
5138       \int_use:N \l_@@_percent_int
5139     }
5140   }
5141 }

```

The following command is meant to get the overall percentage of a certain gender. It goes into the final total row of the table, but it also can be used elsewhere with any funding phase you want.

```

5142 \NewDocumentCommand{\getGenderPhasePercentage}{O{person} m m }
5143 {
5144   % #1: database
5145   % #2: gender
5146   % #3: phase
5147
5148   \int_zero:N \l_@@_percent_int
5149   \int_zero:N \l_@@_tmp_int
5150   \int_zero:N \l_@@_tmp_total_int
5151
5152   \dfg_total_position_gender_set:Nnn \l_@@_tmp_total_int {#1} {#3}
5153
5154
5155   % % --- number of the requested gender -----
5156   \dfg_total_gender_set:Nnnn \l_@@_tmp_gender_int {#1}{#2}{#3}
5157
5158   % --- avoid division by zero -----
5159   \dfgShowCalculatedTag{getGenderPhasePercentage}{#1}
5160   {
5161     \int_compare:nNnTF { \l_@@_tmp_total_int } = { 0 }
5162     { 0 }
5163     {
5164       % --- integer percentage (rounded) -----
5165       \int_set:Nn \l_@@_percent_int
5166       { \fp_eval:n { round( 100 * \l_@@_tmp_gender_int / \l_@@_tmp_total_int ) } }
5167
5168       % print the integer together with the percent sign
5169       \int_use:N \l_@@_percent_int
5170     }
5171   }
5172   % \par Gender: #2--

```

```

5173 % Phase: #3--
5174 % Count: \int_use:N \l_@@_tmp_gender_int --
5175 % Count Total:\int_use:N \l_@@_tmp_total_int\par-----
5176 }

```

Finally the table which is mostly calculated automatically based on the person-database.

```

5177 \NewDocumentCommand{\GenderEqualityProjectLeadersTable}{ O{GenderEqualityProjectLeaders} }{%
5178   \def\dfgLocalDB{#1}
5179   \DTLifdbexists{\dfgLocalDB}{%
5180     % --- prime the count cache once for this table's phase -----
5181     \dfg_compute_counts:nn {person} {\theFundingPeriodNumeralPrevious}%
5182     \tl_clear:N \l_tblr_body_tl
5183     \DTLforeach*[
5184       % just making absolutely sure we only have the data sets we need.
5185       \DTLiseq{postDoc}{\pPosition}
5186       \OR
5187       \DTLiseq{groupLeader}{\pPosition}
5188       \OR
5189       \DTLiseq{prof-W2}{\pPosition}
5190       \OR
5191       \DTLiseq{prof-W3}{\pPosition}
5192     ]{\dfgLocalDB}{%
5193       \pPosition=position,%
5194       \pPrevObjPctFemale=previous-objective-percentage-female,%
5195       \pFutureObjPctFemale=future-objective-percentage-female%
5196     }{
5197
5198       \tl_gput_right:Nx \l_tblr_body_tl
5199       {
5200         \dfgShowTag{\pPosition}{position}
5201         {\dfgPositionName{\pPosition}}[\dfgLocalDB] % position
5202         & \dfgShowTag{\pPosition}{previous-objective-percentage-female}
5203         {\pPrevObjPctFemale}[\dfgLocalDB] % objective
5204         & \getPositionGenderPhaseAmount{\pPosition}{f}{\theFundingPeriodNumeralPrevious} % f number
5205         & \getPositionGenderPhaseAmount{\pPosition}{m}{\theFundingPeriodNumeralPrevious} % m number
5206         & \getPositionGenderPhaseAmount{\pPosition}{d}{\theFundingPeriodNumeralPrevious} % d number
5207         & \getPositionGenderPhasePercentage{\pPosition}{f}{\theFundingPeriodNumeralPrevious} % f percenta
5208         & \getPositionGenderPhasePercentage{\pPosition}{m}{\theFundingPeriodNumeralPrevious} % m percenta
5209         & \getPositionGenderPhasePercentage{\pPosition}{d}{\theFundingPeriodNumeralPrevious} % d percenta
5210         & \dfgShowTag{\pPosition}{future-objective-percentage-female}
5211         {\pFutureObjPctFemale}[\dfgLocalDB] % f objective
5212       }
5213     }
5214   }
5215   \begin{tblr}[%
5216     theme=main,
5217     note{a}={Reference~ date:~ proposal~ for~ third~ funding~ period},
5218     expand=\l_tblr_body_tl,
5219     long
5220   ]{
5221     vline{3} = {3-4}{1pt,solid,tableLines},
5222     vline{6} = {4-4}{1pt,solid,tableLines},
5223     vline{9} = {1-4}{1pt,solid,tableLines},
5224     vspan=even,
5225     colspec = {
5226       X[m] % position
5227       m{2cm} % objective
5228       m{0.4cm} % f
5229       m{0.4cm} % m
5230       m{0.4cm} % d
5231       m{0.4cm} % f
5232       m{0.4cm} % m
5233       m{0.4cm} % d
5234       m{3cm} % objective
5235     },
5236     hspan=minimal, % !!!!! https://tex.stackexchange.com/a/637391/98739
5237     row{Z}= {font={\footnotesize\bfseries}},

```

```

5238 hline{5} = {1pt,solid,tableLines},
5239 hline{Y} = {1pt,solid,fg={tableOuterLines}},
5240 hline{2} = {wd=0pt},
5241 row{odd}={bg=white},
5242 row{even}={bg=tableRows},
5243 row{1-4}={bg=tableHeadingsBG},
5244 rowhead = 3,
5245 column{2-9}={halign={c}},
5246 % column{1} = {font={\bfseries},
5247 % fg = {rwthBlue}},
5248 row{2-4} = {
5249     guard,
5250     valign={t},
5251     font={\footnotesize\bfseries},
5252     fg={tableHeadingsFont},
5253     bg={white}},
5254 }
5255 \SetCell[r=4]{c} % empty
5256 & \SetCell[c=6]{c} Second~ funding~ period %
5257 & %
5258 & %
5259 & %
5260 & %
5261 & %
5262 & %
5263 & Third~ funding~ period %%
5264 % empty
5265 & {Objective~ [\unit{\percent}]}
5266 & \SetCell[c=6]{c}Status~ Quo\TblrNote{a}
5267 &
5268 &
5269 &
5270 &
5271 &
5272 & {Objective~ [\unit{\percent}]} %%
5273 % empty
5274 & % empty
5275 & \SetCell[c=3]{c}Number
5276 &
5277 &
5278 & \SetCell[c=3]{c} [\unit{\percent}]
5279 &
5280 &
5281 & %%
5282 % empty
5283 & % empty
5284 & f
5285 & m
5286 & d
5287 & f
5288 & m
5289 & d
5290 & f %%
5291 % \tl_use:N
5292 \l_tblr_body_tl
5293 Total\printMarginalia{
5294     Total~ no.:~
5295     \dfg_total_position_gender_set:Nnn \l_@@_tmp_total_int
5296     {person} % database
5297     {\theFundingPeriodNumeralPrevious} % phase
5298     \num{\int_use:N \l_@@_tmp_total_int}
5299 }
5300
5301 & % objective
5302 & \getGenderPhaseTotal{f}{\theFundingPeriodNumeralPrevious} % number f
5303 & \getGenderPhaseTotal{m}{\theFundingPeriodNumeralPrevious} % number m

```

```

5304      & \getGenderPhaseTotal{d}{\theFundingPeriodNumeralPrevious}      % number d
5305      & \getGenderPhasePercentage{f}{\theFundingPeriodNumeralPrevious} % percentage f
5306      & \getGenderPhasePercentage{m}{\theFundingPeriodNumeralPrevious} % percentage m
5307      & \getGenderPhasePercentage{d}{\theFundingPeriodNumeralPrevious} % percentage d
5308      &                                                                    \\
5309      \end{tblr}}
5310  {
5311      Database~ \texttt{#1}~ missing.
5312      \msg_warning:nne { dfg } { database-not-found }{ #1 }
5313  }
5314 }

```

We continue with the list of existing instrumentation

```

5315 \NewDocumentCommand{\ExistingInstrumentationTable}{ O{existingInstrumentation} }{%
5316   \def\dfgLocalDB{#1}
5317   \def\tblrbody{}
5318   \DTLifdbexists{\dfgLocalDB}{%
5319     \DTLforeach*{\dfgLocalDB}{%
5320       \instProject=ref-project-id,%
5321       \instInstrument=instrument,%
5322       \instCompany=company,%
5323       \instQuantity=quantity,%
5324       \instYear=year,%
5325       \instCost=cost,%
5326       \instSource=financed-by%
5327     }{%
5328       \protected@edef\tblrbody{\tblrbody
5329         \getProject{\instProject}
5330         & \ifdefempty{\instQuantity}{}{
5331           \noexpand\dfgShowTag{\instProject/\instInstrument}{quantity}
5332           {\instQuantity}[\dfgLocalDB]\, \times\,,
5333           \noexpand\dfgShowTag{\instProject/\instInstrument}{instrument}
5334           {\instInstrument}[\dfgLocalDB]
5335           \ifdefempty{\instCompany}{}{\space (
5336             \noexpand\dfgShowTag{\instProject/\instInstrument}{company}
5337             {\instCompany}[\dfgLocalDB]}
5338           & \noexpand\dfgShowTag{\instProject/\instInstrument}{year}
5339           {\instYear}[\dfgLocalDB]
5340           & \noexpand\dfgShowTag{\instProject/\instInstrument}{cost}
5341           {\noexpand@@_show_existing_instrumentation_cost:n{\instCost}}[\dfgLocalDB]
5342           & \noexpand\dfgShowTag{\instProject/\instInstrument}{financed-by}
5343           {\instSource}[\dfgLocalDB]
5344           \\
5345         }}%
5346       \begin{tblr}[%
5347         theme=main,
5348         expand=\tblrbody,
5349         long,
5350         note{a}={Figures~ in~ thousands},
5351         ]{%
5352           %rowsep=1pt,
5353           vspan=even,
5354           colspec = {X[-.8,m]X[4.5,m]X[m]X[-1,c,si={table-format=4.1}]X[1.7,m]},
5355           rowhead = 1,
5356           column{3}={halign={c}},
5357           column{4}={halign={r},guard},
5358           column{5}={halign={l}},
5359           % cell{1}{4}={valign={m}},
5360           cell{1}{1-5} = {cmd=\hypersetup{linkcolor=tableLink}},
5361           row{1}={valign=t, halign={c},guard},
5362           % row{1} = {font={\bfseries},fg={white}}
5363         }
5364       Project %
5365       & Description~ of~ instrumentation %
5366       & {Year~ of~                               \\ purchase}
5367       & \SetCell{c}{{\{Cost~ of~                     \\purchase}}}\TblrNote{a}
5368       & {Source~ of~                               \\ funding} \\

```

```

5369     \tblrbody
5370 \end{tblr}
5371 }
5372 {
5373 Database~ \texttt{#1}~ missing.
5374 \msg_warning:nne { dfg } { database-not-found }{ #1 }
5375 a }
5376 }

```

We turn to the laboratory animals

```

5377 \NewDocumentCommand{\UpkeepLaboratoryAnimalsTable}{ O{UpkeepLaboratoryAnimals} }{%
5378 \def\tmpLocalDB{#1}%
5379 \DTLifdbexists{\tmpLocalDB}{%
5380 \DTLsort{ref-project-id}{\tmpLocalDB}%
5381 \DTLsumcolumn{\tmpLocalDB}{quantity}{\totalQuantity}%
5382 \DTLsumcolumn{\tmpLocalDB}{requested-funds}{\totalRequestedFunds}%
5383 \DTLsumcolumn{\tmpLocalDB}{existing-funds}{\totalExistingFunds}%
5384 \DTLconverttodecimal{\totalRequestedFunds}{\totalRequestedFunds}%
5385 \DTLconverttodecimal{\totalExistingFunds}{\totalExistingFunds}%
5386 \def\tblrbody{}%
5387 \def\totalMouseQuantity{}%
5388 \def\totalRatQuantity{}%
5389 \DTLforeach*{\tmpLocalDB}{%
5390 \pProject=ref-project-id,%
5391 \pSpecies=species,%
5392 \pQuantity=quantity,%
5393 \pWeeksKept=weeks-kept,%
5394 \pPurchasingCosts=purchasing-costs,%
5395 \pRequestedFunds=requested-funds,%
5396 \pExistingFunds=existing-funds%
5397 }{
5398 \str_case:en {\pSpecies}{
5399
5400 {mouse}{%
5401 \protected@edef\crcSpecies{Mouse}%
5402 \protected@edef\crcHousingCosts{\dfgMouseHousing}%
5403 \DTLgadd{\totalMouseQuantity}{\totalMouseQuantity}{\pQuantity}}%
5404 {mouse-gnotobiotic}{%
5405 \protected@edef\crcSpecies{Mouse~ {\footnotesize(gnotobiotic)}}%
5406 \protected@edef\crcHousingCosts{\dfgMouseHousingGnotobiotic}%
5407 \DTLgadd{\totalMouseQuantity}{\totalMouseQuantity}{\pQuantity}}%
5408 {rat}{%
5409 \protected@edef\crcSpecies{Rat}%
5410 \protected@edef\crcHousingCosts{\dfgRatHousing}%
5411 \DTLgadd{\totalRatQuantity}{\totalRatQuantity}{\pQuantity}}
5412 }
5413 \protected@edef\tblrbody{\tblrbody
5414 \getProject{\pProject}
5415 & \noexpand\dfgShowTag{\pProject/\pSpecies}{species}
5416 {\crcSpecies}{\tmpLocalDB}
5417 & \noexpand\dfgShowTag{\pProject/\pSpecies}{quantity}
5418 {\noexpand\@@_show_table_number:n{\pQuantity}}{\tmpLocalDB}
5419 & \noexpand\dfgShowTag{\pProject/\pSpecies}{weeks-kept}
5420 {\noexpand\@@_show_table_number:n{\pWeeksKept}}{\tmpLocalDB}
5421 & \noexpand\dfgShowCalculatedTag{animalHousingRate}
5422 {settings,\tmpLocalDB}
5423 {\noexpand\@@_show_table_number:n{\crcHousingCosts}}
5424 & \noexpand\dfgShowTag{\pProject/\pSpecies}{purchasing-costs}
5425 {\noexpand\@@_show_eur:n{\pPurchasingCosts}}{\tmpLocalDB}
5426 & \noexpand\dfgShowTag{\pProject/\pSpecies}{requested-funds}
5427 {\noexpand\@@_show_eur:n{\pRequestedFunds}}{\tmpLocalDB}
5428 & \noexpand\dfgShowTag{\pProject/\pSpecies}{existing-funds}
5429 {\noexpand\@@_show_eur:n{\pExistingFunds}}{\tmpLocalDB} \\
5430 } % \DTLconverttodecimal{\totalMouseQuantity}{\totalMouseQuantity}%
5431 }%
5432 \begin{tblr}[%
5433 theme=main,

```

```

5434     expand=\tblrbody,
5435     long,
5436     note{a}={Figures~ in~ EUR},
5437     ]{%
5438     vspan=even,
5439     colspec ={*{1}{Q[1]}
5440     *{1}{X[2,1]}
5441     *{2}{X[1.3,c,si={table-format=3}]}
5442     *{1}{X[-1,c,si={table-format=2.2,table-auto-round=false}]}
5443     *{1}{X[-1,c,si={table-format=5}]}
5444     *{2}{X[-1,c,si={table-format=6}]}
5445     },
5446     rowhead={1},
5447     column{3-8}={guard},
5448     %rowfoot = 1,
5449     hline{Y}={%
5450         wd=1pt,
5451         tableLines},
5452     row{Z}={%
5453         bg=white,
5454         fg=black,
5455         font=\footnotesize\bfseries,
5456         halign={c},
5457         valign={t}},
5458     % cell{Y}{3}={halign={l}},
5459     row{1}={%
5460         guard,
5461         halign={c},
5462         cmd={\hypersetup{linkcolor=tableLink}},
5463     },
5464 }
5465 Project
5466 & Species
5467 & Quantity
5468 & {Average~
5469 & {Housing~ costs~
5470 & {Purchasing~
5471 & {Requested~
5472 & {Existing~
5473 \tblrbody
5474 Total
5475 &
5476 & \SetCell{halign={l}, font={\bfseries\footnotesize}}
5477 {Mice:~\dfgShowCalculatedTag{UpkeepLaboratoryAnimalsTable}{\tmpLocalDB}
5478 {\totalMouseQuantity}
5479 \Rats:~\dfgShowCalculatedTag{UpkeepLaboratoryAnimalsTable}{\tmpLocalDB}
5480 {\totalRatQuantity}}
5481 & \SetCell{tableNoValue}
5482 & \SetCell{tableNoValue}
5483 & \SetCell{tableNoValue}
5484 & \dfgShowCalculatedTag{UpkeepLaboratoryAnimalsTable}{\tmpLocalDB}
5485 {\@@_show_eur:n{\totalRequestedFunds}}
5486 & \dfgShowCalculatedTag{UpkeepLaboratoryAnimalsTable}{\tmpLocalDB}
5487 {\@@_show_eur:n{\totalExistingFunds}}
5488 \end{tblr}}
5489 {
5490 Database~ \texttt{#1}~ missing.
5491 \msg_warning:nne { dfg } { database-not-found }{ #1 }
5492 }
5493 }
5494 \newcommand{\dfgRotate}[1]{\rotatebox{90}{\dfgPositionName{#1}}}

```

```

\\number~ of~\\we
\\per~ animal~\\p
\\costs~ \\per~ a
\\funds\TblrNote{
\\funds\TblrNote{

```

`\getCountRequestedStaff`<sup>P.140</sup> with aggregate indexing Funding declarations update a property-list index when they are read. Consequently this command only performs one property lookup; it never traverses a datatool database. This matters especially for `tabularray`, which evaluates table cells more than once while measuring and typesetting them. Missing tuples and explicit zero values both print the faded multiplication sign used elsewhere in funding tables,

preserving the display of the former database sum.

**\getCountRequestedStaff**[*<project>*]{*<year>*}{*<category>*}

Sum of the requested staff quantity-year(*<year>*) values in the currently selected requested-funding database, normally RequestedFunding, filtered by *<category>* and (when *<project>* is given) by *<project>*. Display follows the usual table conventions: an absent or zero sum prints a faded \texttimes, and any other value prints verbatim.

```

5495 \tl_new:N \l_@@_requested_staff_database_tl
5496 \tl_set:Nn \l_@@_requested_staff_database_tl { RequestedFunding }
5497
5498 \NewDocumentCommand{\getCountRequestedStaff}{omm}{%
5499   \tl_set:Nx \l_@@_funding_cache_key_tl
5500   {
5501     \IfNoValueTF{#1}{
5502       {\tl_use:N \l_@@_requested_staff_database_tl/
5503         __ALL__/#3/quantity-year#2}
5504       {\tl_use:N \l_@@_requested_staff_database_tl/
5505         #1/#3/quantity-year#2}
5506     }
5507     \dfgShowCalculatedTag{getCountRequestedStaff}
5508     {\l_@@_requested_staff_database_tl}
5509     {
5510       \prop_get:NVNTF \g_@@_funding_staff_quantity_prop
5511       \l_@@_funding_cache_key_tl \l_@@_funding_cache_value_tl
5512       {
5513         \fp_compare:nNnTF {\l_@@_funding_cache_value_tl} = {0}{
5514           {\textcolor{tableNoValue!60!black}{\texttimes}}
5515           {\l_@@_funding_cache_value_tl}
5516         }
5517         {\textcolor{tableNoValue!60!black}{\texttimes}}
5518       }
5519     }

```

**\OverviewExistingStaffTable** The chapter-2 overview reuses the project-level staff roster instead of maintaining a second set of totals. Only records with funding-status=existing are counted. Each record contributes one person to every distinct parent affiliation reached through its ref-institution-id list; when that field is absent, both organisation and category are inherited through ref-person-id from the central person row. Multiple institutions at the same affiliation are counted once. The comma-separated applicant affiliations come from meta and occupy the first numeric columns. The heading is singular for one applicant affiliation and plural for several. Other affiliations are added in first-use order.

Because project declarations normally occur after chapter 2, the default database is RequestedFundingStaffOverview, restored from the preceding LaTeX run's auxiliary file. Passing RequestedFundingStaff explicitly is useful in focused tests or documents that load all rows before the table.

The DFG overview has seven fixed category rows. The more detailed roster categories medDoc and assistant are folded into enquoteOther research staff and enquoteStudent and graduate assistants, respectively.

**\OverviewExistingStaffTable**[*<database>*]

Print the DFG enquoteOverview of existing staff. The optional database defaults to RequestedFundingStaffOverview. Use the public call \printTable<sup>P.28</sup>{OverviewExistingStaff} in chapter 2. Direct calls also emit the standard skipped-item notice instead of querying unavailable metadata when either fast-compilation mode is active.

```

5520 \seq_new:N \l_@@_oes_affiliation_seq
5521 \prop_new:N \l_@@_oes_affiliation_name_prop
5522 \prop_new:N \l_@@_oes_affiliation_abbreviation_prop
5523 \prop_new:N \l_@@_oes_count_prop
5524 \prop_new:N \l_@@_oes_row_affiliation_seen_prop
5525 \tl_new:N \l_@@_oes_applicant_affiliation_tl
5526 \tl_new:N \l_@@_oes_person_tl
5527 \tl_new:N \l_@@_oes_category_tl
5528 \tl_new:N \l_@@_oes_institutions_tl
5529 \tl_new:N \l_@@_oes_affiliation_tl
5530 \tl_new:N \l_@@_oes_candidate_affiliation_tl
5531 \tl_new:N \l_@@_oes_registered_affiliation_tl
5532 \tl_new:N \l_@@_oes_affiliation_name_tl

```

```

5533 \tl_new:N \l_@@_oes_affiliation_abbreviation_tl
5534 \tl_new:N \l_@@_oes_lookup_key_tl
5535 \tl_new:N \l_@@_oes_database_tl
5536 \tl_new:N \l_@@_oes_table_body_tl
5537 \tl_new:N \l_@@_oes_colspec_tl
5538 \int_new:N \l_@@_oes_affiliation_count_int
5539 \int_new:N \l_@@_oes_applicant_affiliation_count_int
5540 \int_new:N \l_@@_oes_other_affiliation_count_int
5541 \int_new:N \l_@@_oes_record_count_int
5542 \clist_new:N \l_@@_oes_applicant_affiliation_clist
5543
5544 \cs_new_protected:Npn \@@_oes_resolve_person_fallbacks:
5545 {
5546   \tl_if_blank:VF \l_@@_oes_person_tl
5547   {
5548     \DTLifdbexists{person}
5549     {
5550       \DTLgetvalueforkey{\l_tmpa_tl}{id}{person}{id}
5551       {\l_@@_oes_person_tl}
5552       \DTLifnulloreempty{\l_tmpa_tl}
5553       {
5554         \msg_warning:nnee { dfg } { requested-staff-unresolved-person }
5555         { \pOESProject } { \l_@@_oes_person_tl }
5556       }
5557     }
5558     \tl_if_blank:VT \l_@@_oes_category_tl
5559     {
5560       \DTLgetvalueforkey{\l_tmpa_tl}{position}{person}{id}
5561       {\l_@@_oes_person_tl}
5562       \DTLifnulloreempty{\l_tmpa_tl}
5563       { }
5564       { \tl_set:NV \l_@@_oes_category_tl \l_tmpa_tl }
5565     }
5566     \bool_lazy_all:nT
5567     {
5568       { \tl_if_blank_p:V \l_@@_oes_institutions_tl }
5569       { \tl_if_blank_p:V \l_@@_oes_affiliation_tl }
5570     }
5571     {
5572       \DTLgetvalueforkey{\l_tmpa_tl}{ref-institution-id}{person}{id}
5573       {\l_@@_oes_person_tl}
5574       \DTLifnulloreempty{\l_tmpa_tl}
5575       { }
5576       { \tl_set:NV \l_@@_oes_institutions_tl \l_tmpa_tl }
5577       \tl_if_blank:VT \l_@@_oes_institutions_tl
5578       {
5579         \DTLgetvalueforkey{\l_tmpa_tl}{ref-affiliation-id}{person}{id}
5580         {\l_@@_oes_person_tl}
5581         \DTLifnulloreempty{\l_tmpa_tl}
5582         { }
5583         { \tl_set:NV \l_@@_oes_affiliation_tl \l_tmpa_tl }
5584       }
5585     }
5586   }
5587 }
5588 {
5589   \msg_warning:nnee { dfg } { requested-staff-unresolved-person }
5590   { \pOESProject } { \l_@@_oes_person_tl }
5591 }
5592 }
5593 }
5594
5595 \cs_new_protected:Npn \@@_oes_register_affiliation:n #1
5596 {
5597   \tl_set:Nx \l_@@_oes_registered_affiliation_tl {#1}
5598   \tl_trim_spaces:N \l_@@_oes_registered_affiliation_tl

```

```

5599 \tl_if_blank:VF \l_@@_oes_registered_affiliation_tl
5600 {
5601   \seq_if_in:NVF \l_@@_oes_affiliation_seq
5602     \l_@@_oes_registered_affiliation_tl
5603   {
5604     \tl_clear:N \l_@@_oes_affiliation_name_tl
5605     \tl_clear:N \l_@@_oes_affiliation_abbreviation_tl
5606     \DTLifdbexists{affiliation}
5607     {
5608       \DTLgetvalueforkey{\l_@@_oes_affiliation_name_tl}
5609         {name}{affiliation}{id}{\l_@@_oes_registered_affiliation_tl}
5610       \DTLifnulloreempty{\l_@@_oes_affiliation_name_tl}
5611       {
5612         \msg_warning:nnee { dfg } { requested-staff-unresolved-affiliation }
5613         { OverviewExistingStaff }
5614         { \l_@@_oes_registered_affiliation_tl }
5615         \tl_set:NV \l_@@_oes_affiliation_name_tl
5616           \l_@@_oes_registered_affiliation_tl
5617         \tl_set:NV \l_@@_oes_affiliation_abbreviation_tl
5618           \l_@@_oes_registered_affiliation_tl
5619       }
5620     }
5621     \DTLgetvalueforkey{\l_@@_oes_affiliation_abbreviation_tl}
5622       {abbreviation}{affiliation}{id}
5623       {\l_@@_oes_registered_affiliation_tl}
5624     \DTLifnulloreempty{\l_@@_oes_affiliation_abbreviation_tl}
5625     {
5626       \msg_warning:nne { dfg } { requested-staff-missing-abbreviation }
5627       { \l_@@_oes_registered_affiliation_tl }
5628       \tl_set:NV \l_@@_oes_affiliation_abbreviation_tl
5629         \l_@@_oes_affiliation_name_tl
5630     }
5631     { }
5632   }
5633 }
5634 {
5635   \msg_warning:nnee { dfg } { requested-staff-unresolved-affiliation }
5636   { OverviewExistingStaff }
5637   { \l_@@_oes_registered_affiliation_tl }
5638   \tl_set:NV \l_@@_oes_affiliation_name_tl
5639     \l_@@_oes_registered_affiliation_tl
5640   \tl_set:NV \l_@@_oes_affiliation_abbreviation_tl
5641     \l_@@_oes_registered_affiliation_tl
5642 }
5643 \seq_put_right:NV \l_@@_oes_affiliation_seq
5644   \l_@@_oes_registered_affiliation_tl
5645 \prop_put:NVV \l_@@_oes_affiliation_name_prop
5646   \l_@@_oes_registered_affiliation_tl \l_@@_oes_affiliation_name_tl
5647 \prop_put:NVV \l_@@_oes_affiliation_abbreviation_prop
5648   \l_@@_oes_registered_affiliation_tl
5649   \l_@@_oes_affiliation_abbreviation_tl
5650 }
5651 }
5652 }
5653
5654 \cs_new_protected:Npn \@@_oes_count_affiliation:n #1
5655 {
5656   \tl_set:N \l_@@_oes_candidate_affiliation_tl {#1}
5657   \tl_trim_spaces:N \l_@@_oes_candidate_affiliation_tl
5658   \tl_if_blank:VF \l_@@_oes_candidate_affiliation_tl
5659   {
5660     \prop_if_in:NVF \l_@@_oes_row_affiliation_seen_prop
5661       \l_@@_oes_candidate_affiliation_tl
5662     {
5663       \prop_put:NVn \l_@@_oes_row_affiliation_seen_prop
5664         \l_@@_oes_candidate_affiliation_tl {1}

```

```

5665 \@@_oes_register_affiliation:n
5666 { \l_@@_oes_candidate_affiliation_tl }
5667 \tl_set:Nx \l_tmpb_tl
5668 { \l_@@_oes_category_tl / \l_@@_oes_candidate_affiliation_tl }
5669 \prop_get:NVNTF \l_@@_oes_count_prop \l_tmpb_tl \l_tmpe_tl
5670 { \int_set:Nn \l_tmpe_int { \l_tmpe_tl + 1 } }
5671 { \int_set:Nn \l_tmpe_int { 1 } }
5672 \prop_put:NVx \l_@@_oes_count_prop \l_tmpb_tl
5673 { \int_use:N \l_tmpe_int }
5674 }
5675 }
5676 }
5677
5678 \cs_new_protected:Npn \@@_oes_collect_current:
5679 {
5680 \DTLifnulllorempty{\pOESPerson}
5681 { \tl_clear:N \l_@@_oes_person_tl }
5682 { \tl_set:Ne \l_@@_oes_person_tl {\pOESPerson} }
5683 \DTLifnulllorempty{\pOESCategory}
5684 { \tl_clear:N \l_@@_oes_category_tl }
5685 { \tl_set:Ne \l_@@_oes_category_tl {\pOESCategory} }
5686 \DTLifnulllorempty{\pOESInstitutions}
5687 { \tl_clear:N \l_@@_oes_institutions_tl }
5688 { \tl_set:Ne \l_@@_oes_institutions_tl {\pOESInstitutions} }
5689 \DTLifnulllorempty{\pOESAffiliation}
5690 { \tl_clear:N \l_@@_oes_affiliation_tl }
5691 { \tl_set:Ne \l_@@_oes_affiliation_tl {\pOESAffiliation} }
5692 \@@_oes_resolve_person_fallbacks:
5693 \str_case:VnF \l_@@_oes_category_tl
5694 {
5695 { prof } { \tl_set:Nn \l_@@_oes_category_tl { prof } }
5696 { prof-W2 } { \tl_set:Nn \l_@@_oes_category_tl { prof } }
5697 { prof-W3 } { \tl_set:Nn \l_@@_oes_category_tl { prof } }
5698 { groupLeader } { \tl_set:Nn \l_@@_oes_category_tl { groupLeader } }
5699 { postDoc } { \tl_set:Nn \l_@@_oes_category_tl { postDoc } }
5700 { PhD } { \tl_set:Nn \l_@@_oes_category_tl { PhD } }
5701 { medDoc } { \tl_set:Nn \l_@@_oes_category_tl { research } }
5702 { research } { \tl_set:Nn \l_@@_oes_category_tl { research } }
5703 { nonResearch } { \tl_set:Nn \l_@@_oes_category_tl { nonResearch } }
5704 { student } { \tl_set:Nn \l_@@_oes_category_tl { student } }
5705 { assistant } { \tl_set:Nn \l_@@_oes_category_tl { student } }
5706 }
5707 { \tl_clear:N \l_@@_oes_category_tl }
5708 \tl_if_blank:VF \l_@@_oes_category_tl
5709 {
5710 \int_incr:N \l_@@_oes_record_count_int
5711 \prop_clear:N \l_@@_oes_row_affiliation_seen_prop
5712 \tl_if_blank:VTF \l_@@_oes_institutions_tl
5713 {
5714 \tl_if_blank:VTF \l_@@_oes_affiliation_tl
5715 {
5716 \msg_warning:nne { dfq } { existing-staff-no-organisation }
5717 { \pOESProject / \pOESLastname }
5718 }
5719 { \@@_oes_count_affiliation:n { \l_@@_oes_affiliation_tl } }
5720 }
5721 {
5722 \clist_set:NV \l_tmpe_clist \l_@@_oes_institutions_tl
5723 \clist_map_inline:Nn \l_tmpe_clist
5724 {
5725 \tl_clear:N \l_tmpe_tl
5726 \DTLifdbexists{institution}
5727 {
5728 \DTLgetvalueforkey{\l_tmpe_tl}
5729 {ref-affiliation-id}{institution}{id}{##1}
5730 }

```

```

5731         { }
5732         \DTLifnullorempy{\l_tmpa_tl}
5733         {
5734             \msg_warning:nnee { dfg } { requested-staff-unresolved-institution }
5735             { OverviewExistingStaff } {##1}
5736         }
5737         { \@@_oes_count_affiliation:n { \l_tmpa_tl } }
5738     }
5739 }
5740 }
5741 }
5742
5743 \cs_new_protected:Npn \@@_oes_append_empty_cells:n #1
5744 {
5745     \int_step_inline:nn {#1}
5746     { \tl_put_right:Nn \l_@@_oes_table_body_tl { & } }
5747 }
5748
5749 \cs_new_protected:Npn \@@_oes_append_category:nn #1#2
5750 {
5751     \tl_put_right:Nn \l_@@_oes_table_body_tl {#2}
5752     \seq_map_inline:Nn \l_@@_oes_affiliation_seq
5753     {
5754         \tl_set:Ne \l_@@_oes_lookup_key_tl { #1 / ##1 }
5755         \prop_get:NVNTF \l_@@_oes_count_prop
5756         \l_@@_oes_lookup_key_tl \l_tmpc_tl
5757         {
5758             \tl_put_right:Ne \l_@@_oes_table_body_tl
5759             {
5760                 & \exp_not:N \dfgShowCalculatedTag{OverviewExistingStaffTable}
5761                 {\exp_not:N \l_@@_oes_database_tl, person, institution, affiliation}
5762                 {\exp_not:N \l_tmpc_tl}
5763             }
5764         }
5765         {
5766             \tl_put_right:Ne \l_@@_oes_table_body_tl
5767             {
5768                 & \exp_not:N \dfgShowCalculatedTag{OverviewExistingStaffTable}
5769                 {\exp_not:N \l_@@_oes_database_tl, person, institution, affiliation}{0}
5770             }
5771         }
5772     }
5773     \tl_put_right:Nn \l_@@_oes_table_body_tl { \\ }
5774 }
5775
5776 \cs_new_protected:Npn \@@_oes_build_table_body:
5777 {
5778     \int_set:Nn \l_@@_oes_affiliation_count_int
5779     { \seq_count:N \l_@@_oes_affiliation_seq }
5780     \int_set:Nn \l_@@_oes_other_affiliation_count_int
5781     {
5782         \l_@@_oes_affiliation_count_int
5783         - \l_@@_oes_applicant_affiliation_count_int
5784     }
5785     \tl_set:Nx \l_@@_oes_colspec_tl
5786     {
5787         X[4,1]~*{\int_use:N \l_@@_oes_affiliation_count_int}{X[1,c]}
5788     }
5789     \tl_clear:N \l_@@_oes_table_body_tl
5790     \tl_put_right:Nx \l_@@_oes_table_body_tl
5791     {
5792         \exp_not:N \SetCell [r=3] {c,m} Category
5793         & \exp_not:N \SetCell
5794         [c=\int_use:N \l_@@_oes_affiliation_count_int] {c,m}
5795         {Number~of~persons}
5796     }

```

```

5797 \@@_oes_append_empty_cells:n
5798 { \l_@@_oes_affiliation_count_int - 1 }
5799 \tl_put_right:Nn \l_@@_oes_table_body_tl { \\ & }
5800 \int_compare:nNnTF
5801 { \l_@@_oes_applicant_affiliation_count_int } = {1}
5802 {
5803   \tl_put_right:Nn \l_@@_oes_table_body_tl
5804     { \SetCell{c,m} {at~the~applicant\\university} }
5805 }
5806 {
5807   \tl_put_right:Nx \l_@@_oes_table_body_tl
5808   {
5809     \exp_not:N \SetCell
5810       [c=\int_use:N \l_@@_oes_applicant_affiliation_count_int] {c,m}
5811       {at~the~applicant\\universities}
5812   }
5813   \@@_oes_append_empty_cells:n
5814     { \l_@@_oes_applicant_affiliation_count_int - 1 }
5815 }
5816 \int_compare:nNnT { \l_@@_oes_other_affiliation_count_int } > {0}
5817 {
5818   \tl_put_right:Nx \l_@@_oes_table_body_tl
5819   {
5820     & \exp_not:N \SetCell
5821       [c=\int_use:N \l_@@_oes_other_affiliation_count_int] {c,m}
5822       {at~other~participating\\institutions}
5823   }
5824   \@@_oes_append_empty_cells:n
5825     { \l_@@_oes_other_affiliation_count_int - 1 }
5826 }
5827 \tl_put_right:Nn \l_@@_oes_table_body_tl { \\ }
5828 \tl_put_right:Nn \l_@@_oes_table_body_tl { & }
5829 \seq_map_indexed_inline:Nn \l_@@_oes_affiliation_seq
5830 {
5831   \int_compare:nNnF {##1} = {1}
5832   { \tl_put_right:Nn \l_@@_oes_table_body_tl { & } }
5833   \tl_set:Nn \l_tmpa_tl {##2}
5834   \prop_get:NVN \l_@@_oes_affiliation_abbreviation_prop
5835     \l_tmpa_tl \l_tmpb_tl
5836   \tl_put_right:Ne \l_@@_oes_table_body_tl
5837   {
5838     \exp_not:N \dfgShowCalculatedTag{affiliationLabel}{affiliation}
5839     { \exp_not:N \l_tmpb_tl }
5840   }
5841 }
5842 \tl_put_right:Nn \l_@@_oes_table_body_tl { \\ }
5843 \@@_oes_append_category:nn { prof } { Professors }
5844 \@@_oes_append_category:nn { groupLeader }
5845   { Junior~research~group~leaders }
5846 \@@_oes_append_category:nn { postDoc } { Postdoctoral~researchers }
5847 \@@_oes_append_category:nn { PhD } { Doctoral~researchers }
5848 \@@_oes_append_category:nn { research } { Other~research~staff }
5849 \@@_oes_append_category:nn { nonResearch } { Non-research~staff }
5850 \@@_oes_append_category:nn { student }
5851   { Student~and~graduate~assistants }
5852 }
5853
5854 \cs_new_protected:Npn \@@_oes_print_legend:
5855 {
5856   \vspace*{-1.5\baselineskip}%
5857   %\par\noindent
5858   \group_begin:
5859   \footnotesize\textbf{Affiliations:}\space
5860   \seq_map_indexed_inline:Nn \l_@@_oes_affiliation_seq
5861   {
5862     \int_compare:nNnF {##1} = {1} {;\space}

```

```

5863 \tl_set:Nn \l_tmpa_tl {##2}
5864 \prop_get:NVN \l_@@_oes_affiliation_abbreviation_prop
5865 \l_tmpa_tl \l_tmpb_tl
5866 \prop_get:NVN \l_@@_oes_affiliation_name_prop
5867 \l_tmpa_tl \l_tmpc_tl
5868 \textbf{\dfgShowCalculatedTag{affiliationLabel}{affiliation}
5869 {\l_tmpb_tl}}:~
5870 \dfgShowTag{##2}{name}{\l_tmpc_tl}[affiliation]
5871 }
5872 .\par
5873 \group_end:
5874 }
5875
5876 \cs_new_protected:Npn \l_@@_oes_typeset:n #1
5877 {
5878 \begin{tblr}[
5879 theme=main,
5880 long,
5881 expand=\l_@@_oes_table_body_tl
5882 ]{
5883 colspec={#1},
5884 rowhead=3,
5885 rows={valign=m},
5886 column{2-Z}={halign=c},
5887 row{1-3}={font=\footnotesize\bfseries,
5888 fg=tableHeadingsFont,bg=tableHeadingsBG},
5889 hline{4}={wd=1pt,tableLines},
5890 vline{2}={wd=.75pt,tableLines}
5891 }
5892 \l_@@_oes_table_body_tl
5893 \end{tblr}
5894 }
5895
5896 \cs_new_protected:Npn \l_@@_overview_existing_staff:n #1
5897 {
5898 \group_begin:
5899 \tl_set:Nn \l_@@_oes_database_tl {#1}
5900 \seq_clear:N \l_@@_oes_affiliation_seq
5901 \prop_clear:N \l_@@_oes_affiliation_name_prop
5902 \prop_clear:N \l_@@_oes_affiliation_abbreviation_prop
5903 \prop_clear:N \l_@@_oes_count_prop
5904 \int_zero:N \l_@@_oes_record_count_int
5905 \tl_clear:N \l_@@_oes_applicant_affiliation_tl
5906 \DTLifdbexists{meta}
5907 {
5908 \DTLgetvalueforkey{\l_@@_oes_applicant_affiliation_tl}
5909 {ref-affiliation-id}{meta}{id}{crc}
5910 }
5911 { }
5912 \DTLifnulllorempty{\l_@@_oes_applicant_affiliation_tl}
5913 { \tl_set:Nn \l_@@_oes_applicant_affiliation_tl { applicant } }
5914 { }
5915 \clist_set:NV \l_@@_oes_applicant_affiliation_clist
5916 \l_@@_oes_applicant_affiliation_tl
5917 \clist_map_inline:Nn \l_@@_oes_applicant_affiliation_clist
5918 { \l_@@_oes_register_affiliation:n {##1} }
5919 \int_set:Nn \l_@@_oes_applicant_affiliation_count_int
5920 { \seq_count:N \l_@@_oes_affiliation_seq }
5921 \DTLifdbexists{#1}
5922 {
5923 \DTLforeach*{#1}
5924 {
5925 \pOESProject=ref-project-id,
5926 \pOESStatus=funding-status,
5927 \pOESLastname=lastname,
5928 \pOESPerson=ref-person-id,

```

```

5929     \pOESCategory=category,
5930     \pOESInstitutions=ref-institution-id,
5931     \pOESAffiliation=ref-affiliation-id
5932   }
5933   {
5934     \DTLifnullorempty{\pOESStatus}
5935     { }
5936     {
5937       \tl_set:Nx \l_tmpa_tl { \pOESStatus }
5938       \str_if_eq:VnT \l_tmpa_tl { existing }
5939       { \@@_oes_collect_current: }
5940     }
5941   }
5942 }
5943 { \msg_warning:nnn { dfg } { database-not-found } {#1} }
5944 \int_compare:nNtT { \l_@@_oes_record_count_int } = {0}
5945 { \msg_warning:nnn { dfg } { existing-staff-no-data } {#1} }
5946 \@@_oes_build_table_body:
5947 \exp_args:NV \@@_oes_typeset:n \l_@@_oes_colspec_tl
5948 \@@_oes_print_legend:
5949 \group_end:
5950 }
5951
5952 \NewDocumentCommand{\OverviewExistingStaffTable}
5953 { O{RequestedFundingStaffOverview} }
5954 {
5955   \bool_if:NTF \l_@@_class_fastcompile_bool
5956   { \dfgItemSkipped{OverviewExistingStaffTable} }
5957   { \@@_overview_existing_staff:n {#1} }
5958 }

```

`\OverviewOfFundsRequestedForStaffTable` Each body row is assembled by `\tl_put_right:Nx` into `\l_tblr_body_tl` and contains twenty-five `\getCountRequestedStaff`<sup>P.140</sup> calls (five years  $\times$  five categories) plus the leading `\getProject{<project>}`; the foot row issues another twenty-five calls for the column totals.

No indexing logic appears here: `\addEntry`<sup>P.21</sup> maintains the aggregate property list and `\getCountRequestedStaff`<sup>P.140</sup> encapsulates its lookup. The speed-up therefore applies transparently to every other consumer of the macro as well (marginalia, individual project tables, etc.).

### **`\OverviewOfFundsRequestedForStaffTable` [`<database>`]**

Emit the overview of requested staff funding. `<database>` defaults to `RequestedFundingOverview`, which combines funding declared before the document with project-local declarations restored from the preceding run’s auxiliary files. The table contains five year bands of five category columns (`postDoc`, `PhD`, `research`, `nonResearch`, `student`), one body row per project, and a “Total” foot row.

```

5959 \NewDocumentCommand{\OverviewOfFundsRequestedForStaffTable}{ O{RequestedFundingOverview} }{%
5960   \def\tmpLocalDB{#1}
5961   \tl_set:Nn \l_@@_requested_staff_database_tl {#1}
5962   \DTLifdbexists{\tmpLocalDB}{%
5963     \tl_clear:N \l_tblr_body_tl
5964     \DTLsort{number}{project}
5965     \DTLforeach*{
5966       \not\DTLiseq{\tmpProjectStatus}{E}
5967       \and
5968       \not\DTLiseq{\tmpProjectConsiderForLists}{false}
5969     }{project}{%
5970       \pProject = number,
5971       \tmpProjectStatus = project-status,
5972       \tmpProjectType = project-type,
5973       \tmpProjectConsiderForLists = consider-for-lists,
5974     }{%
5975       \tl_put_right:Nx \l_tblr_body_tl
5976       {
5977         \getProject{\pProject}
5978         & \getCountRequestedStaff[\pProject]{1}{postDoc}
5979         & \getCountRequestedStaff[\pProject]{1}{PhD}
5980         & \getCountRequestedStaff[\pProject]{1}{research}

```

```

5981 & \getCountRequestedStaff[\pProject]{1}{nonResearch}
5982 & \getCountRequestedStaff[\pProject]{1}{student}
5983
5984 & \getCountRequestedStaff[\pProject]{2}{postDoc}
5985 & \getCountRequestedStaff[\pProject]{2}{PhD}
5986 & \getCountRequestedStaff[\pProject]{2}{research}
5987 & \getCountRequestedStaff[\pProject]{2}{nonResearch}
5988 & \getCountRequestedStaff[\pProject]{2}{student}
5989
5990 & \getCountRequestedStaff[\pProject]{3}{postDoc}
5991 & \getCountRequestedStaff[\pProject]{3}{PhD}
5992 & \getCountRequestedStaff[\pProject]{3}{research}
5993 & \getCountRequestedStaff[\pProject]{3}{nonResearch}
5994 & \getCountRequestedStaff[\pProject]{3}{student}
5995
5996 & \getCountRequestedStaff[\pProject]{4}{postDoc}
5997 & \getCountRequestedStaff[\pProject]{4}{PhD}
5998 & \getCountRequestedStaff[\pProject]{4}{research}
5999 & \getCountRequestedStaff[\pProject]{4}{nonResearch}
6000 & \getCountRequestedStaff[\pProject]{4}{student}
6001
6002 & \getCountRequestedStaff[\pProject]{5}{postDoc}
6003 & \getCountRequestedStaff[\pProject]{5}{PhD}
6004 & \getCountRequestedStaff[\pProject]{5}{research}
6005 & \getCountRequestedStaff[\pProject]{5}{nonResearch}
6006 & \getCountRequestedStaff[\pProject]{5}{student} \\
6007 }
6008 }
6009
6010 \begin{tblr}{%
6011     theme=main,
6012     expand=\l_tblr_body_tl,
6013     long,
6014 }{%
6015     vspan=even,
6016     colspec = {*{1}{X[2,m]}
6017         *{24}{Q[c]}
6018     },
6019     rowhead = 2,
6020     colsep=4.5pt,
6021     vline{2,7,12,17,22}={tableLines,solid,wd=.75pt},
6022     vline{2,7,12,17,22}={3-Z}{tableLines,solid,wd=.75pt},
6023     hline{2}={wd=0pt},
6024     hline{3}={wd=1pt,tableLines},
6025     hline{Y}={wd=1pt,tableOuterLines},
6026     row{2} = {
6027         fg={tableHeadingsFont},
6028         bg={tableHeadingsBG},
6029         halign={c}
6030     },
6031     row{Z}= {font={\footnotesize\bfseries}}
6032 }
6033 &
6034 \SetCell[c=5]{c} \dfgFundingYear{1}
6035 & & & &
6036 \SetCell[c=5]{c} \dfgFundingYear{2}
6037 & & & &
6038 \SetCell[c=5]{c} \dfgFundingYear{3}
6039 & & & &
6040 \SetCell[c=5]{c} \dfgFundingYear{4}
6041 & & & &
6042 \SetCell[c=5]{c} \dfgFundingYear{5}
6043 & & & &
6044 \\
6045 \rotatebox{90}{Project} %
6046 & \dfgRotate{postDoc}

```

```

6047 & \dfgRotate{PhD}
6048 & \dfgRotate{research}
6049 & \dfgRotate{nonResearch}
6050 & \dfgRotate{student}
6051 & \dfgRotate{postDoc}
6052 & \dfgRotate{PhD}
6053 & \dfgRotate{research}
6054 & \dfgRotate{nonResearch}
6055 & \dfgRotate{student}
6056 & \dfgRotate{postDoc}
6057 & \dfgRotate{PhD}
6058 & \dfgRotate{research}
6059 & \dfgRotate{nonResearch}
6060 & \dfgRotate{student}
6061 & \dfgRotate{postDoc}
6062 & \dfgRotate{PhD}
6063 & \dfgRotate{research}
6064 & \dfgRotate{nonResearch}
6065 & \dfgRotate{student}
6066 & \dfgRotate{postDoc}
6067 & \dfgRotate{PhD}
6068 & \dfgRotate{research}
6069 & \dfgRotate{nonResearch}
6070 & \dfgRotate{student}
6071 \\
6072 \l_tblr_body_t1
6073 Total
6074 & \getCountRequestedStaff{1}{postDoc}
6075 & \getCountRequestedStaff{1}{PhD}
6076 & \getCountRequestedStaff{1}{research}
6077 & \getCountRequestedStaff{1}{nonResearch}
6078 & \getCountRequestedStaff{1}{student}
6079 & \getCountRequestedStaff{2}{postDoc}
6080 & \getCountRequestedStaff{2}{PhD}
6081 & \getCountRequestedStaff{2}{research}
6082 & \getCountRequestedStaff{2}{nonResearch}
6083 & \getCountRequestedStaff{2}{student}
6084 & \getCountRequestedStaff{3}{postDoc}
6085 & \getCountRequestedStaff{3}{PhD}
6086 & \getCountRequestedStaff{3}{research}
6087 & \getCountRequestedStaff{3}{nonResearch}
6088 & \getCountRequestedStaff{3}{student}
6089 & \getCountRequestedStaff{4}{postDoc}
6090 & \getCountRequestedStaff{4}{PhD}
6091 & \getCountRequestedStaff{4}{research}
6092 & \getCountRequestedStaff{4}{nonResearch}
6093 & \getCountRequestedStaff{4}{student}
6094 & \getCountRequestedStaff{5}{postDoc}
6095 & \getCountRequestedStaff{5}{PhD}
6096 & \getCountRequestedStaff{5}{research}
6097 & \getCountRequestedStaff{5}{nonResearch}
6098 & \getCountRequestedStaff{5}{student}
6099 \end{tblr}
6100
6101 }
6102 {
6103 Database~ \texttt{#1}~ missing.
6104 \msg_warning:nne { dfg } { database-not-found }{ #1 }
6105 }
6106 \tl_set:Nn \l_@@_requested_staff_database_t1 { RequestedFunding }
6107 }

6108 \NewDocumentCommand{\getSumRequestedFundsInstrumentation}{som}{
6109 % #2: project
6110 % #3: year
6111 \IfNoValueTF{#2}
6112 { \l_@@_funding_sum_set:Nnnnn \SumFundsRequestedInstrumentation

```

```

6113      {RequestedFundingOverview}{__ALL__}{instrumentation}{#3} }
6114      { \@@_funding_sum_set:Nnnnn \SumFundsRequestedInstrumentation
6115      {RequestedFundingOverview}{#2}{instrumentation}{#3} }
6116      \@_show_calculated_number:nnN
6117      {getSumRequestedFundsInstrumentation}
6118      {RequestedFundingOverview}
6119      \SumFundsRequestedInstrumentation
6120 }

```

Requested instrumentation overview The overview filters its database for `funding-type=instrumentation`. When the filter yields no rows, the table is suppressed and a sentence names the proposed funding-period number instead. This also covers a freshly created overview database on the first compilation pass.

### **\OverviewFundsRequestedInstrumentationTable** [*<database>*]

Print the requested-instrumentation overview from *<database>*, or state that no instrumentation funds are requested for the current funding period. The database defaults to `RequestedFundingOverview`.

```

6121 \NewDocumentCommand{\OverviewFundsRequestedInstrumentationTable} { O{RequestedFundingOverview} }{%
6122 \def\tmpLocalDB{#1}
6123 \DTLifdbexists{\tmpLocalDB}{%
6124 \tl_clear:N \l_tblr_body_tl
6125 \DTLsort{ref-project-id}{\tmpLocalDB}
6126 \DTLforeach*{\DTLiseq{\pFundingType}{instrumentation}}{\tmpLocalDB}{%
6127 \pProject=ref-project-id,
6128 \pFundingType=type,
6129 \pDescription=category,
6130 \pSumYearOne=sum-year1,
6131 \pSumYearTwo=sum-year2,
6132 \pSumYearThree=sum-year3,
6133 \pSumYearFour=sum-year4,
6134 \pSumYearFive=sum-year5
6135 }{%
6136 \tl_put_right:Nx \l_tblr_body_tl
6137 {
6138 \getProject{\pProject}
6139 \printMarginalia{
6140 \getSumRequestedFundsInstrumentation[\pProject]{%
6141 sum-year1,
6142 sum-year2,
6143 sum-year3,
6144 sum-year4,
6145 sum-year5
6146 }
6147 }
6148 & \dfgShowTag{\pProject}{category}{\pDescription}{\tmpLocalDB}
6149 & \dfgShowTag{\pProject}{sum-year1}
6150 {\exp_not:N \@@_show_eur:n {\pSumYearOne}}{\tmpLocalDB}
6151 & \dfgShowTag{\pProject}{sum-year2}
6152 {\exp_not:N \@@_show_eur:n {\pSumYearTwo}}{\tmpLocalDB}
6153 & \dfgShowTag{\pProject}{sum-year3}
6154 {\exp_not:N \@@_show_eur:n {\pSumYearThree}}{\tmpLocalDB}
6155 & \dfgShowTag{\pProject}{sum-year4}
6156 {\exp_not:N \@@_show_eur:n {\pSumYearFour}}{\tmpLocalDB}
6157 & \dfgShowTag{\pProject}{sum-year5}
6158 {\exp_not:N \@@_show_eur:n {\pSumYearFive}}{\tmpLocalDB} \\
6159 }
6160 }
6161 \tl_if_empty:VTF \l_tblr_body_tl
6162 {
6163 \par\noindent
6164 No~funds~for~instrumentation~are~requested~for~funding~period~
6165 \dfgFundingPeriodNumeral.
6166 \par
6167 }
6168 {
6169 \begin{tblr}{%
6170 theme=main,

```

```

6171     expand=\l_tblr_body_t1,
6172     long,
6173     remark{Note} = {Figures~ in~ EUR}
6174 ]{%
6175     vspan=even,
6176     row{Z} = {guard,font={\footnotesize\bfseries}},
6177     colspec = {
6178         *{1}{X[-1,t]}
6179         *{1}{X[2,t]}
6180         *{5}{X[-1,c,si={table-format=8}]}
6181     },
6182     rowhead = 2,
6183     column{3-7}={guard},
6184     %colsep=4.5pt,
6185     hline{2}={wd=0pt},
6186     hline{3}={wd=1pt,tableOuterLines},
6187     hline{Y}={wd=1pt,tableOuterLines},
6188     row{2} = {
6189         fg={tableHeadingsFont},
6190         bg={tableHeadingsBG},
6191         halign={c},
6192         guard,
6193     },
6194 }
6195 Project
6196 & {Description~of \\\ instrumentation}
6197 & \SetCell[c=5]{c,guard} Funds~ requested~ for
6198 & % year 2
6199 & % year 3
6200 & % year 4
6201 & % year 5
6202 \\\
6203 &
6204 & \dfgFundingYear{1}
6205 & \dfgFundingYear{2}
6206 & \dfgFundingYear{3}
6207 & \dfgFundingYear{4}
6208 & \dfgFundingYear{5} \\\
6209
6210 \l_tblr_body_t1
6211 \SetCell[c=2]{1}Total
6212 \printMarginalia{
6213     \getSumRequestedFundsInstrumentation{%
6214         sum-year1,
6215         sum-year2,
6216         sum-year3,
6217         sum-year4,
6218         sum-year5
6219     }
6220 }
6221 &
6222 & \getSumRequestedFundsInstrumentation{sum-year1}
6223 & \getSumRequestedFundsInstrumentation{sum-year2}
6224 & \getSumRequestedFundsInstrumentation{sum-year3}
6225 & \getSumRequestedFundsInstrumentation{sum-year4}
6226 & \getSumRequestedFundsInstrumentation{sum-year5} \\\
6227 \end{tblr}
6228 }
6229 }
6230 {
6231 Database~ \texttt{#1}~ missing.
6232 \msg_warning:nne { dfg } { database-not-found }{ #1 }
6233 }
6234 }
6235

```

## Generic memoized \DTLsumforkeys

```
6236 \prop_new:N \g_@@_dtlsum_cache_prop
```

**Memoized form WITH filter:** \@@\_dtlsum\_filtered:nnnnN {db}{filter-key}{filter-value}{cols}{result-cs} **This computes** \DTLsumforkeys[\DTLiseq{\pTmp}{value}][\pTmp=key]{db}{cols}{result}

```
6237
6238 \cs_new_protected:Npn \@@_dtlsum_filtered:nnnnN #1#2#3#4#5 {
6239   \tl_set:Nx \l_tmpa_tl
6240   { #1 || \tl_to_str:n {#2} || \tl_to_str:n {#3} || \tl_to_str:n {#4} }
6241   \prop_get:NVNTF \g_@@_dtlsum_cache_prop \l_tmpa_tl \l_tmpb_tl
6242   { \cs_set_eq:NN #5 \l_tmpb_tl }
6243   {%
6244     \DTLsumforkeys[\DTLiseq{\pCacheKey}{#3}][\pCacheKey=#2]{#1}{#4}{#5}%
6245     \prop_gput:NVV \g_@@_dtlsum_cache_prop \l_tmpa_tl #5
6246   }
6247 }
6248
6249 % Memoized form WITHOUT filter:
6250 %   \@@_dtlsum_all:nnN {db}{cols}{result-cs}
6251 \cs_new_protected:Npn \@@_dtlsum_all:nnN #1#2#3 {
6252   \tl_set:Nx \l_tmpa_tl
6253   { #1 || NOFILTER || \tl_to_str:n {#2} }
6254   \prop_get:NVNTF \g_@@_dtlsum_cache_prop \l_tmpa_tl \l_tmpb_tl
6255   { \cs_set_eq:NN #3 \l_tmpb_tl }
6256   {%
6257     \DTLsumforkeys{#1}{#2}{#3}%
6258     \prop_gput:NVV \g_@@_dtlsum_cache_prop \l_tmpa_tl #3
6259   }
6260 }
6261
6262 % =====
6263 % Drop-in replacements
6264 % =====
6265
6266 \providecommand{\SumPreviousRequestedFunding}{0}
6267 \providecommand{\SumRequestedFunding}{0}
6268
6269 \NewDocumentCommand{\getSumPreviousRequestedFunding}{O{PreviousRequestedFunding}mm}{%
6270   \DTLifdbexists{#1}{%
6271     \str_if_eq:nnTF {#2} {all}
6272     { \@@_dtlsum_all:nnN {#1} {#3} \SumPreviousRequestedFunding }
6273     { \@@_dtlsum_filtered:nnnnN {#1} {year} {#2} {#3} \SumPreviousRequestedFunding }%
6274     \@@_show_calculated_number:nnN
6275     {getSumPreviousRequestedFunding}{#1}
6276     \SumPreviousRequestedFunding
6277   }{%
6278     \texttt{\color{error}XXX}%
6279     \msg_warning:nne { dfg } { database-not-found } { #1 }%
6280   }%
6281 }
6282
6283 \NewDocumentCommand{\getSumRequestedFunding}{O{RequestedFundingOverview}mm}{%
6284   \DTLifdbexists{#1}{%
6285     \str_if_eq:nnTF {#2} {all}
6286     { \@@_funding_sum_set:Nnnnn \SumRequestedFunding {#1}
6287       {__ALL__}{#3}{sum-year1,sum-year2,sum-year3,sum-year4,sum-year5} }
6288     { \@@_funding_sum_set:Nnnnn \SumRequestedFunding {#1}
6289       {__ALL__}{#3}{sum-year#2} }%
6290     \@@_show_calculated_number:nnN
6291     {getSumRequestedFunding}{#1}
6292     \SumRequestedFunding
6293   }{%
6294     \texttt{\color{error}XXX}%
6295     \msg_warning:nne { dfg } { database-not-found } { #1 }%
6296   }%
6297 }
```

```

6298
6299 \NewDocumentCommand{\getTotalSumRequestedFunding}{O{RequestedFundingOverview}mm}{%
6300   \DTLifdbexists{#1}{%
6301     \tl_set:Nn \l_tmpa_tl {#3}
6302     \str_if_eq:nnT {#3} {all} { \tl_set:Nn \l_tmpa_tl {__ALL__} }
6303     \str_if_eq:nnTF {#2} {all}
6304       { \@@_funding_sum_set:Nnnnn \SumRequestedFunding {#1}
6305         {__ALL__}{\l_tmpa_tl}
6306         {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5} }
6307       { \@@_funding_sum_set:Nnnnn \SumRequestedFunding {#1}
6308         {__ALL__}{\l_tmpa_tl}{sum-year#2} }%
6309     \@@_show_calculated_number:nnN
6310       {getTotalSumRequestedFunding}{#1}
6311       \SumRequestedFunding
6312   }{%
6313     \texttt{\color{error}XXX}%
6314     \msg_warning:nne { dfg } { database-not-found } { #1 }%
6315   }%
6316 }
6317
6318 \NewDocumentCommand{\PreviousAndCurrentRequestedFundingTable}{O{PreviousRequestedFunding}}
6319 {
6320   \def\tmpLocalDB{#1}
6321   \begin{tblr}{%
6322     theme=main,
6323     expand=\l_tblr_body_tl,
6324     long,
6325     remark{Note} = {Figures~ in~ EUR}
6326   ]{%
6327     row{8,Z} = {guard,font={\footnotesize\bfseries}},
6328     colspec = {
6329       *{1}{t{3.5cm}}@{}
6330       *{6}{X[-1,c,si={table-format=8}]}
6331     },
6332     rowhead = 2,
6333     column{2-7}={guard},
6334     %colsep=4.5pt,
6335     hline{2}={wd=0pt},
6336     hline{3}={wd=1pt,tableOuterLines},
6337     % hline{Y}={wd=1pt,tableOuterLines},
6338     row{1,2} = {
6339       fg={tableHeadingsFont},
6340       bg={tableHeadingsBG},
6341       halign={c},
6342       guard,
6343     },
6344   }
6345   \SetCell[r=2]{b}{Financial~year/} \\\funding~period}
6346   & \SetCell[c=5]{c} Funding~ for % staff
6347   & % costs
6348   & % instrumentation
6349   & % fellowships
6350   & % globalfunds
6351   & \SetCell[r=2]{b} Total \\
6352   &
6353   Staff
6354   & Direct~ costs
6355   & Instrumentation
6356   & Fellowships
6357   & Globalfunds
6358   & \\
6359   \dfgFundingYearPrevious{1}
6360   \printMarginalia{%
6361     \getSumPreviousRequestedFunding{1}{%
6362       staff, costs, instrumentation, fellowships, globalfunds}%
6363   }

```

```

6364      & \getSumPreviousRequestedFunding{1}{staff}           % staff
6365      & \getSumPreviousRequestedFunding{1}{costs}           % costs
6366      & \getSumPreviousRequestedFunding{1}{instrumentation} % instrumentation
6367      & \getSumPreviousRequestedFunding{1}{fellowships}      % fellowships
6368      & \getSumPreviousRequestedFunding{1}{globalfunds}      % globalfunds
6369      &
6370      \getSumPreviousRequestedFunding{1}{staff, costs, instrumentation,
6371      fellowships, globalfunds}
6372      \\ % Total
6373
6374      \dfgFundingYearPrevious{2}
6375      \printMarginalia{%
6376      \getSumPreviousRequestedFunding{2}{%
6377      staff, costs, instrumentation, fellowships, globalfunds}%
6378      }
6379      & \getSumPreviousRequestedFunding{2}{staff}           % staff
6380      & \getSumPreviousRequestedFunding{2}{costs}           % costs
6381      & \getSumPreviousRequestedFunding{2}{instrumentation} % instrumentation
6382      & \getSumPreviousRequestedFunding{2}{fellowships}      % fellowships
6383      & \getSumPreviousRequestedFunding{2}{globalfunds}      % globalfunds
6384      &
6385      \getSumPreviousRequestedFunding{2}{staff, costs, instrumentation,
6386      fellowships, globalfunds}
6387      \\ % Total
6388      \dfgFundingYearPrevious{3}
6389      \printMarginalia{%
6390      \getSumPreviousRequestedFunding{3}{%
6391      staff, costs, instrumentation, fellowships, globalfunds}%
6392      }
6393      & \getSumPreviousRequestedFunding{3}{staff}           % staff
6394      & \getSumPreviousRequestedFunding{3}{costs}           % costs
6395      & \getSumPreviousRequestedFunding{3}{instrumentation} % instrumentation
6396      & \getSumPreviousRequestedFunding{3}{fellowships}      % fellowships
6397      & \getSumPreviousRequestedFunding{3}{globalfunds}      % globalfunds
6398      &
6399      \getSumPreviousRequestedFunding{3}{staff, costs, instrumentation,
6400      fellowships, globalfunds}
6401      \\ % Total
6402
6403      \dfgFundingYearPrevious{4}
6404      \printMarginalia{%
6405      \getSumPreviousRequestedFunding{4}{%
6406      staff, costs, instrumentation, fellowships, globalfunds}%
6407      }
6408      & \getSumPreviousRequestedFunding{4}{staff}           % staff
6409      & \getSumPreviousRequestedFunding{4}{costs}           % costs
6410      & \getSumPreviousRequestedFunding{4}{instrumentation} % instrumentation
6411      & \getSumPreviousRequestedFunding{4}{fellowships}      % fellowships
6412      & \getSumPreviousRequestedFunding{4}{globalfunds}      % globalfunds
6413      &
6414      \getSumPreviousRequestedFunding{4}{staff, costs, instrumentation,
6415      fellowships, globalfunds}
6416      \\ % Total
6417
6418      \dfgFundingYearPrevious{5}
6419      \printMarginalia{%
6420      \getSumPreviousRequestedFunding{5}{%
6421      staff, costs, instrumentation, fellowships, globalfunds}%
6422      }
6423      & \getSumPreviousRequestedFunding{5}{staff}           % staff
6424      & \getSumPreviousRequestedFunding{5}{costs}           % costs
6425      & \getSumPreviousRequestedFunding{5}{instrumentation} % instrumentation
6426      & \getSumPreviousRequestedFunding{5}{fellowships}      % fellowships
6427      & \getSumPreviousRequestedFunding{5}{globalfunds}      % globalfunds
6428      &
6429      \getSumPreviousRequestedFunding{5}{staff, costs, instrumentation,

```

```

6430     fellowships, globalfunds}
6431     \\ % Total
6432     \SetHline{-}{tableOuterLines, 0.5pt}
6433     \SetRow{belowsep=5pt}
6434     Ending~Funding~period
6435     \printMarginalia{%
6436         \getSumPreviousRequestedFunding{all}{%
6437             staff, costs, instrumentation, fellowships, globalfunds}%
6438     }
6439     & \getSumPreviousRequestedFunding{all}{staff}           % staff
6440     & \getSumPreviousRequestedFunding{all}{costs}           % costs
6441     & \getSumPreviousRequestedFunding{all}{instrumentation} % instrumentation
6442     & \getSumPreviousRequestedFunding{all}{fellowships}     % fellowships
6443     & \getSumPreviousRequestedFunding{all}{globalfunds}     % globalfunds
6444     &
6445     \getSumPreviousRequestedFunding{all}{staff, costs, instrumentation,
6446         fellowships, globalfunds}
6447     \\ % Total
6448
6449     \SetHline{-}{tableOuterLines, 1pt}
6450     \dfgFundingYear{1}
6451         \printMarginalia{\getTotalSumRequestedFunding{1}{all}}
6452         & \getSumRequestedFunding{1}{staff}
6453         & \getSumRequestedFunding{1}{costs}
6454         & \getSumRequestedFunding{1}{instrumentation}
6455         & \getSumRequestedFunding{1}{fellowships}
6456         & \getSumRequestedFunding{1}{globalfunds}
6457         & \getTotalSumRequestedFunding{1}{all}
6458     \\
6459     \dfgFundingYear{2}
6460         \printMarginalia{\getTotalSumRequestedFunding{2}{all}}
6461         & \getSumRequestedFunding{2}{staff}
6462         & \getSumRequestedFunding{2}{costs}
6463         & \getSumRequestedFunding{2}{instrumentation}
6464         & \getSumRequestedFunding{2}{fellowships}
6465         & \getSumRequestedFunding{2}{globalfunds}
6466         & \getTotalSumRequestedFunding{2}{all}
6467     \\
6468
6469     \dfgFundingYear{3}
6470         \printMarginalia{\getTotalSumRequestedFunding{3}{all}}
6471         & \getSumRequestedFunding{3}{staff}
6472         & \getSumRequestedFunding{3}{costs}
6473         & \getSumRequestedFunding{3}{instrumentation}
6474         & \getSumRequestedFunding{3}{fellowships}
6475         & \getSumRequestedFunding{3}{globalfunds}
6476         & \getTotalSumRequestedFunding{3}{all}
6477     \\
6478     \dfgFundingYear{4}
6479         \printMarginalia{\getTotalSumRequestedFunding{4}{all}}
6480         & \getSumRequestedFunding{4}{staff}
6481         & \getSumRequestedFunding{4}{costs}
6482         & \getSumRequestedFunding{4}{instrumentation}
6483         & \getSumRequestedFunding{4}{fellowships}
6484         & \getSumRequestedFunding{4}{globalfunds}
6485         & \getTotalSumRequestedFunding{4}{all}
6486     \\
6487     \dfgFundingYear{5}
6488         \printMarginalia{\getTotalSumRequestedFunding{5}{all}}
6489         & \getSumRequestedFunding{5}{staff}
6490         & \getSumRequestedFunding{5}{costs}
6491         & \getSumRequestedFunding{5}{instrumentation}
6492         & \getSumRequestedFunding{5}{fellowships}
6493         & \getSumRequestedFunding{5}{globalfunds}
6494         & \getTotalSumRequestedFunding{5}{all}
6495     \\

```

```

6496
6497 \SetHline{-}{tableOuterLines,0.5pt}
6498 New~ Funding~period
6499 \printMarginalia{\getTotalSumRequestedFunding{all}{all}}
6500 & \getTotalSumRequestedFunding{all}{staff} % staff
6501 & \getTotalSumRequestedFunding{all}{costs} % costs
6502 & \getTotalSumRequestedFunding{all}{instrumentation} % instrumentation
6503 & \getTotalSumRequestedFunding{all}{fellowships} % fellowships
6504 & \getTotalSumRequestedFunding{all}{globalfunds} % globalfunds
6505 &
6506 \getTotalSumRequestedFunding{all}{all}
6507 \\ % Total
6508 \end{tblr}
6509 }

```

Section 2.1.1 reuses the project-level existing-funds declarations. Both the stored values and the overview display use full euros. The shared euro formatter adds thousands separators and rounds display values to whole euros (for example, 5000 is printed as 5, 000).

ref-affiliation-id determines the column: every id listed in meta/crc.ref-affiliation-id is applicant core support, the sentinel other-funds selects other funding sources, and every other affiliation id is treated as another participating institution. The descriptive financed-by value does not perform this classification.

```

6510 \cs_new_protected:Npn
6511 \@@_get_sum_previous_requested_funding_eur:nnn #1#2#3
6512 {
6513 \DTLifdbexists{#1}
6514 {
6515 \str_if_eq:nnTF {#2} {all}
6516 { \@@_dtlsum_all:nnN {#1} {#3} \SumPreviousRequestedFunding }
6517 { \@@_dtlsum_filtered:nnnnN
6518 {#1} {year} {#2} {#3} \SumPreviousRequestedFunding }
6519 \@@_show_calculated_number:nnN
6520 {getSumPreviousRequestedFunding}{#1}
6521 \SumPreviousRequestedFunding
6522 }
6523 {
6524 \texttt{\color{error}XXX}
6525 \msg_warning:nne { dfg } { database-not-found } {#1}
6526 }
6527 }
6528
6529 \NewDocumentCommand{\getSumRequestedFundingDirectCosts}{
6530 O{RequestedAndExistingFundingDirectCostsOverview}
6531 m m }
6532 {
6533 % #1: database
6534 % #2: year
6535 % #3: affiliation
6536
6537 \str_if_eq:nnTF {#2}{all}
6538 {
6539 \str_case:nn {#3}
6540 {
6541 {applicant} {\DTLsumforkeys[\DTLisinlist{\pAffiliation}{\theApplicantID}]
6542 [\pAffiliation=ref-affiliation-id]{#1}
6543 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
6544 {\SumRequestedFundingDirectCosts}}
6545
6546 {participant}{
6547 \DTLsumforkeys[
6548 \not\DTLisinlist{\pAffiliation}{\theApplicantID}
6549 \and
6550 \not\DTLiseq{\pAffiliation}{other-funds}
6551 ]
6552 [\pAffiliation=ref-affiliation-id]{#1}
6553 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
6554 {\SumRequestedFundingDirectCosts}}

```

```

6555
6556 {other-funds}{\DTLsumforkeys[\DTLiseq{\pAffiliation}{other-funds}]
6557 [\pAffiliation=ref-affiliation-id]{#1}
6558 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
6559 {\SumRequestedFundingDirectCosts}}
6560
6561 {all}{\DTLsumforkeys{#1}
6562 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
6563 {\SumRequestedFundingDirectCosts}}
6564 }}
6565 {
6566 \str_case:nn {#3}
6567 {
6568 {applicant} {\DTLsumforkeys[\DTLisinlist{\pAffiliation}{\theApplicantID}]
6569 [\pAffiliation=ref-affiliation-id]{#1}
6570 {sum-year#2}
6571 {\SumRequestedFundingDirectCosts}}
6572
6573 {participant}{
6574 \DTLsumforkeys[
6575 \not\DTLisinlist{\pAffiliation}{\theApplicantID}
6576 \and
6577 \not\DTLiseq{\pAffiliation}{other-funds}
6578 ]
6579 [\pAffiliation=ref-affiliation-id]{#1}
6580 {sum-year#2}
6581 {\SumRequestedFundingDirectCosts}}
6582
6583 {other-funds}{\DTLsumforkeys[\DTLiseq{\pAffiliation}{other-funds}]
6584 [\pAffiliation=ref-affiliation-id]{#1}
6585 {sum-year#2}
6586 {\SumRequestedFundingDirectCosts}}
6587
6588 {all}{\DTLsumforkeys{#1}
6589 {sum-year#2}
6590 {\SumRequestedFundingDirectCosts}}
6591 }}
6592
6593
6594 \@@_show_calculated_number:nnN
6595 {getSumRequestedFundingDirectCosts}{#1}
6596 \SumRequestedFundingDirectCosts
6597 }
6598
6599 \NewDocumentCommand{\ExistingFundsDirectCostsTable}
6600 {O{RequestedAndExistingFundingDirectCostsOverview}}
6601 {
6602 \DTLifdbexists{#1}{
6603 \begin{tblr}[%
6604 theme=main,
6605 % expand=\l_tblr_body_tl,
6606 long,
6607 remark{Note} = {Figures~ in~ EUR}
6608 ]{%
6609 row{7,Z} = {guard,font={\footnotesize\bfseries}},
6610 colspec = {
6611 *{1}{t{3.5cm}}
6612 *{4}{X[-1,c,si={table-format=9}]}
6613 },
6614 % rowhead = 1,
6615 column{2-5}={guard},
6616 %colsep=4.5pt,
6617 % hline{3}={wd=1pt,tableOuterLines},
6618 % hline{Y}={wd=1pt,tableOuterLines},
6619 row{1} = {
6620 fg={tableHeadingsFont},

```

```

6621         bg={tableHeadingsBG},
6622         halign={c},
6623         guard,
6624     },
6625 }
6626 {Financial~year/
6627 & {Core~ support~ provided~
6628     \dfgApplicantAffiliationsTF{university}{universities}}
6629
6630     & {Core~ support~ provided~
6631         other~ participating~ institutions}
6632     & Other~ funds
6633     & Total
6634
6635 \dfgFundingYearPrevious{1}
6636     \printMarginalia{%
6637         \@@_get_sum_previous_requested_funding_eur:nnn
6638         {PreviousExistingFundsDirectCosts}{1}{%
6639             applicant,participant,other-funds}%
6640     }
6641     & {\@@_get_sum_previous_requested_funding_eur:nnn
6642         {PreviousExistingFundsDirectCosts}{1}{applicant}}
6643     & {\@@_get_sum_previous_requested_funding_eur:nnn
6644         {PreviousExistingFundsDirectCosts}{1}{participant}}
6645     & {\@@_get_sum_previous_requested_funding_eur:nnn
6646         {PreviousExistingFundsDirectCosts}{1}{other-funds}}
6647     &
6648     {\@@_get_sum_previous_requested_funding_eur:nnn
6649         {PreviousExistingFundsDirectCosts}{1}{
6650             applicant,
6651             participant,
6652             other-funds}}
6653
6654 \dfgFundingYearPrevious{2}
6655     \printMarginalia{%
6656         \@@_get_sum_previous_requested_funding_eur:nnn
6657         {PreviousExistingFundsDirectCosts}{2}{%
6658             applicant,participant,other-funds}%
6659     }
6660     & {\@@_get_sum_previous_requested_funding_eur:nnn
6661         {PreviousExistingFundsDirectCosts}{2}{applicant}}
6662     & {\@@_get_sum_previous_requested_funding_eur:nnn
6663         {PreviousExistingFundsDirectCosts}{2}{participant}}
6664     & {\@@_get_sum_previous_requested_funding_eur:nnn
6665         {PreviousExistingFundsDirectCosts}{2}{other-funds}}
6666     & {\@@_get_sum_previous_requested_funding_eur:nnn
6667         {PreviousExistingFundsDirectCosts}{2}{
6668             applicant,
6669             participant,
6670             other-funds}}
6671
6672 \dfgFundingYearPrevious{3}
6673     \printMarginalia{%
6674         \@@_get_sum_previous_requested_funding_eur:nnn
6675         {PreviousExistingFundsDirectCosts}{3}{%
6676             applicant,participant,other-funds}%
6677     }
6678     & {\@@_get_sum_previous_requested_funding_eur:nnn
6679         {PreviousExistingFundsDirectCosts}{3}{applicant}}
6680     & {\@@_get_sum_previous_requested_funding_eur:nnn
6681         {PreviousExistingFundsDirectCosts}{3}{participant}}
6682     & {\@@_get_sum_previous_requested_funding_eur:nnn
6683         {PreviousExistingFundsDirectCosts}{3}{other-funds}}
6684     & {\@@_get_sum_previous_requested_funding_eur:nnn
6685         {PreviousExistingFundsDirectCosts}{3}{
6686             applicant,

```

\\funding~  
\\by~ appli

\\by~

\\

\\

```

6687     participant,
6688     other-funds}}
6689
6690 \dfgFundingYearPrevious{4}
6691     \printMarginalia{%
6692         \@_get_sum_previous_requested_funding_eur:nnn
6693         {PreviousExistingFundsDirectCosts}{4}{%
6694             applicant,participant,other-funds}%
6695     }
6696 & {\@_get_sum_previous_requested_funding_eur:nnn
6697     {PreviousExistingFundsDirectCosts}{4}{applicant}}
6698 & {\@_get_sum_previous_requested_funding_eur:nnn
6699     {PreviousExistingFundsDirectCosts}{4}{participant}}
6700 & {\@_get_sum_previous_requested_funding_eur:nnn
6701     {PreviousExistingFundsDirectCosts}{4}{other-funds}}
6702 & {\@_get_sum_previous_requested_funding_eur:nnn
6703     {PreviousExistingFundsDirectCosts}{4}{
6704         applicant,
6705         participant,
6706         other-funds}}
6707
6708 \dfgFundingYearPrevious{5}
6709     \printMarginalia{%
6710         \@_get_sum_previous_requested_funding_eur:nnn
6711         {PreviousExistingFundsDirectCosts}{5}{%
6712             applicant,participant,other-funds}%
6713     }
6714 & {\@_get_sum_previous_requested_funding_eur:nnn
6715     {PreviousExistingFundsDirectCosts}{5}{applicant}}
6716 & {\@_get_sum_previous_requested_funding_eur:nnn
6717     {PreviousExistingFundsDirectCosts}{5}{participant}}
6718 & {\@_get_sum_previous_requested_funding_eur:nnn
6719     {PreviousExistingFundsDirectCosts}{5}{other-funds}}
6720 & {\@_get_sum_previous_requested_funding_eur:nnn
6721     {PreviousExistingFundsDirectCosts}{5}{
6722         applicant,
6723         participant,
6724         other-funds}}
6725
6726 \SetHline{-}{tableOuterLines,0.5pt}
6727 \SetRow{belowsep=5pt}
6728     Ending~Funding~period
6729     \printMarginalia{%
6730         \@_get_sum_previous_requested_funding_eur:nnn
6731         {PreviousExistingFundsDirectCosts}{all}{%
6732             applicant,participant,other-funds}%
6733     }
6734 & {\@_get_sum_previous_requested_funding_eur:nnn
6735     {PreviousExistingFundsDirectCosts}{all}{applicant}}
6736 & {\@_get_sum_previous_requested_funding_eur:nnn
6737     {PreviousExistingFundsDirectCosts}{all}{participant}}
6738 & {\@_get_sum_previous_requested_funding_eur:nnn
6739     {PreviousExistingFundsDirectCosts}{all}{other-funds}}
6740 & {\@_get_sum_previous_requested_funding_eur:nnn
6741     {PreviousExistingFundsDirectCosts}{all}{
6742         applicant,
6743         participant,
6744         other-funds}}
6745
6746 \SetHline{-}{tableOuterLines,1pt}
6747 \dfgFundingYear{1}
6748     \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{1}{all}}
6749 & \getSumRequestedFundingDirectCosts[#1]{1}{applicant}
6750 & \getSumRequestedFundingDirectCosts[#1]{1}{participant}
6751 & \getSumRequestedFundingDirectCosts[#1]{1}{other-funds}
6752 & \getSumRequestedFundingDirectCosts[#1]{1}{all}

```

```

6753 \dfgFundingYear{2}
6754 \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{2}{all}}
6755 & \getSumRequestedFundingDirectCosts[#1]{2}{applicant}
6756 & \getSumRequestedFundingDirectCosts[#1]{2}{participant}
6757 & \getSumRequestedFundingDirectCosts[#1]{2}{other-funds}
6758 & \getSumRequestedFundingDirectCosts[#1]{2}{all}
6759 \dfgFundingYear{3}
6760 \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{3}{all}}
6761 & \getSumRequestedFundingDirectCosts[#1]{3}{applicant}
6762 & \getSumRequestedFundingDirectCosts[#1]{3}{participant}
6763 & \getSumRequestedFundingDirectCosts[#1]{3}{other-funds}
6764 & \getSumRequestedFundingDirectCosts[#1]{3}{all}
6765 \dfgFundingYear{4}
6766 \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{4}{all}}
6767 & \getSumRequestedFundingDirectCosts[#1]{4}{applicant}
6768 & \getSumRequestedFundingDirectCosts[#1]{4}{participant}
6769 & \getSumRequestedFundingDirectCosts[#1]{4}{other-funds}
6770 & \getSumRequestedFundingDirectCosts[#1]{4}{all}
6771 \dfgFundingYear{5}
6772 \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{5}{all}}
6773 & \getSumRequestedFundingDirectCosts[#1]{5}{applicant}
6774 & \getSumRequestedFundingDirectCosts[#1]{5}{participant}
6775 & \getSumRequestedFundingDirectCosts[#1]{5}{other-funds}
6776 & \getSumRequestedFundingDirectCosts[#1]{5}{all}
6777
6778
6779 \SetHline{-}{tableOuterLines,0.5pt}
6780 New~ Funding~period
6781 \printMarginalia{\getSumRequestedFundingDirectCosts[#1]{all}{all}}
6782 & \getSumRequestedFundingDirectCosts[#1]{all}{applicant}
6783 & \getSumRequestedFundingDirectCosts[#1]{all}{participant}
6784 & \getSumRequestedFundingDirectCosts[#1]{all}{other-funds}
6785 & \getSumRequestedFundingDirectCosts[#1]{all}{all}
6786 \end{tblr}
6787 }{
6788 \msg_warning:nne { dfg } { database-not-found }{ #1 }
6789 }
6790 }

```

The core part is definitely all about the projects.

```

6791 \clist_new:N \l_tmp_research_area_clist
6792 \bool_new:N \l_@@_project_one_PI_bool
6793 \bool_new:N \g_@@_fast_project_started_bool
6794
6795 \NewDocumentCommand{\printProjectHead}{m}
6796 {%
6797 \bool_if:NTF \l_@@_class_fastcompile_project_bool
6798 {
6799 \bool_if:NF \g_@@_fast_project_started_bool
6800 {
6801 \setcounter{page}{1}% Ignore page checkpoints restored by excluded files.
6802 \bool_gset_true:N \g_@@_fast_project_started_bool
6803 }
6804 \def\tmpLocalDB{project}%
6805 \setcounter{section}{0}%
6806 \setcounter{figure}{0}%
6807 \setcounter{table}{0}%
6808 \setcounter{secnumdepth}{2}%
6809 \restartlist{workpackages}%
6810 \tl_set:Nn \l__tmp_current_project_tl {#1}%
6811 \cs_set:Npn \tmpProjectNumber {#1}%
6812 \cs_set:Npn \tmpProjectTitle { }%
6813 \cs_set:Npn \tmpProjectStatus { }%
6814 \cs_set:Npn \tmpProjectType { }%
6815 \cs_set:Npn \tmpProjectResearchArea { }%
6816 \cs_set:Npn \tmpProjectPIids { }%
6817 \bool_set_true:N \l_@@_project_one_PI_bool

```

```

6818 \renewcommand*{\thesection} {\arabic{section}}%
6819 \renewcommand*{\thesubsection} {\thesection.\arabic{subsection}}%
6820 \renewcommand*{\thesubsubsection}{\thesubsection.\arabic{subsubsection}}%
6821 \renewcommand*{\thefigure} {\arabic{figure}}%
6822 \renewcommand*{\thetable} {\arabic{table}}%
6823 \renewcommand*{\theHpart} {\thepart.#1}%
6824 \renewcommand*{\theHchapter} {\thechapter.#1}%
6825 \renewcommand*{\theHsection} {\thesection.#1}%
6826 \renewcommand*{\theHsubsection} {\thesubsection.#1}%
6827 \renewcommand*{\theHsubsubsection}{\thesubsubsection.#1}%
6828 \renewcommand*{\theHfigure} {\thefigure.#1}%
6829 \renewcommand*{\theHtable} {\thetable.#1}%
6830 \renewcommand*{\theHfootnote} {\thefootnote.#1}%
6831 \thead*{\textbf{Project~#1}\enspace\enspace FAST~COMPILE~~~DRAFT}%
6832 \printThumbIndexOff
6833 \bool_if:NT \l_@_class_fastcompile_project_show_publications_bool
6834 {
6835 \@@_project_results_prepare:n {#1}%
6836 \citereset
6837 \begin{refsection}
6838 }
6839 }
6840 {
6841 % #1: project id
6842 \cleardoublepage
6843 \phantomsection
6844 \def\tmpLocalDB{project}%
6845 \setcounter{section}{0}%
6846 \setcounter{figure}{0}%
6847 \setcounter{table}{0}%
6848 \setcounter{tocdepth}{0}%
6849 \restartlist{workpackages}%
6850 \tl_set:Nn \l__tmp_current_project_tl {#1}%
6851 \@@_project_results_prepare:n {#1}%
6852
6853 \renewcommand*{\theHpart} {\thepart.#1}%
6854 \renewcommand*{\theHchapter} {\thechapter.#1}%
6855 \renewcommand*{\theHsection} {\thesection.#1}%
6856 \renewcommand*{\theHsubsection} {\thesubsection.#1}%
6857 \renewcommand*{\theHsubsubsection}{\thesubsubsection.#1}%
6858 \renewcommand*{\theHfigure} {\thefigure.#1}%
6859 \renewcommand*{\theHtable} {\thetable.#1}%
6860 \renewcommand*{\theHfootnote} {\thefootnote.#1}%
6861
6862 % --- single row scan for all project columns we need -----
6863 \getEntry*[\tmpLocalDB]{#1}{
6864 \tmpProjectNumber = number,
6865 \tmpProjectTitle = name,
6866 \tmpProjectStatus = project-status,
6867 \tmpProjectType = project-type,
6868 \tmpProjectResearchArea = research-area,
6869 \tmpProjectPIids = ref-person-id
6870 }%
6871
6872 % Register the bibliography aliases of every PI assigned to this project.
6873 % The mapping parameter is doubled because this loop occurs inside the
6874 % definition of \printProjectHead.
6875 \datatool_if_has_key:nnT { person } { name-alias }
6876 {
6877 \clist_map_inline:Nn \tmpProjectPIids
6878 {
6879 \DTLgetvalueforkey { \theAliases } { name-alias } { person } { id } { ##1 }
6880 \DTLifnullorempy { \theAliases }
6881 { }
6882 { \exp_args:No \addboldnames { \theAliases } }
6883 }

```

```

6884     }
6885
6886 % --- precompute the few derived booleans we actually use -----
6887 \int_compare:nNnTF { \clist_count:N \tmpProjectPIids } > {1}
6888 { \bool_set_false:N \l_@@_project_one_PI_bool }
6889 { \bool_set_true:N \l_@@_project_one_PI_bool }%
6890
6891 \citereset
6892 \hypertarget{project:#1}{}%
6893
6894 \use:x
6895 {
6896   \exp_not:N \printThumbIndex
6897   [ project \tl_head:n {#1} ]
6898   { \exp_not:n {#1} }
6899 }%
6900
6901 \thead{\getPIOfProject{#1}[\space\cdot\space]%
6902   \space|\space
6903   \dfgShowTag{#1}{name}{\tmpProjectTitle}[project]}%
6904
6905
6906
6907 % --- toc entry -----
6908 \addtocentrydefault{section}{
6909   \texorpdfstring
6910     { \dfgShowTag{#1}{number}{\tmpProjectNumber}[project] }
6911     { \tmpProjectNumber }
6912   \str_if_eq:eeF {\tmpProjectStatus} {C}
6913   {
6914     \space
6915     \texorpdfstring
6916       { \dfgShowTag{#1}{project-status}{\tmpProjectStatus}[project] }
6917       { \tmpProjectStatus }
6918   }%
6919 }
6920 {
6921   \texorpdfstring{\dfgShowTag{#1}{name}{\tmpProjectTitle}[project]}{}%
6922 }%
6923 \setcounter{secnumdepth}{2}%
6924 \addtocontents{toc}{\protect\setcounter{tocdepth}{0}}%
6925 \hypersetup{bookmarksdepth=0}%
6926 \begin{refsection}
6927
6928 \section{%
6929   General~information~about~Project~%
6930   \texorpdfstring
6931   {
6932     \getProject{#1}%
6933     \str_if_eq:eeF {\tmpProjectStatus} {C}
6934     { \c_space_tl
6935       \dfgShowTag{#1}{project-status}{\tmpProjectStatus}[project] }%
6936   }
6937   {\tmpProjectNumber}%
6938 }
6939 \subsection{Project~title:~
6940   \texorpdfstring
6941     { \dfgShowTag{#1}{name}{\tmpProjectTitle}[project] }
6942     { \tmpProjectTitle }}
6943
6944 % --- research areas (for active research and service projects) -----
6945 \str_if_eq:eeF {\tmpProjectStatus} {E}
6946 {
6947   \bool_lazy_or:nnT
6948   { \str_if_eq_p:ee {\tmpProjectType} {research} }
6949   { \str_if_eq_p:ee {\tmpProjectType} {service} }

```

```

6950     {%
6951     \clist_clear:N \l_tmp_research_area_clist
6952     \clist_sort:Nn \tmpProjectResearchArea
6953     { \fp_compare:nTF {##1 < ##2} {\sort_return_swapped:} {\sort_return_same:} }%
6954     \clist_map_inline:Nn \tmpProjectResearchArea
6955     { \clist_put_right:Nn \l_tmp_research_area_clist { \dfgResearchAreasList{##1} } }%
6956     \subsection{Research~area
6957         \int_compare:nNnT { \clist_count:N \tmpProjectResearchArea } > {1}
6958         {s}
6959         :~
6960         \texorpdfstring
6961         { \dfgShowTag{#1}{research-area}
6962           { \clist_use:Nn \l_tmp_research_area_clist {,~}[project]}
6963           { \clist_use:Nn \l_tmp_research_area_clist {,~}}}%
6964     }
6965 }
6966
6967 \bool_if:NTF \l_@@_project_one_PI_bool
6968 { \subsection{Project~leader} }
6969 { \subsection{Project~leaders} }
6970
6971 \getPersonInformation{\tmpProjectPIids}\par
6972 \vspace*{1em}
6973
6974 % --- contract information (skip for admin / ending) -----
6975 \bool_lazy_or:nnF
6976 { \str_if_eq_p:ee {\tmpProjectType} {admin} }
6977 { \str_if_eq_p:ee {\tmpProjectStatus} {E} }
6978 {%
6979 \begin{contractinformation}
6980   \clist_map_inline:nn {C1,C2,C3,C4}
6981   { \dfgPIcontractInformation{##1} }%
6982 \end{contractinformation}
6983 }
6984
6985 % --- legal issues (skip for admin / mgk / ending) -----
6986 \bool_lazy_any:nF
6987 {
6988   { \str_if_eq_p:ee {\tmpProjectType} {admin} }
6989   { \str_if_eq_p:ee {\tmpProjectType} {mgk} }
6990   { \str_if_eq_p:ee {\tmpProjectStatus} {E} }
6991 }
6992 {%
6993   \subsection{Legal~issues}%
6994   \def\tmpLocalDB{project}%
6995   {\footnotesize This~project~includes}\
6996
6997   \tl_clear:N \l_mytblr_body_tl
6998   \tl_put_right:Ne \l_mytblr_body_tl
6999   { 1. & research~requiring~compliance~with~discipline-specific~research~ethics~guidelines. & \checkYesN
7000     \compareEntry{#1}{L1}{yes}
7001     {
7002       \tl_put_right:Ne \l_mytblr_body_tl
7003       { & A~statement~from~the~responsible~ethics~committee~is~required~and~will~be~obtained~before~funding
7004         }
7005       {}%
7006       \tl_put_right:Ne \l_mytblr_body_tl
7007       { 2. & clinical~trials & \checkYesNo{L2} \ \ }%
7008       \compareEntry{#1}{L2}{yes}
7009       {
7010         \tl_put_right:Ne \l_mytblr_body_tl
7011         { & A~copy~of~the~studies'~registration~is~included~with~the~proposal. & \checkYesNo{L2a} \ \ }%
7012       }
7013       {}%
7014       \tl_put_right:Ne \l_mytblr_body_tl
7015       {

```

```

7016 3. & experiments~involving~vertebrates. & \checkYesNo{L3} \\
7017 4. & experiments~involving~recombinant~DNA. & \checkYesNo{L4} \\
7018 5. & research~involving~human~embryonic~stem~cells. & \checkYesNo{L5} \\
7019 }
7020 \compareEntry{#1}{L5}{yes}
7021 {
7022 \tl_put_right:Ne \l_mytblr_body_tl
7023 { & Legal~authorization~has~been~obtained. & \checkYesNo{L5a} \\ }%
7024 }
7025 {}%
7026 \tl_put_right:Ne \l_mytblr_body_tl
7027 {
7028 6. & research~concerning~the~Convention~on~Biological~Diversity. & \checkYesNo{L6} \\
7029 7. & investigations~involving~dual~use~research~of~concern. & \checkYesNo{L7} \\
7030 }
7031 \compareEntry{#1}{L7}{yes}
7032 {
7033 \tl_put_right:Ne \l_mytblr_body_tl
7034 { & A~copy~of~the~statement~by~the~institution's~research~ethics~committee~is~included~with~the~pr
7035 }
7036 {}%
7037 \begin{tblr}[
7038 theme = plain,
7039 expand = \l_mytblr_body_tl,
7040 ]{
7041 rowhead = 0,
7042 rowsep = 0pt,
7043 hline{2} = {0pt},
7044 rows = {bg=white, halign=l,font=\footnotesize},
7045 cells = {font=\footnotesize},
7046 column{1} = {halign=r},
7047 colspec = {t{.25cm}X[t]t{.75cm}}
7048 }
7049 \tl_use:N \l_mytblr_body_tl
7050 \end{tblr}%
7051 }
7052 }
7053 }
7054 \NewDocumentCommand{\checkYesNo}{O{\tmpProjectNumber} m}
7055 {%
7056 \compareEntry{#1}% current project ID
7057 {#2}% which cell
7058 {yes}% if cell value is 'yes'
7059 {\dfgShowTag{#1}{#2}{\bfseries\color{green}\faCheck}\,yes}[project]]%
7060 {\dfgShowTag{#1}{#2}{\bfseries\color{red}\faTimes}\space no}[project]]%
7061 }

```

Another helper command to retrieve the information about a PI and his/her/their involvement within the project.

```

7062 % -----
7063 % PI contract information
7064 % -----
7065
7066 \seq_new:N \l_@@_contract_pi_ids_seq
7067 \seq_new:N \l_@@_contract_true_pi_ids_seq
7068 \seq_new:N \l_@@_contract_false_pi_ids_seq
7069 \clist_new:N \l_@@_contract_answers_clist
7070 \tl_new:N \l_@@_contract_answer_tl
7071 \tl_new:N \l_@@_contract_field_list_tl
7072
7073 \NewDocumentCommand{\dfgPIcontractInformation}{o m }
7074 {
7075 % #1: optional comma-separated PI ids
7076 % If omitted, use the current value of \tmpProjectPIids.
7077 % #2: question id, e.g. C1 / C2 / C3 / C4
7078 \IfNoValueTF {#1}
7079 {

```

```

7080 \@@_pi_contract_information:Vn \tmpProjectPIids {#2}
7081 }
7082 {
7083 \@@_pi_contract_information:nn {#1} {#2}
7084 }
7085 }
7086
7087 \cs_new_protected:Npn \@@_pi_contract_information:nn #1#2
7088 {
7089 % #1: comma-separated PI ids
7090 % #2: question id, e.g. C1 / C2 / C3 / C4
7091
7092 \def\tmpLocalDB{person}%
7093 \seq_set_from_clist:Nn \l_@@_contract_pi_ids_seq {#1}
7094
7095 \str_case:nn {#2}
7096 {
7097 {C1}
7098 {
7099 \item
7100 Is~the~employment~of~the~
7101 \bool_if:NTF \l_@@_project_one_PI_bool
7102 { project~leader~at~the~institution~ }
7103 { project~leaders~at~the~institutions~ }%
7104 indicated~contractually~secured~for~the~duration~of~
7105 the~proposed~funding~period?\space
7106 \@@_pi_contract_yes_no:n {#2}%
7107 }
7108
7109 {C2}
7110 {
7111 \item
7112 \bool_if:NTF \l_@@_project_one_PI_bool
7113 { Does~the~above~mentioned~person~hold~a~fixed~term~position? }
7114 { Do~any~of~the~above~mentioned~persons~hold~fixed~term~positions? }%
7115 \space
7116 \@@_pi_contract_yes_no:n {#2}%
7117
7118 \clist_if_in:NnT \l_@@_contract_answers_clist {yes}
7119 {
7120 \begin{contractinformation}
7121 \item End~date~of~fixed~term~contract:\space
7122 \@@_pi_contract_field_list:nN {C2a} \l_@@_contract_true_pi_ids_seq
7123
7124 \item Further~employment~is~planned~until:\space
7125 \@@_pi_contract_field_list:nN {C2b} \l_@@_contract_true_pi_ids_seq
7126 \end{contractinformation}
7127 }
7128 }
7129
7130 {C3}
7131 {
7132 \item
7133 \bool_if:NTF \l_@@_project_one_PI_bool
7134 { Will~the~above~mentioned~person~ }
7135 { Will~one~or~more~of~the~above~mentioned~persons~ }%
7136 retire~during~the~proposed~funding~period?\space
7137 \@@_pi_contract_yes_no:n {#2}%
7138
7139 \clist_if_in:NnT \l_@@_contract_answers_clist {yes}
7140 {
7141 \begin{contractinformation}
7142 \item Anticipated~retirement~date:\space
7143 \@@_pi_contract_field_list:nN {C3a} \l_@@_contract_true_pi_ids_seq
7144 \end{contractinformation}
7145 }

```

```

7146     }
7147
7148 {C4}
7149 {
7150   \item
7151   Funding~for~the~position~of~the~
7152   \bool_if:NTF \l_@@_project_one_PI_bool
7153   { project~leader~at~the~institution~ }
7154   { project~leaders~at~the~institutions~ }%
7155   indicated~is~covered~by~core~support~(state~funds~or~similar):\space
7156   \@@_pi_contract_yes_no:n {#2}%
7157
7158   \clist_if_in:NnT \l_@@_contract_answers_clist {no}
7159   {
7160     \begin{contractinformation}
7161       \item Type~and~source~of~funding:\space
7162       \@@_pi_contract_field_list:nN {C4a} \l_@@_contract_false_pi_ids_seq
7163       \end{contractinformation}
7164     }
7165   }
7166 }
7167 }
7168
7169 \cs_generate_variant:Nn \@@_pi_contract_information:nn { Vn }
7170
7171
7172 \cs_new_protected:Npn \@@_pi_contract_yes_no:n #1
7173 {
7174   % #1: question id, e.g. C1 / C2 / C3 / C4
7175
7176   \clist_clear:N \l_@@_contract_answers_clist
7177   \seq_clear:N \l_@@_contract_true_pi_ids_seq
7178   \seq_clear:N \l_@@_contract_false_pi_ids_seq
7179   \tl_clear:N \l_@@_contract_answer_tl
7180
7181   \bool_set_true:N \l_tmpa_bool
7182
7183   \seq_map_inline:Nn \l_@@_contract_pi_ids_seq
7184   {
7185     \bool_if:NTF \l_tmpa_bool
7186     { \bool_set_false:N \l_tmpa_bool }
7187     { \tl_put_right:Nn \l_@@_contract_answer_tl {,~} }%
7188
7189     \DTLgetvalueforkey{\theLastName}{lastname}{person}{id}{##1}%
7190
7191     \compareEntry{##1}{#1}{yes}
7192     {
7193       \tl_put_right:Nn \l_@@_contract_answer_tl
7194       { \dfgShowTag{##1}{#1}{\textbf{yes}}[person] }%
7195       \clist_put_right:Nn \l_@@_contract_answers_clist {true}%
7196       \seq_put_right:Nn \l_@@_contract_true_pi_ids_seq {##1}%
7197     }
7198     {
7199       \tl_put_right:Nn \l_@@_contract_answer_tl
7200       { \dfgShowTag{##1}{#1}{\textbf{no}}[person] }%
7201       \clist_put_right:Nn \l_@@_contract_answers_clist {false}%
7202       \seq_put_right:Nn \l_@@_contract_false_pi_ids_seq {##1}%
7203     }
7204
7205   \bool_if:NF \l_@@_project_one_PI_bool
7206   {
7207     \tl_put_right:Nx \l_@@_contract_answer_tl
7208     {
7209       \exp_not:n {~()}
7210       \exp_not:N \dfgShowTag{##1}{lastname}
7211       {\exp_not:V \theLastName}[person]

```

```

7212         \exp_not:n {}
7213     }%
7214 }
7215 }
7216
7217 \tl_use:N \l_@@_contract_answer_tl
7218 }
7219
7220
7221 \cs_new_protected:Npn \@@_pi_contract_field_list:nN #1#2
7222 {
7223     % #1: field id, e.g. C2a / C2b / C3a / C4a
7224     % #2: sequence variable containing the PI ids for which the field is relevant
7225
7226     \tl_clear:N \l_@@_contract_field_list_tl
7227     \bool_set_true:N \l_tmpa_bool
7228
7229     \seq_map_inline:Nn #2
7230     {
7231         \bool_if:NTF \l_tmpa_bool
7232         { \bool_set_false:N \l_tmpa_bool }
7233         { \tl_put_right:Nn \l_@@_contract_field_list_tl {,~} }%
7234
7235         \getEntry*[person]{##1}
7236         {
7237             \theFieldValue = #1,
7238             \theLastName   = lastname
7239         }%
7240
7241         \tl_put_right:Nx \l_@@_contract_field_list_tl
7242         {
7243             \exp_not:N \textbf
7244             {
7245                 \exp_not:N \dfgShowTag{##1}{#1}
7246                 {\exp_not:N \theFieldValue}[person]
7247             }
7248             \int_compare:nNnT { \seq_count:N #2 } > {1}
7249             {
7250                 \exp_not:n {~(}
7251                 \exp_not:N \dfgShowTag{##1}{lastname}
7252                 {\exp_not:N \theLastName}[person]
7253                 \exp_not:n {)}
7254             }
7255         }%
7256     }
7257
7258     \tl_use:N \l_@@_contract_field_list_tl
7259 }
7260
7261
7262 \cs_new_protected:Npn \__pi_question_field_list:nn #1#2
7263 {%
7264     \tl_clear:N \l_tmpa_tl
7265     \bool_set_true:N \l_tmpa_bool    % first-iteration flag
7266     \seq_map_inline:Nn #2
7267     {%
7268         \bool_if:NTF \l_tmpa_bool
7269         { \bool_set_false:N \l_tmpa_bool }
7270         { \tl_put_right:Nn \l_tmpa_tl {,~} }%
7271         \getEntry*[person]{##1}{
7272             \theFieldValue = #1,
7273             \theLastName   = lastname
7274         }%
7275         \tl_put_right:Nx \l_tmpa_tl
7276         {
7277             \exp_not:N \textbf

```

```

7278     {
7279         \exp_not:N \dfgShowTag{##1}{#1}
7280         {\exp_not:V \theFieldValue}[person]
7281     }
7282     \int_compare:nNtT { \seq_count:N #2 } > {1}
7283     {
7284         \exp_not:n {\space()}
7285         \exp_not:N \dfgShowTag{##1}{lastname}
7286         {\exp_not:V \theLastName}[person]
7287         \exp_not:n {}
7288     }
7289 }%
7290 }%
7291 \tl_use:N \l_tmpa_tl
7292 }
7293
7294 \tl_new:N \l_@@_yes_names_tl
7295 \tl_new:N \l_@@_no_names_tl
7296
7297 \cs_new_protected:Npn \tmp_person_question_yes_no:n #1
7298 {%
7299     \clist_clear:N \l_tmpeclist
7300     \seq_clear:N \l_tmpe_seq
7301     \seq_clear:N \l_tmpe_seq
7302     \tl_clear:N \l_tmpe_tl
7303     \bool_set_true:N \l_tmpe_bool % first-iteration flag
7304     \seq_map_inline:Nn \l_tmpe_seq
7305     {%
7306         \bool_if:NTF \l_tmpe_bool
7307         { \bool_set_false:N \l_tmpe_bool }
7308         { \tl_put_right:Nn \l_tmpe_tl {,~} }%
7309         \DTLgetvalueforkey{\theLastName}{lastname}{person}{id}{##1}%
7310         \compareEntry{##1}{#1}{yes}
7311     }%
7312     \tl_put_right:Nn \l_tmpe_tl
7313     { \dfgShowTag{##1}{#1}{\textbf{yes}}[person] }%
7314     \clist_put_right:Nn \l_tmpeclist {yes}%
7315     \seq_put_right:Nn \l_tmpe_seq {##1}%
7316 }%
7317 {%
7318     \tl_put_right:Nn \l_tmpe_tl
7319     { \dfgShowTag{##1}{#1}{\textbf{no}}[person] }%
7320     \clist_put_right:Nn \l_tmpeclist {false}%
7321     \seq_put_right:Nn \l_tmpe_seq {##1}%
7322 }%
7323 \bool_if:NF \l_@@_project_one_PI_bool
7324 {%
7325     \tl_put_right:Nx \l_tmpe_tl
7326     {
7327         \exp_not:n {\space()}
7328         \exp_not:N \dfgShowTag{##1}{lastname}
7329         {\exp_not:V \theLastName}[person]
7330         \exp_not:n {}
7331     }%
7332 }%
7333 }%
7334 \tl_use:N \l_tmpe_tl
7335 }

```

Ending projects report three distinct kinds of published results. Each populated list is cited in its own reference segment. The combined list is persisted in the auxiliary file so a preceding project-report bibliography can omit entries that are printed again in the result lists.

```

7336 \clist_new:N \l_@@_project_results_quality_assured_clist
7337 \clist_new:N \l_@@_project_results_other_clist
7338 \clist_new:N \l_@@_project_results_patents_clist
7339 \clist_new:N \l_@@_project_results_all_clist

```

```

7340 \clist_new:N \l_@@_project_results_excluded_clist
7341 \prop_new:N \g_@@_project_results_aux_prop
7342
7343 \NewDocumentCommand{\dfgProjectResultsAux}{mm}
7344 {
7345   \prop_gput:Nnn \g_@@_project_results_aux_prop {#1} {#2}
7346 }
7347
7348 \cs_new_protected:Npn \@@_project_results_prepare:n #1
7349 {
7350   \clist_clear:N \l_@@_project_results_excluded_clist
7351   \prop_get:NnNT \g_@@_project_results_aux_prop {#1} \l_tmpa_tl
7352   {
7353     \clist_set:NV \l_@@_project_results_excluded_clist \l_tmpa_tl
7354   }
7355 }
7356
7357 \cs_new_protected:Npn \@@_project_results_collect:N #1
7358 {
7359   \clist_map_inline:Nn #1
7360   {
7361     \str_if_eq:nnF {##1} {none}
7362     { \clist_put_right:Nn \l_@@_project_results_all_clist {##1} }
7363   }
7364 }
7365
7366 \cs_new_protected:Npn \@@_project_results_register:
7367 {
7368   \clist_clear:N \l_@@_project_results_all_clist
7369   \@@_project_results_collect:N \l_@@_project_results_quality_assured_clist
7370   \@@_project_results_collect:N \l_@@_project_results_other_clist
7371   \@@_project_results_collect:N \l_@@_project_results_patents_clist
7372   \clist_remove_duplicates:N \l_@@_project_results_all_clist
7373   \clist_set_eq:NN
7374     \l_@@_project_results_excluded_clist
7375     \l_@@_project_results_all_clist
7376   \iow_now:Ne \@auxout
7377   {
7378     \exp_not:N \dfgProjectResultsAux
7379     { \exp_not:N \l__tmp_current_project_tl }
7380     { \exp_not:N \l_@@_project_results_all_clist }
7381   }
7382 }
7383
7384 \cs_new_protected:Npn \@@_project_results_skip_if_listed:
7385 {
7386   \clist_map_inline:Nn \l_@@_project_results_excluded_clist
7387   {
7388     \str_if_eq:eeT {##1} { \strfield{entrykey} }
7389     {
7390       \skipentry
7391       \clist_map_break:
7392     }
7393   }
7394 }
7395
7396 \defbibcheck{dfg-project-report}
7397 { \@@_project_results_skip_if_listed: }
7398
7399 \defbibheading{dfg-project-report-references}
7400 { \subsubsection{References} }
7401
7402 \NewDocumentCommand{\projectPublicationsHeading}{}
7403 {
7404   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7405   { \subsection{Project~and~subject-related~list~of~publications} }

```

```

7406 }
7407
7408 \NewDocumentCommand{\projectNocite}{m}
7409 {
7410   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7411   { \nocite{#1} }
7412 }
7413
7414 \NewDocumentCommand{\printProjectBibliography}{o}
7415 {
7416   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7417   {
7418     \group_begin:
7419     % biblatex applies \bibfont when it starts the bibliography list.
7420     \renewcommand*{\bibfont}{\normalfont\footnotesize}%
7421     \bool_if:NT \l_@@_custom_emphasize_entries_bool
7422     {
7423       \tl_if_blank:VF \l__tmp_current_project_tl
7424       {
7425         \tl_set:Nx \l_@@_bibentry_highlight_keyword_tl
7426           {\l__tmp_current_project_tl-highlight}
7427       }
7428     }
7429     \IfNoValueTF{#1}
7430     { \printbibliography }
7431     { \printbibliography[#1] }
7432     \group_end:
7433   }
7434 }
7435
7436 \NewDocumentEnvironment{projectReport}{}
7437 {
7438   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7439   { \begin{refsegment} }
7440 }
7441 {
7442   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7443   {
7444     \printProjectBibliography[
7445       segment = \therefsegment,
7446       check    = dfg-project-report,
7447       heading  = dfg-project-report-references
7448     ]
7449     \end{refsegment}
7450   }
7451 }
7452
7453 \keys_define:nn { dfg / project-results }
7454 {
7455   quality-assured .clist_set:N = \l_@@_project_results_quality_assured_clist,
7456   quality-assured .value_required:n = true,
7457   other .clist_set:N = \l_@@_project_results_other_clist,
7458   other .value_required:n = true,
7459   patents .clist_set:N = \l_@@_project_results_patents_clist,
7460   patents .value_required:n = true,
7461   unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1} }
7462 }
7463
7464 \cs_new_protected:Npn \@@_project_results_print:Nn #1#2
7465 {
7466   \clist_if_empty:NTF #1
7467   {#2}
7468   {
7469     \str_if_eq:eeTF { \clist_use:Nn #1 {,} } { none }
7470     { None. }
7471   }

```

```

7472     \begin{refsegment}
7473     \exp_args:Ne \nocite { \clist_use:Nn #1 {,} }
7474     \printProjectBibliography[segment=\therefsegment, heading=none]
7475     \end{refsegment}
7476   }
7477 }
7478 }
7479
7480 \NewDocumentCommand{\printProjectResults}{m}
7481 {
7482   \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7483   {
7484     \FloatBarrier
7485     \group_begin:
7486       \clist_clear:N \l_@@_project_results_quality_assured_clist
7487       \clist_clear:N \l_@@_project_results_other_clist
7488       \clist_clear:N \l_@@_project_results_patents_clist
7489       \keys_set:nn { dfg / project-results } {#1}
7490       \@@_project_results_register:
7491       \setbibpreamble{}
7492
7493       \subsubsection{Publications~with~scientific~quality~assurance}
7494       \@@_project_results_print:Nn
7495       \l_@@_project_results_quality_assured_clist
7496       { List~publications~with~scientific~quality~assurance. }
7497
7498       \subsubsection{Other~publications~and~published~results}
7499       \@@_project_results_print:Nn
7500       \l_@@_project_results_other_clist
7501       { List~datasets,~software,~preprints,~protocols,~or~other~relevant~
7502         published~results~that~are~not~included~above. }
7503
7504       \subsubsection{Patents}
7505       \@@_project_results_print:Nn
7506       \l_@@_project_results_patents_clist
7507       { List~patents~and~patent~applications,~or~state~that~none~resulted~
7508         from~the~project. }
7509     \group_end:
7510   }
7511 }
7512 \NewDocumentCommand{\printProjectTail}{}{}
7513   \bool_if:NTF \l_@@_class_fastcompile_project_bool
7514   {
7515     \bool_if:NT \l_@@_class_fastcompile_project_show_publications_bool
7516     {
7517       \end{refsection}
7518       \resetboldnames
7519     }
7520   }
7521   {
7522     \end{refsection}
7523     \resetboldnames%
7524     \clearpage
7525     \addtocontents{toc}{\protect\setcounter{tocdepth}{1}}%
7526     \hypersetup{bookmarksdepth = 3}
7527     \colorlet{thumbIndexBG}{\l_@@_custom_thumbIndexBG_tl}
7528   }
7529 }
7530
7531 \cs_new_protected:Npn \@@_print_project_head:n #1
7532 { \printProjectHead{#1} }
7533
7534 \cs_new_protected:Npn \@@_print_project_error:n #1
7535 {
7536   \PackageError{dfg-crc}
7537   {Invalid~project~part~'#1'}

```

```

7538     {Use~\string\printProject{{Head}{project-id}}~or~\string\printProject{{Tail}}.}
7539 }
7540
7541 \cs_new_protected:Npn \@@_print_project_dispatch:w #1#2 \q_stop
7542 {
7543   \str_case:nnF {#1}
7544   {
7545     {Head}
7546     {
7547       \tl_if_blank:nTF {#2}
7548       { \@@_print_project_error:n {Head} }
7549       { \@@_print_project_head:n {#2} }
7550     }
7551     {Tail}
7552     {
7553       \tl_if_blank:nTF {#2}
7554       { \printProjectTail }
7555       { \@@_print_project_error:n {Tail} }
7556     }
7557   }
7558   { \@@_print_project_error:n {#1} }
7559 }
7560
7561 \NewDocumentCommand{\printProject}{m}
7562 { \@@_print_project_dispatch:w #1 \q_stop }

```

To get the interim sum printed in the margin area we use a custom command. Table rows are denser than the package's default collision distance, so these notes use fixed placement with no collision padding. This keeps every total on its row anchor instead of accumulating a downward displacement. The leader is placed before the value in the right margin and after the value in the left margin, keeping it adjacent to the table on both page sides. You can switch the notes off using the customization section.

```

7563 \NewDocumentCommand{\printMarginalia}{O{\hrulefill}m}
7564 {
7565   \bool_if:NT \l_@@_class_showmarginalia_bool
7566   {\bool_set_false:N \g_@@_tblr_inside_bool
7567   \bool_set_true:N \l_@@_show_tag_leftward_bool
7568   \marginalia[type=fixed,ysep=0pt]
7569   {
7570     \int_if_odd:nTF { \marginaliapage }
7571     { #1#2 }
7572     { #2#1 }
7573   }
7574   \bool_set_false:N \l_@@_show_tag_leftward_bool
7575   \bool_set_true:N \g_@@_tblr_inside_bool
7576   }
7577 }
7578 \tl_new:N \l__tmp_body_staff_tl
7579 \tl_new:N \l__tmp_body_costs_tl
7580 \tl_new:N \l__tmp_body_fellowships_tl
7581 \tl_new:N \l__tmp_body_globalfunds_tl
7582 \tl_new:N \l__tmp_body_instrumentation_tl
7583 \cs_new_protected:Npn \@@_requested_funding_append_nonstaff:N #1
7584 {
7585   \DTLaddall{\tmpHorizontalSum}{
7586     \pSumYearOne,
7587     \pSumYearTwo,
7588     \pSumYearThree,
7589     \pSumYearFour,
7590     \pSumYearFive
7591   }
7592   \tl_put_right:Ne #1
7593   {
7594     \dfgShowTag{\pProject/\pCategory}{category}{\pCategory}[\tmpLocalDB]
7595     \printMarginalia{\dfgShowCalculatedTag{RequestedFundingTable}{\tmpLocalDB}
7596       {\@@_show_eur:n{\tmpHorizontalSum}} }
7597     & \dfgShowTag{\pProject/\pCategory}{sum-year1}

```

```

7598         {\@@_show_eur:n{\pSumYearOne}}[\tmpLocalDB]
7599     & & \dfgShowTag{\pProject/\pCategory}{sum-year2}
7600         {\@@_show_eur:n{\pSumYearTwo}}[\tmpLocalDB]
7601     & & \dfgShowTag{\pProject/\pCategory}{sum-year3}
7602         {\@@_show_eur:n{\pSumYearThree}}[\tmpLocalDB]
7603     & & \dfgShowTag{\pProject/\pCategory}{sum-year4}
7604         {\@@_show_eur:n{\pSumYearFour}}[\tmpLocalDB]
7605     & & \dfgShowTag{\pProject/\pCategory}{sum-year5}
7606         {\@@_show_eur:n{\pSumYearFive}}[\tmpLocalDB] \\
7607 }
7608 }
7609 \NewDocumentCommand{\RequestedFundingTable}{m}
7610 {
7611     \group_begin:
7612     \sisetup{drop-zero-decimal=true}
7613     % #1: project
7614     \def\tmpLocalDB{RequestedFunding}%
7615     \DTLifdbexists{\tmpLocalDB}{%
7616         \tl_clear:N \l__tmp_body_staff_tl
7617         \tl_clear:N \l__tmp_body_costs_tl
7618         \tl_clear:N \l__tmp_body_fellowships_tl
7619         \tl_clear:N \l__tmp_body_globalfunds_tl
7620         \tl_clear:N \l__tmp_body_instrumentation_tl
7621         \tl_put_right:Nn \l__tmp_body_staff_tl {
7622
7623             \SetRow{tableHeadingsBGalt}
7624             \SetCell{font=\footnotesize\bfseries,halign=l}
7625             Staff
7626             & Qty & \SetCell{c} Sum
7627             & Qty & \SetCell{c} Sum
7628             & Qty & \SetCell{c} Sum
7629             & Qty & \SetCell{c} Sum
7630             & Qty & \SetCell{c} Sum \\
7631         }
7632
7633         \tl_put_right:Nn \l__tmp_body_costs_tl {
7634             \SetHline{-}{tableOuterLines,0.5pt}
7635             \SetRow{tableHeadingsBGalt}
7636             \SetCell{font=\footnotesize\bfseries,halign=l}
7637             Direct~ Costs
7638             & & \SetCell{c} Sum
7639             & & \SetCell{c} Sum
7640             & & \SetCell{c} Sum
7641             & & \SetCell{c} Sum
7642             & & \SetCell{c} Sum \\
7643         }
7644
7645         \tl_put_right:Nn \l__tmp_body_fellowships_tl {
7646             \SetHline{-}{tableOuterLines,0.5pt}
7647             \SetRow{tableHeadingsBGalt}
7648             \SetCell{font=\footnotesize\bfseries,halign=l}
7649             Fellowships
7650             & & \SetCell{c} Sum
7651             & & \SetCell{c} Sum
7652             & & \SetCell{c} Sum
7653             & & \SetCell{c} Sum
7654             & & \SetCell{c} Sum \\
7655         }
7656
7657         \tl_put_right:Nn \l__tmp_body_globalfunds_tl {
7658             \SetHline{-}{tableOuterLines,0.5pt}
7659             \SetRow{tableHeadingsBGalt}
7660             \SetCell{font=\footnotesize\bfseries,halign=l}
7661             Globalfunds
7662             & & \SetCell{c} Sum
7663             & & \SetCell{c} Sum
7664             & & \SetCell{c} Sum
7665             & & \SetCell{c} Sum

```

```

7664 & & \SetCell{c} Sum \\
7665 }
7666 \tl_put_right:Nn \l__tmp_body_instrumentation_tl {
7667   \SetHline{-}{tableOuterLines,0.5pt}
7668   \SetRow{tableHeadingsBGalt}
7669   \SetCell{font=\footnotesize\bfseries,halign=l}
7670   Instrumentation
7671   & & \SetCell{c} Sum
7672   & & \SetCell{c} Sum
7673   & & \SetCell{c} Sum
7674   & & \SetCell{c} Sum
7675   & & \SetCell{c} Sum \\
7676 }
7677
7678
7679 % One filtered traversal is enough: dispatch each matching row to the
7680 % token list for its funding type. The previous implementation traversed
7681 % the complete, growing database once for every type.
7682 \DTLforeach[\DTLiseq{#1}]{\pProject}{\tmpLocalDB}{
7683   \pProject          =ref-project-id,
7684   \pType              =type,
7685   \pCategory          =category,
7686   \pPercentage        =percentage,
7687   \pQuantityYearOne   =quantity-year1,
7688   \pQuantityYearTwo   =quantity-year2,
7689   \pQuantityYearThree =quantity-year3,
7690   \pQuantityYearFour  =quantity-year4,
7691   \pQuantityYearFive  =quantity-year5,
7692   \pSumYearOne        =sum-year1,
7693   \pSumYearTwo        =sum-year2,
7694   \pSumYearThree      =sum-year3,
7695   \pSumYearFour       =sum-year4,
7696   \pSumYearFive       =sum-year5
7697 }{
7698
7699   \str_case:enF {\pType}
7700   {
7701     {staff} {
7702       \DTLaddall{\tmpHorizontalSum}{
7703         \pSumYearOne,
7704         \pSumYearTwo,
7705         \pSumYearThree,
7706         \pSumYearFour,
7707         \pSumYearFive
7708       }
7709       \tl_put_right:Ne \l__tmp_body_staff_tl
7710       {
7711
7712         \dfgShowTag{\pProject/\pCategory}{category}
7713         {\dfgCategoryName{\pCategory}}[\tmpLocalDB],~
7714         \dfgShowTag{\pProject/\pCategory}{percentage}
7715         {\qty{\pPercentage}{percent}}[\tmpLocalDB]
7716         \printMarginalia{\dfgShowCalculatedTag{RequestedFundingTable}
7717           {\tmpLocalDB}{\@@_show_eur:n{\tmpHorizontalSum}}}
7718         & \dfgShowTag{\pProject/\pCategory}{quantity-year1}
7719         {\@@_show_table_number:n{\pQuantityYearOne}}[\tmpLocalDB]
7720         & \dfgShowTag{\pProject/\pCategory}{sum-year1}
7721         {\@@_show_eur:n{\pSumYearOne}}[\tmpLocalDB]
7722         & \dfgShowTag{\pProject/\pCategory}{quantity-year2}
7723         {\@@_show_table_number:n{\pQuantityYearTwo}}[\tmpLocalDB] % year2
7724         & \dfgShowTag{\pProject/\pCategory}{sum-year2}
7725         {\@@_show_eur:n{\pSumYearTwo}}[\tmpLocalDB]
7726         & \dfgShowTag{\pProject/\pCategory}{quantity-year3}
7727         {\@@_show_table_number:n{\pQuantityYearThree}}[\tmpLocalDB] % year3
7728         & \dfgShowTag{\pProject/\pCategory}{sum-year3}
7729         {\@@_show_eur:n{\pSumYearThree}}[\tmpLocalDB]

```

```

7730      & \dfgShowTag{\pProject/\pCategory}{quantity-year4}
7731          {\@@_show_table_number:n{\pQuantityYearFour}}[\tmpLocalDB] % year4
7732      & \dfgShowTag{\pProject/\pCategory}{sum-year4}
7733          {\@@_show_eur:n{\pSumYearFour}}[\tmpLocalDB]
7734      & \dfgShowTag{\pProject/\pCategory}{quantity-year5}
7735          {\@@_show_table_number:n{\pQuantityYearFive}}[\tmpLocalDB] % year5
7736      & \dfgShowTag{\pProject/\pCategory}{sum-year5}
7737          {\@@_show_eur:n{\pSumYearFive}}[\tmpLocalDB]
7738      \\
7739      }
7740  }
7741      {costs}
7742          {\@@_requested_funding_append_nonstaff:N \l__tmp_body_costs_tl}
7743      {fellowships}
7744          {\@@_requested_funding_append_nonstaff:N \l__tmp_body_fellowships_tl}
7745      {globalfunds}
7746          {\@@_requested_funding_append_nonstaff:N \l__tmp_body_globalfunds_tl}
7747      {instrumentation}
7748          {\@@_requested_funding_append_nonstaff:N \l__tmp_body_instrumentation_tl}
7749  }
7750  { }
7751 }
7752 \tl_put_right:Ne \l__tmp_body_staff_tl
7753 {
7754     \SetRow{belowsep=5pt}
7755     \SetHline{-}{tableOuterLines,0.5pt}
7756     Total~
7757     \printMarginalia{%
7758         \getSumRequestedFunds{#1}{staff}
7759         {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
7760     }
7761     & \SetCell{bg=tableNoValue}
7762     & \getSumRequestedFunds{#1}{staff}{sum-year1}
7763     & \SetCell{bg=tableNoValue}
7764     & \getSumRequestedFunds{#1}{staff}{sum-year2}
7765     & \SetCell{bg=tableNoValue}
7766     & \getSumRequestedFunds{#1}{staff}{sum-year3}
7767     & \SetCell{bg=tableNoValue}
7768     & \getSumRequestedFunds{#1}{staff}{sum-year4}
7769     & \SetCell{bg=tableNoValue}
7770     & \getSumRequestedFunds{#1}{staff}{sum-year5}
7771     \\
7772 }
7773
7774 \clist_map_inline:nn {
7775     costs,fellowships,globalfunds,instrumentation
7776 }{
7777
7778     \tl_put_right:ce { \l__tmp_body_##1_tl }
7779     {
7780         \SetRow{belowsep=5pt}
7781         \SetHline{-}{tableLines,0.5pt}
7782         Total
7783         \printMarginalia{%
7784             \getSumRequestedFunds{#1}{##1}
7785             {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
7786         }
7787         & &
7788         \getSumRequestedFunds{#1}{##1}{sum-year1}
7789         & &
7790         \getSumRequestedFunds{#1}{##1}{sum-year2}
7791         & &
7792         \getSumRequestedFunds{#1}{##1}{sum-year3}
7793         & &
7794         \getSumRequestedFunds{#1}{##1}{sum-year4}
7795         & &

```

```

7796     \getSumRequestedFunds{#1}{##1}{sum-year5}
7797     \\
7798     }}
7799
7800 % delete when zero
7801 \dfgCheckIfZeroShowCategory{#1}{staff}
7802 \dfgCheckIfZeroShowCategory{#1}{costs}
7803 \dfgCheckIfZeroShowCategory{#1}{fellowships}
7804 \dfgCheckIfZeroShowCategory{#1}{globalfunds}
7805 \dfgCheckIfZeroShowCategory{#1}{instrumentation}
7806
7807 \begin{tblr}[
7808     theme=main,
7809     long,
7810     expand=
7811     \l__tmp_body_staff_tl
7812     \l__tmp_body_costs_tl
7813     \l__tmp_body_fellowships_tl
7814     \l__tmp_body_globalfunds_tl
7815     \l__tmp_body_instrumentation_tl,
7816     remark{Note}={Figures~ in~ EUR},
7817     ]{
7818     colsep=3pt,
7819     colspec = {
7820         *{1}{X[3.1,t]}
7821         *{5}{
7822             @{}X[0.75,c,si={table-format=1}]
7823             @{}X[1.2,c,si={table-format=7}]
7824         }
7825         % *{1}{X[2,t]}
7826         % *{10}{@{}X[c, si={table-format=4}]}
7827     },
7828     rows = {bg=white},
7829     column{2-Z}={guard},
7830     row{1}= {bg=tableHeadingsBG},
7831     row{1,2}= {guard},
7832     }
7833 Funding~for
7834 & \SetCell[c=2]{c} \dfgFundingYear{1}
7835 &
7836 & \SetCell[c=2]{c} \dfgFundingYear{2}
7837 &
7838 & \SetCell[c=2]{c} \dfgFundingYear{3}
7839 &
7840 & \SetCell[c=2]{c} \dfgFundingYear{4}
7841 &
7842 & \SetCell[c=2]{c} \dfgFundingYear{5}
7843 & \\
7844
7845 \l__tmp_body_staff_tl
7846 \l__tmp_body_costs_tl
7847 \l__tmp_body_fellowships_tl
7848 \l__tmp_body_globalfunds_tl
7849 \l__tmp_body_instrumentation_tl
7850
7851 \SetHline{-}{tableOuterLines,.75pt}
7852 \SetCell{font=\bfseries\footnotesize}
7853 Total
7854 \printMarginalia{%
7855     \getTotalSumRequestedFunds{#1}
7856     {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
7857 }
7858 &
7859 & \getTotalSumRequestedFunds{#1}{sum-year1}
7860 &
7861 & \getTotalSumRequestedFunds{#1}{sum-year2}

```

```

7862      &
7863      & \getTotalSumRequestedFunds{#1}{sum-year3}
7864      &
7865      & \getTotalSumRequestedFunds{#1}{sum-year4}
7866      &
7867      & \getTotalSumRequestedFunds{#1}{sum-year5} \\
7868      \end{tblr}
7869    }{
7870      Database~ \texttt{#1}~ missing.
7871      \msg_warning:nne { dfg } { database-not-found }{ #1 }
7872    }
7873    \group_end:
7874  }

```

`\RequestedFundingStaffTable` The DFG staff roster uses one database and one project-filtered traversal. Rows are first dispatched, in declaration order, to four sequences. The sequences are then rendered in the official order (existing research, existing non-research, requested research, requested non-research), which also assigns the continuous sequence numbers used by the descriptions. When both staff types occur within a funding-status block, a horizontal rule separates the research and non-research groups without repeating their row-spanning labels. Category values and the emphasized job-description headings are left aligned for easier scanning. Person, institution, and affiliation references are resolved during this assembly phase, before tabularray measures any cells. Thus neither measuring passes nor page breaks repeat Datatool queries.

**`\RequestedFundingStaffTable`**{*<project>*}

Print the official DFG requested-funding staff roster, the institution and parent-affiliation legend, and both applicable job-description blocks for *<project>*. The data source is always `RequestedFundingStaff`. For an ending project (project-status=E), rows declared with `funding-status=requested` are automatically labelled as staff funded with approved grant money; this matches the terminology of the ending-project report while retaining the same two-value data model.

```

7875 \seq_new:N \l_@@_rfs_existing_research_seq
7876 \seq_new:N \l_@@_rfs_existing_nonresearch_seq
7877 \seq_new:N \l_@@_rfs_requested_research_seq
7878 \seq_new:N \l_@@_rfs_requested_nonresearch_seq
7879 \seq_new:N \l_@@_rfs_institution_seq
7880 \seq_new:N \l_@@_rfs_affiliation_seq
7881 \prop_new:N \l_@@_rfs_duplicate_prop
7882 \prop_new:N \l_@@_rfs_institution_name_prop
7883 \prop_new:N \l_@@_rfs_institution_abbreviation_prop
7884 \prop_new:N \l_@@_rfs_institution_affiliation_abbreviation_prop
7885 \prop_new:N \l_@@_rfs_affiliation_abbreviation_prop
7886 \prop_new:N \l_@@_rfs_affiliation_name_prop
7887 \tl_new:N \l_@@_rfs_table_body_tl
7888 \tl_new:N \l_@@_rfs_existing_descriptions_tl
7889 \tl_new:N \l_@@_rfs_requested_descriptions_tl
7890 \tl_new:N \l_@@_rfs_project_tl
7891 \tl_new:N \l_@@_rfs_project_status_tl
7892 \tl_new:N \l_@@_rfs_existing_group_label_tl
7893 \tl_new:N \l_@@_rfs_requested_group_label_tl
7894 \tl_new:N \l_@@_rfs_existing_description_heading_tl
7895 \tl_new:N \l_@@_rfs_requested_description_heading_tl
7896 \tl_new:N \l_@@_rfs_ref_person_tl
7897 \tl_new:N \l_@@_rfs_firstname_tl
7898 \tl_new:N \l_@@_rfs_lastname_tl
7899 \tl_new:N \l_@@_rfs_degree_tl
7900 \tl_new:N \l_@@_rfs_position_tl
7901 \tl_new:N \l_@@_rfs_field_tl
7902 \tl_new:N \l_@@_rfs_ref_institution_tl
7903 \tl_new:N \l_@@_rfs_ref_affiliation_tl
7904 \tl_new:N \l_@@_rfs_department_tl
7905 \tl_new:N \l_@@_rfs_funding_status_tl
7906 \tl_new:N \l_@@_rfs_staff_type_tl
7907 \tl_new:N \l_@@_rfs_commitment_tl
7908 \tl_new:N \l_@@_rfs_category_tl
7909 \tl_new:N \l_@@_rfs_funding_source_tl
7910 \tl_new:N \l_@@_rfs_description_tl

```

```

7911 \tl_new:N \l_@@_rfs_name_cell_tl
7912 \tl_new:N \l_@@_rfs_plain_name_tl
7913 \tl_new:N \l_@@_rfs_description_name_tl
7914 \tl_new:N \l_@@_rfs_field_cell_tl
7915 \tl_new:N \l_@@_rfs_department_cell_tl
7916 \tl_new:N \l_@@_rfs_commitment_cell_tl
7917 \tl_new:N \l_@@_rfs_category_cell_tl
7918 \tl_new:N \l_@@_rfs_funding_source_cell_tl
7919 \tl_new:N \l_@@_rfs_group_cell_tl
7920 \tl_new:N \l_@@_rfs_institution_name_tl
7921 \tl_new:N \l_@@_rfs_institution_abbreviation_tl
7922 \tl_new:N \l_@@_rfs_institution_affiliation_tl
7923 \tl_new:N \l_@@_rfs_affiliation_name_tl
7924 \tl_new:N \l_@@_rfs_affiliation_abbreviation_tl
7925 \int_new:N \l_@@_rfs_display_number_int
7926 \int_new:N \l_@@_rfs_record_count_int
7927 \bool_new:N \l_@@_rfs_person_resolved_bool
7928 \bool_new:N \l_@@_rfs_name_incomplete_bool
7929
7930 \keys_define:nn { dfg / requested-funding-staff-row }
7931 {
7932   ref-person-id .tl_set:N = \l_@@_rfs_ref_person_tl,
7933   firstname .tl_set:N = \l_@@_rfs_firstname_tl,
7934   lastname .tl_set:N = \l_@@_rfs_lastname_tl,
7935   academic-degree .tl_set:N = \l_@@_rfs_degree_tl,
7936   positionText .tl_set:N = \l_@@_rfs_position_tl,
7937   position .tl_set:N = \l_@@_rfs_position_tl,
7938   field-of-research .tl_set:N = \l_@@_rfs_field_tl,
7939   ref-institution-id .tl_set:N = \l_@@_rfs_ref_institution_tl,
7940   ref-affiliation-id .tl_set:N = \l_@@_rfs_ref_affiliation_tl,
7941   department .tl_set:N = \l_@@_rfs_department_tl,
7942   funding-status .tl_set:N = \l_@@_rfs_funding_status_tl,
7943   staff-type .tl_set:N = \l_@@_rfs_staff_type_tl,
7944   commitment .tl_set:N = \l_@@_rfs_commitment_tl,
7945   category .tl_set:N = \l_@@_rfs_category_tl,
7946   funding-source .tl_set:N = \l_@@_rfs_funding_source_tl,
7947   description .tl_set:N = \l_@@_rfs_description_tl,
7948   unknown .code:n = { }
7949 }
7950
7951 \cs_new:Npn \@@_rfs_missing_text:
7952 { \textcolor{tableNoValue!55!black}{\emph{not~provided}}} }
7953
7954 \cs_new:Npn \@@_rfs_error_text:n #1
7955 { \textcolor{error}{\texttt{<?#1?>}}} }
7956
7957 \cs_new_protected:Npn \@@_rfs_warn_missing:n #1
7958 {
7959   \msg_warning:nnee { dfg } { requested-staff-missing-field }
7960   { \l_@@_rfs_project_tl }
7961   { no.~\int_use:N \l_@@_rfs_display_number_int \c_colon_str\space #1 }
7962 }
7963
7964 \cs_new_protected:Npn \@@_rfs_row_clear:
7965 {
7966   \tl_clear:N \l_@@_rfs_ref_person_tl
7967   \tl_clear:N \l_@@_rfs_firstname_tl
7968   \tl_clear:N \l_@@_rfs_lastname_tl
7969   \tl_clear:N \l_@@_rfs_degree_tl
7970   \tl_clear:N \l_@@_rfs_position_tl
7971   \tl_clear:N \l_@@_rfs_field_tl
7972   \tl_clear:N \l_@@_rfs_ref_institution_tl
7973   \tl_clear:N \l_@@_rfs_ref_affiliation_tl
7974   \tl_clear:N \l_@@_rfs_department_tl
7975   \tl_clear:N \l_@@_rfs_funding_status_tl
7976   \tl_clear:N \l_@@_rfs_staff_type_tl

```

```

7977 \tl_clear:N \l_@@_rfs_commitment_tl
7978 \tl_clear:N \l_@@_rfs_category_tl
7979 \tl_clear:N \l_@@_rfs_funding_source_tl
7980 \tl_clear:N \l_@@_rfs_description_tl
7981 }
7982
7983 \cs_new_protected:Npn \@@_rfs_store:N #1
7984 {
7985   \seq_put_right:Ne #1
7986   {
7987     ref-person-id = { \exp_not:V \pRFSRefPerson },
7988     firstname = { \exp_not:V \pRFSFirstname },
7989     lastname = { \exp_not:V \pRFSLastname },
7990     academic-degree = { \exp_not:V \pRFSDegree },
7991     positionText = { \exp_not:V \pRFSPosition },
7992     field-of-research = { \exp_not:V \pRFSField },
7993     ref-institution-id = { \exp_not:V \pRFSRefInstitution },
7994     ref-affiliation-id = { \exp_not:V \pRFSRefAffiliation },
7995     department = { \exp_not:V \pRFSDepartment },
7996     funding-status = { \exp_not:V \pRFSFundingStatus },
7997     staff-type = { \exp_not:V \pRFSStaffType },
7998     commitment = { \exp_not:V \pRFSCommitment },
7999     category = { \exp_not:V \pRFSCategory },
8000     funding-source = { \exp_not:V \pRFSFundingSource },
8001     description = { \exp_not:V \pRFSDescription }
8002   }
8003 }
8004
8005 \cs_new_protected:Npn \@@_rfs_collect_current:
8006 {
8007   \clist_map_inline:nn
8008   {
8009     \pRFSRefPerson, \pRFSFirstname, \pRFSLastname, \pRFSDegree,
8010     \pRFSPosition, \pRFSField, \pRFSRefInstitution,
8011     \pRFSRefAffiliation, \pRFSDepartment, \pRFSCommitment,
8012     \pRFSCategory, \pRFSFundingSource, \pRFSDescription
8013   }
8014   { \DTLifnulllorempty{##1}{\cs_set:Npn ##1 {}}} }
8015 \tl_if_blank:VTF \pRFSRefPerson
8016 {
8017   \str_if_eq:VnTF \pRFSLastname { TBA }
8018   {
8019     \tl_set:Ne \l_tmpa_tl
8020     {
8021       \exp_not:V \pRFSProject / \exp_not:V \pRFSFundingStatus /
8022       \exp_not:V \pRFSStaffType / vacancy /
8023       \exp_not:V \pRFSCategory / \exp_not:V \pRFSPosition /
8024       \exp_not:V \pRFSField / \exp_not:V \pRFSRefInstitution /
8025       \exp_not:V \pRFSDepartment
8026     }
8027   }
8028   {
8029     \tl_set:Ne \l_tmpa_tl
8030     {
8031       \exp_not:V \pRFSProject / \exp_not:V \pRFSFundingStatus /
8032       \exp_not:V \pRFSStaffType / name /
8033       \exp_not:V \pRFSLastname / \exp_not:V \pRFSFirstname
8034     }
8035   }
8036 }
8037 {
8038   \tl_set:Ne \l_tmpa_tl
8039   {
8040     \exp_not:V \pRFSProject / \exp_not:V \pRFSFundingStatus /
8041     \exp_not:V \pRFSStaffType / person / \exp_not:V \pRFSRefPerson
8042   }

```

```

8043     }
8044     \prop_get:NVNTF \l_@@_rfs_duplicate_prop \l_tmpa_tl \l_tmpb_tl
8045     { \msg_warning:nne { dfg } { requested-staff-duplicate } { \l_tmpa_tl } }
8046     { \prop_put:NVn \l_@@_rfs_duplicate_prop \l_tmpa_tl { 1 } }
8047     \tl_set:Ne \l_tmpa_tl
8048     { \pRFSFundingStatus / \pRFSStaffType }
8049     \str_case:VnF \l_tmpa_tl
8050     {
8051       { existing/research }
8052       { \@@_rfs_store:N \l_@@_rfs_existing_research_seq }
8053       { existing/nonResearch }
8054       { \@@_rfs_store:N \l_@@_rfs_existing_nonresearch_seq }
8055       { requested/research }
8056       { \@@_rfs_store:N \l_@@_rfs_requested_research_seq }
8057       { requested/nonResearch }
8058       { \@@_rfs_store:N \l_@@_rfs_requested_nonresearch_seq }
8059     }
8060     { }
8061   }
8062
8063   \cs_new_protected:Npn \@@_rfs_use_fallback:NN #1#2
8064   {
8065     \tl_if_blank:VT #1
8066     { \DTLifnulloreempty{#2}{ } { \tl_set:NV #1 #2 } }
8067   }
8068
8069   \cs_new_protected:Npn \@@_rfs_resolve_person:
8070   {
8071     \bool_set_false:N \l_@@_rfs_person_resolved_bool
8072     \tl_if_blank:VF \l_@@_rfs_ref_person_tl
8073     {
8074       \DTLifdbexists{person}
8075       {
8076         \DTLgetvalueforkey{\l_tmpa_tl}{lastname}{person}{id}
8077         {\l_@@_rfs_ref_person_tl}
8078         \DTLifnulloreempty{\l_tmpa_tl}
8079         {
8080           \msg_warning:nnee { dfg } { requested-staff-unresolved-person }
8081           { \l_@@_rfs_project_tl } { \l_@@_rfs_ref_person_tl }
8082         }
8083       }
8084       \bool_set_true:N \l_@@_rfs_person_resolved_bool
8085       \@@_rfs_use_fallback:NN \l_@@_rfs_lastname_tl \l_tmpa_tl
8086       \DTLgetvalueforkey{\l_tmpa_tl}{firstname}{person}{id}
8087       {\l_@@_rfs_ref_person_tl}
8088       \@@_rfs_use_fallback:NN \l_@@_rfs_firstname_tl \l_tmpa_tl
8089       \DTLgetvalueforkey{\l_tmpa_tl}{academicdegree}{person}{id}
8090       {\l_@@_rfs_ref_person_tl}
8091       \@@_rfs_use_fallback:NN \l_@@_rfs_degree_tl \l_tmpa_tl
8092       \DTLgetvalueforkey{\l_tmpa_tl}{positionText}{person}{id}
8093       {\l_@@_rfs_ref_person_tl}
8094       \@@_rfs_use_fallback:NN \l_@@_rfs_position_tl \l_tmpa_tl
8095       \DTLgetvalueforkey{\l_tmpa_tl}{position}{person}{id}
8096       {\l_@@_rfs_ref_person_tl}
8097       \@@_rfs_use_fallback:NN \l_@@_rfs_category_tl \l_tmpa_tl
8098       \bool_lazy_all:nT
8099       {
8100         { \tl_if_blank_p:V \l_@@_rfs_department_tl }
8101         { \tl_if_blank_p:V \l_@@_rfs_ref_institution_tl }
8102         { \tl_if_blank_p:V \l_@@_rfs_ref_affiliation_tl }
8103       }
8104       {
8105         \DTLgetvalueforkey{\l_tmpa_tl}{ref-institution-id}{person}{id}
8106         {\l_@@_rfs_ref_person_tl}
8107         \@@_rfs_use_fallback:NN \l_@@_rfs_ref_institution_tl \l_tmpa_tl
8108         \tl_if_blank:VT \l_@@_rfs_ref_institution_tl

```

```

8109         {
8110             \DTLgetvalueforkey{\l_tmpa_tl}{ref-affiliation-id}{person}{id}
8111             {\l_@@_rfs_ref_person_tl}
8112             \@@_rfs_use_fallback:NN \l_@@_rfs_ref_affiliation_tl \l_tmpa_tl
8113         }
8114     }
8115 }
8116 }
8117 {
8118     \msg_warning:nnee { dfg } { requested-staff-unresolved-person }
8119     { \l_@@_rfs_project_tl } { \l_@@_rfs_ref_person_tl }
8120 }
8121 }
8122 }
8123
8124 \cs_new_protected:Npn \@@_rfs_register_affiliation:n #1
8125 {
8126     \tl_set:Ne \l_tmpa_tl {#1}
8127     \tl_clear:N \l_@@_rfs_affiliation_name_tl
8128     \tl_clear:N \l_@@_rfs_affiliation_abbreviation_tl
8129     \DTLifdbexists{affiliation}
8130     {
8131         \DTLgetvalueforkey{\l_@@_rfs_affiliation_name_tl}
8132         {name}{affiliation}{id}{\l_tmpa_tl}
8133         \DTLifnulloreempty{\l_@@_rfs_affiliation_name_tl}
8134         {
8135             \msg_warning:nnee { dfg } { requested-staff-unresolved-affiliation }
8136             { \l_@@_rfs_project_tl } { \l_tmpa_tl }
8137             \tl_clear:N \l_@@_rfs_affiliation_name_tl
8138         }
8139         {
8140             \DTLgetvalueforkey{\l_@@_rfs_affiliation_abbreviation_tl}
8141             {abbreviation}{affiliation}{id}{\l_tmpa_tl}
8142             \DTLifnulloreempty{\l_@@_rfs_affiliation_abbreviation_tl}
8143             {
8144                 \msg_warning:nne { dfg } { requested-staff-missing-abbreviation }
8145                 { \l_tmpa_tl }
8146                 \tl_set:NV \l_@@_rfs_affiliation_abbreviation_tl
8147                 \l_@@_rfs_affiliation_name_tl
8148             }
8149             { }
8150             \seq_if_in:NVF \l_@@_rfs_affiliation_seq \l_tmpa_tl
8151             {
8152                 \seq_put_right:NV \l_@@_rfs_affiliation_seq \l_tmpa_tl
8153                 \prop_put:NVV \l_@@_rfs_affiliation_abbreviation_prop
8154                 \l_tmpa_tl \l_@@_rfs_affiliation_abbreviation_tl
8155                 \prop_put:NVV \l_@@_rfs_affiliation_name_prop
8156                 \l_tmpa_tl \l_@@_rfs_affiliation_name_tl
8157             }
8158         }
8159     }
8160     {
8161         \msg_warning:nnee { dfg } { requested-staff-unresolved-affiliation }
8162         { \l_@@_rfs_project_tl } { \l_tmpa_tl }
8163     }
8164 }
8165
8166 \cs_new_protected:Npn \@@_rfs_resolve_organisation:
8167 {
8168     \tl_if_blank:VT \l_@@_rfs_department_tl
8169     {
8170         \tl_if_blank:VTF \l_@@_rfs_ref_institution_tl
8171         {
8172             % Compatibility fallback for roster declarations written before the
8173             % institution-level key was introduced.
8174             \tl_if_blank:VTF \l_@@_rfs_ref_affiliation_tl

```

```

8175 {
8176   \@@_rfs_warn_missing:n { department~or~ref-institution-id }
8177   \tl_set:Nn \l_@@_rfs_department_tl
8178     { \SetCell{bg=tableNoValue}\@@_rfs_missing_text: }
8179 }
8180 {
8181   \@@_rfs_register_affiliation:n { \l_@@_rfs_ref_affiliation_tl }
8182   \tl_if_blank:VTF \l_@@_rfs_affiliation_name_tl
8183   {
8184     \tl_set:Ne \l_@@_rfs_department_tl
8185     {
8186       \exp_not:N \SetCell { bg=tableNoValue }
8187       \exp_not:N \@@_rfs_error_text:n
8188         { \exp_not:V \l_@@_rfs_ref_affiliation_tl }
8189     }
8190   }
8191   {
8192     \tl_set:NV \l_@@_rfs_department_tl
8193     \l_@@_rfs_affiliation_abbreviation_tl
8194   }
8195 }
8196 }
8197 {
8198   \tl_clear:N \l_@@_rfs_department_tl
8199   \DTLifdbexists{institution}
8200   {
8201     \clist_set:NV \l_tmpa_clist \l_@@_rfs_ref_institution_tl
8202     \bool_set_true:N \l_tmpa_bool
8203     \clist_map_inline:Nn \l_tmpa_clist
8204     {
8205       \bool_if:NTF \l_tmpa_bool
8206       { \bool_set_false:N \l_tmpa_bool }
8207       { \tl_put_right:Nn \l_@@_rfs_department_tl {,~} }
8208       \DTLgetvalueforkey{\l_@@_rfs_institution_affiliation_tl}
8209       {ref-affiliation-id}{institution}{id}{##1}
8210       \DTLifnulloreempty{\l_@@_rfs_institution_affiliation_tl}
8211       {
8212         \msg_warning:nnee { dfg } { requested-staff-unresolved-institution }
8213         { \l_@@_rfs_project_tl } {##1}
8214         \tl_put_right:Ne \l_@@_rfs_department_tl
8215           { \exp_not:N \@@_rfs_error_text:n { \exp_not:n {##1} } }
8216       }
8217       {
8218         \DTLgetvalueforkey{\l_@@_rfs_institution_name_tl}
8219         {name}{institution}{id}{##1}
8220         \@@_institution_abbreviation_or_name:nN
8221           {##1} \l_@@_rfs_institution_abbreviation_tl
8222         \@@_rfs_register_affiliation:n
8223           { \l_@@_rfs_institution_affiliation_tl }
8224         \DTLifnulloreempty{\l_@@_rfs_institution_name_tl}
8225         {
8226           \tl_set:NV \l_@@_rfs_institution_name_tl
8227             \l_@@_rfs_affiliation_name_tl
8228         }
8229         { }
8230         \DTLifnulloreempty{\l_@@_rfs_institution_abbreviation_tl}
8231         {
8232           \tl_set:NV \l_@@_rfs_institution_abbreviation_tl
8233             \l_@@_rfs_affiliation_abbreviation_tl
8234         }
8235         { }
8236         \tl_put_right:NV \l_@@_rfs_department_tl
8237           \l_@@_rfs_institution_abbreviation_tl
8238         \tl_set:Nn \l_tmpa_tl {##1}
8239         \seq_if_in:NVF \l_@@_rfs_institution_seq \l_tmpa_tl
8240         {

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8241         \seq_put_right:NV \l_@@_rfs_institution_seq \l_tmpa_tl
8242         \prop_put:NVV \l_@@_rfs_institution_name_prop
8243             \l_tmpa_tl \l_@@_rfs_institution_name_tl
8244         \prop_put:NVV \l_@@_rfs_institution_abbreviation_prop
8245             \l_tmpa_tl \l_@@_rfs_institution_abbreviation_tl
8246         \prop_put:NVV
8247             \l_@@_rfs_institution_affiliation_abbreviation_prop
8248             \l_tmpa_tl \l_@@_rfs_affiliation_abbreviation_tl
8249     }
8250 }
8251 }
8252 }
8253 {
8254     \msg_warning:nnee { dfg } { requested-staff-unresolved-institution }
8255     { \l_@@_rfs_project_tl } { \l_@@_rfs_ref_institution_tl }
8256     \tl_set:Nx \l_@@_rfs_department_tl
8257     {
8258         \exp_not:N \SetCell { bg=tableNoValue }
8259         \exp_not:N \@@_rfs_error_text:n
8260         { \exp_not:N \l_@@_rfs_ref_institution_tl }
8261     }
8262 }
8263 }
8264 }
8265 }
8266
8267 \cs_new_protected:Npn \@@_rfs_make_cell:NnN #1#2#3
8268 {
8269     \tl_if_blank:VTF #1
8270     {
8271         \@@_rfs_warn_missing:n {#2}
8272         \tl_set:Nn #3 { \SetCell{bg=tableNoValue}\@@_rfs_missing_text: }
8273     }
8274     { \tl_set:NV #3 #1 }
8275 }
8276
8277 \cs_new_protected:Npn \@@_rfs_make_field_cell:
8278 {
8279     \bool_lazy_all:nTF
8280     {
8281         { \str_if_eq_p:Vn \l_@@_rfs_funding_status_tl { existing } }
8282         { \str_if_eq_p:Vn \l_@@_rfs_staff_type_tl { nonResearch } }
8283         { \tl_if_blank_p:V \l_@@_rfs_field_tl }
8284     }
8285     { \tl_set:Nn \l_@@_rfs_field_cell_tl { \SetCell{bg=tableNoValue} } }
8286     {
8287         \@@_rfs_make_cell:NnN \l_@@_rfs_field_tl
8288         { field-of-research } \l_@@_rfs_field_cell_tl
8289     }
8290 }
8291
8292 \cs_new_protected:Npn \@@_rfs_make_name_cell:
8293 {
8294     \bool_set_false:N \l_@@_rfs_name_incomplete_bool
8295     \str_if_eq:VnTF \l_@@_rfs_lastname_tl { TBA }
8296     {
8297         \tl_set:Nn \l_@@_rfs_plain_name_tl { TBA }
8298         \tl_set:Nn \l_@@_rfs_description_name_tl { TBA }
8299         \tl_set:Nn \l_tmpa_tl { TBA }
8300     }
8301     {
8302         \tl_if_blank:VT \l_@@_rfs_lastname_tl
8303         {
8304             \@@_rfs_warn_missing:n { lastname~or~resolvable~ref-person-id }
8305             \tl_set:Nn \l_@@_rfs_lastname_tl { \@@_rfs_error_text:n {name} }
8306             \bool_set_true:N \l_@@_rfs_name_incomplete_bool

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8307     }
8308     \tl_if_blank:VT \l_@@_rfs_firstname_tl
8309     {
8310         \@@_rfs_warn_missing:n { firstname }
8311         \tl_set:Nn \l_@@_rfs_firstname_tl { \@@_rfs_missing_text: }
8312         \bool_set_true:N \l_@@_rfs_name_incomplete_bool
8313     }
8314     \tl_set:Ne \l_@@_rfs_plain_name_tl
8315     {
8316         \exp_not:V \l_@@_rfs_lastname_tl, \exp_not:N \space
8317         \exp_not:V \l_@@_rfs_firstname_tl
8318     }
8319     \tl_clear:N \l_@@_rfs_description_name_tl
8320     \tl_if_blank:VF \l_@@_rfs_degree_tl
8321     {
8322         \tl_put_right:Ne \l_@@_rfs_description_name_tl
8323         { \exp_not:V \l_@@_rfs_degree_tl \exp_not:N \space }
8324     }
8325     \tl_put_right:Ne \l_@@_rfs_description_name_tl
8326     {
8327         \exp_not:V \l_@@_rfs_firstname_tl \exp_not:N \space
8328         \exp_not:V \l_@@_rfs_lastname_tl
8329     }
8330     \tl_set:NV \l_tmpa_tl \l_@@_rfs_plain_name_tl
8331     \tl_if_blank:VF \l_@@_rfs_degree_tl
8332     {
8333         \tl_put_right:Ne \l_tmpa_tl
8334         { , \exp_not:N \space \exp_not:V \l_@@_rfs_degree_tl }
8335     }
8336     \bool_if:NT \l_@@_rfs_person_resolved_bool
8337     {
8338         \str_if_eq:VnT \l_@@_rfs_funding_status_tl { existing }
8339         {
8340             \tl_set:Ne \l_tmpa_tl
8341             {
8342                 \exp_not:N \textbf { \exp_not:V \l_@@_rfs_lastname_tl },
8343                 \exp_not:N \space \exp_not:V \l_@@_rfs_firstname_tl
8344             }
8345             \tl_if_blank:VF \l_@@_rfs_degree_tl
8346             {
8347                 \tl_put_right:Ne \l_tmpa_tl
8348                 { , \exp_not:N \space \exp_not:V \l_@@_rfs_degree_tl }
8349             }
8350         }
8351     }
8352 }
8353 \tl_if_blank:VF \l_@@_rfs_position_tl
8354 {
8355     \tl_put_right:Ne \l_tmpa_tl
8356     {
8357         \exp_not:N \newline
8358         (\exp_not:V \l_@@_rfs_position_tl)
8359     }
8360 }
8361 \bool_if:NF \l_@@_rfs_person_resolved_bool
8362 {
8363     \tl_if_blank:VF \l_@@_rfs_ref_person_tl
8364     {
8365         \bool_set_true:N \l_@@_rfs_name_incomplete_bool
8366         \tl_put_right:Ne \l_tmpa_tl
8367         {
8368             \exp_not:N \space
8369             \exp_not:N \@@_rfs_error_text:n
8370             { \exp_not:V \l_@@_rfs_ref_person_tl }
8371         }
8372     }

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8373 }
8374 \tl_clear:N \l_@@_rfs_name_cell_tl
8375 \bool_if:NT \l_@@_rfs_name_incomplete_bool
8376 { \tl_put_right:Nn \l_@@_rfs_name_cell_tl { \SetCell{bg=tableNoValue} } }
8377 \bool_if:NTF \l_@@_rfs_person_resolved_bool
8378 {
8379   \tl_put_right:Ne \l_@@_rfs_name_cell_tl
8380   {
8381     \exp_not:N \hyperlink { pi:\exp_not:V \l_@@_rfs_ref_person_tl }
8382     {
8383       \exp_not:N \textcolor { referencePI }
8384       {
8385         \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
8386         {RequestedFundingStaff, person}
8387         {\exp_not:V \l_tmpa_tl}
8388       }
8389     }
8390   }
8391 }
8392 {
8393   \tl_put_right:Ne \l_@@_rfs_name_cell_tl
8394   {
8395     \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
8396     {RequestedFundingStaff, person}
8397     {\exp_not:V \l_tmpa_tl}
8398   }
8399 }
8400 }
8401
8402 \cs_new_protected:Npn \@@_rfs_render_row:nnnN #1#2#3#4
8403 {
8404   \int_incr:N \l_@@_rfs_display_number_int
8405   \@@_rfs_resolve_person:
8406   \@@_rfs_resolve_organisation:
8407   \@@_rfs_make_name_cell:
8408   \@@_rfs_make_field_cell:
8409   \tl_if_blank:VF \l_@@_rfs_field_tl
8410   {
8411     \tl_set:Ne \l_@@_rfs_field_cell_tl
8412     {
8413       \exp_not:N \dfgShowTag
8414       {\exp_not:V \l_@@_rfs_project_tl/
8415        \int_use:N \l_@@_rfs_display_number_int}
8416       {field-of-research}{\exp_not:V \l_@@_rfs_field_cell_tl}
8417       [RequestedFundingStaff]
8418     }
8419   }
8420   \tl_set:Nv \l_@@_rfs_department_cell_tl \l_@@_rfs_department_tl
8421   \tl_if_in:VnF \l_@@_rfs_department_cell_tl { \SetCell }
8422   {
8423     \tl_set:Ne \l_@@_rfs_department_cell_tl
8424     {
8425       \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
8426       {RequestedFundingStaff, person, institution, affiliation}
8427       {\exp_not:V \l_@@_rfs_department_cell_tl}
8428     }
8429   }
8430   \str_if_eq:VnTF \l_@@_rfs_funding_status_tl { requested }
8431   {
8432     \tl_set:Nn \l_@@_rfs_commitment_cell_tl
8433     { \SetCell{bg=tableNoValue} }
8434     \tl_set:Nn \l_@@_rfs_funding_source_cell_tl
8435     { \SetCell{bg=tableNoValue} }
8436   }
8437   {
8438     \@@_rfs_make_cell:NnN \l_@@_rfs_commitment_tl

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8439     { commitment } \l_@@_rfs_commitment_cell_tl
8440 \l_@@_rfs_make_cell:NnN \l_@@_rfs_funding_source_tl
8441     { funding-source } \l_@@_rfs_funding_source_cell_tl
8442 \tl_if_blank:VF \l_@@_rfs_commitment_tl
8443 {
8444     \tl_set:Ne \l_@@_rfs_commitment_cell_tl
8445     {
8446         \exp_not:N \dfgShowTag
8447         {\exp_not:V \l_@@_rfs_project_tl/
8448          \int_use:N \l_@@_rfs_display_number_int}
8449         {commitment}{\exp_not:V \l_@@_rfs_commitment_cell_tl}
8450         [RequestedFundingStaff]
8451     }
8452 }
8453 \tl_if_blank:VF \l_@@_rfs_funding_source_tl
8454 {
8455     \tl_set:Ne \l_@@_rfs_funding_source_cell_tl
8456     {
8457         \exp_not:N \dfgShowTag
8458         {\exp_not:V \l_@@_rfs_project_tl/
8459          \int_use:N \l_@@_rfs_display_number_int}
8460         {funding-source}{\exp_not:V \l_@@_rfs_funding_source_cell_tl}
8461         [RequestedFundingStaff]
8462     }
8463 }
8464 }
8465 \str_if_eq:VnTF \l_@@_rfs_funding_status_tl { existing }
8466 {
8467     \tl_set:Nn \l_@@_rfs_category_cell_tl
8468     { \SetCell{bg=tableNoValue} }
8469 }
8470 {
8471     \tl_if_blank:VTF \l_@@_rfs_category_tl
8472     {
8473         \l_@@_rfs_warn_missing:n { category }
8474         \tl_set:Nn \l_@@_rfs_category_cell_tl
8475         { \SetCell{bg=tableNoValue}\l_@@_rfs_missing_text: }
8476     }
8477     {
8478         \prop_get:NVNTF \g_@@_dfg_category_names_prop
8479         \l_@@_rfs_category_tl \l_@@_rfs_category_cell_tl
8480         { }
8481         {
8482             \tl_set:Ne \l_@@_rfs_category_cell_tl
8483             { \exp_not:N \l_@@_rfs_error_text:n { \exp_not:V \l_@@_rfs_category_tl } }
8484         }
8485     }
8486 }
8487 \tl_if_in:VnF \l_@@_rfs_category_cell_tl { \SetCell }
8488 {
8489     \tl_set:Ne \l_@@_rfs_category_cell_tl
8490     {
8491         \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
8492         {RequestedFundingStaff, person}
8493         {\exp_not:V \l_@@_rfs_category_cell_tl}
8494     }
8495 }
8496 \int_compare:nNnTF {#1} = {1}
8497 {
8498     \tl_set:Ne \l_@@_rfs_group_cell_tl
8499     {
8500         \exp_not:N \SetCell [ r=#2 ] { 1 }
8501         { \exp_not:n {#3} } &
8502     }
8503 }
8504 { \tl_set:Nn \l_@@_rfs_group_cell_tl { & } }

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8505 \tl_put_right:Ne \l_@@_rfs_table_body_tl
8506 {
8507   \exp_not:V \l_@@_rfs_group_cell_tl
8508   \int_use:N \l_@@_rfs_display_number_int .
8509   & \exp_not:V \l_@@_rfs_name_cell_tl
8510   & \exp_not:V \l_@@_rfs_field_cell_tl
8511   & \exp_not:V \l_@@_rfs_department_cell_tl
8512   & \exp_not:V \l_@@_rfs_commitment_cell_tl
8513   & \exp_not:V \l_@@_rfs_category_cell_tl
8514   & \exp_not:V \l_@@_rfs_funding_source_cell_tl
8515   \\
8516 }
8517 \tl_if_blank:VT \l_@@_rfs_description_tl
8518 {
8519   \@@_rfs_warn_missing:n { description }
8520   \tl_set:Nn \l_@@_rfs_description_tl
8521     { \textcolor{error}{Description~not~provided.} }
8522 }
8523 \tl_put_right:Ne #4
8524 {
8525   \exp_not:N \item
8526     [\exp_not:N \textbf
8527       { \int_use:N \l_@@_rfs_display_number_int. }]
8528   \exp_not:N \textbf
8529     { \exp_not:N \dfgShowCalculatedTag{RequestedFundingStaffTable}
8530       {RequestedFundingStaff, person}
8531       {\exp_not:V \l_@@_rfs_description_name_tl} }
8532   \space
8533   \exp_not:N \dfgShowTag
8534     {\exp_not:V \l_@@_rfs_project_tl/
8535       \int_use:N \l_@@_rfs_display_number_int}
8536     {description}{\exp_not:V \l_@@_rfs_description_tl}
8537     [RequestedFundingStaff]
8538 }
8539 }
8540
8541 \cs_new_protected:Npn \@@_rfs_render_group:NnN #1#2#3
8542 {
8543   \seq_map_indexed_inline:Nn #1
8544   {
8545     \@@_rfs_row_clear:
8546     \keys_set:nn { dfg / requested-funding-staff-row } {##2}
8547     \@@_rfs_render_row:nnnN {##1} { \seq_count:N #1 } {##2} #3
8548   }
8549 }
8550
8551 \cs_new_protected:Npn \@@_rfs_render_status:NnnN #1#2#3#4
8552 {
8553   \int_compare:nNnT { \seq_count:N #1 + \seq_count:N #2 } > {0}
8554   {
8555     \tl_put_right:Nn \l_@@_rfs_table_body_tl
8556     {
8557       \SetRow{bg=tableHeadingsBGalt,font=\footnotesize\bfseries}
8558       \SetCell[c=8]{l} #3 & & & & & \\\*
8559     }
8560     \@@_rfs_render_group:NnN #1 { Research~staff } #4
8561     \seq_if_empty:NF #1
8562     {
8563       \seq_if_empty:NF #2
8564       {
8565         \tl_put_right:Nn \l_@@_rfs_table_body_tl
8566         { \SetHline{-}{tableOuterLines,0.5pt} }
8567       }
8568     }
8569     \@@_rfs_render_group:NnN #2 { Non-research~staff } #4
8570   }

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8571 }
8572
8573 \cs_new_protected:Npn \l_@@_rfs_print_legend:
8574 {
8575   \bool_lazy_or:nnT
8576     { ! \seq_if_empty_p:N \l_@@_rfs_institution_seq }
8577     { ! \seq_if_empty_p:N \l_@@_rfs_affiliation_seq }
8578   {
8579     \par\smallskip\noindent
8580     \group_begin:
8581     \footnotesize
8582     \seq_if_empty:NF \l_@@_rfs_institution_seq
8583     {
8584       \textbf{Institutions:}\space
8585       \seq_map_indexed_inline:Nn \l_@@_rfs_institution_seq
8586       {
8587         \int_compare:nNnF {##1} = {1} {;\space}
8588         \tl_set:Nn \l_tmpa_tl {##2}
8589         \prop_get:NVN \l_@@_rfs_institution_name_prop
8590           \l_tmpa_tl \l_tmpb_tl
8591         \prop_get:NVN \l_@@_rfs_institution_abbreviation_prop
8592           \l_tmpa_tl \l_tmpd_tl
8593         \prop_get:NVN \l_@@_rfs_institution_affiliation_abbreviation_prop
8594           \l_tmpa_tl \l_tmpc_tl
8595         \textbf{\dfgShowCalculatedTag{institutionLabel}{institution}}
8596           {\l_tmpd_tl}}:~
8597         \dfgShowTag{##2}{name}{\l_tmpb_tl}{institution}\space
8598         (\dfgShowCalculatedTag{affiliationLabel}{affiliation}
8599           {\l_tmpc_tl})
8600       }
8601       .\space
8602     }
8603     \seq_if_empty:NF \l_@@_rfs_affiliation_seq
8604     {
8605       \textbf{Affiliations:}\space
8606       \seq_map_indexed_inline:Nn \l_@@_rfs_affiliation_seq
8607       {
8608         \int_compare:nNnF {##1} = {1} {;\space}
8609         \tl_set:Nn \l_tmpa_tl {##2}
8610         \prop_get:NVN \l_@@_rfs_affiliation_abbreviation_prop
8611           \l_tmpa_tl \l_tmpb_tl
8612         \prop_get:NVN \l_@@_rfs_affiliation_name_prop
8613           \l_tmpa_tl \l_tmpc_tl
8614         \textbf{\dfgShowCalculatedTag{affiliationLabel}{affiliation}}
8615           {\l_tmpb_tl}}:~
8616         \dfgShowTag{##2}{name}{\l_tmpc_tl}{affiliation]
8617       }
8618       .
8619     }
8620     \par
8621     \group_end:
8622   }
8623 }
8624
8625 \cs_new_protected:Npn \l_@@_rfs_no_data:n #1
8626 {
8627   \msg_warning:nnn { dfg } { requested-staff-no-data } {#1}
8628   \par\noindent
8629   \textcolor{tableNoValue!55!black}
8630     {No~staff~data~have~been~provided~for~this~project.}
8631   \par
8632 }
8633
8634 \NewDocumentCommand{\RequestedFundingStaffTable}{m}
8635 {
8636   \group_begin:

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8637 \tl_set:Nn \l_@@_rfs_project_tl {#1}
8638 \tl_clear:N \l_@@_rfs_project_status_tl
8639 \DTLifdbexists{project}
8640 {
8641   \DTLgetvalueforkey{\l_@@_rfs_project_status_tl}
8642     {project-status}{project}{id}{#1}
8643 }
8644 { }
8645 \str_if_eq:VnTF \l_@@_rfs_project_status_tl { E }
8646 {
8647   \tl_set:Nn \l_@@_rfs_existing_group_label_tl {Existing~staff}
8648   \tl_set:Nn \l_@@_rfs_requested_group_label_tl
8649     {Staff~funded~with~approved~grant~money}
8650   \tl_set:Nn \l_@@_rfs_existing_description_heading_tl
8651     {Job~descriptions~of~staff~(supported~through~existing~funds):}
8652   \tl_set:Nn \l_@@_rfs_requested_description_heading_tl
8653     {Job~descriptions~of~staff~(funded~with~approved~grant~money):}
8654 }
8655 {
8656   \tl_set:Nn \l_@@_rfs_existing_group_label_tl {Existing~staff}
8657   \tl_set:Nn \l_@@_rfs_requested_group_label_tl {Requested~staff}
8658   \tl_set:Nn \l_@@_rfs_existing_description_heading_tl
8659     {Job~descriptions~of~staff~for~the~proposed~funding~period~
8660       (supported~through~existing~funds):}
8661   \tl_set:Nn \l_@@_rfs_requested_description_heading_tl
8662     {Job~descriptions~of~staff~for~the~proposed~funding~period~
8663       (requested~funds):}
8664 }
8665 \seq_clear:N \l_@@_rfs_existing_research_seq
8666 \seq_clear:N \l_@@_rfs_existing_nonresearch_seq
8667 \seq_clear:N \l_@@_rfs_requested_research_seq
8668 \seq_clear:N \l_@@_rfs_requested_nonresearch_seq
8669 \seq_clear:N \l_@@_rfs_institution_seq
8670 \seq_clear:N \l_@@_rfs_affiliation_seq
8671 \prop_clear:N \l_@@_rfs_duplicate_prop
8672 \prop_clear:N \l_@@_rfs_institution_name_prop
8673 \prop_clear:N \l_@@_rfs_institution_abbreviation_prop
8674 \prop_clear:N \l_@@_rfs_institution_affiliation_abbreviation_prop
8675 \prop_clear:N \l_@@_rfs_affiliation_abbreviation_prop
8676 \prop_clear:N \l_@@_rfs_affiliation_name_prop
8677 \tl_clear:N \l_@@_rfs_table_body_tl
8678 \tl_clear:N \l_@@_rfs_existing_descriptions_tl
8679 \tl_clear:N \l_@@_rfs_requested_descriptions_tl
8680 \DTLifdbexists{RequestedFundingStaff}
8681 {
8682   \DTLforeach[\DTLiseq{#1}]{\pRFSProject}
8683     {RequestedFundingStaff}
8684   {
8685     \pRFSProject=ref-project-id,
8686     \pRFSFundingStatus=funding-status,
8687     \pRFSStaffType=staff-type,
8688     \pRFSRefPerson=ref-person-id,
8689     \pRFSFirstname=firstname,
8690     \pRFSLastname=lastname,
8691     \pRFSDegree=academic-degree,
8692     \pRFSPosition=positionText,
8693     \pRFSField=field-of-research,
8694     \pRFSRefInstitution=ref-institution-id,
8695     \pRFSRefAffiliation=ref-affiliation-id,
8696     \pRFSDepartment=department,
8697     \pRFSCommitment=commitment,
8698     \pRFSCategory=category,
8699     \pRFSFundingSource=funding-source,
8700     \pRFSDescription=description
8701   }
8702 { \l_@@_rfs_collect_current: }

```

```

8703 \int_set:Nn \l_@@_rfs_record_count_int
8704 {
8705   \seq_count:N \l_@@_rfs_existing_research_seq
8706   + \seq_count:N \l_@@_rfs_existing_nonresearch_seq
8707   + \seq_count:N \l_@@_rfs_requested_research_seq
8708   + \seq_count:N \l_@@_rfs_requested_nonresearch_seq
8709 }
8710 \int_compare:nNnTF { \l_@@_rfs_record_count_int } = {0}
8711 { \@@_rfs_no_data:n {#1} }
8712 {
8713   \int_zero:N \l_@@_rfs_display_number_int
8714   \@@_rfs_render_status:NNnN
8715     \l_@@_rfs_existing_research_seq
8716     \l_@@_rfs_existing_nonresearch_seq
8717     {\tl_use:N \l_@@_rfs_existing_group_label_tl}
8718     \l_@@_rfs_existing_descriptions_tl
8719   \@@_rfs_render_status:NNnN
8720     \l_@@_rfs_requested_research_seq
8721     \l_@@_rfs_requested_nonresearch_seq
8722     {\tl_use:N \l_@@_rfs_requested_group_label_tl}
8723     \l_@@_rfs_requested_descriptions_tl
8724   \begin{tblr}[
8725     theme=requestedFundingStaff,
8726     long,
8727     postsep=0pt,
8728     expand=\l_@@_rfs_table_body_tl
8729   ]{
8730     colsep=2pt,
8731     width=\textwidth,
8732     hline{1,Z}={1pt,fg=tableOuterLines},
8733     hline{2}={1pt,fg=tableOuterLines},
8734     stretch=.8,
8735     rowsep=.500pt,
8736     colspec={X[1.1,1]
8737               X[.42,c] % no
8738               X[2.18,1] % Name
8739               X[1.4,1] % field
8740               X[1.5,c] % department
8741               X[1.05,c] % proj com.
8742               X[1.1,c] % category
8743               X[.95,c] % funding
8744             },
8745     column{1}={font=\footnotesize\bfseries,valign=m},
8746     column{2}={halign=c},
8747     rows={font=\footnotesize,valign=t},
8748     rowhead=1,
8749     row{1}={bg=tableHeadingsBG,fg=tableHeadingsFont,
8750             font=\scriptsize\bfseries,guard},
8751     cell{1}{1-8}={halign=c,valign=m}
8752   }
8753   & {No.}
8754   & {Name,~academic\\degree,~position}
8755   & {Field~of\\research}
8756   & {Departm.~of\\(non-)univers.\\institution}
8757   & {Project\\commitm.~(h/wk)}
8758   & Category
8759   & {Funding\\source} \\
8760   \l_@@_rfs_table_body_tl
8761 \end{tblr}
8762 \@@_rfs_print_legend:
8763 \tl_if_empty:NF \l_@@_rfs_existing_descriptions_tl
8764 {
8765   \par\medskip\noindent
8766   {\tl_use:N \l_@@_rfs_existing_description_heading_tl}\par\nobreak
8767   {\normalfont\normalsize\setlength{\parskip}{0pt}
8768     \begin{itemize}[

```

```

8769         label={},
8770         labelindent=0pt,
8771         labelwidth=1.5em,
8772         labelsep=.5em,
8773         leftmargin=2em,
8774         align=left,
8775         beginpenalty=10000]
8776         \tl_use:N \l_@@_rfs_existing_descriptions_tl
8777     \end{itemize}}
8778 }
8779 \tl_if_empty:NF \l_@@_rfs_requested_descriptions_tl
8780 {
8781     %\par\medskip\noindent
8782     {\tl_use:N \l_@@_rfs_requested_description_heading_tl}\par\nobreak
8783     {\normalfont\normalsize\setlength{\parskip}{0pt}
8784     \begin{itemize}[
8785         label={},
8786         labelindent=0pt,
8787         labelwidth=1.5em,
8788         labelsep=.5em,
8789         leftmargin=2em,
8790         align=left,
8791         beginpenalty=10000]
8792         \tl_use:N \l_@@_rfs_requested_descriptions_tl
8793     \end{itemize}}
8794 }
8795 }
8796 }
8797 { \@@_rfs_no_data:n {#1} }
8798 \group_end:
8799 }

8800
8801 \NewDocumentCommand{\getTotalSumRequestedFunds}{O{RequestedFunding}mm}{
8802     % #1: database
8803     % #2: project
8804     % #3: year
8805     \def\tmpLocalDB{#1}%
8806     \DTLifdbexists{\tmpLocalDB}{%
8807         \@_funding_sum_set:Nnnnn \TotalSumRequestedFunds
8808         {#1}{#2}{__ALL__}{#3}
8809         \@_show_calculated_number:nnN
8810         {getTotalSumRequestedFunds}{#1}
8811         \TotalSumRequestedFunds
8812     }{
8813         \texttt{\color{error}XXX}
8814         \msg_warning:nne { dfg } { database-not-found }{ #1 }
8815     }
8816 }
8817
8818
8819 \NewDocumentCommand{\getSumExistingFunds}{O{RequestedAndExistingFundingDirectCosts}mm}{
8820     % #1: database
8821     % #2: project
8822     % #3: year
8823     \def\tmpLocalDB{#1}%
8824     \DTLifdbexists{\tmpLocalDB}{
8825         \@_funding_sum_set:Nnnnn \SumExistingFunds
8826         {#1}{#2}{__ALL__}{#3}
8827
8828         \@_show_calculated_number:nnN
8829         {getSumExistingFunds}{#1}
8830         \SumExistingFunds
8831     }{
8832         \texttt{\color{error}XXX}
8833         \msg_warning:nne { dfg } { database-not-found }{ #1 }
8834     }

```

```

8835 }
8836
8837
8838 \providecommand{\SumRequestedFunds}{0}
8839
8840 \NewDocumentCommand{\getSumRequestedFunds}{ O{RequestedFunding} m m m }{%
8841   \DTLifdbexists{#1}{%
8842     \@_funding_sum_set:Nnnnn \SumRequestedFunds {#1}{#2}{#3}{#4}%
8843     \@_show_calculated_number:nnN
8844     {getSumRequestedFunds}{#1}
8845     \SumRequestedFunds
8846   }{%
8847     \texttt{\color{error}XXX}%
8848     \msg_warning:nne { dfg } { database-not-found } { #1 }%
8849   }%
8850 }
8851 \NewDocumentCommand{\dfgCheckIfZeroShowCategory}{ O{RequestedFunding} m m }
8852 {
8853   % #1: database
8854   % #2: project
8855   % #3: category/type
8856   \def\tmpLocalDB{#1}
8857   \DTLifdbexists{\tmpLocalDB}{
8858     \@_funding_sum_set:Nnnnn \SumRequestedFunds {#1}{#2}{#3}
8859     {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
8860     \fp_compare:nNnT { \SumRequestedFunds } = {0}
8861     { \tl_clear:c {l__tmp_body_#3_tl } }
8862   }
8863   {
8864     \msg_warning:nne { dfg } { database-not-found } { #1 }
8865   }
8866 }

```

**This is for Requested funding for direct costs fo the new funding period and is partially data from new key-values and partially it has to be reused.**

```

8867 \NewDocumentCommand{\RequestedAndExistingFundingDirectCostsTable}{m}
8868 {
8869   % #1: project
8870   \def\tmpLocalDB{RequestedAndExistingFundingDirectCosts}%
8871   \DTLifdbexists{\tmpLocalDB}{%
8872     \tl_clear:N \l__tmp_body_costs_tl
8873     \DTLforeach[\DTLiseq{\pProject}{#1}]{\tmpLocalDB}{
8874       \pProject=ref-project-id,
8875       \pAffiliation=ref-affiliation-id,
8876       \pFinancedBy=financed-by,
8877       \pSumYearOne=sum-year1,
8878       \pSumYearTwo=sum-year2,
8879       \pSumYearThree=sum-year3,
8880       \pSumYearFour=sum-year4,
8881       \pSumYearFive=sum-year5
8882     }{
8883       \DTLaddall{\tmpHorizontalSum}{
8884         \pSumYearOne,
8885         \pSumYearTwo,
8886         \pSumYearThree,
8887         \pSumYearFour,
8888         \pSumYearFive
8889       }
8890
8891       \tl_put_right:Ne \l__tmp_body_costs_tl
8892       {
8893         \str_if_eq:VnTF { \pAffiliation } { other-funds }
8894         { Other }
8895         { \getEntry{affiliation}{\pAffiliation}{name} : } ~
8896         existing~ funds~ from~
8897         % Freeze the database value without expanding commands such as \RWTH,

```

```

8898 % whose trailing \xspace must only run when the completed cell is typeset.
8899 \dfgShowTag{\pProject/\pAffiliation}{financed-by}
8900 {\exp_not:V \pFinancedBy}{\tmpLocalDB}
8901 \printMarginalia{\dfgShowCalculatedTag
8902 {RequestedAndExistingFundingDirectCostsTable}}{\tmpLocalDB}
8903 {\@@_show_eur:n{\tmpHorizontalSum}}
8904 & \dfgShowTag{\pProject/\pAffiliation}{sum-year1}
8905 {\@@_show_eur:n{\pSumYearOne}}{\tmpLocalDB}
8906 & \dfgShowTag{\pProject/\pAffiliation}{sum-year2}
8907 {\@@_show_eur:n{\pSumYearTwo}}{\tmpLocalDB}
8908 & \dfgShowTag{\pProject/\pAffiliation}{sum-year3}
8909 {\@@_show_eur:n{\pSumYearThree}}{\tmpLocalDB}
8910 & \dfgShowTag{\pProject/\pAffiliation}{sum-year4}
8911 {\@@_show_eur:n{\pSumYearFour}}{\tmpLocalDB}
8912 & \dfgShowTag{\pProject/\pAffiliation}{sum-year5}
8913 {\@@_show_eur:n{\pSumYearFive}}{\tmpLocalDB} \\
8914 }
8915 }
8916 \tl_put_right:Ne \l__tmp_body_costs_tl
8917 {
8918 \SetHline{-}{tableOuterLines,0.5pt}
8919 \SetRow{belowsep=5pt}
8920 Sum~ of~ existing~ funds
8921 \printMarginalia{%
8922 \getSumExistingFunds{#1}
8923 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
8924 }
8925 & \getSumExistingFunds{#1}{sum-year1}
8926 & \getSumExistingFunds{#1}{sum-year2}
8927 & \getSumExistingFunds{#1}{sum-year3}
8928 & \getSumExistingFunds{#1}{sum-year4}
8929 & \getSumExistingFunds{#1}{sum-year5} \\
8930 }
8931
8932 \begin{tblr}[
8933 theme=main,
8934 long,
8935 expand=
8936 \l__tmp_body_costs_tl,
8937 remark{Note}={Figures~ in~ EUR},
8938 ]{
8939 % colsep=3pt,
8940 colspec = {
8941 *{1}{X[4,t]}
8942 *{5}{
8943 @{}X[c,si={table-format=8}]
8944 }},
8945 rows = {bg=white},
8946 column{2-6}={guard},
8947 row{1}= {guard,bg=tableHeadingsBG},
8948 row{Y,Z}= {
8949 %bg=tableHeadingsBGalt,
8950 font={\footnotesize\bfseries}},
8951 }
8952
8953 & \dfgFundingYear{1}
8954 & \dfgFundingYear{2}
8955 & \dfgFundingYear{3}
8956 & \dfgFundingYear{4}
8957 & \dfgFundingYear{5} \\
8958
8959 \l__tmp_body_costs_tl
8960
8961 \SetHline{-}{tableOuterLines,.75pt}
8962 %\SetCell{font=\bfseries\footnotesize}
8963 Sum~ of~ requested~ funds

```

```

8964 \printMarginalia{%
8965 \getSumRequestedFunds{#1}{costs}
8966 {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
8967 }
8968 & \getSumRequestedFunds{#1}{costs}{sum-year1}
8969 & \getSumRequestedFunds{#1}{costs}{sum-year2}
8970 & \getSumRequestedFunds{#1}{costs}{sum-year3}
8971 & \getSumRequestedFunds{#1}{costs}{sum-year4}
8972 & \getSumRequestedFunds{#1}{costs}{sum-year5} \\
8973 \end{tblr}
8974 }{
8975 Database~ \texttt{#1}~ missing.
8976 \msg_warning:nne { dfg } { database-not-found }{ #1 }
8977 }
8978 }

```

### 3.2.19 Boxes

```

8979 \RequirePackage[breakable,fitting,skins,most]{tcolorbox}
8980
8981 \tcbset{
8982   Pibox/.style={
8983     %enhanced, breakable,
8984     colback=white, colframe=white,
8985     coltitle=black,
8986     boxrule=0pt, %arc=2pt,
8987     before~ skip=0pt, after~ skip=7pt,
8988     before~ upper=\RaggedRight,
8989     boxsep=0pt,
8990     left=0pt, right=0pt, top=7pt, bottom=0pt,
8991   },
8992 }
8993
8994 \bool_if:NTF \l_@@_class_final_bool
8995 {\newcommand{\dfgcomment}[2][{}]}
8996 {\NewTotalTColorBox{\dfgcomment}{O}{m}{
8997   {%
8998     nobeforeafter,
8999     colupper=black!50!white,
9000     coltitle=black!75!white,
9001     fonttitle=\fontsize{7}{9}\selectfont\bfseries,
9002     colback=black!5!white,
9003     colframe=black!15!white,
9004     width=\linewidth,
9005     % text height=4cm,
9006     breakable,
9007     enhanced,
9008     left=0pt,right=0pt,
9009     top=0pt,bottom=0pt,
9010     % text width=\linewidth,
9011     fontupper=\fontsize{7}{9}\selectfont,
9012     title={Anmerkung~der~DFG},
9013     #1
9014   }{#2}}

```

#### defining standard for boxes

```

9015 \tcbset{
9016   dfgStyle/.style={%
9017     enhanced~ jigsaw,
9018     colback      =white,
9019     colbacktitle =tableHeadingsBG,
9020     coltitle     =tableHeadingsFont,
9021     colframe     =tableOuterLines,
9022     %colupper    =tableHeadingsFont,
9023     fontupper    =\sfamily,
9024     fonttitle    =\bfseries,
9025     % after skip =1em,
9026     before      ={\pagebreak[0]},

```

```

9027     after          ={\nopagebreak},
9028     % fonttitle     =\bfseries,
9029     %boxrule        =0.5pt,
9030     sharp~ corners,
9031     toprule         =1pt,
9032     rightrule        =0mm,
9033     leftrule         =0mm,
9034     % drop shadow =rwthGrey,
9035     %drop large lifted shadow,
9036     width           =\linewidth,
9037     bottomrule       =1pt,
9038     % draft,
9039     left            =2mm,
9040     bottom          =0mm,
9041     top             =0mm,
9042     capture         =minipage,
9043   }}
9044 \NewTotalTColorBox{\dfgBox}{ O{} m }
9045 {%
9046   dfgStyle,
9047   nobeforeafter,
9048   left=0pt, right=0pt,
9049   top=0pt, bottom=0pt,
9050   #1
9051 }{#2}

```

A handy box to aggregate important points, `dfgSummaryBox`<sup>→P.38</sup>.

```

9052 \newtcolorbox{dfgSummaryBox}[1][ ]{
9053   dfgStyle,
9054   top=1mm,
9055   left=1mm,
9056   bottom=1mm,
9057   before={\par},
9058   after={\par},
9059   before~ upper={\begin{itemize}[leftmargin=.5cm]%
9060     \renewcommand{\labelitemi}{\dfgTargetPoint}%
9061     \hypersetup{linkcolor=tableHeadingsFont}%
9062     \colorlet{referencePI}{tableHeadingsFont}
9063     \colorlet{referenceWP}{tableHeadingsFont}
9064     \colorlet{referenceAim}{tableHeadingsFont}
9065   },
9066   after~ upper={\end{itemize}},
9067   % height=2.5cm,
9068   fontupper=\rmfamily,
9069   % ----- title below.
9070   width=\linewidth,
9071   rounded~ corners,
9072   toprule=1pt,
9073   rightrule=1pt,
9074   leftrule=1pt,
9075   bottomrule=1pt,
9076   % attach boxed title to bottom center,
9077   boxed~ title~ style={empty,boxrule=1pt},
9078   varwidth~ boxed~ title=0.5\linewidth,
9079   #1
9080 }

```

Box for anything like the aims section.

```

9081 \newtcolorbox{dfgBoxEnv}[1][ ]{
9082   dfgStyle,
9083   % top=-1.5mm,
9084   % left=1mm,
9085   before={\par},
9086   #1
9087 }

```

### 3.2.20 New Commands

Providing further commands that can and will be used throughout the document

```

9088 \providecommand{\crc}{Collaborative~ Research~ Centre\space}
9089 \providecommand{\dfgLocation}{<Location>\space}
9090 \providecommand{\dfgDate}{2026-06-11\space} % date when proposal will be turned in
9091 \providecommand{\dfgTitle}{\enquote{\get{meta}{crc}{name}}\space}
9092 \providecommand{\InfoTeX}{LuaLaTeX~ (via~ Overleaf).}
9093
9094 % getting the main logo of the CRC
9095 % the filename needs to be adjusted or make this more generic.
9096 \providecommand{\crcLogoPath}{\tl_use:N \l_@@_custom_crc_logo_path_tl}
9097 \providecommand{\affiliationLogoPath}
9098   {\tl_use:N \l_@@_custom_affiliation_logo_path_tl}
9099
9100 \NewDocumentCommand{\crcLogo}{O{1cm}}{%
9101   \includegraphics[#1]{\crcLogoPath}}
9102
9103 % same for the affiliation.
9104 \NewDocumentCommand{\affiliationLogo}{O{1cm}}{%
9105   \includegraphics[#1]{\affiliationLogoPath}}
9106
9107 \keys_define:nn { hrule }
9108 {
9109   color      .tl_set:N   = \l__hrule_color_tl,
9110   color      .initial:n  = color@tags@line,
9111   above      .dim_set:N  = \l__hrule_above_dim,
9112   above      .initial:n  = 0pt,
9113   below      .dim_set:N  = \l__hrule_below_dim,
9114   below      .initial:n  = 0pt,
9115   thickness  .dim_set:N  = \l__hrule_thickness_dim,
9116   thickness  .initial:n  = 0.4pt,
9117 }
9118
9119 \ProvideDocumentCommand{\Hrule}{O{}}
9120 {%
9121   \group_begin:
9122   \keys_set:nn { hrule } {#1}%
9123   \par
9124   \addvspace{ \l__hrule_above_dim }%
9125   {\color{ \l__hrule_color_tl }\hrule height \l__hrule_thickness_dim}%
9126   \addvspace{ \l__hrule_below_dim }%
9127   \group_end:
9128 }
9129
9130 % remodeling for the titlepage where we use some center-environments
9131 \AtBeginEnvironment{center}{
9132   % \vspace*{-1em}
9133 }
9134 \seq_new:N \l_@@_sig_pairs_seq
9135 \tl_new:N \l_@@_sig_id_tl
9136 \tl_new:N \l_@@_sig_desc_tl

```

Signature \printSignature[<db>]{ { <id>}{<desc> } {<id>}{<desc> } ... } – one signature block per {id}{desc} pair. <db> defaults to person. Inside <desc> you may use \theAffiliationOfRoleID, which is set to the person’s ref-institution-id before the description is typeset.

```

9137 \NewDocumentCommand{\printSignature}{ O{person} m }
9138 {
9139   \bool_if:NF \l_@@_class_fastcompile_project_bool
9140   {
9141     \par
9142     \seq_set_split:Nnn \l_@@_sig_pairs_seq { } {#2}
9143     \int_compare:nNnT { \seq_count:N \l_@@_sig_pairs_seq } > { 0 }
9144     { \@@_signature_consume_pairs:n {#1} }
9145   }
9146 }

```

```

9147
9148 \tl_new:N \l_@@_signature_role_id_tl
9149 \tl_new:N \l_@@_signature_role_tl
9150 \tl_new:N \l_@@_signature_role_period_tl
9151
9152 \NewDocumentCommand{\printSignaturesWithRole}{ O{person} m m }
9153 {
9154   \bool_if:NF \l_@@_class_fastcompile_project_bool
9155   {
9156     \DTLifdbexists{#1}
9157     {
9158       \DTLforeach*[
9159         \DTLisinlist{\theFundingPeriodNumeral}{\l_@@_signature_role_period_tl}
9160         \and
9161         \DTLisinlist{#2}{\l_@@_signature_role_tl}
9162       ]{#1}{
9163         \l_@@_signature_role_id_tl = id,
9164         \l_@@_signature_role_tl = role,
9165         \l_@@_signature_role_period_tl = period
9166       }{
9167         \@@_signature_block:nnn
9168         {#1}{\l_@@_signature_role_id_tl}{#3}
9169       }
9170     }
9171     { \msg_warning:nne { dfg } { database-not-found } {#1} }
9172   }
9173 }

```

**Pops {id}{desc} pairs off \l\_@@\_sig\_pairs\_seq until empty, typesetting one block per pair.**

```

9174 \cs_new_protected:Npn \@@_signature_consume_pairs:n #1
9175 {
9176   \seq_pop_left:NN \l_@@_sig_pairs_seq \l_@@_sig_id_tl
9177   \seq_pop_left:NNTF \l_@@_sig_pairs_seq \l_@@_sig_desc_tl
9178   {
9179     \@@_signature_block:nVV {#1} \l_@@_sig_id_tl \l_@@_sig_desc_tl
9180     \seq_if_empty:NF \l_@@_sig_pairs_seq
9181     { \@@_signature_consume_pairs:n {#1} }
9182   }
9183   {
9184     \msg_warning:nnn { crc-proposal } { signature-odd-args } {#1}
9185   }
9186 }
9187 \msg_new:nnn { crc-proposal } { signature-odd-args }
9188 { \printSignature\ in\ db\ '#1':\ odd\ number\ of\ tokens,\ %
9189   expected\ {id}{desc}\ pairs. }

```

**Typesets a single signature block for person #2 in db #1 with description #3. Sets \theAffiliationOfRoleID from the row's ref-institution-id before expanding #3.**

```

9190 \cs_new_protected:Npn \@@_signature_block:nnn #1 #2 #3
9191 {
9192   \DTLgetvalueforkey{\theAffiliationOfRoleID}{ref-affiliation-id}{#1}{id}{#2}
9193   \DTLgetvalueforkey{\@@tmpDegree}{academicdegree}{#1}{id}{#2}
9194   \DTLgetvalueforkey{\@@tmpFirst}{firstname}{#1}{id}{#2}
9195   \DTLgetvalueforkey{\@@tmpLast}{lastname}{#1}{id}{#2}
9196   \begin{tblr}{
9197     width=\linewidth,
9198     colspec={@{}b{3cm}b{1cm}X[b]@{}},
9199   }
9200   {\theCRCAffiliationLocation \ \ dfgDate} & & \faFileSignature
9201   \SetHline{3-3}{tableOuterLines,1pt}
9202   & & {
9203     \dfgShowTag{#2}{academicdegree}{\@@tmpDegree}
9204     \textcolor{referencePI}{
9205       \dfgShowTag{#2}{firstname}{\@@tmpFirst} [#
9206       \dfgShowTag{#2}{lastname}{\@@tmpLast} [#1
9207       #3 } \ \
9208   \end{tblr}

```

```

9209 \par\bigskip
9210 }
9211 \cs_generate_variant:Nn \@@_signature_block:nnn { nVV }

```

If there are multiple institutions mentioned we want to have a list of all of them with their affiliation. We are getting the possible list of institutions into one command Loop over your list and build the sequence.1

```

9212 \bool_new:N \l_@@_narrow_bool
9213 \bool_new:N \l_@@_institution_abbreviation_bool
9214 \bool_new:N \l_@@_noaddr_bool
9215 \bool_new:N \l_@@_nozip_bool
9216 \bool_new:N \l_@@_noloc_bool
9217 \bool_new:N \l_@@_has_country_bool
9218 \seq_new:N \l_@@_inst_ids_seq
9219 \tl_new:N \l_@@_sep_tl
9220 \tl_new:N \l_@@_inst_sep_tl
9221
9222 \cs_generate_variant:Nn \seq_set_from_clist:Nn { NV }
9223
9224 \NewDocumentCommand{\InstitutionsList}{O{person} m o}
9225 {
9226 \bool_if:NTF \l_@@_class_fastcompile_project_bool
9227 { \dfgFastReference{#2} }
9228 {
9229 \DTLifdbexists{#1}{
9230 % --- parse options once -----
9231 \clist_if_in:nnTF {#3} {abbreviation}
9232 { \bool_set_true:N \l_@@_institution_abbreviation_bool }
9233 { \bool_set_false:N \l_@@_institution_abbreviation_bool }
9234 \clist_if_in:nnTF {#3} {narrow}
9235 { \bool_set_true:N \l_@@_narrow_bool
9236 \tl_set:Nn \l_@@_sep_tl {,~}
9237 \tl_set:Nn \l_@@_inst_sep_tl {;~} }
9238 { \bool_set_false:N \l_@@_narrow_bool
9239 \tl_set:Nn \l_@@_sep_tl {\newline}
9240 \tl_set:Nn \l_@@_inst_sep_tl {\par\medskip} }
9241 \clist_if_in:nnTF {#3} {noaddress}
9242 { \bool_set_true:N \l_@@_noaddr_bool } { \bool_set_false:N \l_@@_noaddr_bool }
9243 \clist_if_in:nnTF {#3} {nozip}
9244 { \bool_set_true:N \l_@@_nozip_bool } { \bool_set_false:N \l_@@_nozip_bool }
9245 \clist_if_in:nnTF {#3} {nolocation}
9246 { \bool_set_true:N \l_@@_noloc_bool } { \bool_set_false:N \l_@@_noloc_bool }
9247 \datatool_if_has_key:nnTF {affiliation}{country}
9248 { \bool_set_true:N \l_@@_has_country_bool }
9249 { \bool_set_false:N \l_@@_has_country_bool }
9250
9251 % --- get list of institution ids for this person -----
9252 \DTLgetvalueforkey{\theInstitutionListValue}{ref-institution-id}{#1}{id}{#2}
9253 \seq_set_from_clist:NV \l_@@_inst_ids_seq \theInstitutionListValue
9254
9255 % --- iterate -----
9256 \bool_set_true:N \l_tmpa_bool
9257 \seq_map_inline:Nn \l_@@_inst_ids_seq
9258 {
9259 \bool_if:NTF \l_tmpa_bool
9260 { \bool_set_false:N \l_tmpa_bool }
9261 { \tl_use:N \l_@@_inst_sep_tl }
9262 \_@@_one_institution:n {#1}
9263 }
9264 }
9265 {
9266 Database~ \texttt{#1}~ missing.
9267 \msg_warning:nne { dfg } { database-not-found } { #1 }
9268 }
9269 }
9270 }
9271
9272 % Compatibility spelling for older proposal sources.

```

```

9273 \NewDocumentCommand{\dfgInstitutionList}{O{person} m o}
9274 {
9275   \IfNoValueTF{#3}
9276   { \InstitutionsList[#1]{#2} }
9277   { \InstitutionsList[#1]{#2}[#3] }
9278 }
9279
9280 \cs_new_protected:Npn \l_@@_one_institution:n #1
9281 {
9282   \DTLifdbexists{institution}{ \DTLgetvalueforkey{\theAffiliationIDValue}{ref-affiliation-id}{institution}
9283
9284   \bool_if:NTF \l_@@_institution_abbreviation_bool
9285   {
9286     \l_@@_institution_abbreviation_or_name:nN
9287     {#1} \l_tmpa_tl
9288     \cs_set:Npx \theInstitutionNameValue { \exp_not:V \l_tmpa_tl }
9289   }
9290   { \DTLgetvalueforkey{\theInstitutionNameValue}{name}{institution}{id}{#1} }
9291   \DTLifnulloreempty{\theInstitutionNameValue}{}
9292   {
9293     \dfgShowTag{#1}{\l_@@_institution_label_field_tl}
9294     {\theInstitutionNameValue}[institution]
9295     \tl_use:N \l_@@_sep_tl
9296   }
9297
9298   \DTLgetvalueforkey{\theAffiliationNameValue}{name}{affiliation}{id}{\theAffiliationIDValue}
9299   \dfgShowTag{\theAffiliationIDValue}{name}
9300   {\theAffiliationNameValue}[affiliation]
9301
9302   \bool_if:NF \l_@@_noaddr_bool
9303   {
9304     \tl_use:N \l_@@_sep_tl
9305     \DTLgetvalueforkey{\theAffiliationStreetValue}{addressStreet}{affiliation}{id}{\theAffiliationIDValue}
9306     \dfgShowTag{\theAffiliationIDValue}{addressStreet}
9307     {\theAffiliationStreetValue}[affiliation]
9308   }
9309
9310   \bool_if:NF \l_@@_nozip_bool
9311   {
9312     ,~
9313     \DTLgetvalueforkey{\theAffiliationZIPValue}{addressZIP}{affiliation}{id}{\theAffiliationIDValue}
9314     \dfgShowTag{\theAffiliationIDValue}{addressZIP}
9315     {\theAffiliationZIPValue}[affiliation]
9316     \bool_if:NF \l_@@_noloc_bool { ~ }
9317   }
9318
9319   \bool_if:NF \l_@@_noloc_bool
9320   {
9321     \bool_if:NT \l_@@_nozip_bool { ,~ }
9322     \DTLgetvalueforkey{\theAffiliationLocationValue}{location}{affiliation}{id}{\theAffiliationIDValue}
9323     \dfgShowTag{\theAffiliationIDValue}{location}
9324     {\theAffiliationLocationValue}[affiliation]
9325     \bool_if:NT \l_@@_has_country_bool
9326     {
9327       \DTLgetvalueforkey{\theAffiliationCountryValue}{country}{affiliation}{id}{\theAffiliationIDValue}
9328       \DTLifnulloreempty{\theAffiliationCountryValue}{}
9329       { ~(\dfgShowTag{\theAffiliationIDValue}{country}
9330         {\theAffiliationCountryValue}[affiliation]) }
9331     }
9332   }
9333 }
9334 {
9335   Database~ \texttt{institution}~ missing.
9336   \msg_warning:nne { dfg } { database-not-found }{ institution }
9337 }
9338 }

```

get all the PIs who have a certain role in the crc this can be e.g. 'spokesperson', 'steering-committee-member'. the optional argument is to specify the database, which is by default 'person'.

```

9339 \NewDocumentCommand{\getPIsWithRole}{O{person} m O{}}
9340 {%
9341   \bool_if:NTF \l_@@_class_fastcompile_bool
9342   { \dfgItemSkipped{dfgPIsWithRole:~#2} }
9343   {%
9344     \DTLifdbexists{#1}
9345     {
9346       \def\tmpLocalDB{#1}%
9347       \DTLsort*{lastname}{#1}%
9348       \begin{tcbrafter}[
9349         raster~ columns=3,
9350         raster~ equal~ height=rows,
9351         raster~ column~ skip=4pt,
9352         raster~ row~ skip=20pt,
9353         raster~ after~ skip=20pt,
9354         PIBox,
9355         #3
9356       ]
9357       \DTLforeach*[
9358         \DTLisinlist{\theFundingPeriodNumeral}{\period}
9359         \and
9360         \DTLisinlist{#2}{\role}
9361       ]{#1}{
9362         \id = id,
9363         \role = role,
9364         \period = period
9365       }{%
9366         \__getperson_one:n {\id}%
9367       }%
9368     \end{tcbrafter}
9369   }
9370   {
9371     Database~ \texttt{#1}~ missing.
9372     \msg_warning:nne { dfg } { database-not-found }{ #1 }
9373   }
9374 }
9375 }

```

In the text you can reference to a PI with the following command. The name is highlighted and referenced.

```

9376 \cs_new_protected:Npn \@@_pi_reference_seq_use:N #1
9377 {
9378   \bool_if:NTF \g_@@_tblr_inside_bool
9379   { \seq_use:Nn #1 {\adnbthinspace/\addthinspace} }
9380   { \seq_use:Nnn #1 {\and~} {,~} {,~and~} }
9381 }
9382
9383 \NewDocumentCommand{\getPI}{s m o} {
9384   % #1: starred version -> firstname
9385   % #2: id of PI / person
9386   % #3: optional text, but reference linked to PI
9387   \bool_if:NTF \l_@@_class_fastcompile_project_bool
9388   { \IfNoValueTF{#3}{\dfgFastReference{#2}{#3} }
9389   {
9390     \seq_clear:N \l_tmpa_seq
9391     \seq_set_from_clist:Nn \l_tmpa_seq {#2}%
9392     \seq_set_map:Nnn \l_tmpb_seq \l_tmpa_seq {
9393       \exp_not:n {
9394         \group_begin:
9395         \DTLgetvalueforkey{\thePersonName}{lastname}{person}{id}{##1}
9396         \DTLgetvalueforkey{\thePersonFirstName}{firstname}{person}{id}{##1}
9397         \datatool_if_null:NTF {\thePersonName}
9398         { \getEntry[person]{##1}{lastname} %<- just to get the error message
9399         \textcolor{error}{\texttt{<?##1?>}}
9400       }

```

```

9401     {
9402     \color{referencePI}\bfseries
9403     \IfNoValueTF{#3}%
9404
9405     {\hyperlink{pi:##1}{\IfBooleanT{#1}
9406      {\dfgShowTag{##1}{firstname}{\thePersonFirstName}[person]\space}
9407      \dfgShowTag{##1}{lastname}{\thePersonName}[person]}}
9408     {\hyperlink{pi:##1}{#3}}}
9409     \group_end:
9410   }}
9411   \@@_pi_reference_seq_use:N \l_tmpb_seq
9412 }
9413 }

```

Very similarly, we want to get a list of the projects.

```

9414 \NewDocumentCommand \getProjectColor { m }
9415 {
9416   \exp_args:Nx \color { project \tl_head:n { #1 } }
9417 }
9418 \tl_new:N \l_@@_project_reference_only_tl
9419
9420 \prg_new_protected_conditional:Npnn \@@_project_if_reference_only:n #1
9421 { T,F,TF }
9422 {
9423   \DTLgetvalueforkey{\l_@@_project_reference_only_tl}
9424   {reference-only}{project}{id}{#1}
9425   \str_if_eq:VnTF \l_@@_project_reference_only_tl { true }
9426   { \prg_return_true: }
9427   { \prg_return_false: }
9428 }
9429
9430 \cs_new_protected:Npn \@@_project_reference_only_indicator:
9431 {
9432   \bool_if:NTF \l_@@_former_project_compact_bool
9433   {
9434     \bool_gset_true:N \g_@@_former_project_seen_bool
9435     {\normalfont\normalcolor\textsuperscript{*}}
9436   }
9437   {
9438     \nobreakspace
9439     {\normalfont\normalcolor(former~project)}
9440   }
9441 }
9442
9443 % Project references read naturally in prose but need a compact delimiter in
9444 % narrow table cells. Keep the two container variants centralized so
9445 % \cs{getProject}, \cs{getProjectPI}, and focused-project fallbacks cannot
9446 % diverge.
9447 \cs_new_protected:Npn \@@_project_reference_seq_use:N #1
9448 {
9449   \bool_if:NTF \g_@@_tblr_inside_bool
9450   { \seq_use:Nn #1 {\adnbthinspace/\addthinspace} }
9451   { \seq_use:Nnnn #1 {\~and~} {\,~} {\,~and~} }
9452 }
9453
9454 \cs_new_protected:Npn \@@_project_reference_clist_use:N #1
9455 {
9456   \bool_if:NTF \g_@@_tblr_inside_bool
9457   { \clist_use:Nn #1 {\adnbthinspace/\addthinspace} }
9458   { \clist_use:Nnnn #1 {\~and~} {\,~} {\,~and~} }
9459 }
9460
9461 \cs_new_protected:Npn \@@_get_project_compact:nn #1#2 {
9462   % #1: id of project
9463   % #2: optional text, but reference linked to project
9464   \bool_if:NTF \l_@@_class_fastcompile_project_bool
9465   {

```

```

9466 \seq_set_from_clist:Nn \l_tmpa_seq {#1}
9467 \seq_set_map:NNn \l_tmpb_seq \l_tmpa_seq
9468 {
9469 \exp_not:n
9470 { \IfNoValueTF{#2}{\dfgFastReference{##1}}{#2} }
9471 }
9472 \@@_project_reference_seq_use:N \l_tmpb_seq
9473 }
9474 {
9475 \seq_clear:N \l_tmpa_seq
9476 \seq_set_from_clist:Nn \l_tmpa_seq {#1}%
9477 \seq_set_map:NNn \l_tmpb_seq \l_tmpa_seq {
9478 \exp_not:n {
9479 \group_begin:
9480 \DTLgetvalueforkey{\theProjectNumber}{number}{project}{id}{##1}
9481 \datatool_if_null:NTF {\theProjectNumber}
9482 { \getEntry[project]{##1}{number} %<- just to get the error message
9483 \textcolor{error}{\texttt{<?##1?>}}
9484 }{
9485 \bfseries%
9486 \getProjectColor{##1}%
9487 \@@_project_if_reference_only:nTF {##1}
9488 {
9489 \IfNoValueTF{#2}
9490 { \dfgShowTag{##1}{number}{\theProjectNumber}[project]}
9491 {#2}%
9492 \@@_project_reference_only_indicator:
9493 }
9494 {
9495 \IfNoValueTF{#2}%
9496 {
9497 \bool_if:NTF \l_@@_class_cv_bool
9498 { \dfgShowTag{##1}{number}{\theProjectNumber}[project] }
9499 { \hyperlink{project:##1}
9500 { \dfgShowTag{##1}{number}{\theProjectNumber}[project]} }
9501 }%
9502 {
9503 \bool_if:NTF \l_@@_class_cv_bool
9504 { #2 }
9505 { \hyperlink{project:##1}{#2} }
9506 }%
9507 }
9508 }
9509 \group_end:
9510 }}%
9511 \@@_project_reference_seq_use:N \l_tmpb_seq
9512 }
9513 }
9514
9515 \NewDocumentCommand{\getProject}{s m o}
9516 {
9517 \IfBooleanTF{#1}
9518 { \@@_get_project_compact:nn {#2} {#3} }
9519 {
9520 \bool_if:NTF \l_@@_custom_project_pi_once_per_section_bool
9521 { \@@_get_project_with_people:nnn {\BooleanFalse} {#2} {#3} }
9522 { \@@_get_project_compact:nn {#2} {#3} }
9523 }
9524 }
9525
9526 \int_new:N \g_@@_project_count_all_int
9527 \prop_new:N \g_@@_project_count_area_prop
9528 \tl_new:N \l_@@_project_count_id_tl
9529 \tl_new:N \l_@@_project_count_area_tl
9530 \tl_new:N \l_@@_project_count_status_tl
9531 \tl_new:N \l_@@_project_count_consider_for_lists_tl

```

```

9532 \tl_new:N \l_@@_project_count_reference_only_tl
9533
9534 \cs_new_protected:Npn \@@_project_count_increment:n #1
9535 {
9536   \int_gincr:N \g_@@_project_count_all_int
9537   \tl_set:Nx \l_tmpa_tl { \tl_upper_case:n {#1} }
9538   \prop_get:NVNTF \g_@@_project_count_area_prop
9539     \l_tmpa_tl \l_tmpb_tl
9540   {
9541     \prop_gput:NVx \g_@@_project_count_area_prop \l_tmpa_tl
9542     { \int_eval:n { \l_tmpb_tl + 1 } }
9543   }
9544   { \prop_gput:NVn \g_@@_project_count_area_prop \l_tmpa_tl { 1 } }
9545 }
9546
9547 \cs_new_protected:Npn \@@_project_count_build:
9548 {
9549   \int_gzero:N \g_@@_project_count_all_int
9550   \prop_gclear:N \g_@@_project_count_area_prop
9551   \DTLifdbexists{project}
9552   {
9553     \DTLifhaskey { project } { project-area }
9554     { }
9555     { \DTLaddcolumn { project } { project-area } }
9556     \DTLforeach*{project}
9557     {
9558       \l_@@_project_count_id_tl = id,
9559       \l_@@_project_count_area_tl = project-area,
9560       \l_@@_project_count_status_tl = project-status,
9561       \l_@@_project_count_consider_for_lists_tl = consider-for-lists,
9562       \l_@@_project_count_reference_only_tl = reference-only
9563     }
9564     {
9565       \bool_lazy_all:nT
9566       {
9567         { \str_if_eq_p:Vn \l_@@_project_count_consider_for_lists_tl { true } }
9568         { \str_if_eq_p:Vn \l_@@_project_count_reference_only_tl { false } }
9569         {
9570           \bool_lazy_or_p:nn
9571           { \str_if_eq_p:Vn \l_@@_project_count_status_tl { C } }
9572           { \str_if_eq_p:Vn \l_@@_project_count_status_tl { N } }
9573         }
9574       }
9575       {
9576         \DTLifnulloreempty{\l_@@_project_count_area_tl}
9577         {
9578           \tl_set:Nx \l_@@_project_count_area_tl
9579             { \tl_head:V \l_@@_project_count_id_tl }
9580         }
9581         { }
9582         \tl_trim_spaces:N \l_@@_project_count_area_tl
9583         \exp_args:NV \@@_project_count_increment:n
9584           \l_@@_project_count_area_tl
9585       }
9586     }
9587   }
9588   { \msg_warning:nnn { dfg } { database-not-found } { project } }
9589   \bool_gset_true:N \g_@@_project_count_ready_bool
9590 }
9591
9592 \NewDocumentCommand{\getProjectCount}{o}
9593 {
9594   \bool_if:NF \g_@@_project_count_ready_bool
9595   { \@@_project_count_build: }
9596   \dfgShowCalculatedTag{getProjectCount}{project}
9597   {

```

```

9598 \IfNoValueTF{#1}
9599 { \int_use:N \g_@@_project_count_all_int }
9600 {
9601   \tl_set:Nx \l_tmpa_tl { \tl_upper_case:n {#1} }
9602   \prop_get:NVNTF \g_@@_project_count_area_prop
9603     \l_tmpa_tl \l_tmpb_tl
9604     { \tl_use:N \l_tmpb_tl }
9605   {
9606     \msg_warning:nnn { dfg } { invalid-project-count-area } {#1}
9607     0
9608   }
9609 }
9610 }
9611 }
9612 \clist_new:N \l_@@_person_project_clist
9613 \clist_new:N \l_@@_project_id_clist
9614 \clist_new:N \l_@@_project_number_clist
9615
9616 \NewDocumentCommand{\getPIPProject}{s m}{
9617   \bool_if:NTF \l_@@_class_fastcompile_project_bool
9618   { \dfgFastReference{#2} }
9619   {
9620     %
9621     % • Argument #1 (optional *-star)
9622     %   - if present, the PI's *first name* is printed before the last name;
9623     %   - if the star is omitted only the last name is printed.
9624     %
9625     % • Argument #2 (mandatory)
9626     %   - a comma-separated list of *person-IDs* (the field "id" in your
9627     %     "person" datatool table).
9628     %     Example: '\getPIPProject*{per1,per2}'.
9629     %
9630     % What the macro does (high-level description)
9631     % -----
9632     % 1. Turns the comma list #2 into a clist: \l_@@_person_id_clist
9633     % 2. For each person-ID in that clist it builds an
9634     %    "author block" consisting of
9635     %    • a coloured, bold hyperlink to the PI's entry, and
9636     %    • the list of projects (formatted by \getProject) that are
9637     %      attached to that PI.
9638     % 3. All author blocks are collected in a second clist
9639     %    \l_@@_person_project_clist.
9640     % 4. Finally the blocks are printed in an *Oxford-comma* style
9641     %    using \clist_use:Nnnn.
9642     %
9643     % Internal containers (all declared elsewhere with \clist_new:N)
9644     % -----
9645     % \l_@@_person_id_clist          - list of the IDs passed in #2
9646     % \l_@@_person_project_clist    - the final list of "author blocks"
9647     % \l_@@_project_id_clist        - temporary clist that stores the raw
9648     %                               CSV string returned by the DB field
9649     %                               'ref-project-id' for the current PI.
9650     % \l_@@_project_number_clist    - coloured project numbers for the
9651     %                               current PI (built by the inner loop).
9652     % \l_@@_project_id_clist (re-used) - holds the CSV string before it is
9653     %                               split into \l_@@_project_id_clist.
9654     % \l_tmpa_clist                  - loop variable used by
9655     %                               \clist_map_variable:NNn (holds a *single*
9656     %                               project-ID during the inner loop).
9657     %
9658     % -----
9659     % Detailed walk-through of the code
9660     % -----
9661     % -----
9662     % 0. Initialise the containers
9663     % -----

```

```

9664 % #2 is a comma-separated list of person IDs → turn it into a clist
9665 \clist_set:Nn \l_@@_person_id_clist {#2}
9666 % containers that will be filled later
9667 \clist_clear:N \l_@@_person_project_clist
9668 \clist_clear:N \l_@@_project_id_clist % (used as a *scratch* clist)
9669
9670 %-----
9671 % 1. Outer loop - one iteration per PI
9672 %-----
9673 \clist_map_inline:Nn \l_@@_person_id_clist
9674 {
9675     %-----
9676     % a) Build the *author name* (hyperlinked, coloured,
9677     %      bold). We wrap everything in \exp_not:n so that the
9678     %      whole fragment is **not expanded now** - it will be
9679     %      expanded later when the final clist is printed.
9680     %-----
9681     \clist_put_right:Nn \l_@@_person_project_clist {
9682         \clist_clear:N \l_@@_project_number_clist
9683         \IfBooleanTF{#1}
9684         {\getPI*{#1}}
9685         {\getPI{#1}}
9686         %-----
9687         % b) Pull the raw CSV string that contains *all* project
9688         %      IDs belonging to this PI.
9689         %-----
9690         \DTLgetvalueforkey{\l_@@_project_id_clist}
9691         {ref-project-id}
9692         {person}{id}{#1}
9693
9694         %-----
9695         % c) Print the project list inside parentheses.
9696         %      The raw CSV string is *still* a token list; we turn it
9697         %      into a clist by using the special "variable" version of
9698         %      \clist_map_... which gives us a temporary clist variable
9699         %      (\l_tmpa_clist) that holds *one* project ID at a time.
9700         %-----
9701         \space(
9702         \clist_map_variable:Nn \l_@@_project_id_clist \l_tmpa_clist {
9703             % #1 (here called \l_tmpa_clist) is a single project ID.
9704             % \getProject expands that ID to the coloured project number.
9705             \clist_put_right:Ne \l_@@_project_number_clist {
9706                 \getProject{\l_tmpa_clist}
9707             }
9708         }
9709         % finally print the list of coloured project numbers, separated
9710         % by a thin space + comma
9711         \clist_use:Nn \l_@@_project_number_clist {\adnbthinspace/\addthinspace}
9712         )
9713     } % end of \clist_put_right:Nn (one author block)
9714 } % end of outer \clist_map_inline:Nn
9715
9716 %-----
9717 % 2. Typeset the collected author blocks.
9718 %      \clist_use:Nnnn joins the items with
9719 %      "~and~" for the *last* separator,
9720 %      ",~" for the *middle* separators,
9721 %      ",~and~" for the *penultimate* separator
9722 %-----
9723 \clist_use:Nnnn \l_@@_person_project_clist {~and~} {,~} {,~and~}%
9724 }
9725 }
9726
9727 \clist_new:N \l_@@_person_clist
9728
9729 % Track which projects have already had their PI names expanded by either

```

```

9730 % \cs{getProject} or \cs{getProjectPI} in the current section. Chapter
9731 % boundaries also clear the state so references before the first section of a
9732 % new chapter cannot inherit the preceding section's state.
9733 \prop_new:N \g_@@_project_pi_seen_prop
9734 \cs_new_protected:Npn \@@_project_pi_seen_clear:
9735 { \prop_gc_clear:N \g_@@_project_pi_seen_prop }
9736 \AddToHook{cmd/chapter/before}[dfg/project-pi-once-per-section]
9737 { \@@_project_pi_seen_clear: }
9738 \AddToHook{cmd/section/before}[dfg/project-pi-once-per-section]
9739 { \@@_project_pi_seen_clear: }
9740
9741 % PI details are never appended to reference-only projects, the project
9742 % currently being typeset, or references inside generated tables and lists.
9743 % Otherwise the customization setting selects either the former always-expanded
9744 % \cs{getProjectPI} behaviour or one shared expansion per project and section.
9745 \prg_new_protected_conditional:Npnn \@@_project_pi_if_show_people:n #1
9746 { T,F,TF }
9747 {
9748   \@@_project_pi_if_reference_only:nTF {#1}
9749   { \prg_return_false: }
9750   {
9751     \tl_if_eq:NnTF \l__tmp_current_project_tl {#1}
9752     { \prg_return_false: }
9753     {
9754       \bool_if:nTF
9755       {
9756         \g_@@_tblr_inside_bool
9757         || \l_@@_former_project_compact_bool
9758       }
9759       { \prg_return_false: }
9760       {
9761         \bool_if:NnTF \l_@@_custom_project_pi_once_per_section_bool
9762         {
9763           \prop_if_in:NnTF \g_@@_project_pi_seen_prop {#1}
9764           { \prg_return_false: }
9765           {
9766             \prop_gput:Nnn \g_@@_project_pi_seen_prop {#1} { }
9767             \prg_return_true:
9768           }
9769         }
9770         { \prg_return_true: }
9771       }
9772     }
9773   }
9774 }
9775
9776 \cs_new_protected:Npn \@@_get_project_with_people:nnn #1#2#3
9777 {
9778   \bool_if:NnTF \l_@@_class_fastcompile_project_bool
9779   { \@@_get_project_compact:nn {#2} {#3} }
9780   {
9781     %-----
9782     % 0. Initialise the containers we are going to use.
9783     %-----
9784     % #2 is a comma-separated list of *project* IDs → turn it into a clist.
9785     \clist_set:Nn \l_@@_project_id_clist {#2}
9786     % These three clists will be filled during the loops.
9787     \clist_clear:N \l_@@_person_project_clist % final result: "project → PI list"
9788     \clist_clear:N \l_@@_person_id_clist % temporary list of PIs for one project
9789     \clist_clear:N \l_@@_person_clist % temporary list of formatted PI names
9790
9791     %-----
9792     % 1. Outer loop - one iteration per *project* ID.
9793     %-----
9794     \clist_map_inline:Nn \l_@@_project_id_clist
9795     {

```

```

9796 % ##1 = the current project ID
9797 %-----
9798 % a) Put the *project number* (coloured) at the beginning
9799 % of the block that will be stored in
9800 % \l_@@_person_project_clist.
9801 %-----
9802 \clist_put_right:Nn \l_@@_person_project_clist
9803 {%
9804 % Reset the per-project temporaries before we start filling them.
9805 \clist_clear:N \l_@@_person_clist
9806 \clist_clear:N \l_@@_person_id_clist
9807
9808 % The coloured project number (e.g. "\color{blue}{12}")
9809 \@_get_project_compact:nn {##1} {#3}
9810
9811 % Reference-only projects and the current project remain compact. For
9812 % other projects, the customization setting determines whether PI names
9813 % are always shown or only on the first reference in this section.
9814 \@_project_pi_if_show_people:nT {##1}
9815 {
9816 %-----
9817 % b) Retrieve the *raw* CSV string that contains all
9818 % person IDs attached to this project.
9819 %-----
9820 \DTLgetvalueforkey
9821 {\l_@@_person_id_clist} % ← will receive something like "perl,per3"
9822 {ref-person-id} % field name in the "project" table
9823 {project}{id}{##1} % look it up for the current project
9824
9825 %-----
9826 % c) Build the *list of PI names* for this project.
9827 % We use the "variable" version of \clist_map which
9828 % gives us a temporary clist variable (\l_tmpa_clist)
9829 % that holds a *single* person ID at each iteration.
9830 %-----
9831 \space(
9832 \clist_map_variable:NNn \l_@@_person_id_clist \l_tmpa_clist
9833 {
9834 % \l_tmpa_clist now expands to one person ID.
9835 % We format it with \getPI (or \getPI* if the star was given).
9836 \clist_put_right:Ne \l_@@_person_clist
9837 {
9838 \IfBooleanTF{#1}
9839 {\getPI*{\l_tmpa_clist}}
9840 {\getPI{\l_tmpa_clist}}
9841 }
9842 }
9843 %-----
9844 % d) Print the formatted PI list, separating consecutive
9845 % names with a thin slash (the macro \adnbthinspace and
9846 % \addthinspace are assumed to be defined elsewhere).
9847 %-----
9848 \clist_use:Nn \l_@@_person_clist {\adnbthinspace/\addthinspace}
9849 ) % end of the parentheses that surround the PI list
9850 }
9851 } % end of \clist_put_right:Nn (one *project block*)
9852 } % end of outer \clist_map_inline:Nn
9853
9854 %-----
9855 % 2. Typeset the collected project blocks.
9856 % \clist_use:Nnnn joins the items with
9857 % "~and~" for the *last* separator,
9858 % ",~" for the *middle* separators,
9859 % ",~and~" for the *penultimate* separator.
9860 %-----
9861 \@_project_reference_clist_use:N \l_@@_person_project_clist

```

```

9862     }
9863 }
9864
9865 \NewDocumentCommand{\getProjectPI}{s m}
9866 {
9867     \exp_args:NnnV \@@_get_project_with_people:nnn
9868     {#1} {#2} \c_novalue_tl
9869 }

```

We also need a way to extract all PIs of a project.

```

9870 % \getPIofProject [<properties>]{<PROJECT>}{<delimiter>}
9871 \NewDocumentCommand{\getPIofProject}{O{lastname} m O{\,/\\,}}
9872 {
9873     % #1: list of keys to retrieve from the PIs info
9874     % #2: ID of PI
9875     % #3: delimiter
9876     \bool_if:NTF \l_@@_class_fastcompile_project_bool
9877     { \dfgFastReference{#2} }
9878     {
9879
9880         % #2 is a comma-separated list of *project* IDs → turn it into a clist.
9881         \clist_set:Nn \l_@@_project_id_clist {#2}
9882         % These three clists will be filled during the loops.
9883         \clist_clear:N \l_@@_person_project_clist % final result: "project → PI list"
9884         \clist_clear:N \l_@@_person_id_clist % temporary list of PIs for one project
9885         \clist_clear:N \l_@@_person_clist % temporary list of formatted PI names
9886
9887         \DTLgetvalueforkey
9888         {\l_@@_person_id_clist} % ← will receive something like "perl,per3"
9889         {ref-person-id} % field name in the "project" table
9890         {project}{id}{\clist_use:N \l_@@_project_id_clist} % look it
9891         % up for the current project
9892
9893         \clist_map_variable:NNn \l_@@_person_id_clist \l_tmpa_clist
9894         {
9895             \DTLgetvalueforkey{\tmpPIacademicdegree}{academicdegree}{person}{id}{\l_tmpa_clist}%
9896             \DTLgetvalueforkey{\tmpPIfirstname}{firstname}{person}{id}{\l_tmpa_clist}%
9897             \DTLgetvalueforkey{\tmpPIlastname}{lastname}{person}{id}{\l_tmpa_clist}%
9898             % \clist_clear:N \l_@@_person_clist
9899             % % \l_tmpa_clist now expands to one person ID.
9900             % We format it with \getPI (or \getPI* if the star was given).
9901             \clist_put_right:Ne \l_@@_person_clist
9902             {
9903                 \clist_if_in:nnT{#1}{academicdegree}
9904                 {\dfgShowTag{\l_tmpa_clist}{academicdegree}{\tmpPIacademicdegree}[person]\adnbthinspace}
9905                 \clist_if_in:nnT{#1}{firstname}
9906                 {\dfgShowTag{\l_tmpa_clist}{firstname}{\tmpPIfirstname}[person]\space}
9907                 \clist_if_in:nnT{#1}{lastname}
9908                 {\dfgShowTag{\l_tmpa_clist}{lastname}{\tmpPIlastname}[person]}
9909             }
9910             % end of \clist_put_right:Nn (one *project block*)
9911             \clist_use:Nn \l_@@_person_clist {#3}
9912         }
9913     } % end of \NewDocumentCommand

```

For referencing Aims we need to define a new macro.

```

9914 \clist_new:N \l_@@_aim_refs_clist
9915 \NewDocumentCommand{\getAim}{O{\l_@@_tmp_current_project_tl} m}
9916 {
9917     % #1: current project
9918     % #2: id of aim(s)
9919     \clist_clear:N \l_@@_aim_refs_clist
9920     \clist_map_inline:nn { #2 }
9921     { \clist_put_right:Nn \l_@@_aim_refs_clist { #1-aim-##1 } }
9922     \exp_args:NV \cref \l_@@_aim_refs_clist
9923 }

```

For work-package references, `\labelcref` keeps `cleveref`'s sorting and ranges while we provide a narrow, unbreakable

space after WP or WPs.

```

9924 \tl_new:N \l__tmp_current_project_tl
9925 \clist_new:N \l_@@_wp_refs_clist
9926 \NewDocumentCommand{\getWP}{O{\l__tmp_current_project_tl} m}
9927 {
9928   % #1: current project
9929   % #2: id of workpackage(s)
9930   \clist_clear:N \l_@@_wp_refs_clist
9931   \clist_map_inline:nn { #2 }
9932   { \clist_put_right:Nn \l_@@_wp_refs_clist { #1-wp-##1 } }
9933   \textcolor{referenceWP}
9934   {\textbf{WP}\int_compare:nNnF
9935     { \clist_count:N \l_@@_wp_refs_clist } = { 1 } { s }}}
9936   \addnbthinspace
9937   \exp_args:NV \labelcref \l_@@_wp_refs_clist
9938 }

```

The following command must be called within the environment workpackages.

```

9939 \tl_new:N \l_@@_fast_workpackage_name_tl
9940 \keys_define:nn { dfg / fast-workpackage }
9941 {
9942   name .tl_set:N = \l_@@_fast_workpackage_name_tl,
9943   unknown .code:n = { }
9944 }
9945
9946 % A nested workpackage starts directly with its authored body; its list label
9947 % already supplies the required separation. Remove only the immediately
9948 % following spaces and paragraph tokens, without adding interword space. Later
9949 % paragraph breaks in the authored body remain untouched.
9950 \cs_new_protected:Npn \@@_start_subworkpackage_body:
9951 {
9952   \peek_meaning_remove_ignore_spaces:NTF \par
9953   { \@@_start_subworkpackage_body: }
9954   { \ignorespaces }
9955 }
9956
9957 % The visible sub-workpackage label contains its parent number, but enumitem's
9958 % child counter restarts for every parent. Cleveref otherwise sees, for
9959 % example, both WP 1b and WP 2b as child counter 2 and can discard the latter
9960 % while sorting or compress a range across two parents. Store the parent
9961 % counter as Cleveref's numeric prefix so sorting and range detection respect
9962 % the work-package hierarchy.
9963 \NewDocumentCommand{\addWP}{m m }{
9964   % #1: workpackage-id
9965   % #2: key-set
9966   \bool_if:NTF \l_@@_class_fastcompile_project_bool
9967   {
9968     \tl_clear:N \l_@@_fast_workpackage_name_tl
9969     \keys_set:nn { dfg / fast-workpackage } {#2}
9970     \bool_if:NT \l_@@_class_fastcompile_project_show_images_bool
9971     { \addEntry[gantt]{gantt-\l__tmp_current_project_tl}{id=#1,#2} }
9972   }
9973   {
9974     \addEntry[gantt]{gantt-\l__tmp_current_project_tl}{id=#1,#2}
9975   }
9976   \str_if_eq:eeTF { \@enumctr } { workpackagesi }
9977   {
9978     \bool_if:NTF \l_@@_class_fastcompile_project_bool
9979     {
9980       \item \textbf{
9981         \tl_if_blank:VTF \l_@@_fast_workpackage_name_tl
9982         { WP~#1 }
9983         { \tl_use:N \l_@@_fast_workpackage_name_tl }
9984       }%
9985     }
9986   {

```

```

9987      \item \textbf{\getEntry[gantt-\l__tmp_current_project_tl]{#1}{name}}%
9988    }
9989  }
9990  { \item }
9991    \label{\l__tmp_current_project_tl-wp-#1}%
9992    \str_if_eq:eeF { \@enumctr } { workpackagesi }
9993      { \@@_start_subworkpackage_body: }
9994  }

```

Project collaborations are stored with each project as an undirected list. The default plot is a compact focus heatmap containing every active project; the focus and its direct collaborators are highlighted. An arc layout uses the same ordered nodes, draws only the focus project's edges, and gives every edge the same peak height. It prints identifiers inside uniformly sized nodes and places unlabelled project-area rules directly below them. Heatmap rows and colors are generated dynamically from `project-area` (with the project-ID prefix as fallback); a rotating palette supports any number of areas. Boxes use a shared dynamic column width determined by the widest project area, so the grid fills the complete text block after its area labels. Both layouts are deterministic, are generated entirely with TikZ, and omit ending, reference-only, and list-excluded projects. The built-in area palette cycles when more areas are present than palette entries; existing A, B, and Q projects retain their familiar colors.

```

9995 \dim_new:N \l_@@_collaboration_plot_x_dim
9996 \dim_new:N \l_@@_collaboration_plot_y_dim
9997 \dim_new:N \l_@@_collaboration_plot_x_step_dim
9998 \dim_new:N \l_@@_collaboration_plot_box_width_dim
9999 \dim_new:N \l_@@_collaboration_plot_box_gap_dim
10000 \dim_new:N \l_@@_collaboration_plot_area_label_width_dim
10001 \dim_new:N \l_@@_collaboration_plot_content_start_dim
10002 \dim_new:N \l_@@_collaboration_plot_width_dim
10003 \dim_new:N \l_@@_collaboration_plot_arc_height_dim
10004 \box_new:N \l_@@_collaboration_plot_area_label_box
10005 \seq_new:N \l_@@_collaboration_plot_nodes_seq
10006 \seq_new:N \l_@@_collaboration_plot_areas_seq
10007 \seq_new:N \l_@@_collaboration_plot_area_palette_seq
10008 \seq_new:N \l_@@_collaboration_plot_edges_seq
10009 \prop_new:N \l_@@_collaboration_plot_all_status_prop
10010 \prop_new:N \l_@@_collaboration_plot_status_prop
10011 \prop_new:N \l_@@_collaboration_plot_lists_prop
10012 \prop_new:N \l_@@_collaboration_plot_edges_prop
10013 \prop_new:N \l_@@_collaboration_plot_visible_prop
10014 \prop_new:N \l_@@_collaboration_plot_area_prop
10015 \prop_new:N \l_@@_collaboration_plot_area_nodes_prop
10016 \prop_new:N \l_@@_collaboration_plot_area_color_prop
10017 \prop_new:N \l_@@_collaboration_plot_area_color_override_prop
10018 \tl_new:N \l_@@_collaboration_plot_focus_tl
10019 \tl_new:N \l_@@_collaboration_plot_layout_tl
10020 \tl_new:N \l_@@_collaboration_plot_id_tl
10021 \tl_new:N \l_@@_collaboration_plot_status_tl
10022 \tl_new:N \l_@@_collaboration_plot_consider_tl
10023 \tl_new:N \l_@@_collaboration_plot_reference_only_tl
10024 \tl_new:N \l_@@_collaboration_plot_collaborations_tl
10025 \tl_new:N \l_@@_collaboration_plot_area_tl
10026 \tl_new:N \l_@@_collaboration_plot_source_tl
10027 \tl_new:N \l_@@_collaboration_plot_target_tl
10028 \tl_new:N \l_@@_collaboration_plot_edge_tl
10029 \tl_new:N \l_@@_collaboration_plot_edge_left_tl
10030 \tl_new:N \l_@@_collaboration_plot_edge_right_tl
10031 \tl_new:N \l_@@_collaboration_plot_label_tl
10032 \tl_new:N \l_@@_collaboration_plot_color_tl
10033 \tl_new:N \l_@@_collaboration_plot_caption_tl
10034 \int_new:N \l_@@_collaboration_plot_group_index_int
10035 \int_new:N \l_@@_collaboration_plot_row_index_int
10036 \int_new:N \l_@@_collaboration_plot_node_count_int
10037 \int_new:N \l_@@_collaboration_plot_area_index_int
10038 \bool_new:N \l_@@_collaboration_plot_arcs_bool
10039
10040 \cs_new_protected:Npn \@@_collaboration_plot_merge_area_colors:n #1
10041 {
10042   \prop_set_from_keyval:Nn \l_tmpa_prop {#1}

```

```

10043 \prop_map_inline:Nn \l_tmpa_prop
10044 { \prop_put:Nnn \l_@@_collaboration_plot_area_color_override_prop
10045 {##1} {##2} }
10046 }
10047
10048 \keys_define:nn { dfg / project-collaboration-plot }
10049 {
10050 layout .choice:,
10051 layout / heatmap .code:n =
10052 { \tl_set:Nn \l_@@_collaboration_plot_layout_tl { heatmap } },
10053 layout / arc .code:n =
10054 { \tl_set:Nn \l_@@_collaboration_plot_layout_tl { arc } },
10055 layout / arc-diagram .meta:n = { layout = arc },
10056 heatmap .meta:n = { layout = heatmap },
10057 arc .meta:n = { layout = arc },
10058 arc-diagram .meta:n = { layout = arc },
10059 arcs .bool_set:N = \l_@@_collaboration_plot_arcs_bool,
10060 arcs .default:n = true,
10061 no-arcs .meta:n = { arcs = false },
10062 area-colors .code:n =
10063 { \@@_collaboration_plot_merge_area_colors:n {#1} },
10064 area-colours .meta:n = { area-colors = {#1} },
10065 area-palette .code:n =
10066 {
10067 \clist_if_empty:nF {#1}
10068 { \seq_set_from_clist:Nn \l_@@_collaboration_plot_area_palette_seq {#1} }
10069 },
10070 caption .tl_set:N = \l_@@_collaboration_plot_caption_tl,
10071 unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1} }
10072 }
10073
10074 \cs_new_protected:Npn \@@_collaboration_plot_collect_nodes:
10075 {
10076 \seq_clear:N \l_@@_collaboration_plot_nodes_seq
10077 \prop_clear:N \l_@@_collaboration_plot_all_status_prop
10078 \prop_clear:N \l_@@_collaboration_plot_status_prop
10079 \prop_clear:N \l_@@_collaboration_plot_lists_prop
10080 \prop_clear:N \l_@@_collaboration_plot_edges_prop
10081 \prop_clear:N \l_@@_collaboration_plot_area_prop
10082 % DATATOOL requires an iterated key to exist as a database column. Older
10083 % proposals do not have project-area yet, so create the optional column and
10084 % let the ID-prefix fallback below handle its empty values.
10085 \DTLifhaskey { project } { project-area }
10086 { }
10087 { \DTLaddcolumn { project } { project-area } }
10088 \DTLifhaskey { project } { collaborations }
10089 { }
10090 { \DTLaddcolumn { project } { collaborations } }
10091 \DTLforeach*{project}
10092 {
10093 \l_@@_collaboration_plot_id_tl = id,
10094 \l_@@_collaboration_plot_status_tl = project-status,
10095 \l_@@_collaboration_plot_consider_tl = consider-for-lists,
10096 \l_@@_collaboration_plot_reference_only_tl = reference-only,
10097 \l_@@_collaboration_plot_area_tl = project-area,
10098 \l_@@_collaboration_plot_collaborations_tl = collaborations
10099 }
10100 {
10101 \prop_put:NVV \l_@@_collaboration_plot_all_status_prop
10102 \l_@@_collaboration_plot_id_tl
10103 \l_@@_collaboration_plot_status_tl
10104 \bool_lazy_all:nT
10105 {
10106 { \str_if_eq_p:Vn \l_@@_collaboration_plot_consider_tl { true } }
10107 { \str_if_eq_p:Vn \l_@@_collaboration_plot_reference_only_tl { false } }
10108 {

```

```

10109         \bool_lazy_or_p:nn
10110         { \str_if_eq_p:Vn \l_@@_collaboration_plot_status_tl { C } }
10111         { \str_if_eq_p:Vn \l_@@_collaboration_plot_status_tl { N } }
10112     }
10113 }
10114 {
10115     \DTLifnulloreempty{\l_@@_collaboration_plot_collaborations_tl}
10116     { \tl_clear:N \l_@@_collaboration_plot_collaborations_tl }
10117     { }
10118     \seq_put_right:NV \l_@@_collaboration_plot_nodes_seq
10119     \l_@@_collaboration_plot_id_tl
10120     \DTLifnulloreempty{\l_@@_collaboration_plot_area_tl}
10121     { \tl_set:Nx \l_@@_collaboration_plot_area_tl
10122       { \tl_head:V \l_@@_collaboration_plot_id_tl } }
10123     { }
10124     \tl_trim_spaces:N \l_@@_collaboration_plot_area_tl
10125     \prop_put:NVV \l_@@_collaboration_plot_area_prop
10126     \l_@@_collaboration_plot_id_tl \l_@@_collaboration_plot_area_tl
10127     \prop_put:NVV \l_@@_collaboration_plot_status_prop
10128     \l_@@_collaboration_plot_id_tl
10129     \l_@@_collaboration_plot_status_tl
10130     \prop_put:NVV \l_@@_collaboration_plot_lists_prop
10131     \l_@@_collaboration_plot_id_tl
10132     \l_@@_collaboration_plot_collaborations_tl
10133 }
10134 }
10135 \seq_sort:Nn \l_@@_collaboration_plot_nodes_seq
10136 {
10137     \prop_get:NnN \l_@@_collaboration_plot_area_prop {##1} \l_tmpa_tl
10138     \prop_get:NnN \l_@@_collaboration_plot_area_prop {##2} \l_tmpb_tl
10139     \str_compare:eNeTF
10140     { \tl_use:N \l_tmpa_tl / ##1 }
10141     <
10142     { \tl_use:N \l_tmpb_tl / ##2 }
10143     { \sort_return_same: }
10144     { \sort_return_swapped: }
10145 }
10146 }
10147
10148 \cs_new_protected:Npn \@@_collaboration_plot_collect_edge:nn #1#2
10149 {
10150     \tl_set:Nn \l_@@_collaboration_plot_source_tl {#1}
10151     \tl_set:Nn \l_@@_collaboration_plot_target_tl {#2}
10152     \tl_trim_spaces:N \l_@@_collaboration_plot_source_tl
10153     \tl_trim_spaces:N \l_@@_collaboration_plot_target_tl
10154     \tl_if_blank:VF \l_@@_collaboration_plot_target_tl
10155     {
10156         \prop_if_in:NVTF \l_@@_collaboration_plot_status_prop
10157         \l_@@_collaboration_plot_target_tl
10158         {
10159             \str_if_eq:VVF
10160             \l_@@_collaboration_plot_source_tl
10161             \l_@@_collaboration_plot_target_tl
10162             {
10163                 \str_compare:eNeTF
10164                 { \tl_use:N \l_@@_collaboration_plot_source_tl }
10165                 <
10166                 { \tl_use:N \l_@@_collaboration_plot_target_tl }
10167                 {
10168                     \tl_set:Nx \l_@@_collaboration_plot_edge_tl
10169                     {
10170                         \tl_use:N \l_@@_collaboration_plot_source_tl
10171                         /\tl_use:N \l_@@_collaboration_plot_target_tl
10172                     }
10173                 }
10174             }

```

```

10175         \tl_set:Nx \l_@@_collaboration_plot_edge_tl
10176         {
10177             \tl_use:N \l_@@_collaboration_plot_target_tl
10178             /\tl_use:N \l_@@_collaboration_plot_source_tl
10179         }
10180     }
10181     \prop_put:NVn \l_@@_collaboration_plot_edges_prop
10182     \l_@@_collaboration_plot_edge_tl { 1 }
10183 }
10184 }
10185 {
10186     \prop_if_in:NVF \l_@@_collaboration_plot_all_status_prop
10187     \l_@@_collaboration_plot_target_tl
10188     {
10189         \msg_warning:nnee { dfg } { collaboration-target-not-found }
10190         { \l_@@_collaboration_plot_source_tl }
10191         { \l_@@_collaboration_plot_target_tl }
10192     }
10193 }
10194 }
10195 }
10196
10197 \cs_new_protected:Npn \@@_collaboration_plot_collect_edges:
10198 {
10199     \seq_clear:N \l_@@_collaboration_plot_edges_seq
10200     \prop_map_inline:Nn \l_@@_collaboration_plot_lists_prop
10201     {
10202         \clist_map_inline:nn {##2}
10203         { \@@_collaboration_plot_collect_edge:nn {##1} {####1} }
10204     }
10205     \prop_map_inline:Nn \l_@@_collaboration_plot_edges_prop
10206     { \seq_put_right:Nn \l_@@_collaboration_plot_edges_seq {##1} }
10207     \seq_sort:Nn \l_@@_collaboration_plot_edges_seq
10208     {
10209         \str_compare:eNeTF {##1} < {##2}
10210         { \sort_return_same: }
10211         { \sort_return_swapped: }
10212     }
10213 }
10214
10215 \cs_new_protected:Npn \@@_collaboration_plot_unpack_edge:n #1
10216 {
10217     \seq_set_split:Nnn \l_tmpa_seq {/} {#1}
10218     \seq_pop_left:NN \l_tmpa_seq \l_@@_collaboration_plot_edge_left_tl
10219     \seq_pop_left:NN \l_tmpa_seq \l_@@_collaboration_plot_edge_right_tl
10220 }
10221
10222 \cs_new_protected:Npn \@@_collaboration_plot_prepare:
10223 {
10224     \prop_clear:N \l_@@_collaboration_plot_visible_prop
10225     \seq_clear:N \l_@@_collaboration_plot_areas_seq
10226     \prop_clear:N \l_@@_collaboration_plot_area_nodes_prop
10227     \prop_clear:N \l_@@_collaboration_plot_area_color_prop
10228     \int_zero:N \l_@@_collaboration_plot_area_index_int
10229     \prop_put:NVn \l_@@_collaboration_plot_visible_prop
10230     \l_@@_collaboration_plot_focus_tl { 1 }
10231     \seq_map_inline:Nn \l_@@_collaboration_plot_edges_seq
10232     {
10233         \@@_collaboration_plot_unpack_edge:n {##1}
10234         \bool_lazy_or:nnT
10235         {
10236             \str_if_eq_p:VV
10237             \l_@@_collaboration_plot_edge_left_tl
10238             \l_@@_collaboration_plot_focus_tl
10239         }
10240     }

```

```

10241     \str_if_eq_p:VV
10242     \l_@@_collaboration_plot_edge_right_tl
10243     \l_@@_collaboration_plot_focus_tl
10244   }
10245   {
10246     \prop_put:NVN \l_@@_collaboration_plot_visible_prop
10247     \l_@@_collaboration_plot_edge_left_tl { 1 }
10248     \prop_put:NVN \l_@@_collaboration_plot_visible_prop
10249     \l_@@_collaboration_plot_edge_right_tl { 1 }
10250   }
10251 }
10252 \seq_map_inline:Nn \l_@@_collaboration_plot_nodes_seq
10253 {
10254   \prop_get:NnN \l_@@_collaboration_plot_area_prop {##1}
10255   \l_@@_collaboration_plot_area_tl
10256   \prop_if_in:NVF \l_@@_collaboration_plot_area_nodes_prop
10257   \l_@@_collaboration_plot_area_tl
10258   {
10259     \seq_put_right:NV \l_@@_collaboration_plot_areas_seq
10260     \l_@@_collaboration_plot_area_tl
10261     \prop_get:NVNTF \l_@@_collaboration_plot_area_color_override_prop
10262     \l_@@_collaboration_plot_area_tl
10263     \l_@@_collaboration_plot_color_tl
10264     {
10265       \prop_put:NVV \l_@@_collaboration_plot_area_color_prop
10266       \l_@@_collaboration_plot_area_tl
10267       \l_@@_collaboration_plot_color_tl
10268     }
10269     {
10270       \int_incr:N \l_@@_collaboration_plot_area_index_int
10271       \int_set:Nn \l_tmpa_int
10272       {
10273         1 + \int_mod:nn
10274         { \l_@@_collaboration_plot_area_index_int - 1 }
10275         { \seq_count:N \l_@@_collaboration_plot_area_palette_seq }
10276       }
10277       \prop_put:NVx \l_@@_collaboration_plot_area_color_prop
10278       \l_@@_collaboration_plot_area_tl
10279       {
10280         \seq_item:Nn \l_@@_collaboration_plot_area_palette_seq
10281         { \l_tmpa_int }
10282       }
10283     }
10284     \prop_put:NVN \l_@@_collaboration_plot_area_nodes_prop
10285     \l_@@_collaboration_plot_area_tl { }
10286   }
10287   \prop_get:NVN \l_@@_collaboration_plot_area_nodes_prop
10288   \l_@@_collaboration_plot_area_tl \l_tmpa_tl
10289   \tl_if_blank:VTF \l_tmpa_tl
10290   { \tl_set:Nn \l_tmpa_tl {##1} }
10291   { \tl_put_right:Nn \l_tmpa_tl { , ##1 } }
10292   \prop_put:NVV \l_@@_collaboration_plot_area_nodes_prop
10293   \l_@@_collaboration_plot_area_tl \l_tmpa_tl
10294 }
10295 }
10296
10297 \cs_new_protected:Npn \@@_collaboration_plot_set_color:n #1
10298 {
10299   \tl_set:Nx \l_@@_collaboration_plot_label_tl {#1}
10300   \prop_get:NnNTF \l_@@_collaboration_plot_area_prop
10301   {#1} \l_@@_collaboration_plot_area_tl
10302   { \prop_get:NVN \l_@@_collaboration_plot_area_color_prop
10303     \l_@@_collaboration_plot_area_tl
10304     \l_@@_collaboration_plot_color_tl }
10305   { \tl_set:Nn \l_@@_collaboration_plot_color_tl { grey } }
10306 }

```

```

10307
10308 \cs_new_protected:Npn \@@_collaboration_plot_heatmap_cell:n #1
10309 {
10310   \@@_collaboration_plot_set_color:n {#1}
10311   \str_if_eq:VVTF
10312     \l_@@_collaboration_plot_focus_tl
10313     \l_@@_collaboration_plot_label_tl
10314   {
10315     \node[
10316       anchor=center,
10317       minimum~width=\dim_use:N \l_@@_collaboration_plot_box_width_dim,
10318       minimum~height=5.2mm,
10319       inner~sep=0pt,
10320       rounded~corners=1.4pt,
10321       draw=\tl_use:N \l_@@_collaboration_plot_color_tl!78!black,
10322       fill=\tl_use:N \l_@@_collaboration_plot_color_tl,
10323       text=white,
10324       font=\footnotesize\bfseries
10325     ] at
10326       (\dim_use:N \l_@@_collaboration_plot_x_dim,
10327        \dim_use:N \l_@@_collaboration_plot_y_dim)
10328     { \strut\tl_use:N \l_@@_collaboration_plot_label_tl };
10329   }
10330   {
10331     \prop_if_in:NVTf \l_@@_collaboration_plot_visible_prop
10332       \l_@@_collaboration_plot_label_tl
10333     {
10334       \node[
10335         anchor=center,
10336         minimum~width=\dim_use:N \l_@@_collaboration_plot_box_width_dim,
10337         minimum~height=5.2mm,
10338         inner~sep=0pt,
10339         rounded~corners=1.4pt,
10340         draw=\tl_use:N \l_@@_collaboration_plot_color_tl!48,
10341         fill=\tl_use:N \l_@@_collaboration_plot_color_tl!14,
10342         text=\tl_use:N \l_@@_collaboration_plot_color_tl,
10343         font=\footnotesize\bfseries
10344       ] at
10345         (\dim_use:N \l_@@_collaboration_plot_x_dim,
10346          \dim_use:N \l_@@_collaboration_plot_y_dim)
10347       { \strut\tl_use:N \l_@@_collaboration_plot_label_tl };
10348     }
10349     {
10350       \node[
10351         anchor=center,
10352         minimum~width=\dim_use:N \l_@@_collaboration_plot_box_width_dim,
10353         minimum~height=5.2mm,
10354         inner~sep=0pt,
10355         rounded~corners=1.4pt,
10356         draw=grey!22,
10357         fill=white,
10358         text=grey!70!black,
10359         font=\footnotesize
10360       ] at
10361         (\dim_use:N \l_@@_collaboration_plot_x_dim,
10362          \dim_use:N \l_@@_collaboration_plot_y_dim)
10363       { \strut\tl_use:N \l_@@_collaboration_plot_label_tl };
10364     }
10365   }
10366 }
10367
10368 \cs_new_protected:Npn \@@_collaboration_plot_heatmap_row:nnn #1#2#3
10369 {
10370   \clist_if_empty:nF {#1}
10371   {
10372     \int_incr:N \l_@@_collaboration_plot_row_index_int

```

```

10373 \dim_set:Nn \l_@@_collaboration_plot_y_dim
10374 {
10375     -7mm *
10376     \int_eval:n { \l_@@_collaboration_plot_row_index_int - 1 }
10377 }
10378 \node[
10379     anchor=east,
10380     inner~sep=0pt,
10381     font=\scriptsize\bfseries
10382 ] at
10383     (\dim_use:N \l_@@_collaboration_plot_area_label_width_dim,
10384     \dim_use:N \l_@@_collaboration_plot_y_dim)
10385     {Project~area~#3};
10386 \draw[draw=#2,line~width=.75pt,line~cap=round]
10387     (\dim_eval:n
10388     { \l_@@_collaboration_plot_area_label_width_dim + .8mm },
10389     \dim_use:N \l_@@_collaboration_plot_y_dim)
10390     --
10391     (\dim_eval:n
10392     { \l_@@_collaboration_plot_area_label_width_dim + 2.8mm },
10393     \dim_use:N \l_@@_collaboration_plot_y_dim);
10394 \int_zero:N \l_@@_collaboration_plot_group_index_int
10395 \clist_map_inline:nn {#1}
10396 {
10397     \int_incr:N \l_@@_collaboration_plot_group_index_int
10398     \dim_set:Nn \l_@@_collaboration_plot_x_dim
10399     {
10400         \l_@@_collaboration_plot_content_start_dim
10401         + \l_@@_collaboration_plot_box_width_dim / 2
10402         + \l_@@_collaboration_plot_x_step_dim *
10403         \int_eval:n { \l_@@_collaboration_plot_group_index_int - 1 }
10404     }
10405     \l_@@_collaboration_plot_heatmap_cell:n {##1}
10406 }
10407 }
10408 }
10409 \cs_generate_variant:Nn \l_@@_collaboration_plot_heatmap_row:nnn { V V n }
10410
10411 \cs_new_protected:Npn \l_@@_collaboration_plot_heatmap_picture:
10412 {
10413     % Use the widest project area as the shared column grid. Each column gets
10414     % a dynamic box width, and the final cell reaches the right edge of the
10415     % text block instead of leaving a large unused strip before the caption.
10416     \dim_zero:N \l_@@_collaboration_plot_area_label_width_dim
10417     \seq_map_inline:Nn \l_@@_collaboration_plot_areas_seq
10418     {
10419         \hbox_set:Nn \l_@@_collaboration_plot_area_label_box
10420         { \scriptsize\bfseries Project~area~##1 }
10421         \dim_compare:nNnT
10422         { \box_wd:N \l_@@_collaboration_plot_area_label_box }
10423         >
10424         { \l_@@_collaboration_plot_area_label_width_dim }
10425         {
10426             \dim_set:Nn \l_@@_collaboration_plot_area_label_width_dim
10427             { \box_wd:N \l_@@_collaboration_plot_area_label_box }
10428         }
10429     }
10430     \dim_set:Nn \l_@@_collaboration_plot_content_start_dim
10431     { \l_@@_collaboration_plot_area_label_width_dim + 4mm }
10432 \begin{tikzpicture}
10433     \int_zero:N \l_@@_collaboration_plot_node_count_int
10434     \seq_map_inline:Nn \l_@@_collaboration_plot_areas_seq
10435     {
10436         \prop_get:NnN \l_@@_collaboration_plot_area_nodes_prop {##1}
10437         \l_tmpa_tl
10438         \clist_set:NV \l_tmpa_clist \l_tmpa_tl

```

```

10439     \int_set:Nn \l_tmpa_int { \clist_count:N \l_tmpa_clist }
10440     \int_set:Nn \l_@@_collaboration_plot_node_count_int
10441     { \int_max:nn { \l_@@_collaboration_plot_node_count_int }
10442       { \l_tmpa_int } }
10443   }
10444   \dim_set:Nn \l_@@_collaboration_plot_box_gap_dim { 1mm }
10445   \int_compare:nNnTF
10446   { \l_@@_collaboration_plot_node_count_int } > { 0 }
10447   {
10448     \dim_set:Nn \l_@@_collaboration_plot_box_width_dim
10449     {
10450       ( \l_@@_collaboration_plot_width_dim
10451         - \l_@@_collaboration_plot_content_start_dim
10452         - \l_@@_collaboration_plot_box_gap_dim *
10453           \int_eval:n
10454           { \l_@@_collaboration_plot_node_count_int - 1 }
10455       ) / \l_@@_collaboration_plot_node_count_int
10456     }
10457     \dim_set:Nn \l_@@_collaboration_plot_x_step_dim
10458     {
10459       \l_@@_collaboration_plot_box_width_dim
10460       + \l_@@_collaboration_plot_box_gap_dim
10461     }
10462   }
10463   {
10464     \dim_zero:N \l_@@_collaboration_plot_box_width_dim
10465     \dim_zero:N \l_@@_collaboration_plot_x_step_dim
10466   }
10467   \int_zero:N \l_@@_collaboration_plot_row_index_int
10468   \seq_map_inline:Nn \l_@@_collaboration_plot_areas_seq
10469   {
10470     \prop_get:NnN \l_@@_collaboration_plot_area_nodes_prop {##1}
10471     \l_tmpa_tl
10472     \prop_get:NnN \l_@@_collaboration_plot_area_color_prop {##1}
10473     \l_@@_collaboration_plot_color_tl
10474     \@@_collaboration_plot_heatmap_row:VVn
10475     \l_tmpa_tl \l_@@_collaboration_plot_color_tl {##1}
10476   }
10477   \end{tikzpicture}
10478 }
10479
10480 \cs_new_protected:Npn \@@_collaboration_plot_arc_place_nodes:
10481 {
10482   \int_set:Nn \l_@@_collaboration_plot_node_count_int
10483   { \seq_count:N \l_@@_collaboration_plot_nodes_seq }
10484   \int_compare:nNnTF
10485   { \l_@@_collaboration_plot_node_count_int } > { 1 }
10486   {
10487     \dim_set:Nn \l_@@_collaboration_plot_x_step_dim
10488     {
10489       ( \l_@@_collaboration_plot_width_dim - 6mm ) /
10490       \int_eval:n { \l_@@_collaboration_plot_node_count_int - 1 }
10491     }
10492   }
10493   { \dim_zero:N \l_@@_collaboration_plot_x_step_dim }
10494   \int_zero:N \l_@@_collaboration_plot_group_index_int
10495   \seq_map_inline:Nn \l_@@_collaboration_plot_nodes_seq
10496   {
10497     \dim_set:Nn \l_@@_collaboration_plot_x_dim
10498     {
10499       3mm + \l_@@_collaboration_plot_x_step_dim
10500       * \l_@@_collaboration_plot_group_index_int
10501     }
10502     \coordinate (dfg-collaboration-arc-##1) at
10503     ( \dim_use:N \l_@@_collaboration_plot_x_dim, 0 );
10504     \int_incr:N \l_@@_collaboration_plot_group_index_int

```

```

10505     }
10506 }
10507
10508 \cs_new_protected:Npn \@@_collaboration_plot_draw_focus_arc:n #1
10509 {
10510     \@@_collaboration_plot_unpack_edge:n {#1}
10511     \tl_clear:N \l_@@_collaboration_plot_target_tl
10512     \str_if_eq:VVTTF
10513         \l_@@_collaboration_plot_edge_left_tl
10514         \l_@@_collaboration_plot_focus_tl
10515     {
10516         \tl_set_eq:NN \l_@@_collaboration_plot_target_tl
10517         \l_@@_collaboration_plot_edge_right_tl
10518     }
10519     {
10520         \str_if_eq:VVT
10521             \l_@@_collaboration_plot_edge_right_tl
10522             \l_@@_collaboration_plot_focus_tl
10523         {
10524             \tl_set_eq:NN \l_@@_collaboration_plot_target_tl
10525             \l_@@_collaboration_plot_edge_left_tl
10526         }
10527     }
10528     \tl_if_blank:VF \l_@@_collaboration_plot_target_tl
10529     {
10530         \@@_collaboration_plot_set_color:n
10531         { \tl_use:N \l_@@_collaboration_plot_target_tl }
10532         \draw[
10533             draw=\tl_use:N \l_@@_collaboration_plot_color_tl,
10534             line~width=.75pt,
10535             opacity=.78,
10536             line~cap=round
10537         ]
10538             (dfg-collaboration-arc-\l_@@_collaboration_plot_focus_tl)
10539             .. controls
10540             ($ (dfg-collaboration-arc-\l_@@_collaboration_plot_focus_tl)
10541               + (0,\dim_use:N \l_@@_collaboration_plot_arc_height_dim) $)
10542             and
10543             ($ (dfg-collaboration-arc-\l_@@_collaboration_plot_target_tl)
10544               + (0,\dim_use:N \l_@@_collaboration_plot_arc_height_dim) $)
10545             ..
10546             (dfg-collaboration-arc-\l_@@_collaboration_plot_target_tl);
10547     }
10548 }
10549
10550 \cs_new_protected:Npn \@@_collaboration_plot_arc_node:n #1
10551 {
10552     \@@_collaboration_plot_set_color:n {#1}
10553     \str_if_eq:VVTTF
10554         \l_@@_collaboration_plot_focus_tl
10555         \l_@@_collaboration_plot_label_tl
10556     {
10557         \node[
10558             anchor=center,
10559             minimum~width=6mm,
10560             minimum~height=5mm,
10561             inner~sep=0pt,
10562             rounded~corners=1pt,
10563             draw=\tl_use:N \l_@@_collaboration_plot_color_tl!78!black,
10564             fill=\tl_use:N \l_@@_collaboration_plot_color_tl,
10565             text=white,
10566             font=\scriptsize\bfseries
10567         ] at (dfg-collaboration-arc-#1) {#1};
10568     }
10569     {
10570         \prop_if_in:NVTTF \l_@@_collaboration_plot_visible_prop

```

```

10571 \l_@@_collaboration_plot_label_tl
10572 {
10573   \node[
10574     anchor=center,
10575     minimum~width=6mm,
10576     minimum~height=5mm,
10577     inner~sep=0pt,
10578     rounded~corners=.8pt,
10579     draw=\tl_use:N \l_@@_collaboration_plot_color_tl!48,
10580     fill=\tl_use:N \l_@@_collaboration_plot_color_tl!14,
10581     text=\tl_use:N \l_@@_collaboration_plot_color_tl,
10582     font=\scriptsize\bfseries
10583   ] at (dfg-collaboration-arc-#1) {#1};
10584 }
10585 {
10586   \node[
10587     anchor=center,
10588     minimum~width=6mm,
10589     minimum~height=5mm,
10590     inner~sep=0pt,
10591     rounded~corners=.8pt,
10592     draw=grey!22,
10593     fill=white,
10594     text=grey!70!black,
10595     font=\scriptsize
10596   ] at (dfg-collaboration-arc-#1) {#1};
10597 }
10598 }
10599 }
10600
10601 \cs_new_protected:Npn \@@_collaboration_plot_arc_group:nn #1#2
10602 {
10603   \clist_if_empty:nF {#1}
10604   {
10605     \tl_set:Nx \l_tmpa_tl { \clist_item:nn {#1} { 1 } }
10606     \tl_set:Nx \l_tmpb_tl { \clist_item:nn {#1} { -1 } }
10607     \draw[draw=#2,line~width=.75pt,line~cap=round]
10608       ($ (dfg-collaboration-arc-\l_tmpa_tl) + (-3mm,-3.5mm) $)
10609       --
10610       ($ (dfg-collaboration-arc-\l_tmpb_tl) + (3mm,-3.5mm) $);
10611   }
10612 }
10613 \cs_generate_variant:Nn \@@_collaboration_plot_arc_group:nn { V V }
10614
10615 \cs_new_protected:Npn \@@_collaboration_plot_arc_picture:
10616 {
10617   \begin{tikzpicture}
10618     \@@_collaboration_plot_arc_place_nodes:
10619     % Equal control-point heights give every symmetric cubic arc the same peak.
10620     \dim_set:Nn \l_@@_collaboration_plot_arc_height_dim { 12mm }
10621     \bool_if:NT \l_@@_collaboration_plot_arcs_bool
10622     {
10623       \seq_map_inline:Nn \l_@@_collaboration_plot_edges_seq
10624       { \@@_collaboration_plot_draw_focus_arc:n {##1} }
10625     }
10626     \seq_map_inline:Nn \l_@@_collaboration_plot_nodes_seq
10627     { \@@_collaboration_plot_arc_node:n {##1} }
10628     \seq_map_inline:Nn \l_@@_collaboration_plot_areas_seq
10629     {
10630       \prop_get:NnN \l_@@_collaboration_plot_area_nodes_prop {##1}
10631       \l_tmpa_tl
10632       \prop_get:NnN \l_@@_collaboration_plot_area_color_prop {##1}
10633       \l_@@_collaboration_plot_color_tl
10634       \@@_collaboration_plot_arc_group:VV
10635       \l_tmpa_tl \l_@@_collaboration_plot_color_tl
10636     }

```

```

10637 \end{tikzpicture}
10638 }
10639
10640 \cs_new_protected:Npn \l_@@_collaboration_plot_picture:
10641 {
10642   \str_case:VnF \l_@@_collaboration_plot_layout_tl
10643   {
10644     { heatmap } { \l_@@_collaboration_plot_heatmap_picture: }
10645     { arc }      { \l_@@_collaboration_plot_arc_picture: }
10646   }
10647   { \l_@@_collaboration_plot_arc_picture: }
10648 }
10649
10650 % Keep both caption variants at the captured body-text width without scaling
10651 % the TikZ plot, even when the surrounding \linewidth is temporarily narrower.
10652 \cs_new_protected:Npn \l_@@_collaboration_plot_full_width_picture:
10653 {
10654   \makebox[\dim_use:N \l_@@_collaboration_plot_width_dim][l]
10655   { \l_@@_collaboration_plot_picture: }
10656 }
10657
10658 \NewDocumentCommand{\ProjectCollaborationPlot}{ O{} m o }
10659 {%
10660   \group_begin:
10661   % Capture the normal body width before hvfloat builds either bottom caption.
10662   \dim_set:Nn \l_@@_collaboration_plot_width_dim { \textwidth }
10663   \exp_args:NNV \prop_set_from_keyval:Nn
10664     \l_@@_collaboration_plot_area_color_override_prop
10665     \l_@@_custom_collaboration_area_colors_tl
10666   \exp_args:NNV \seq_set_from_clist:Nn
10667     \l_@@_collaboration_plot_area_palette_seq
10668     \l_@@_custom_collaboration_area_palette_tl
10669   \tl_clear:N \l_@@_collaboration_plot_caption_tl
10670   \keys_set:nn { dfg / project-collaboration-plot }
10671   {
10672     layout = arc,
10673     arcs = false,
10674     #1
10675   }
10676   \IfNoValueF{#3}
10677   { \tl_set:Nn \l_@@_collaboration_plot_caption_tl {#3} }
10678   \tl_set:Nn \l_@@_collaboration_plot_focus_tl {#2}
10679   \tl_trim_spaces:N \l_@@_collaboration_plot_focus_tl
10680   \DTLifdbexists{project}
10681   {
10682     \l_@@_collaboration_plot_collect_nodes:
10683     \prop_if_in:NVTF \l_@@_collaboration_plot_status_prop
10684       \l_@@_collaboration_plot_focus_tl
10685     {
10686       \l_@@_collaboration_plot_collect_edges:
10687       \l_@@_collaboration_plot_prepare:
10688       \tl_if_blank:VTF \l_@@_collaboration_plot_caption_tl
10689       {%
10690         \hvFloat[
10691           floatPos=h,
10692           capPos=bottom
10693         ]
10694         {figure}
10695         { \l_@@_collaboration_plot_full_width_picture: }
10696         { Collaborations~of~\getProject{#2}. }
10697         { fig:project-collaboration-#2-
10698           \tl_use:N \l_@@_collaboration_plot_layout_tl } %
10699       }
10700       {%
10701         \hvFloat[
10702           floatPos=h,

```

```

10703         capPos=bottom
10704     ]
10705     {figure}
10706     {\@@_collaboration_plot_full_width_picture:}
10707     {Collaborations~of~\getProject{#2}.~
10708       \tl_use:N \l_@@_collaboration_plot_caption_tl}
10709     {fig:project-collaboration-#2-
10710       \tl_use:N \l_@@_collaboration_plot_layout_tl}%
10711   }
10712 }
10713 {
10714   \msg_warning:nne { dfg } { collaboration-focus-not-found }
10715   { \l_@@_collaboration_plot_focus_tl }
10716   \textcolor{error}
10717   {Project~collaboration~plot:~unknown~project~'#2'.}
10718 }
10719 }
10720 { \msg_warning:nnn { dfg } { database-not-found } { project } }
10721 \group_end:
10722 }
10723
10724 % Since the workpackage is closely related to the Gantt chart we continue with
10725 % that. \cs{GanttPlot} is the plot dispatcher's target. The old
10726 % \cs{printGantt} spelling remains as a compatibility wrapper.
10727 \tl_new:N \l_@@_gantt_plot_caption_tl
10728 \keys_define:nn { dfg / gantt-plot }
10729 {
10730   caption .tl_set:N = \l_@@_gantt_plot_caption_tl,
10731   unknown .code:n = { \msg_warning:nnn { dfg } { unknown-key } {#1} }
10732 }
10733
10734 \NewDocumentCommand{\GanttPlot}{O{} m o }
10735 {
10736   \group_begin:
10737   \tl_clear:N \l_@@_gantt_plot_caption_tl
10738   \keys_set:nn { dfg / gantt-plot } {#1}
10739   \IfNoValueF{#3}
10740   { \tl_set:Nn \l_@@_gantt_plot_caption_tl {#3} }
10741   \DTLifdbexists{gantt-#2}
10742   {
10743     \tl_if_blank:VTF \l_@@_gantt_plot_caption_tl
10744     {%
10745       \hvFloat[
10746         floatPos=h,
10747         capPos=bottom
10748       ]
10749       {figure}
10750       {\dfgGanttEnvironment{#2}}
10751       {Gantt~chart~of~\getProject{#2}.~
10752         {fig:gantt#2}%
10753       }
10754       {%
10755         \hvFloat[
10756           floatPos=h,
10757           capPos=bottom
10758         ]
10759         {figure}
10760         {\dfgGanttEnvironment{#2}}
10761         {Gantt~chart~of~\getProject{#2}.~
10762           \tl_use:N \l_@@_gantt_plot_caption_tl}
10763         {fig:gantt-#2}%
10764       }
10765     }
10766   }
10767   Database~ \texttt{gantt-#2}~ missing.
10768   \msg_warning:nne { dfg } { database-not-found }{ gantt-#2 }

```

```

10769     }
10770     \group_end:
10771 }
10772
10773 % Lowercase plot names accept either an explicit project ID or the active
10774 % project. An explicit ID may carry a trailing caption; the current-project
10775 % form uses the caption key instead.
10776 \cs_new_protected:Npn \@@_typed_plot:nnnn #1#2#3#4
10777 {
10778     \IfNoValueTF{#4}
10779     { #1[#2]{#3} }
10780     { #1[#2]{#3}[#4] }
10781 }
10782 \cs_new_protected:Npn \@@_typed_plot_current:nnnn #1#2#3#4
10783 { \@@_typed_plot:nnnn {#2}{#3}{#1}{#4} }
10784
10785 \NewDocumentCommand{\gantttPlot}{ O{} g o }
10786 {
10787     \IfNoValueTF{#2}
10788     {
10789         \tl_if_blank:VTF \l__tmp_current_project_tl
10790         { \msg_warning:nnn { dfg } { plot-current-project-missing } { gantt } }
10791         { \exp_args:NV \@@_typed_plot_current:nnnn
10792             \l__tmp_current_project_tl {\gantttPlot}{#1}{#3} }
10793     }
10794     { \@@_typed_plot:nnnn {\gantttPlot}{#1}{#2}{#3} }
10795 }
10796 \NewDocumentCommand{\collaborationsPlot}{ O{} g o }
10797 {
10798     \IfNoValueTF{#2}
10799     {
10800         \tl_if_blank:VTF \l__tmp_current_project_tl
10801         { \msg_warning:nnn { dfg } { plot-current-project-missing }
10802             { collaborations } }
10803         { \exp_args:NV \@@_typed_plot_current:nnnn
10804             \l__tmp_current_project_tl {\ProjectCollaborationPlot}{#1}{#3} }
10805     }
10806     { \@@_typed_plot:nnnn {\ProjectCollaborationPlot}{#1}{#2}{#3} }
10807 }
10808 % Preserve the earlier singular current-project shorthand.
10809 \cs_new_eq:NN \collaborationPlot \collaborationsPlot
10810
10811 \NewDocumentCommand{\printGantt}{ m o }
10812 {
10813     \IfNoValueTF{#2}
10814     { \printPlot{{\ganttt}{#1}} }
10815     { \printPlot{{\ganttt}{#1}[#2]} }
10816 }

```

### 3.2.21 Gantt chart rendering

The Gantt chart for each project is assembled in two steps:

- 1) `\dfgGanttContent{<project>}`: iterates over the `ganttt-meta{project}` database and generates one `\gantttbar` call per row. Rows where `periodStart = periodEnd` are silently skipped. Row breaks precede each visible bar after the first, so skipped rows and the last bar add no blank bottom row. The bar style is dispatched via `\str_case:VnF`: `crosshatch` uses a `pgfgantt` pattern fill; `striped` overlays two colours at 45° with `\postaction`; `alternative` and `important` use flat fills; the default is a solid `color@ganttt@default` bar.
- 2) `\dfgGanttEnvironment{<project>}`: wraps the content in a `pgfgantt gantttchart` environment spanning 16 columns (quarters Q3 of year 0 through Q2 of year 5, matching the standard DFG 5-year period). The chart is scaled with `\resizebox` to fill the full text width. A 0.9-row bar with no top shift leaves a narrow gap between the final bar and the bottom rule.

`\printPlot{{\ganttt}{<project>}}` is the preferred user-facing command; `\printGantt` remains a compatibility alias. The dispatcher calls `\gantttPlot`, which wraps the chart in an `hvfloat` figure with an appropriate caption. Both `\hvFloat` calls put the caption below the chart; the second one appends optional extra text. Both variants use the strict `h` position so the chart remains directly after the work packages; the following `\FloatBarrier` closes that

project-plan block.

**Quarter numbering:** columns 1–2 correspond to Q3–Q4 of the calendar year preceding the funding start; columns 3–16 are Q1–Q4 of years 1–4; the final 16th column is Q1–Q2 of year 5. Bar start/end values in the Gantt database should use these numbers directly.

```
10817 \bool_new:N \l_@@_gantt_first_bar_bool
10818 \NewDocumentCommand{\dfgGanttContent}{m}{%
10819   \bool_set_true:N \l_@@_gantt_first_bar_bool
10820   \DTLforeach*{gantt-#1}{%
10821     \ganttWP=id,%
10822     \ganttName=name,%
10823     \ganttDescription=description,%
10824     \ganttPeriodStart=periodStart,%
10825     \ganttPeriodEnd=periodEnd,%
10826     \ganttPatternbar=style%
10827   }{\hypersetup{linkcolor=black}%
10828     % If we want to omit a bar in the plot,
10829     % you need to set periodStart and periodEnd
10830     % the same value.
10831     \ifdefstrequal{\ganttPeriodStart}{\ganttPeriodEnd}{}{%
10832       % if the values are different then there will be a bar.
10833       \bool_if:NTF \l_@@_gantt_first_bar_bool
10834         { \bool_set_false:N \l_@@_gantt_first_bar_bool }
10835         { \ganttnewline }
10836       \def\ganttBarPlot{
10837         \sffamily
10838         \dfgShowTag{\ganttWP}{id}{\getWP{\ganttWP}}[gantt-#1]
10839         \ifdefempty{\ganttDescription}{}
10840           {:\dfgShowTag{\ganttWP}{description}{\ganttDescription}[gantt-#1]]}
10841
10842         \str_case:VnF {\ganttPatternbar}
10843         {%
10844           {crosshatch}{\ganttbar[bar/.append~ style = {%
10845             pattern      = {crosshatch},
10846             pattern~ color = {color@gantt@crosshatch},
10847             draw          = {color@gantt@frame}
10848           }]{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10849
10850           {striped}{\ganttbar[bar/.append~ style = {%
10851             fill          = {color@gantt@stripe-one},
10852             % the pattern needs to be applied after the filled color
10853             postaction    = {pattern={Lines[%
10854               angle=45,
10855               distance={12pt},
10856               line~ width=6pt}},
10857             pattern~ color= color@gantt@stripe-two},
10858             postaction    = {draw, semithick},
10859             draw          = {color@gantt@frame}
10860           }]{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10861
10862           {alternative}{\ganttbar[bar/.append~ style = {%
10863             fill          = {color@gantt@alternative},
10864             draw          = {color@gantt@frame}
10865           }]{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10866
10867           {important}{\ganttbar[bar/.append~ style = {%
10868             fill          = {color@gantt@important},
10869             draw          = {color@gantt@frame}
10870           }]{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10871         }
10872         { % default
10873           {}{\ganttbar[bar/.append~ style = {%
10874             fill          = {color@gantt@default},
10875             draw          = {color@gantt@frame}
10876           }]{\ganttBarPlot}{\ganttPeriodStart}{\ganttPeriodEnd}}}%
10877         }
10878       }%
```

```

10879 \hypersetup{linkcolor=blue}}
10880 }

```

The following macro makes it easier to debug the position of the bars.

```

10881 \newcommand{\dfgGanttShowQs}[2]{%
10882   \bool_if:NTF \l_@@_class_showtags_bool
10883   {\leavevmode\vbox to\z@{%
10884     \vss\color{color@tags@line}
10885     \rlap{\vrule\raise .9em%
10886       \hbox{%
10887         \fontsize{4}{0}\selectfont%
10888         \ttfamily\,#1:#2}}}}
10889     \textcolor{color@tags@font}{#1}}
10890   {#1}
10891 }
10892 \NewDocumentCommand{\dfgGanttEnvironment}{m}{
10893   % #1 : Project ID
10894   \resizebox{\linewidth}{!}{
10895     \begin{ganttchart}[
10896       title~ height=.8,
10897       title/.append~ style={draw=none, fill=tableHeadingsBG},
10898       dfgTitleTopRule/.style={
10899         title/.append~ style={
10900           path~ picture={
10901             \draw[draw=tableOuterLines,line~ width=2pt]
10902               (path~ picture~ bounding~ box.north~ west) --
10903               (path~ picture~ bounding~ box.north~ east);
10904             }},
10905       dfgTitleBottomRule/.style={
10906         title/.append~ style={
10907           path~ picture={
10908             \draw[draw=tableOuterLines,line~ width=2pt]
10909               (path~ picture~ bounding~ box.south~ west) --
10910               (path~ picture~ bounding~ box.south~ east);
10911             }},
10912       dfgTitleBottomRightRule/.style={
10913         title/.append~ style={
10914           path~ picture={
10915             \draw[draw=tableOuterLines,line~ width=2pt]
10916               (path~ picture~ bounding~ box.south~ west) --
10917               (path~ picture~ bounding~ box.south~ east);
10918             \draw[draw=tableOuterLines,line~ width=2pt]
10919               (path~ picture~ bounding~ box.north~ east) --
10920               (path~ picture~ bounding~ box.south~ east);
10921             }},
10922       title~ label~ font={\bfseries\footnotesize\color{tableHeadingsFont}},
10923       canvas/.style={
10924         shape=rectangle,
10925         draw=none,
10926         fill=white,
10927         path~ picture={
10928           \draw[draw=tableOuterLines,line~ width=2pt]
10929             (path~ picture~ bounding~ box.north~ west) --
10930             (path~ picture~ bounding~ box.north~ east);
10931           \draw[draw=tableOuterLines,line~ width=2pt]
10932             (path~ picture~ bounding~ box.south~ west) --
10933             (path~ picture~ bounding~ box.south~ east);
10934           }},
10935       x~ unit = \textwidth/16,
10936       y~ unit~ title=0.5cm,
10937       y~ unit~ chart=.5cm,
10938       vgrid={*1{tableOuterLines,dashed}},
10939       %hgrid,
10940       % group label font=\bfseries\footnotesize,
10941       % milestone label font=\scriptsize,
10942       bar~ inline~ label~ node/.style={anchor=west},
10943       bar~ inline~ label~ anchor=west,

```

```

10944     bar~ label~ font={\scriptsize\color{tableHeadingsFont}},
10945     % title label font=\bfseries\scriptsize\color{white},
10946     % bar/.style={rounded~ corners=1mm},
10947     bar~ top~ shift=0,
10948     bar~ height=.9,
10949     inline
10950     % NOTE: {1}{16} = 16 quarters = 5 years (2 + 4 + 4 + 4 + 2 quarters).
10951     % This is hardcoded. To adapt to a different funding period length,
10952     % update the ganttchart range, the \ganttttitle blocks below,
10953     % and the fundingYears-related fields in the meta keyset.
10954     ]{1}{16}
10955     \ganttttitle[dfgTitleTopRule]{\dfgFundingYear{1}}{2}
10956     \ganttttitle[dfgTitleTopRule]{\dfgFundingYear{2}}{4}
10957     \ganttttitle[dfgTitleTopRule]{\dfgFundingYear{3}}{4}
10958     \ganttttitle[dfgTitleTopRule]{\dfgFundingYear{4}}{4}
10959     \ganttttitle[dfgTitleTopRule]{\dfgFundingYear{5}}{2}\
10960     %=====
10961     % \ganttttitle{\crcTMPganttShowQs{Q1}{1}}{1}
10962     % \ganttttitle{\crcTMPganttShowQs{Q2}{2}}{1}
10963     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q3}{1}}{1}
10964     \ganttttitle[dfgTitleBottomRightRule]{\dfgGanttShowQs{Q4}{2}}{1}
10965     %=====
10966     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q1}{3}}{1}
10967     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q2}{4}}{1}
10968     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q3}{5}}{1}
10969     \ganttttitle[dfgTitleBottomRightRule]{\dfgGanttShowQs{Q4}{6}}{1}
10970     % =====
10971     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q1}{7}}{1}
10972     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q2}{8}}{1}
10973     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q3}{9}}{1}
10974     \ganttttitle[dfgTitleBottomRightRule]{\dfgGanttShowQs{Q4}{10}}{1}
10975     % =====
10976     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q1}{11}}{1}
10977     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q2}{12}}{1}
10978     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q3}{13}}{1}
10979     \ganttttitle[dfgTitleBottomRightRule]{\dfgGanttShowQs{Q4}{14}}{1}
10980     % =====
10981     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q1}{15}}{1}
10982     \ganttttitle[dfgTitleBottomRule]{\dfgGanttShowQs{Q2}{16}}{1}
10983     %\ganttttitle{\dfgGanttShowQs{Q3}{19}}{1}
10984     %\ganttttitle{\dfgGanttShowQs{Q4}{20}}{1}
10985     \
10986     \dfgGanttContent{#1}
10987     \end{gantttchart}%
10988 }
10989 }

```

### 3.2.22 TOC entry and work-package helpers

`\dfgTOCprojectPart{<letter>}{<title>}` adds a bold chapter-level entry to the table of contents coloured in the project colour (projectA for letter A, etc.). Call it immediately before the project's `\chapter` command.

```

10990 \NewDocumentCommand{\dfgTOCprojectPart}{m O{Project~area} m}{
10991   % #1: project      (kann leer sein)
10992   % #2: pre-freetext (default: "Project area")
10993   % #3: free text    (kann leer sein)
10994   \bool_if:NF \l_@@_class_fastcompile_project_bool
10995   {
10996     \addtocentrydefault{chapter}
10997     { \tl_if_blank:NF {#1} { \texorpdfstring{\getProjectColor{#1}{#1}}{} } }
10998     {
10999       #2\c_space_tl
11000       \tl_if_blank:NF {#1} { \texorpdfstring{\getProjectColor{#1}{#1}}{#1} } ~~~~ #3 }
11001     }
11002   }
11003 }

```

### 3.3 CV / Curriculum Vitae

The CV section produces structured curricula vitae in the DFG-prescribed format for each project leader. The same document class is used for both the integrated CV pages inside the main proposal and the standalone `crc-cv.tex` document (identified by `cv=true`).

#### Structure per PI:

- 1) `\dfgCVheader{⟨id⟩}` – chapter heading with name, academic title and (if present) a QR code linking to the PI’s homepage.
- 2) `\dfgCVmandatory{⟨id⟩}` – qualification and career table built from all `cv` entries with `cv-type=mandatory`.
- 3) `\dfgCVoptional{⟨id⟩}` – the five supplementary sections (supplement, activities, supervision, distinction, other), each rendered only when at least one matching entry exists.
- 4) `\dfgCVpublications{⟨id⟩}` – the ten most important publications printed via biblatex; skippable with `skip10pub=true`.
- 5) `\dfgCVdataprivacy` – the mandatory GDPR data-privacy statement.

`\dfgCV{⟨id⟩}` is a convenience wrapper that calls all five steps in order and manages the bold-author activations around the publications.

Creating a boolean for detecting optional content (used to conditionally include the privacy statement when optional sections exist).

```
11004 \bool_new:N \l_@@_cvoptional_bool
```

#### 3.3.1 CV commands

`\dfgCVheader` Renders the standardised CV heading for one PI. The chapter title uses a two-line format: the word “Curriculum Vitae” in the alternative font colour, followed by the PI’s full name with academic title in bold. If the PI has a URL in the person database, a QR code linking to it is placed in the top-right margin on the first CV page via `\AddToHookNext{shipout/background}`. The QR code is omitted when the URL field is empty to avoid rendering an empty code.

```
11005 \bool_if:NT \l_@@_class_cv_bool {
11006 % multicol for TOC
11007 % https://tex.stackexchange.com/a/314046/98739
11008 \BeforeStartingTOC[toc]{\begin{multicols}{2}}%
11009 \AfterStartingTOC[toc]{\end{multicols}}
11010
11011 % no page number for chapters in TOC
11012 \RedeclareSectionCommands[
11013   tocraggedpagenumber,
11014   toclinefill=\tocpageseparator,
11015   tocindent=0em,
11016   tocnumwidth=0em,
11017   tocpagumberbox=\tocpagenumberbox,%\tocgobble,% <- added
11018   tocpagumberformat=\textsf,
11019 ]{chapter}
11020 }
11021
11022 \newcommand\dfgReduceSpace{\vspace*{-1.5\baselineskip}}
11023 \NewDocumentCommand{\dfgCVheader}{m}{%
11024   % #1: person-id
11025   \bool_set_false:N \l_@@_cvoptional_bool
11026
11027   % Single scan: pull all needed fields at once
11028   \getEntry*[person]{#1}{
11029     \theAcademicDegree = academicdegree,
11030     \theURLValue       = url,
11031     \theNameValue      = lastname,
11032     \theFirstNameValue = firstname,
11033     \CurrentPosition   = position,
11034     \CurrentPositionText = positionText
11035   }%
11036   \addchap[ {
11037     head={CV
11038       \texorpdfstring{\dfgShowTag{#1}{academicdegree}}{\theAcademicDegree}[person]}
11039       {\theAcademicDegree}\space
11040       \texorpdfstring{\dfgShowTag{#1}{firstname}}{\theFirstNameValue}[person]}
11041       {\theFirstNameValue}\space
11042       \texorpdfstring{\dfgShowTag{#1}{lastname}}{\theNameValue}[person]}
11043       {\theNameValue}},
```

```

11044         tocentry={
11045             \texorpdfstring{\dfgShowTag{#1}{lastname}{\theNameValue}[person]}
11046             {\theNameValue}, \space
11047             \texorpdfstring{\dfgShowTag{#1}{firstname}{\theFirstNameValue}[person]}
11048             {\theFirstNameValue}}]{%
11049             {\normalsize\textcolor{color@font@alternative}{Curriculum \space Vitae}}\[\.5\baselineskip]
11050 \dfgShowTag{#1}{academicdegree}{\theAcademicDegree}[person]\[\.25\baselineskip]}
11051 \bfseries
11052         \dfgShowTag{#1}{firstname}{\theFirstNameValue}[person] \space
11053         \dfgShowTag{#1}{lastname}{\theNameValue}[person]
11054     }%
11055     %\pdfbookmark{CV~\theNameValue, ~~ \theFirstNameValue}{cv-#1}
11056
11057     % Printing the QR code only on one page next to the headline.
11058     \AddToHookNext{shipout/background}{%
11059         \DTLifnulloreempty{\theURLValue}
11060         {}
11061         {\put(\pagewidth-\marginparwidth,-.05\paperheight){%
11062             \dfgShowTag{#1}{url}{\qrcode[link,height=1.5cm]{\theURLValue}}[person]}}}%
11063     }
11064
11065     \begin{tblr}[
11066         theme    =main,
11067         long
11068     ]{
11069         colspec={X[t]X[4,t]},
11070         % $column{2}={font=\bfseries},
11071         columns={halign=l},
11072         row{odd}={bg=white},
11073         row{even}={bg=white},
11074         row{1}={font=\footnotesize\bfseries\sffamily,
11075             bg=tableHeadingsBG,
11076             fg=tableHeadingsFont}
11077     }
11078     Personal~ Data                                     &
11079     Title                                                & \dfgShowTag{#1}{academicdegree}{\theAcademicDegree}[person]
11080     First~ name                                         & \dfgShowTag{#1}{firstname}{\theFirstNameValue}[person]
11081     Name                                                & \dfgShowTag{#1}{lastname}{\theNameValue}[person]
11082     Current~ position                                   &
11083     \ifdefempty{\CurrentPositionText}
11084     {\dfgShowTag{#1}{position}{\dfgCategoryName{\CurrentPosition}}[person]}
11085     {\dfgShowTag{#1}{positionText}{\CurrentPositionText}[person]}
11086     \\\
11087     {Current~ institution(s)/\ site(s),~ country} & {\printList{{Institutions}{#1}} }
11088     ORCiD                                              & \getORCiD{#1}
11089     \end{tblr}
11090     \dfgReduceSpace
11091 }

```

The next section is about Qualifications and Career.

```

11092 \NewDocumentCommand{\dfgCVmandatory}{ m }{%
11093     % #1: person-id
11094     \DTLsortdata{cv-#1}
11095     {
11096         periodStart ={\descending=true},
11097         periodEnd   ={\descending=true},
11098         position    ={\ascending=true}
11099     }
11100
11101     \group_begin:
11102     \def\tblrbody{}
11103
11104     % Build the institution-name prop on first use (shared with ProjectsTable)
11105     \@_proj_pi_build:
11106
11107     % Single scan over person table for the three fields shown above
11108     \getEntry*[person]{#1}{

```

```

11109 \theDegreeProgramme = degree-programme,
11110 \theDoctorateYear    = doctorateYear,
11111 \theDoctorate        = doctorate
11112 }%
11113
11114 \DTLforeach*[
11115 \DTLiseq{\dfgrefpersonid}{#1}
11116 \and
11117 \DTLiseq{\dfgtype}{mandatory}
11118 ]{cv-#1}{%
11119 \dfgrefpersonid      = ref-person-id,
11120 \dfgtype              = type,
11121 \dfgyearstart        = periodStart,
11122 \dfgyearend          = periodEnd,
11123 \dfgpositionText     = positionText,
11124 \dfgposition         = position,
11125 \dfgrefinstitutionid = ref-institution-id,
11126 \dfgdescription      = description
11127 }{%
11128 % Hash lookup instead of two \DTLgetvalueforkey calls
11129 \prop_get:NVNTF \g_@@_inst_narrow_prop \dfgrefinstitutionid \theInstAffName
11130 {}
11131 { \tl_clear:N \theInstAffName }%
11132
11133 \protected@edef\tblrbody{\tblrbody
11134 \ifdefempty{\dfgyearend}
11135 {since\space\dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1]}
11136 {\str_if_eq:eeTF { \dfgyearstart } { \dfgyearend }
11137 { \dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1] }
11138 { \dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1]--
11139 \dfgShowTag{#1}{periodEnd}{\dfgyearend}[cv-#1] }}
11140 \ifdefempty{\dfgposition}
11141 {}{: \space\dfgShowTag{#1}{position}{\dfgposition}[cv-#1]}
11142 &
11143 {\dfgShowTag{#1}{positionText}{\dfgpositionText}[cv-#1]
11144 \ifdefempty{\theInstAffName}{}{, \space\theInstAffName}%
11145 \ifdefempty{\dfgdescription}{}
11146 {\textit{\dfgShowTag{#1}{description}{\dfgdescription}[cv-#1]}}%
11147 }
11148 \\
11149 }%
11150 }
11151
11152 \begin{tblr}[
11153 theme = main,
11154 expand = \tblrbody,
11155 long
11156 ]{
11157 colspec = {X[.7,t]X[4,t]},
11158 columns = {halign=1},
11159 row{odd}={bg=white},
11160 row{even}={bg=white},
11161 row{1}={font=\footnotesize\bfseries\sffamily,
11162 bg=tableHeadingsBG,
11163 fg=tableHeadingsFont}
11164 }
11165 \SetCell[c=2]{1}{Qualifications~ and~ Career} & \\
11166 \SetRow{tableHeadingsBGalt,font=\footnotesize\bfseries,halign=1}%
11167 Stages & Periods~ and~ Details \\
11168 {Degree\\programme} & \dfgShowTag{#1}{degree-programme}{\theDegreeProgramme}[person] \\
11169 Doctorate & \dfgShowTag{#1}{doctorateYear}{\theDoctorateYear}[person]\space
11170 \dfgShowTag{#1}{doctorate}{\theDoctorate}[person] \\
11171 \SetHline{-}{tableOuterLines,.5pt}%
11172 % \SetRow{tableHeadingsBGalt}%
11173 % \SetCell{font=\footnotesize\bfseries,halign=1}%
11174 % Stages~ of~ academic/professional~ career & \\

```

```

11175 \tblrbody
11176 \end{tblr}
11177 \group_end:
11178 \dfgReduceSpace
11179 }

```

The next section is about Supplementary Career Information, or Activities in the Research System or Supervision of Researchers in Early Career Phases since they all are technically the same.

```

11180 \NewDocumentCommand{\dfgCVOptional}{ m m m }{%
11181 \def\tblrbody{
11182 \DTLforeach*[
11183 \DTLlseq{\dfgrefpersonid}{#1}
11184 \and
11185 \DTLlseq{\dfgtype}{#2}
11186 ]{cv-#1}{%
11187 \dfgrefpersonid = ref-person-id,
11188 \dfgtype = type,
11189 \dfgyearstart = periodStart,
11190 \dfgyearend = periodEnd,
11191 \dfgpositionText = positionText,
11192 \dfgposition = position,
11193 \dfgrefinstitutionid = ref-institution-id,
11194 \dfgdescription = description
11195 }{%
11196 % datatool represents an absent value in a numeric column by its null
11197 % sentinel, which expands like zero in this context. Normalise those
11198 % sentinels before testing the optional period fields; description-only
11199 % CV entries must not acquire a spurious ``0'' in the first column.
11200 \DTLifnulloreempty{\dfgyearstart}{\def\dfgyearstart{}}{}
11201 \DTLifnulloreempty{\dfgyearend}{\def\dfgyearend{}}{}
11202 \bool_lazy_and:nnTF
11203 { \tl_if_empty_p:V \dfgyearstart }
11204 { \tl_if_empty_p:V \dfgyearend }
11205 {%
11206 \protected@edef\tblrbody{\tblrbody
11207 \SetCell[c=2]{l,wd=\dimexpr\textwidth-12pt\relax}
11208 {\dfgShowTag{#1}{description}{\dfgdescription}[cv-#1]} & \\\
11209 }%
11210 }
11211 {%
11212 \protected@edef\tblrbody{\tblrbody
11213 \ifdefempty{\dfgyearstart}
11214 {
11215 \ifdefempty{\dfgyearend}
11216 {}
11217 {\dfgShowTag{#1}{periodEnd}{\dfgyearend}[cv-#1]\space}
11218 }
11219 {
11220 \ifdefempty{\dfgyearend}
11221 {since\space\dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1]\space}
11222 {
11223 \str_if_eq:eeTF { \dfgyearstart } { \dfgyearend }
11224 { \dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1] }
11225 { \dfgShowTag{#1}{periodStart}{\dfgyearstart}[cv-#1]--
11226 \dfgShowTag{#1}{periodEnd}{\dfgyearend}[cv-#1] }
11227 \space
11228 }
11229 }
11230 &
11231 \dfgShowTag{#1}{description}{\dfgdescription}[cv-#1]
11232 \\\
11233 }%
11234 }%
11235 }%
11236
11237 \ifdefempty{\tblrbody}{}{%
11238 \begin{tblr}[

```

```

11239     theme = main,
11240     expand = \tblrbody,
11241     long
11242     ]{
11243         %rowsep=3pt,
11244         width = \textwidth,
11245         colspec = {X[0.7,t]X[4,t]},
11246         columns = {halign=l},
11247         row{odd}={bg=white},
11248         row{even}={bg=white},
11249         row{1}={font=\footnotesize\bfseries\sffamily,
11250                 bg=tableHeadingsBG,
11251                 fg=tableHeadingsFont}
11252     }
11253     \SetCell[c=2]{1}{#3} & \\\*
11254     \tblrbody
11255 \end{tblr}
11256 \bool_set_true:N \l_@@_cvoptional_bool
11257 \dfgReduceSpace
11258 }%
11259 }

```

For the publications we define a custom bibliography template that is enumerating the items as required.

```

11260 \newlist{DFGlist}{enumerate}{1}
11261 \setlist[DFGlist]{leftmargin=*}
11262 \setlist[DFGlist,1]{
11263     % font=\bfseries,
11264     % first=\bfseries,
11265     % after=\normalfont,
11266     % itemsep=.5\baselineskip,
11267     % wide,
11268     label={\bfseries\arabic*},
11269     nosep
11270 }

```

Further on we apply this to the bibliography environment.

```

11271 \defbibenvironment{DFGlist}
11272 {\begin{DFGlist}\RaggedRight}
11273 {\end{DFGlist}}
11274 {\item}

```

The next section combines everything and wraps it. To have a reference listed in this section you have to write into the

```

11275 \defbibheading{categoryA}{%
11276     \par
11277     \begin{tblr}[ theme=main, long ]{
11278         rowhead = 0,
11279         colspec = {X[1,t]},
11280         row{odd}={bg=white},
11281         row{even}={bg=white},
11282         %hline{1,2,Z} = {0pt},
11283         row{1}={font=\footnotesize\bfseries\sffamily,
11284                 bg=tableHeadingsBG,
11285                 halign=l,
11286                 fg=tableHeadingsFont},
11287         row{2} = {%bg=tableHeadingsBGalt, fg=tableHeadingsFont,
11288                 font=\footnotesize\sffamily, halign=l, valign=t, guard},
11289         }Scientific~ results \\\*
11290         Category~ A~ ---~ Articles~ in~ peer-reviewed~ journals,~
11291         contributions~ to~ peer-reviewed~ conferences~ or~ to~
11292         anthology~ volumes,~ and~ book~ publications
11293     \end{tblr}
11294     \vspace*{-1.5\baselineskip}
11295 }
11296
11297 \defbibheading{categoryB}{%
11298     \par
11299     \begin{tblr}[ theme=main, long ]{

```

```

11300     rowhead = 0,
11301     colspec = {X[1,t]},
11302     row{odd}={bg=white},
11303     row{even}={bg=white},
11304     %hline{1,2,Z} = {0pt},
11305     row{1}={font=\footnotesize\bfseries\sffamily,
11306             bg=tableHeadingsBG,
11307             halign=l,
11308             fg=tableHeadingsFont},
11309     row{2} = {%bg=tableHeadingsBGalt, fg=tableHeadingsFont,
11310             font=\footnotesize\sffamily, halign=l, valign=t, guard},
11311     }Scientific~ results \\*
11312     Category~ B~ --- Any~ other~ form~ of~ published~ results \\
11313 \end{tblr}
11314 \vspace*{-1.5\baselineskip}
11315 }
11316
11317 \NewDocumentCommand{\dfgCVpublications}{ m }{%
11318 % #1: person-id
11319 \bool_if:NTF \l_@@_class_skipTENpublications_bool
11320 {%
11321 \par
11322 \group_begin: \ttfamily
11323 Publication~ section~ for~ \getFullName{#1}~ omitted~
11324 for~ faster~ compilation.\\
11325 To~ enable~ the~ 10~ most~ important~ publications,~
11326 go~ to~ the~ documentclass~ options\\ and~ state~
11327 '\textbf{skip10pub=false}'.
11328 \group_end:
11329 }{%
11330 \tl_gset:Nn \g_@@_current_pi_tl {#1}
11331 \newrefcontext[sorting=ydnt]
11332 \nocite{*}%
11333 \datatool_if_has_key:nnT { person } { name-alias }
11334 {
11335 \DTLgetvalueforkey { \theAliases } { name-alias } { person } { id } { #1 }
11336 \DTLifnulloreempty { \theAliases }
11337 { }
11338 { \exp_args:No \addboldnames { \theAliases } }
11339 }
11340
11341 \renewcommand*{\bibfont}{\footnotesize}%
11342
11343 \printbibliography[
11344     env          = DFGList,
11345     resetnumbers,
11346     keyword      = {#1-A},
11347     heading      = categoryA
11348 ]
11349 \printbibliography[
11350     env          = DFGList,
11351     resetnumbers,
11352     keyword      = {#1-B},
11353     heading      = categoryB
11354 ]
11355
11356 \endrefcontext
11357 \resetboldnames
11358 \tl_gclear:N \g_@@_current_pi_tl
11359 }%
11360 }
11361
11362 \tl_new:N \g_@@_current_pi_tl

```

`\ifIDEqual` Conditional macro for use inside .bib files. Inside an addendum field, write `\ifIDEqual{pi-id}{text}`; the text is only emitted when the bibliography is being rendered for that PI.

The current PI is held in `\g_@@_current_pi_tl`, which is set by `\dfgCVpublications` before each `\printbibliography` call.

The implementation deliberately uses classic  $\TeX$  primitives (`\edef`, `\ifx`, `\csname`) rather than `expl3`, because `\ifIDequal` is invoked from inside a biblatex-rendered bibliography where `\ExplSyntaxOff` is in effect. Wrapping the variable lookup in `\csname... \endcsname` makes the name resolve correctly regardless of catcode state.

```
11363 \DeclareFieldFormat{addendum}{\mkbibitalic{#1}}
11364 \ExplSyntaxOff
11365 \protected\long\def\ifIDequal#1#2{%
11366   \if\relax\detokenize{#2}\relax
11367     % #2 is empty: do nothing
11368   \else
11369     \begingroup
11370       \edef\dfg@tempa{#1}%
11371       \edef\dfg@tempb{\csname g_@@_current_pi_tl\endcsname}%
11372       \ifx\dfg@tempa\dfg@tempb
11373         \endgroup \par\textcolor{color@font@alternative}{#2}%
11374       \else
11375         \endgroup
11376       \fi
11377   \fi
11378 }
11379 \ExplSyntaxOn
```

After each section - especially when any content was written for the optional parts, a data privacy is needed. We only need this section if there has been optional text before. We find this out by checking the bool.

```
11380 \ExplSyntaxOff
11381 \NewDocumentCommand{\dfgCVdataprivacy}{ m }{%
11382   \begin{tblr}{%
11383     theme    =main,
11384     long
11385   }{%
11386     colspec = {
11387       X[-1,t]
11388       X[10,t]
11389     },
11390     rows = {bg=white},
11391     row{2-Z}={font=\scriptsize},
11392     row{1}={font=\footnotesize\bfseries\sffamily,
11393       halign=l,
11394       bg=tableHeadingsBG,
11395       fg=tableHeadingsFont},
11396   }
11397   \SetCell[c=2]{1}
11398   Data protection and consent to the processing of optional data & \\\
11399   \SetCell{font=\large}\ding{55} & I (\getFullName*{#1}) expressly consent
11400   to the processing of the voluntary
11401   (optional) information, including "special categories of personal data" in
11402   connection with the DFG's review and decision-making process regarding my
11403   proposal. This also includes forwarding my data to the external reviewers,
11404   committee members and, where applicable, foreign partner organisations who
11405   are involved in the decision-making process. To the extent that these
11406   recipients are located in a third country (outside the European Economic
11407   Area), I additionally consent to them being granted access to my data for
11408   the above-mentioned purposes, even though a level of data protection
11409   comparable to EU law may not be guaranteed. For this reason, compliance with
11410   the data protection principles of EU law is not guaranteed in such cases. In
11411   this respect, there may be a violation of my fundamental rights and freedoms
11412   and resulting damages. This may make it more difficult for me to assert my
11413   rights under the General Data Protection Regulation (e.g.\ information,
11414   rectification, erasure, compensation) and, if necessary, to enforce these
11415   rights with the help of authorities or in court. \[2pt]
11416   & I may \emph{revoke} my consent in whole or in part at any time - with effect for the
11417   future, freely and without giving reasons - vis-à-vis the DFG
11418   (\href{mailto:postmaster@dfg.de}{postmaster@dfg.de}). The lawfulness of the
11419   processing carried out up to that point remains unaffected. Insofar as I
11420   transmit \enquote{special categories of personal data} relating to third
```

```

11421 parties, I confirm that the necessary legitimation under data protection law
11422 exists (e.g.\ based on consent). \\[2pt]
11423 & I have taken note of the DFG's Data Protection Notice relating to research
11424 funding, which I can access at \url{www.dfg.de/privacy_policy} and I will forward it
11425 to such persons whose data the DFG processes as a result of being mentioned in
11426 this CV.
11427 \end{tblr}
11428 }
11429 \ExplSyntaxOn

```

We wrap everything into one command.

```

11430 \NewDocumentCommand{\dfgCV}{ m }{%
11431   % #1: person-id
11432   \bool_if:NF \l_@@_class_fastcompile_project_bool
11433   {
11434     \DTLifdbexists{cv-#1}{
11435       \StartTimer\dfgCVheader{#1}\StopTimer{#1:dfgCVheader}
11436       \StartTimer\dfgCVmandatory{#1}\StopTimer{#1:dfgCVmandatory}
11437       \StartTimer\dfgCVoptional{#1}{supplement}{Supplementary~ Career~ Information}\StopTimer{#1:dfgCVopti
11438       \StartTimer\dfgCVoptional{#1}{activities}{Activities~ in~ the~ Research~ System}\StopTimer{#1:dfg
11439       \StartTimer\dfgCVoptional{#1}{supervision}{Supervision~ of~ Researchers~ in~ Early~ Career~ Ph
11440       \StartTimer \dfgCVpublications{#1}\StopTimer{#1: dfgCVpublications}
11441       \StartTimer\dfgCVoptional{#1}{distinction}{Academic~ Distinctions}\StopTimer{#1:dfgCVoptional|disti
11442       \StartTimer\dfgCVoptional{#1}{other}{Other~ Information}\StopTimer{#1:dfgCVoptional|other}
11443     }
11444     % We check for the bool at this place because we dont have to enable
11445     % \LaTeX3-Syntax within the command which would require to put |~| at each space.
11446     \bool_if:NT \l_@@_cvoptional_bool {
11447       \StartTimer \dfgCVdataprivacy{#1} \StopTimer{#1:dfgCVdataprivacy}
11448     }
11449   }
11450   {\msg_warning:nne { dfg } { database-not-found }{ cv-#1 }}
11451 }
11452 }

```

The CV should be printed automatically for all persons with the role PI.

```

11453 \NewDocumentCommand{\dfgCVsection}{ O{person} }{%
11454   \bool_if:NF \l_@@_class_fastcompile_project_bool
11455   {
11456     \DTLifdbexists{#1}{%
11457       \DTLsort*{lastname,firstname}{#1}%
11458       \DTLforeach*[%start of conditions
11459         \DTLisinlist{\theFundingPeriodNumeral}{\period}% 1st condition
11460         \and%
11461         \DTLisinlist{PI}{\role}% 2nd condition
11462       ]{#1}{%
11463         \id           =id,
11464         \period       =period,
11465         \role         =role%
11466       }{%
11467         \exp_args:Ne \dfgCV { \id }
11468       }
11469     }{
11470       Database \texttt{#1} missing.
11471       \msg_warning:nne { dfg } { database-not-found }{ #1 }
11472     }%
11473   }
11474 }

```

Finally we load the metadata and customization provided by the user. In case a file is missing a message will be displayed to inform the user.

```

11475 \NewDocumentCommand{\checkFile}{m}{%
11476   \StartTimer
11477   \file_if_exist:nTF {#1}
11478   {\ExplSyntaxOff\input{#1}\ExplSyntaxOn}
11479   {\msg_warning:nne { dfg } { file-not-found }{#1}}%
11480   \StopTimer{checkFile:#1}
11481 }

```

There are at least some file we need or should consider checking.

```

11482 \bool_if:NTF \l_@@_class_fastcompile_project_bool
11483 {
11484   \bool_if:NT \l_@@_class_fastcompile_project_show_images_bool
11485     { \checkFile{metadata/dfg-metadata.tex} }
11486 }
11487 {
11488   \checkFile{metadata/dfg-metadata.tex}
11489   \bool_if:NTF \l_@@_class_cv_bool
11490     { \checkFile{metadata/dfg-metadata-cv.tex} }
11491     { \msg_warning:nnn { dfg } { cv-entry-omitted }
11492       {metadata/dfg-metadata-cv.tex} }
11493   \bool_if:NF \l_@@_class_cv_bool
11494     { \checkFile{metadata/dfg-metadata-tables.tex} }
11495 }

```

This is a gimmick but quite fun to experiment with. This is taken from <https://tex.stackexchange.com/a/732406/98739>. Note that the message is written into the .log-file, not in the terminal.

```

11496 \def\dfgFinalComment{Well~ done~ coding!~ Happy~ TeXing.}
11497 \directlua{
11498   luatexbase.add_to_callback('wrapup_run',
11499     function ()
11500       f=io.open("\jobname.log", "a")
11501       f:write("\dfgFinalComment")
11502       f:close()
11503     end,
11504     "final message"
11505   )
11506 }

```

### 3.4 Main file

In this section we provide a skeleton of files to be used as a starting point for your proposal. You can adjust the content anytime. The following code block leads to a strange behaviour and in a table are ignored, it can be fixed with a minipage around the table.

```

11507 % \DocumentMetadata{
11508 %   pdfstandard=A-2b,
11509 %   lang=en-EN,
11510 %   % tagging=structure,
11511 %   % uncompress
11512 % }
11513 \documentclass[
11514   showtags           =true,
11515   showtags-tables    =false,
11516   showmarginalia     =true,
11517   % fastcompile       =true,
11518   % fastcompile-project =true,
11519   % fastcompile-project-show-images=true,
11520   % fastcompile-project-show-publications=false,
11521   % skip10pub         =true,
11522   % colorscheme       =rgb,
11523   % final             =true,
11524   english % <-- needed here
11525 ]{dfg-crc}

```

We use `includeonly` for the case to compile only one, two or n-many chapters. This speeds up the compiling time in case you are working mainly and currently on one specific chapter.

```

11526 %% % \includeonly{
11527 %% %   content/01_general-information,
11528 %% %   content/02_existing-funds-and-requested-funds,
11529 %% %   content/03_project,
11530 %% %   content/04_bylaws-of-the-crc,
11531 %% %   content/05_declarations
11532 %% %}
11533 \begin{document}
11534 \dfgIfFastCompileProjectF{\input{content/00_titlepage}}
11535 \include{content/01_general-information}

```

```

11536 \include{content/02_existing-funds-and-requested-funds}
11537 \include{content/03_project}
11538 \include{content/04_bylaws-of-the-crc}
11539 \include{content/05_declarations}
11540 \include{content/99_backmatter}
11541 \end{document}

```

### 3.5 Bibliography Files

There are at least two bibliography files in the folder `bib/`. One is for the common `bibtex`-entries, the others contain so called strings.

#### 3.5.1 Main Bibliography File

```

11542 @Article{FAIR2016,
11543   Author      = {Wilkinson, Mark D. and others},
11544   Title       = {The {FAIR} Guiding Principles for scientific data management and stewardship},
11545   JournalTitle = {Scientific Data},
11546   Date        = {2016-12},
11547   DOI         = {10.1038/sdata.2016.18},
11548   Keywords    = {{FAIR}},
11549   langid      = {english},
11550   Number      = {1},
11551   Pages       = {160018},
11552   ShortJournal = {Sci Data},
11553   URLDate     = {2021-05-31},
11554   Volume      = {3}
11555 }

```

#### 3.5.2 Bibliography Strings

The strings are used for quick and consistent referencing parts repeatedly.

```

11556 @String {equal      = {\textit{*equal contribution}}}
11557 @String {sharedlast = {\textit{*shared last authorship}}}

```

### 3.6 Customization File

In the file `preamble/dfg-customization.tex` you can adjust settings of this template. Further information you find in 2.6. If you want to create new commands put them in this file as well.

```

11558 % \title{<Title>}
11559 % \subtitle{<Subtitle>}
11560 %% \changeSettings{
11561 %% font                      =<nn>,
11562 %% crcLogoPath              =<file path>,
11563 %% affiliationLogoPath      =<file path>,
11564 %% doiAPIMail               =<contact email for optional DOI API lookup>,
11565 %% projectPIOncePerSection  =true,
11566 %% projectsTableInstitutionAbbreviations=false,
11567 %% salary@prof              =123600,
11568 %% salary@groupLeader       =102300,
11569 %% salary@postDoc           =88200,
11570 %% salary@medDoc            =111000,
11571 %% salary@PhD               =81600,
11572 %% salary@research          =67200,
11573 %% salary@nonResearch       =60000,
11574 %% salary@student          =1,
11575 %% salary@assistant         =1,
11576 %% animalHousing@mouse      =0.75,
11577 %% animalHousing@mouseGnotobiotic=3.9,
11578 %% animalHousing@rat        =1.4,
11579 %% thumbindex               =true,
11580 %% thumbindex@pattern       =<int>,
11581 %% thumbindex@topmargin     =auto,
11582 %% thumbindex@bottommargin =auto,
11583 %% emphasizeAuthors         =true,
11584 %% emphasizeEntries         =false,
11585 %% biblatexstyleCV          =<nn>,
11586 %% biblatexstyleFeatureCV   ={\<nn>, \<nn>},
11587 %% biblatexstyleProposal    =<nn>,

```

```

11588 %% biblatexstyleFeatureProposal={<nn>,<nn>},
11589 %%%% color section %%%%
11590 %% color@reference@boldAuthor =<nn>,
11591 %% color@reference@PI          =<nn>,
11592 %% color@reference@WP          =<nn>,
11593 %% color@reference@Aim         =<nn>,
11594 %% color@table@headingsBG      =<nn>,
11595 %% color@table@headingsBGalt   =<nn>,
11596 %% color@table@headingsFont    =<nn>,
11597 %% color@table@rows            =<nn>,
11598 %% color@table@lines           =<nn>,
11599 %% color@table@outerLines      =<nn>,
11600 %% color@table@noValue         =<nn>,
11601 %% color@table@firstColumn     =<nn>,
11602 %% color@table@link            =<nn>,
11603 %% color@table@contFootHead    =<nn>,
11604 %% color@table@caption         =<nn>,
11605 %% color@gantt@frame           =<nn>,
11606 %% color@gantt@default         =<nn>,
11607 %% color@gantt@crosshatch      =<nn>,
11608 %% color@gantt@important       =<nn>,
11609 %% color@gantt@stripe-one      =<nn>,
11610 %% color@gantt@stripe-two      =<nn>,
11611 %% color@thumbindex@bg        =<nn>,
11612 %% color@thumbindex@font       =<nn>,
11613 %% color@tags@font             =<nn>,
11614 %% color@tags@line             =<nn>,
11615 %% color@font@alternative      =<nn>,
11616 %% color@item@i                =<nn>,
11617 %% }

```

### 3.7 DFG salary and animal-housing defaults

The DFG specifies standardised all-in salary costs (*Personalmittel*) per position category for the current funding year. These constants are used in the requested-funding staff tables to calculate yearly personnel costs from FTE counts.

The values are updated annually and published by the DFG. Their canonical defaults are keys in the `dfg/custom` key family. Override them together with the other proposal settings in `dfg-customization.tex`:

#### Overriding salary and animal-housing rates

```

% \changeSettings{
%   salary@postDoc      = 90000,
%   animalHousing@mouse = 0.80,
% }
%

```

Source: <https://www.dfg.de/resource/blob/345094/31cd4b597ee7a1fc711a8f2566010783/60-12-2025-de-pdf> (status: 2026-01)

The expandable `\dfgSalaryProf`, `\dfgSalaryGroupLeader`, `\dfgSalaryPostDoc`, `\dfgSalaryMedDoc`, `\dfgSalaryPhD`, `\dfgSalaryResearch`, `\dfgSalaryNonResearch`, `\dfgSalaryStudent`, `\dfgSalaryAssistant`, `\dfgMouseHousing`, `\dfgMouseHousingGnotobiotic`, and `\dfgRatHousing` accessors remain available for compatibility. They expand to the corresponding setting.

### 3.8 Metadata File

The file `metadata/dfg-metadata.tex` provides all or at least most of the meta information needed for the proposal. Especially put all entries of person, affiliation, institution and meta (the proposal title etc.) in here. For an explanation how to use and fill the fields see 2.4.

```

11618 \addEntry{meta}{
11619   id          = {crc}, %<--- id (do not change)
11620   name        = {Mechanisms of Host--Microbiome Communication},
11621   nameAddon   = {From Molecular Interactions to Organ Function},
11622   number      = {9999},
11623   fundingPeriodNumeral = {3}, % 1|2|3
11624   ref-affiliation-id = {aff1}, % or {aff1,aff2} for two applicants

```

```

11625 fundedSince          = {2019-07-01},
11626 fundingYears          = {2027|2,2028,2029,2030,2031|1},
11627 fundingYearsPrevious = {2022|2,2023,2024,2025,2026|1}
11628 }
11629
11630 \addEntry{institution}{
11631   id          = {ins1},
11632   name         = {Institute of Microbial Systems Medicine},
11633   abbreviation = {IMSM},
11634   ref-affiliation-id = {aff1}
11635 }
11636
11637 \addEntry{institution}{
11638   id          = {ins2},
11639   name         = {Department of Translational Biosciences},
11640   abbreviation = {DTB},
11641   ref-affiliation-id = {aff2}
11642 }
11643
11644
11645 \addEntry{affiliation}{
11646   id          = {aff1},
11647   name         = {Example University},
11648   abbreviation = {EU},
11649   addressStreet = {University Avenue 1},
11650   addressZIP    = {12345},
11651   location      = {Example City},
11652   country       = {Germany}
11653 }
11654
11655 \addEntry{affiliation}{
11656   id          = {aff2},
11657   name         = {Partner University},
11658   abbreviation = {PU},
11659   addressStreet = {Research Road 2},
11660   addressZIP    = {54321},
11661   location      = {Partner City},
11662   country       = {Germany}
11663 }
11664
11665 \addEntry{person}{
11666   id          = {per1},
11667   firstname    = {Kim},
11668   lastname     = {Sample},
11669   academicdegree = {Prof. Dr. rer. nat.},
11670   period       = {1,2,3},
11671   role         = {PI},
11672   gender       = {d},
11673   ref-institution-id = {ins1,ins2},
11674   ref-project-id  = {A01,A02},
11675   name-alias     = {
11676     {Kim Sample},
11677     {Sample, Kim S.}
11678   },
11679   orcid         = {0000-0000-0000-0001},
11680   doctorateYear = {2000},
11681   doctorate     = {Dr. rer. nat., Example University},
11682   degree-programme = {Biology, Example University},
11683   position      = {prof-W3},
11684   positionText   = {Professor and Director},
11685   url           = {https://www.example.org/kim-sample},
11686   phone         = {+49 000 100-1000},
11687   email         = {kim.sample@example.org},
11688   contract-information = {
11689     C1 = {no},
11690     C2 = {yes},

```

```

11691     C2a = {2028-12-31},
11692     C2b = {2029-01-03},
11693     C3  = {yes},
11694     C3a = {2054-03-10},
11695     C4  = {no},
11696     C4a = {DFG}
11697   }
11698 }
11699
11700 \addEntry{person}{
11701   id           = {per2},
11702   period       = {2,3},
11703   firstname    = {Alex},
11704   lastname     = {Example},
11705   academicdegree = {Prof. Dr. phil.},
11706   position     = {groupLeader},
11707   positionText = {Research group leader},
11708   role         = {PI,steering-committee-member},
11709   doctorateYear = {1999},
11710   doctorate    = {Dr. phil., Partner University},
11711   degree-programme = {Data Science, Partner University},
11712   gender       = {m},
11713   ref-institution-id = {ins2},
11714   ref-project-id = {A01,B01,Q01,Q02},
11715   orcid        = {0000-0000-0000-0002},
11716   phone        = {+49 000 200-2000},
11717   email        = {alex.example@example.org},
11718   contract-information = {
11719     C1 = {no},
11720     C2 = {no},
11721     C2a = {},
11722     C2b = {},
11723     C3 = {no},
11724     C3a = {},
11725     C4 = {yes},
11726     C4a = {BMFTR}
11727   }
11728 }
11729
11730 \addEntry{person}{
11731   id           = {per3},
11732   period       = {2,3},
11733   firstname    = {Hansi},
11734   lastname     = {Meier},
11735   academicdegree = {Dr. rer. nat.},
11736   position     = {postDoc},
11737   positionText = {Senior research scientist},
11738   role         = {PI,steering-committee-member},
11739   doctorateYear = {1999},
11740   doctorate    = {Dr. rer. nat., Partner University},
11741   degree-programme = {Microbiology, Partner University},
11742   gender       = {f},
11743   ref-institution-id = {ins2},
11744   ref-project-id = {B01,Q03},
11745   orcid        = {0000-0000-0000-0003},
11746   phone        = {+49 000 200-3000},
11747   email        = {hansi.meier@example.org},
11748   contract-information = {
11749     C1 = {yes},
11750     C2 = {no},
11751     C2a = {},
11752     C2b = {},
11753     C3 = {no},
11754     C3a = {},
11755     C4 = {yes},
11756     C4a = {DFG}

```

```

11757     }
11758 }
11759
11760 \addEntry{person}{
11761     id                = {per4},
11762     period            = {2,3},
11763     firstname         = {Kimm},
11764     lastname          = {Miller},
11765     academicdegree    = {Prof. Dr. rer. nat.},
11766     position          = {prof-W2},
11767     positionText      = {Professor of Molecular Medicine},
11768     role              = {PI},
11769     doctorateYear     = {1999},
11770     doctorate         = {Dr. rer. nat., Partner University},
11771     degree-programme  = {Molecular Medicine, Partner University},
11772     gender            = {f},
11773     ref-institution-id = {ins2},
11774     ref-project-id    = {B02},
11775     orcid             = {0000-0000-0000-0004},
11776     phone             = {+49 000 200-4000},
11777     email             = {kimm.mueller@example.org},
11778     contract-information = {
11779         C1 = {yes},
11780         C2 = {no},
11781         C2a = {},
11782         C2b = {},
11783         C3 = {no},
11784         C3a = {},
11785         C4 = {yes},
11786         C4a = {DFG}
11787     }
11788 }
11789
11790 \addEntry{person}{
11791     id                = {per5},
11792     period            = {3},
11793     firstname         = {Friedhelm},
11794     lastname          = {Redata},
11795     academicdegree    = {Prof. Dr.-Ing.},
11796     orcid             = {0000-0000-0000-0005},
11797     position          = {prof-W2},
11798     positionText      = {Professor of Research Training},
11799     role              = {PI, steering-committee-member},
11800     doctorateYear     = {1998},
11801     doctorate         = {Dr.-Ing., Example University},
11802     degree-programme  = {Biomedical Engineering, Example University},
11803     gender            = {m},
11804     ref-institution-id = {ins1},
11805     ref-project-id    = {Q02},
11806     phone             = {+49 000 100-5000},
11807     email             = {friedhelm.redata@example.org},
11808     contract-information = {
11809         C1 = {yes},
11810         C2 = {yes},
11811         C2a = {2028-12-31},
11812         C2b = {2029-01-03},
11813         C3 = {yes},
11814         C3a = {2054-03-10},
11815         C4 = {no},
11816         C4a = {DFG}
11817     }
11818 }
11819
11820
11821 \addEntry{project}{
11822     id                = {A01},

```

```

11823     project-area      = {A},
11824     number            = {A01},
11825     project-status    = {C},
11826     consider-for-lists = {true},
11827     reference-only     = {false},
11828     name              = {Microbial signalling across epithelial barriers},
11829     project-type       = {research},
11830     research-area      = {2.21-02},
11831     ref-person-id      = {per1,per2},
11832     collaborations     = {A02,B01,B02,Q01},
11833     legal-issues      = {
11834         L1 = no,
11835         L1a = no,
11836         L2 = no,
11837         L2a = no,
11838         L3 = no,
11839         L4 = no,
11840         L5 = no,
11841         L5a = no,
11842         L6 = no,
11843         L7 = no,
11844         L7a = no
11845     }
11846 }
11847 \addEntry{project}{
11848     id                = {A02},
11849     project-area      = {A},
11850     number            = {A02},
11851     project-status    = {N},
11852     consider-for-lists = {true},
11853     reference-only     = {false},
11854     project-type       = {research},
11855     name              = {Metabolic control of tissue-resident immunity},
11856     research-area      = {2.21-05},
11857     ref-person-id      = {per1},
11858     collaborations     = {B01,Q02},
11859     legal-issues      = {
11860         L1 = no,
11861         L1a = no,
11862         L2 = yes,
11863         L2a = no,
11864         L3 = yes,
11865         L4 = yes,
11866         L5 = no,
11867         L5a = no,
11868         L6 = yes,
11869         L7 = no,
11870         L7a = yes
11871     }
11872 }
11873
11874 %% Reference-only rows remain available to \getProject but are omitted from
11875 %% generated lists and collaboration plots.
11876 \addEntry{project}{
11877     id                = {A00},
11878     project-area      = {A},
11879     number            = {A00},
11880     project-status    = {E},
11881     consider-for-lists = {false},
11882     reference-only     = {true},
11883     project-type       = {research},
11884     name              = {Former project on microbial community dynamics},
11885     research-area      = {},
11886     ref-person-id      = {},
11887     collaborations     = {}
11888 }

```

```

11889
11890 \addEntry{project}{
11891     id = {B01},
11892     project-area = {B},
11893     number = {B01},
11894     project-status = {C},
11895     consider-for-lists = {true},
11896     reference-only = {false},
11897     project-type = {research},
11898     research-area = {2.21-03,2.21-05,2.22-15},
11899     name = {Host defence during microbiome perturbation},
11900     ref-person-id = {per3,per2},
11901     collaborations = {A01,Q02},
11902     legal-issues = {
11903         L1 = no,
11904         L1a = no,
11905         L2 = no,
11906         L2a = no,
11907         L3 = no,
11908         L4 = no,
11909         L5 = no,
11910         L5a = no,
11911         L6 = no,
11912         L7 = no,
11913         L7a = no
11914     }
11915 }
11916 \addEntry{project}{
11917     id = {B02},
11918     project-area = {B},
11919     number = {B02},
11920     project-status = {E},
11921     consider-for-lists = {true},
11922     reference-only = {false},
11923     project-type = {research},
11924     research-area = {2.22-15},
11925     name = {Molecular signatures of tissue regeneration},
11926     ref-person-id = {per4},
11927     collaborations = {A01},
11928     legal-issues = {
11929         L1 = yes,
11930         L1a = no,
11931         L2 = yes,
11932         L2a = yes,
11933         L3 = yes,
11934         L4 = yes,
11935         L5 = yes,
11936         L5a = no,
11937         L6 = yes,
11938         L7 = yes,
11939         L7a = no
11940     }
11941 }
11942 \addEntry{project}{
11943     id = {Q01},
11944     project-area = {Q},
11945     number = {Q01},
11946     project-status = {C},
11947     consider-for-lists = {true},
11948     reference-only = {false},
11949     project-type = {service},
11950     name = {Integrated imaging and analysis services},
11951     research-area = {2.21-02,2.22-15},
11952     ref-person-id = {per2},
11953     collaborations = {A01},
11954     legal-issues = {

```

```

11955     L1  = no,
11956     L1a = no,
11957     L2  = no,
11958     L2a = no,
11959     L3  = no,
11960     L4  = no,
11961     L5  = no,
11962     L5a = no,
11963     L6  = no,
11964     L7  = no,
11965     L7a = no
11966 }
11967 }
11968 \addEntry{project}{
11969     id          = {Q02},
11970     project-area = {Q},
11971     number      = {Q02},
11972     project-status = {C},
11973     consider-for-lists = {true},
11974     reference-only = {false},
11975     project-type  = {mgk},
11976     name         = {Integrated Research Training Group},
11977     research-area = {},
11978     ref-person-id = {per5,per2},
11979     collaborations = {A02,B01}
11980 }
11981 \addEntry{project}{
11982     id          = {Q03},
11983     project-area = {Q},
11984     number      = {Q03},
11985     project-status = {C},
11986     consider-for-lists = {true},
11987     reference-only = {false},
11988     project-type  = {admin},
11989     name         = {Central coordination and data stewardship},
11990     research-area = {},
11991     ref-person-id = {per3},
11992     collaborations = {A01,A02,B01,Q01,Q02}
11993 }
11994
11995
11996 \addEntry{person}{
11997     id          = {spokesperson},
11998     role        = {spokesperson,steering-committee-member},
11999     period      = {1,2,3},
12000     lastname    = {Sample},
12001     firstname   = {Morgan},
12002     academicdegree = {Prof. Dr. med.},
12003     gender      = {f},
12004     position    = {prof-W3},
12005     positionText = {CRC spokesperson and professor of systems medicine},
12006     doctorateYear = {1998},
12007     doctorate    = {Dr. med., Example University},
12008     degree-programme = {Medicine, Example University},
12009     ref-institution-id = {ins1},
12010     ref-affiliation-id = {aff1},
12011     orcid       = {0000-0000-0000-0006},
12012     phone       = {+49 000 100-6000},
12013     email       = {morgan.sample@example.org}
12014 }
12015
12016
12017 \addEntry{person}{
12018     id          = {man1},
12019     role        = {manager},
12020     period      = {2,3},

```

```

12021     firstname      = {Jamie},
12022     lastname        = {Coordinator},
12023     academicdegree   = {Dr. rer. nat.},
12024     gender           = {d},
12025     position         = {nonResearch},
12026     positionText     = {Scientific manager},
12027     doctorateYear    = {2012},
12028     doctorate        = {Dr. rer. nat., Partner University},
12029     degree-programme = {Life Sciences, Partner University},
12030     ref-institution-id = {ins2},
12031     ref-affiliation-id = {aff2},
12032     orcid            = {0000-0000-0000-0007},
12033     phone            = {+49 000 200-7000},
12034     email            = {jamie.coordinator@example.org}
12035 }
12036
12037
12038 \addEntry{person}{
12039     id                = {rector},
12040     role              = {rector},
12041     period            = {3},
12042     lastname          = {Rector},
12043     firstname         = {Robin},
12044     academicdegree    = {Prof. Dr.},
12045     gender            = {d},
12046     position          = {prof},
12047     positionText      = {Rector of Example University},
12048     ref-affiliation-id = {aff1},
12049     phone             = {+49 000 100-8000},
12050     email             = {rector@example.org}
12051 }
12052
12053 \addEntry{person}{
12054     id                = {rector2},
12055     role              = {rector},
12056     period            = {3},
12057     lastname          = {President},
12058     firstname         = {Casey},
12059     academicdegree    = {Prof. Dr.},
12060     gender            = {d},
12061     position          = {prof},
12062     positionText      = {President of Partner University},
12063     ref-affiliation-id = {aff2},
12064     phone             = {+49 000 200-8000},
12065     email             = {president@partner.example.org}
12066 }
12067
12068 % \iffalse
12069 </meta>
12070 <*meta-cv>
12071 % \fi
12072
12073 \addEntry{cv}{cv-perl}{
12074     ref-person-id     = {perl},
12075     cv-type           = {mandatory},
12076     periodStart       = {2013},
12077     periodEnd         = {},
12078     positionText      = {Professor and Director},
12079     position          = {Professor of Microbial Systems Medicine},
12080     description       = {Director of the Institute of Microbial Systems Medicine},
12081     ref-institution-id = {ins1}
12082 }
12083
12084 \addEntry{cv}{cv-perl}{
12085     ref-person-id     = {perl},
12086     cv-type           = {mandatory},

```

```

12087     periodStart      = {2005},
12088     periodEnd        = {2012},
12089     positionText     = {Associate professor},
12090     position         = {Associate Professor of Molecular Microbiology},
12091     description      = {Established an interdisciplinary microbiome research group},
12092     ref-institution-id = {ins2}
12093 }
12094
12095 \addEntry[cv]{cv-per1}{
12096     ref-person-id = {perl},
12097     cv-type       = {supplement},
12098     description   = {Research visits at international centres for microbiome
12099         science and systems immunology.}
12100 }
12101
12102 \addEntry[cv]{cv-per1}{
12103     ref-person-id = {perl},
12104     cv-type       = {activities},
12105     description   = {Member of national review panels and organiser of an annual
12106         interdisciplinary host--microbiome symposium.}
12107 }
12108
12109 \addEntry[cv]{cv-per1}{
12110     ref-person-id = {perl},
12111     cv-type       = {supervision},
12112     description   = {Supervision of doctoral and postdoctoral researchers in
12113         structured mentoring teams.}
12114 }
12115 \addEntry[cv]{cv-per1}{
12116     ref-person-id = {perl},
12117     cv-type       = {distinction},
12118     description   = {Example University Award for Interdisciplinary Research}
12119 }
12120 \addEntry[cv]{cv-per1}{
12121     ref-person-id = {perl},
12122     cv-type       = {distinction},
12123     description   = {Fellow of the Example Academy of Sciences}
12124 }
12125 \addEntry[cv]{cv-per1}{
12126     ref-person-id = {perl},
12127     cv-type       = {other},
12128     description   = {No commercial interests related to the proposed research.}
12129 }
12130
12131 %% A CV database must exist for every current-period PI. These compact
12132 %% entries keep the generated CV example complete while perl demonstrates all
12133 %% optional CV categories above.
12134 \addEntry[cv]{cv-per2}{
12135     ref-person-id      = {per2},
12136     cv-type            = {mandatory},
12137     periodStart        = {2016},
12138     periodEnd          = {},
12139     positionText       = {Research group leader},
12140     position           = {Computational systems biology},
12141     description        = {Leads the biomedical data-integration group},
12142     ref-institution-id = {ins2}
12143 }
12144
12145 \addEntry[cv]{cv-per3}{
12146     ref-person-id      = {per3},
12147     cv-type            = {mandatory},
12148     periodStart        = {2018},
12149     periodEnd          = {},
12150     positionText       = {Senior research scientist},
12151     position           = {Microbiology and host defence},
12152     description        = {Coordinates translational infection research},

```

```

12153   ref-institution-id = {ins2}
12154 }
12155
12156 \addEntry[cv]{cv-per4}{
12157   ref-person-id       = {per4},
12158   cv-type             = {mandatory},
12159   periodStart         = {2015},
12160   periodEnd           = {},
12161   positionText        = {Professor of Molecular Medicine},
12162   position            = {Molecular tissue regeneration},
12163   description         = {Leads the molecular regeneration programme},
12164   ref-institution-id = {ins2}
12165 }
12166
12167 \addEntry[cv]{cv-per5}{
12168   ref-person-id       = {per5},
12169   cv-type             = {mandatory},
12170   periodStart         = {2014},
12171   periodEnd           = {},
12172   positionText        = {Professor of Research Training},
12173   position            = {Biomedical engineering education},
12174   description         = {Directs interdisciplinary doctoral training},
12175   ref-institution-id = {ins1}
12176 }
12177 % \iffalse
12178  $\langle$ /meta-cv $\rangle$ 
12179  $\langle$ *meta-tables $\rangle$ 
12180 % \fi
12181
12182
12183
12184

```

### 3.9 Title Page (Proposal specific)

```

12185 \pdfbookmark{Titlepage}{titlepage}
12186 \begin{titlepage}
12187   \def\tmpLocalDB{meta}%
12188   \vspace*{4em}
12189   \begin{center}%
12190     \large
12191     \crc\,\dfgCRCNumber\\
12192     \vspace*{1.5em}
12193     {\Large\bfseries \dfgCRCName}\\
12194     \dfgCRCNameAddon\\
12195     \vspace*{2em}
12196     \crcLogo[height=2cm]\\
12197     \vspace*{2em}
12198     \theCRCCoordinatingAffiliation\\
12199     \dfgApplicantAffiliationsTF
12200     { }
12201     {\theCRCOtherApplicantAffiliations\\}
12202     \vspace*{2em}
12203     {\Large\bfseries Funding Proposal}\\[1em]
12204     for the \dfgFundingPeriodText\space Funding Period\\
12205     \dfgFundingYear{1}--%
12206     \dfgFundingYear{2}--%
12207     \dfgFundingYear{3}--%
12208     \dfgFundingYear{4}--%
12209     \dfgFundingYear{5}
12210     \dfgIfCVT{\par\textcolor{tableHeadingsFont}{Appendix: Research profiles}}
12211     \dfgIfFinalF{{\par\large\InfoTeX}}
12212     % \iftoggle{crc@chapter}{%
12213     %   \par\vspace*{5em}\par
12214     %   \begin{csrcTitleBox}
12215     %     \centering\Huge%
12216     %     {\color{rwthRed}%

```

```

12217 % \ttfamily%
12218 % content/\textbf{\dfgChapter}.tex}\\
12219 % \Large\dfgCompiled
12220 % \end{crcTitleBox}%
12221 % {}
12222 \vfill
12223 %
12224 % \crcLogo[height=1cm]
12225 \hfill%
12226 \affiliationLogo[height=1cm]
12227 \end{center}
12228 \clearpage
12229 \checkFile{content/00_titlepage-colophon}
12230 \end{titlepage}
12231 \begin{titlepage}
12232 % setting the default database for general information
12233 \def\tmpLocalDB{meta}
12234 \begin{center}
12235 Proposal for the \dfgFundingPeriodText\space Funding Period of\\
12236 \crc\, \dfgCRCNumber
12237
12238 \enquote{\bfseries\dfgCRCName: \dfgCRCNameAddon}
12239 \end{center}
12240 funded since
12241 \begin{center}
12242 \getEntry{crc}{fundedSince}
12243 \end{center}
12244 for
12245 \begin{center}
12246 \dfgFundingYear{1}--%
12247 \dfgFundingYear{2}--%
12248 \dfgFundingYear{3}--%
12249 \dfgFundingYear{4}--%
12250 \dfgFundingYear{5}
12251 \end{center}
12252 Coordinating university:
12253 \begin{center}
12254 \theCRCCoordinatingAffiliation
12255 \end{center}
12256 \dfgApplicantAffiliationsTF
12257 { }
12258 {
12259 Other applicant
12260 \dfgOtherApplicantAffiliationsTF{university}{universities}:
12261 \begin{center}
12262 \theCRCOtherApplicantAffiliations
12263 \end{center}
12264 }
12265 \Hrule[
12266 thickness = 1.5pt,
12267 above = 2em,
12268 below = 2em]
12269
12270 \begin{minipage}[t]{.49\linewidth}
12271 \textbf{Spokesperson of\ the \crc:}\\[1\baselineskip]
12272 \getPISWithRole{spokesperson}[raster columns=1]
12273 \end{minipage}\hfill%
12274 \begin{minipage}[t]{.49\linewidth}
12275 \textbf{Management or office of\ the \crc:}\\[1\baselineskip]
12276 \getPISWithRole{manager}[raster columns=1]
12277 \end{minipage}
12278 \vfill
12279 \printSignaturesWithRole{spokesperson}{(Spokesperson~of~\crc)}
12280 \printSignaturesWithRole{rector}
12281 {(Rector,~chancellor,~or~president~of~
12282 \getEntry[affiliation]{\theAffiliationOfRoleID}{name})}

```

```

12283 \end{titlepage}
12284 \bgroup
12285 \let\cleardoublepage\clearpage% to get the TOC on two pages (left/right)
12286 \pdfbookmark{\contentsname}{Contents}
12287 \tableofcontents
12288 \dfgIfCVT{\KOMAOptions{open=left}}
12289 \egroup

```

### 3.10 Content Files (Proposal specific)

```

12290 \newrefsection
12291 \chapter{General information}
12292 \printThumbIndex{1}
12293 \section{Key data}
12294 \subsection{Governing bodies of the \crc}
12295 % \subsubsection{Spokesperson of the \thisCRC}
12296 % \getPISWithRole{spokesperson}
12297
12298 \subsubsection*{Steering Committee of the \thisCRC}
12299
12300 \getPISWithRole{steering-committee-member}
12301
12302 For the third funding period, the steering committee includes representatives
12303 of both research areas and the Integrated Research Training Group. The
12304 spokesperson and committee members are elected by the CRC general assembly in
12305 accordance with the bylaws. The composition is reviewed annually with regard
12306 to scientific breadth, career stage, and equitable participation.
12307
12308 \subsection{Project leaders}
12309 \printTable{ProjectLeaders}
12310
12311 \subsection{Participating institutions}
12312 \printList{ParticipatingInstitutions}
12313
12314 \clearpage
12315 \subsection{Project groups and projects}
12316 \printTable{{Projects}{A}{Microbiota and metabolic pathways}}
12317 \printTable{{Projects}{B}{Immunological circuits}}
12318 \printTable{{Projects}{Q}{Central projects}}
12319 N: New projects started in the \dfgFundingPeriodText\space funding period; %
12320 E: Ending projects not continued in the \dfgFundingPeriodText\space funding
12321 period; %
12322 Research areas according to the German Research Foundation (2024--2028)%
12323 \footnote{\raggedright\url{https://www.dfg.de/resource/blob/331950/fachsystematik-2024-2028-
12324 en.pdf}}:
12325
12326 \printList{ResearchAreasFromProjects}
12327
12328 % For the following sections we want to have them
12329 % numbered until 'subsubsection'
12330 \setcounter{secnumdepth}{4}
12331
12332 \clearpage
12333 \section{Research profile of the \crc} %1.2
12334 \begin{dfgSummaryBox}[title={Spotlights: Moving Forward}]
12335 \item Resolve causal mechanisms of communication between microbial
12336 communities, epithelial barriers, and tissue-resident immune cells.
12337 \item Combine spatial profiling, experimental perturbation, and predictive
12338 modelling across the participating projects.
12339 \item Translate shared methods into reproducible services, interoperable
12340 data, and structured training for researchers in early career phases.
12341 \end{dfgSummaryBox}
12342
12343 %% \FloatBarrier % no images in references list.
12344 \defbibnote{frame-references}{%
12345 \usekomafont{subsection}%
12346 \bfseries\sffamily References

```

```

12346 }
12347 \printbibliography[
12348   prenote={frame-references},
12349   heading=none
12350 ]
12351
12352
12353 \subsection{Summary of the research programme}%1.2.1
12354
12355 The CRC investigates how microbial and host-derived signals cross epithelial
12356 barriers and influence organ function. During the previous funding periods,
12357 the consortium established shared cohorts, experimental models, imaging
12358 workflows, and computational methods. The new programme links these resources
12359 in hypothesis-driven projects that test causality across molecular, cellular,
12360 and tissue scales.
12361
12362 \subsection{Detailed presentation of the research programme}%1.2.2
12363
12364 Project area A examines microbial metabolites and barrier signalling, whereas
12365 project area B focuses on immune circuits and tissue responses. The central
12366 projects provide imaging, analysis, training, coordination, and research-data
12367 services. Common samples, harmonised metadata, and reciprocal collaborations
12368 connect the individual work programmes and enable validation across models and
12369 participating institutions.
12370
12371 \subsection{Positioning of the \crc within its general research area}%1.2.3
12372
12373 The programme combines mechanistic microbiome research with systems immunology
12374 and organ physiology. Its distinguishing feature is the coordinated
12375 validation of candidate signals from discovery cohorts through controlled
12376 experimental systems to tissue-level readouts, supported by shared technology
12377 and transparent data-management standards.
12378
12379 \subsection{National and international cooperation and networking} %1.2.4
12380
12381 The CRC maintains method-oriented collaborations with national infrastructure
12382 networks and international partner laboratories. Cooperation agreements
12383 define sample and data transfer, authorship, quality assurance, and access to
12384 specialised technologies. Visiting-researcher and exchange formats are
12385 coordinated through the Integrated Research Training Group.
12386
12387 \section{Research profile of the applicant
12388   \dfgApplicantAffiliationsTF{university}{universities}} %1.3
12389 \subsection{Strategy and planning}%1.3.1
12390
12391 Example University has identified host--microbiome research as a strategic
12392 priority and supports the CRC through permanent scientific positions, shared
12393 technical platforms, research-data infrastructure, and central administration.
12394 Annual reviews align institutional investments with the scientific milestones
12395 of the consortium.
12396
12397 \subsection{Staff situation} % 1.3.2
12398
12399 The participating units contribute principal investigators, research staff,
12400 technical personnel, data stewards, and administrative support. Recruitment
12401 planning prioritises timely appointments, transparent selection procedures,
12402 career development, and continuity of essential technical expertise.
12403
12404 \subsection{Research infrastructure} % 1.3.3
12405
12406 The CRC has access to advanced microscopy, flow cytometry, sequencing,
12407 gnotobiotic facilities, secure data storage, and high-performance computing.
12408 Central projects coordinate access, training, maintenance, and quality control
12409 so that methods and datasets remain comparable across all projects.
12410
12411 \section{Support structures} % 1.4

```

```

12412 \subsection{Researchers in early career phases} % 1.4.1
12413
12414 Researchers in early career phases receive structured scientific and career
12415 mentoring, transferable-skills training, annual progress reviews, and access to
12416 methods courses and exchange opportunities organised by \getProject{Q02}.
12417
12418 \addEntry[person]{EarlyCareerResearcher}{
12419   ref-project-id= {A01},
12420   id              = {KM},
12421   lastname        = {Sample},
12422   firstname       = {Kimmi},
12423   financed-by     = {DFG},
12424   category        = {PhD},
12425   topic           = {Epithelial sensing of microbial metabolites},
12426   periodStart     = {2025-04},
12427   periodEnd       = {2029-06}
12428 }
12429 \addEntry[person]{EarlyCareerResearcher}{
12430   ref-project-id= {B01},
12431   id              = {KiM},
12432   lastname        = {Wunderlich},
12433   firstname       = {Kimmi},
12434   financed-by     = {DFG},
12435   category        = {MD},
12436   topic           = {Immune signatures during microbiome perturbation},
12437   periodStart     = {2025-04},
12438   periodEnd       = {2029-06}
12439 }
12440
12441 %% \getEntry[EarlyCareerResearcher]{KM}{lastname}
12442 \printTable{EarlyCareerResearchers}
12443
12444 \subsection{Promotion of equity and diversity} % 1.4.2
12445
12446 Recruitment, supervision, and committee appointments follow transparent
12447 criteria and are monitored by career stage and gender. Flexible working
12448 arrangements, mentoring, accessibility measures, and targeted career support
12449 are available through the central coordination project.
12450
12451 \addEntry[GenderEquality]{GenderEqualityStaff}{
12452   position              = {PhD}, %PhD|PostDoc
12453   previous-objective-percentage-female = {40},
12454   status-quo-number-female = {20},
12455   status-quo-percentage-female = {14},
12456   future-objective-percentage-female = {40}
12457 }
12458
12459 \addEntry[GenderEquality]{GenderEqualityStaff}{
12460   position              = {postDoc}, %PhD|PostDoc
12461   previous-objective-percentage-female = {22},
12462   status-quo-number-female = {34},
12463   status-quo-percentage-female = {44},
12464   future-objective-percentage-female = {34}
12465 }
12466 % -----
12467
12468 \addEntry[GenderEquality]{GenderEqualityProjectLeaders}{
12469   position              = {postDoc}, %PhD|PostDoc
12470   previous-objective-percentage-female = {22},
12471   future-objective-percentage-female = {34}
12472 }
12473 \addEntry[GenderEquality]{GenderEqualityProjectLeaders}{
12474   position              = {groupLeader}, %PhD|PostDoc
12475   previous-objective-percentage-female = {22},
12476   future-objective-percentage-female = {34}
12477 }

```

```

12478
12479
12480 \addEntry[GenderEquality]{GenderEqualityProjectLeaders}{
12481     position                = {prof-W2}, %PhD|PostDoc
12482     previous-objective-percentage-female = {22},
12483     future-objective-percentage-female  = {34}
12484 }
12485
12486 \addEntry[GenderEquality]{GenderEqualityProjectLeaders}{
12487     position                = {prof-W3}, %PhD|PostDoc
12488     previous-objective-percentage-female = {22},
12489     future-objective-percentage-female  = {34}
12490 }
12491
12492 \clearpage
12493 \subsubsection*{A. Objectives for the participation of female researchers}
12494 \printTable{GenderEqualityStaff}
12495
12496 \subsubsection*{B. Project leaders}
12497 \printTable{GenderEqualityProjectLeaders}
12498
12499 \subsection{Knowledge transfer and science communication} % 1.4.3
12500
12501 The CRC communicates results through open research resources, public lectures,
12502 school and patient-group activities, and dialogue formats with clinical and
12503 societal stakeholders. Transfer opportunities are assessed early, with clear
12504 procedures for intellectual property, responsible communication, and reusable
12505 research outputs.
12506
12507 \section{Risks in international cooperation} %1.5
12508
12509 International partnerships are reviewed for legal, ethical, export-control,
12510 data-protection, and research-security risks. Written agreements specify
12511 permitted data and material transfers, access rights, publication principles,
12512 and responsibilities. The participating universities reassess collaborations
12513 when partners, technologies, or regulatory conditions change.
12514
12515 \section{Considerations on aspects of ecological sustainability in project
12516     planning and implementation} %1.6
12517
12518 The CRC considers ecological sustainability when planning experiments,
12519 procurement, travel, computing, sample storage, and shared infrastructure.
12520 Projects consolidate measurement campaigns, share equipment and reference
12521 materials, select proportionate data-retention and computing strategies, and
12522 prefer lower-emission travel or remote participation where this is compatible
12523 with the scientific objective. The steering committee reviews these measures
12524 alongside scientific feasibility, research quality, legal obligations, animal
12525 welfare, and the responsible use of resources.
12526
12527
12528 % ok, let's go back to the default (from base.tex)
12529 \setcounter{secnumdepth}{2}
12530
12531 \endrefsection
12532 \resetboldnames
12533
12534 \chapter{Existing funds and requested funds} %2
12535 \printThumbIndex{2}
12536 \section{Existing funds} % 2.1
12537 \subsection{Overview of existing funds for direct costs} %2.1.1
12538
12539 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
12540     year      = 1,
12541     applicant  = 1000,
12542     participant = 2000,
12543     other-funds = 3000

```

```

12544 }
12545 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
12546   year      = 2,
12547   applicant  = 1000,
12548   participant = 2000,
12549   other-funds = 3000
12550 }
12551 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
12552   year      = 3,
12553   applicant  = 1000,
12554   participant = 2000,
12555   other-funds = 3000
12556 }
12557 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
12558   year      = 4,
12559   applicant  = 1000,
12560   participant = 2000,
12561   other-funds = 3000
12562 }
12563 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
12564   year      = 5,
12565   applicant  = 1000,
12566   participant = 2000,
12567   other-funds = 3000
12568 }
12569
12570
12571 % New-period values are declared once in the individual project files below.
12572 % The class restores those later declarations from the preceding LaTeX run's
12573 % auxiliary files into the overview database used here.
12574 \printTable{ExistingFundsDirectCosts}
12575
12576
12577 \subsection{Overview of existing staff} % 2.1.2
12578 % Data are reused from project-level RequestedFundingStaff declarations with
12579 % funding-status={existing}. No separate overview database is required.
12580 \printTable{OverviewExistingStaff}
12581
12582 \subsection{List of existing instrumentation} % 2.1.2
12583 \addEntry[instrumentation]{existingInstrumentation}{
12584   ref-project-id = {A01},
12585   quantity      = {1},
12586   instrument     = {Confocal laser-scanning microscope},
12587   company        = {Example Instruments GmbH},
12588   year          = {2025},
12589   cost           = {250},
12590   financed-by   = {DFG}
12591 }
12592 \addEntry[instrumentation]{existingInstrumentation}{
12593   ref-project-id = {A01,B01},
12594   quantity      = {2},
12595   instrument     = {Anaerobic workstation},
12596   company        = {Laboratory Systems AG},
12597   year          = {2024},
12598   cost           = {80},
12599   financed-by   = {Institutional funds}
12600 }
12601
12602 \printTable{ExistingInstrumentation}
12603
12604 \section{Previous and requested funds} %2.2
12605 \subsection{Overview} % 2.2.1
12606
12607 \addEntry[funding]{PreviousRequestedFunding}{
12608   year      = 1,
12609   staff     = 1000,

```

```

12610     costs          = 2000,
12611     instrumentation = 3000,
12612     fellowships    = 4000,
12613     globalfunds     = 5000
12614 }
12615 \addEntry[funding]{PreviousRequestedFunding}{
12616     year          = 2,
12617     staff         = 1000,
12618     costs         = 2000,
12619     instrumentation = 3000,
12620     fellowships    = 4000,
12621     globalfunds     = 5000
12622 }
12623 \addEntry[funding]{PreviousRequestedFunding}{
12624     year          = 3,
12625     staff         = 1000,
12626     costs         = 2000,
12627     instrumentation = 3000,
12628     fellowships    = 4000,
12629     globalfunds     = 5000
12630 }
12631 \addEntry[funding]{PreviousRequestedFunding}{
12632     year          = 4,
12633     staff         = 1000,
12634     costs         = 2000,
12635     instrumentation = 3000,
12636     fellowships    = 4000,
12637     globalfunds     = 5000
12638 }
12639 \addEntry[funding]{PreviousRequestedFunding}{
12640     year          = 5,
12641     staff         = 1000,
12642     costs         = 2000,
12643     instrumentation = 3000,
12644     fellowships    = 4000,
12645     globalfunds     = 5000
12646 }
12647
12648
12649 \printTable{PreviousAndCurrentRequestedFunding}
12650
12651 \subsection{Overview of funds requested for staff} % 2.2.2
12652 % data comes from all the
12653 % \addEntry[funding]{RequestedFunding}{
12654 %     ...
12655 %     category      = {...},
12656 %     funding-type = {staff},
12657 %     ...
12658 % }
12659 \printTable{OverviewOfFundsRequestedForStaff}
12660
12661 \subsection{Overview of funds requested for instrumentation} % 2.2.3
12662
12663 % data comes from all the
12664 % \addEntry[funding]{RequestedFunding}{
12665 %     ...
12666 %     funding-type = {instrumentation},
12667 %     ...
12668 % }
12669 \printTable{OverviewFundsRequestedInstrumentation}
12670
12671
12672 \section{Upkeep of laboratory animals} % 2.3
12673 \addEntry{UpkeepLaboratoryAnimals}{
12674     ref-project-id = {A01},
12675     species        = {mouse},

```

```

12676     quantity          = {1212},
12677     weeks-kept         = {43},
12678     purchasing-costs   = {23},
12679     requested-funds    = {100},
12680     existing-funds     = {232}
12681 }
12682 \addEntry{UpkeepLaboratoryAnimals}{
12683     ref-project-id     = {A01,A02},
12684     species            = {rat},
12685     quantity          = {2},
12686     weeks-kept         = {3},
12687     purchasing-costs   = {23.54},
12688     requested-funds    = {1230},
12689     existing-funds     = {232}
12690 }
12691 \addEntry{UpkeepLaboratoryAnimals}{
12692     ref-project-id     = {B01},
12693     species            = {mouse-gnotobiotic},
12694     quantity          = {3},
12695     weeks-kept         = {43},
12696     purchasing-costs   = {23},
12697     requested-funds    = {201},
12698     existing-funds     = {132}
12699 }
12700 \printTable{UpkeepLaboratoryAnimals}
12701
12702 \addtocontents{toc}{%
12703     % Change style of TOC from here on. (not recommended)
12704     \RedeclareSectionCommands[
12705         tocbeforeskip=0ex,
12706         tocentryformat=\normalsize\normalfont
12707     ]{section}
12708     \protect\clearpage}
12709 \chapter{Project details} %3
12710 \printThumbIndex{3}
12711
12712 %% Each extracted project file is a complete, copyable status/type example.
12713 %% \printProjectHead creates the general-information section, project title,
12714 %% project leaders, contract information, and legal-issues block from metadata.
12715 \dftocprojectpart{A}{Research Projects}
12716 \input{content/03_project_A01}
12717 \input{content/03_project_A02}
12718
12719 \dftocprojectpart{B}{Research Projects}
12720 \input{content/03_project_B01}
12721 \input{content/03_project_B02}
12722
12723 \dftocprojectpart{Q}{Central Projects}
12724 \input{content/03_project_Q01}
12725 \input{content/03_project_Q02}
12726 \input{content/03_project_Q03}

```

### 3.11 Complete continuing-project example

This file demonstrates the complete heading and command structure for a continuing research project (project-status=C).

```

12727 \printProjectHead{A01}
12728
12729 \section{Summary}
12730 \label{A01:summary}
12731
12732 Summarise the continuing project's central question, progress, planned work,
12733 methods, and contribution to the Collaborative Research Centre.
12734
12735 \section{Project progress to date}
12736 \label{A01:project-progress-to-date}
12737

```

```

12738 \subsection{Report and current state of research}%
12739 \label{A01:report-and-current-state-of-research}
12740
12741 Report the work and results from the previous funding periods, relate them to
12742 the current state of research, and explain how they motivate the new plan.
12743
12744 \FloatBarrier
12745
12746 \projectPublicationsHeading
12747
12748 %% Add all project-specific publication keys before printing the bibliography.
12749 \projectNocite{FAIR2016}
12750 \printProjectBibliography[heading=none]
12751
12752 \section{Project plan}
12753 \label{A01:project-plan}
12754
12755 \begin{aims}
12756   \addAim{A} Define the underlying mechanism.
12757   \addAim{B} Validate the mechanism experimentally.
12758   \addAim{C} Integrate the findings across the CRC.
12759 \end{aims}
12760
12761 Refer to one aim as \getAim{A}, or to several as \getAim{A,B,C}.
12762
12763 \begin{workpackages}
12764   \addWP{wp1}{
12765     name={Mechanistic analysis},
12766     description={Define the underlying mechanism},
12767     periodStart={1},
12768     periodEnd={8},
12769     style={default},
12770   }
12771
12772   Describe the work, methods, milestones, risks, and expected results of
12773   \getWP{wp1}.
12774
12775   \begin{workpackages}
12776     %% Sub-workpackages deliberately have no name key: their authored text is
12777     %% the visible list item, while description is used only in the Gantt chart.
12778     \addWP{wpla}{
12779       description={Establish the experimental system},
12780       periodStart={1},
12781       periodEnd={4},
12782       style={alternative},
12783     }
12784     Establish and validate the experimental system.
12785
12786     \addWP{wplb}{
12787       description={Perform the mechanistic experiments},
12788       periodStart={3},
12789       periodEnd={8},
12790       style={important},
12791     }
12792     Perform the mechanistic experiments and define decision points.
12793   \end{workpackages}
12794
12795   \addWP{wp2}{
12796     name={Experimental validation},
12797     description={Validate and integrate the mechanism},
12798     periodStart={7},
12799     periodEnd={16},
12800     style={striped},
12801   }
12802
12803   Describe the validation strategy, expected results, and contingency plan of

```

```

12804 \getWP{wp2}.
12805 \end{workpackages}
12806
12807 \printPlot{{Gantt}}{A01}}
12808
12809 \FloatBarrier
12810
12811 \section{Relevance of sex, gender and/or diversity in the research
12812 project}
12813 \label{A01:relevance-of-sex-gender-and-diversity}
12814
12815 Explain whether and how sex, gender, and diversity affect the research
12816 questions, design, analysis, and interpretation.
12817
12818 \section{Role within the Collaborative Research
12819 Centre}
12820 \label{A01:role-within-the-collaborative-research-centre}
12821
12822 Describe the project's contribution to the CRC and its principal
12823 collaborations.
12824
12825 %% The default full-width arc layout shows nodes and area rules without edges.
12826 \printPlot{{ProjectCollaboration}}{A01}}
12827 %% To draw the connecting arcs, replace the call above with:
12828 %% \printPlot{{ProjectCollaboration}[arcs=true]}{A01}
12829 %% [Optional additional caption text.]}
12830 %% Use [layout=heatmap] for the alternative heatmap layout.
12831
12832
12833 \section{Differentiation from other funded
12834 projects}
12835 \label{A01:differentiation-from-other-funded-projects}
12836
12837 Explain how this project differs from, and complements, other funded work of
12838 the project leaders.
12839
12840 \section{Project funding}
12841 \label{A01:project-funding}
12842
12843 \subsection{Previous funding}
12844
12845 Funding of this project within the Collaborative Research Centre started
12846 in July 2019. Preparatory work was funded by Example University's seed-fund
12847 programme from January 2018 to June 2019 (reference number EU-EXAMPLE-01).
12848
12849 \subsection{Requested funding}
12850
12851 %% Without sum, the class calculates from salary@prof, percentage, and
12852 %% quantity, using half the annual amount in year1 and year5.
12853 \addEntry[funding]{RequestedFunding}{
12854   ref-project-id = {A01},
12855   funding-type   = {staff},
12856   category       = {prof},
12857   percentage     = {100},
12858   quantity = {
12859     year1 = {2},
12860     year2 = {2},
12861     year3 = {2},
12862     year4 = {2},
12863     year5 = {2}
12864   }
12865 }
12866
12867 %% With sum, these concrete yearly amounts override the central salary rate;
12868 %% year1 and year5 below already represent half-years.
12869 \addEntry[funding]{RequestedFunding}{

```

```

12870     ref-project-id = {A01},
12871     funding-type   = {staff},
12872     category       = {PhD},
12873     percentage     = {65},
12874     quantity = {
12875         year1 = {1},
12876         year2 = {1},
12877         year3 = {1},
12878         year4 = {1},
12879         year5 = {1}
12880     },
12881     sum = {
12882         year1 = {26500},
12883         year2 = {53000},
12884         year3 = {53000},
12885         year4 = {53000},
12886         year5 = {26500}
12887     }
12888 }
12889
12890 \addEntry[funding]{RequestedFunding}{
12891     ref-project-id = {A01},
12892     funding-type   = {costs}, %staff, costs, ...
12893     category       = {Laboratory consumables},
12894     sum = {
12895         year1      = {2112},
12896         year2      = {67},
12897         year3      = {9843},
12898         year4      = {2375},
12899         year5      = {983}
12900     }}
12901
12902 \addEntry[funding]{RequestedFunding}{
12903     ref-project-id = {A01},
12904     funding-type   = {costs}, %staff, costs, ...
12905     category       = {Sequencing and data analysis},
12906     sum = {
12907         year1      = {1000},
12908         year2      = {2000},
12909         year3      = {3000},
12910         year4      = {4000},
12911         year5      = {5000}
12912     }}
12913
12914 \addEntry[funding]{RequestedFunding}{
12915     ref-project-id = {A01},
12916     funding-type   = {instrumentation}, %staff, costs, ...
12917     category       = {Live-cell imaging system},
12918     sum = {
12919         year1      = {1000},
12920         year2      = {2000},
12921         year3      = {3000},
12922         year4      = {4000},
12923         year5      = {5000}
12924     }}
12925
12926 \printTable{{RequestedFunding}{A01}}
12927
12928
12929
12930
12931
12932 \subsubsection{Requested funding for staff for the new funding period}
12933 \addEntry[staff]{RequestedFundingStaff}{
12934     ref-project-id   = {A01},
12935     funding-status   = {existing},

```

```

12936     staff-type           = {research},
12937     ref-person-id        = {perl},
12938     field-of-research    = {Microbiology and systems medicine},
12939     commitment          = {8},
12940     category             = {prof},
12941     funding-source       = {State funds},
12942     description          = {Leads the experimental programme and supervises the
12943         research staff assigned to the project.}
12944 }
12945
12946 \addEntry[staff]{RequestedFundingStaff}{
12947     ref-project-id       = {A01},
12948     funding-status       = {existing},
12949     staff-type           = {nonResearch},
12950     firstname            = {Alex},
12951     lastname             = {Example},
12952     academic-degree      = {M.Sc.},
12953     positionText         = {Technical assistant},
12954     field-of-research    = {Laboratory management},
12955     ref-institution-id   = {ins1},
12956     commitment          = {20},
12957     category             = {nonResearch},
12958     funding-source       = {Core support},
12959     description          = {Maintains shared laboratory workflows and coordinates
12960         sample logistics.}
12961 }
12962
12963 \addEntry[staff]{RequestedFundingStaff}{
12964     ref-project-id       = {A01},
12965     funding-status       = {requested},
12966     staff-type           = {research},
12967     firstname            = {Researcher},
12968     lastname             = {TBA},
12969     academic-degree      = {Dr. rer. nat.},
12970     positionText         = {Postdoctoral researcher},
12971     field-of-research    = {Host--microbiome interactions},
12972     ref-institution-id   = {ins2},
12973     category             = {postDoc},
12974     description          = {Performs the planned mechanistic experiments and
12975         integrates molecular and clinical datasets.}
12976 }
12977
12978 \addEntry[staff]{RequestedFundingStaff}{
12979     ref-project-id       = {A01},
12980     funding-status       = {requested},
12981     staff-type           = {nonResearch},
12982     firstname            = {Taylor},
12983     lastname             = {Demo},
12984     academic-degree      = {B.Sc.},
12985     positionText         = {Research assistant},
12986     field-of-research    = {Biobanking and data curation},
12987     ref-institution-id   = {ins2},
12988     category             = {assistant},
12989     description          = {Supports biobanking, quality control, and structured
12990         curation of the project datasets.}
12991 }
12992
12993 \printTable{{RequestedFundingStaff}{A01}}
12994
12995 \subsubsection{Requested funding for direct costs for the new funding
12996     period}
12997
12998 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
12999     ref-project-id       = {A01},
13000     ref-affiliation-id    = {aff2},
13001     financed-by          = {Partner University core support},

```

```

13002     sum = {
13003     year1      = {1200},
13004     year2      = {500},
13005     year3      = {21100},
13006     year4      = {5600},
13007     year5      = {3400}
13008   }}
13009
13010 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13011   ref-project-id = {A01},
13012   ref-affiliation-id = {aff1},
13013   financed-by = {Example University core support},
13014   sum = {
13015     year1      = {11100},
13016     year2      = {53800},
13017     year3      = {21100},
13018     year4      = {600},
13019     year5      = {38300}
13020   }}
13021
13022
13023 \printTable{{RequestedAndExistingFundingDirectCosts}{A01}}
13024
13025 \begin{FundingDirectCostsTable}[Text]
13026   Laboratory consumables and antibodies & EUR & 15000 \\
13027   Single-cell sequencing and spatial profiling & EUR & 12000 \\
13028   Research data storage and analysis & EUR & 3000 \\
13029 \end{FundingDirectCostsTable}
13030
13031
13032 \subsubsection{Requested funding for instrumentation for the new funding
13033   period}
13034
13035
13036 \begin{FundingDirectCostsTable}[Text]
13037   Automated live-cell imaging system & EUR & 95000 \\
13038   Environmental control module & EUR & 18000 \\
13039   Analysis workstation and software & EUR & 7000 \\
13040 \end{FundingDirectCostsTable}
13041
13042
13043 \printProjectTail

```

### 3.12 Complete new-project example

This file demonstrates the complete heading and command structure for a new research project (project-status=N). Its scientific-background section is intentionally named differently from the progress section of a continuing project.

```

13044 \printProjectHead{A02}
13045
13046 \section{Summary}
13047 \label{A02:summary}
13048
13049 Summarise the new project's central hypothesis, methods, expected results, and
13050 contribution to the Collaborative Research Centre.
13051
13052 \section{Research rationale}
13053 \label{A02:research-rationale}
13054
13055 \subsection{Current state of research and preliminary work}
13056 \label{A02:current-state-of-research-and-preliminary-work}
13057
13058 Describe the relevant state of research, preliminary work, open questions,
13059 and the scientific rationale for the proposed project.
13060
13061 \FloatBarrier

```

```

13062
13063 \projectPublicationsHeading
13064 \projectNocite{FAIR2016}
13065 \printProjectBibliography[heading=none]
13066
13067 \section{Project plan}
13068 \label{A02:project-plan}
13069
13070 \begin{aims}
13071   \addAim{1} Establish the experimental and analytical framework.
13072   \addAim{2} Test the central hypothesis and validate the findings.
13073 \end{aims}
13074
13075 \begin{workpackages}
13076   \addWP{wp1}{
13077     name={Framework and pilot experiments},
13078     description={Establish the framework and complete pilot experiments},
13079     periodStart={1},
13080     periodEnd={7},
13081     style={default},
13082   }
13083
13084   Describe the methods, milestones, expected results, and risks of
13085   \getWP{wp1} and its contribution to \getAim{1}.
13086
13087   \addWP{wp2}{
13088     name={Hypothesis testing and validation},
13089     description={Test the hypothesis and validate the findings},
13090     periodStart={6},
13091     periodEnd={16},
13092     style={important},
13093   }
13094
13095   Describe the validation strategy and contingency plan for \getWP{wp2} and
13096   \getAim{2}.
13097 \end{workpackages}
13098
13099 \printPlot{{Gantt}{A02}}
13100
13101 \FloatBarrier
13102
13103 \section{Relevance of sex, gender and/or diversity in the research project}
13104 \label{A02:relevance-of-sex-gender-and-diversity}
13105
13106 Explain whether and how sex, gender, and diversity affect the research
13107 questions, design, analysis, and interpretation.
13108
13109 \section{Role within the Collaborative Research Centre}
13110 \label{A02:role-within-the-collaborative-research-centre}
13111
13112 Describe the project's contribution to the CRC and its principal
13113 collaborations.
13114
13115 \printPlot{{ProjectCollaboration}{A02}}
13116
13117 \section{Differentiation from other funded projects of the project leader(s)}
13118 \label{A02:differentiation-from-other-funded-projects}
13119
13120 Explain how this new project differs from, and complements, other funded work
13121 of the project leaders.
13122
13123 \section{Project funding}
13124 \label{A02:project-funding}
13125
13126 \subsection{Previous funding}
13127

```

```

13128 State that this is a new CRC project and list related previous funding of the
13129 project leaders where applicable.
13130
13131 \subsection{Requested funding}
13132
13133 %% Automatic staff-cost example: sum is intentionally omitted; the class
13134 %% halves the calculated amounts in year1 and year5.
13135 \addEntry[funding]{RequestedFunding}{
13136   ref-project-id = {A02},
13137   funding-type   = {staff},
13138   category       = {postDoc},
13139   percentage     = {100},
13140   quantity = {
13141     year1 = {1},
13142     year2 = {1},
13143     year3 = {1},
13144     year4 = {1},
13145     year5 = {1}
13146   }
13147 }
13148
13149 %% Explicit staff-cost example: sum overrides the central salary calculation;
13150 %% the concrete year1 and year5 amounts below already represent half-years.
13151 \addEntry[funding]{RequestedFunding}{
13152   ref-project-id = {A02},
13153   funding-type   = {staff},
13154   category       = {PhD},
13155   percentage     = {65},
13156   quantity = {
13157     year1 = {1},
13158     year2 = {1},
13159     year3 = {1},
13160     year4 = {1},
13161     year5 = {1}
13162   },
13163   sum = {
13164     year1 = {26500},
13165     year2 = {53000},
13166     year3 = {53000},
13167     year4 = {53000},
13168     year5 = {26500}
13169   }
13170 }
13171
13172 \addEntry[funding]{RequestedFunding}{
13173   ref-project-id = {A02},
13174   funding-type   = {costs},
13175   category       = {Consumables},
13176   sum = {
13177     year1 = {2000},
13178     year2 = {2000},
13179     year3 = {2000},
13180     year4 = {2000},
13181     year5 = {2000}
13182   }
13183 }
13184
13185 \addEntry[funding]{RequestedFunding}{
13186   ref-project-id = {A02},
13187   funding-type   = {instrumentation},
13188   category       = {Specialised instrument},
13189   sum = {
13190     year1 = {5000},
13191     year2 = {0},
13192     year3 = {0},
13193     year4 = {0},

```

```

13194     year5 = {0}
13195   }
13196 }
13197
13198 \printTable{{RequestedFunding}{A02}}
13199
13200 \subsubsection{Requested funding for staff}
13201
13202 %% When no person database row is needed, all display data can be supplied
13203 %% directly. Leave academic-degree empty when it is unknown.
13204 \addEntry[staff]{RequestedFundingStaff}{
13205   ref-project-id      = {A02},
13206   funding-status      = {requested},
13207   staff-type          = {research},
13208   firstname           = {Researcher},
13209   lastname            = {TBA},
13210   academic-degree     = {},
13211   positionText        = {Postdoctoral researcher},
13212   field-of-research   = {Experimental systems medicine},
13213   ref-institution-id  = {ins1},
13214   category            = {postDoc},
13215   description         = {Establishes the new experimental platform, performs
13216     the mechanistic studies, and analyses the resulting datasets.}
13217 }
13218
13219 \printTable{{RequestedFundingStaff}{A02}}
13220
13221 Provide the scientific and organisational justification for every requested
13222 staff position.
13223
13224 \subsubsection{Requested funding of direct costs}
13225
13226 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13227   ref-project-id      = {A02},
13228   ref-affiliation-id  = {aff1},
13229   financed-by         = {State funds},
13230   sum = {
13231     year1 = {500},
13232     year2 = {500},
13233     year3 = {500},
13234     year4 = {500},
13235     year5 = {500}
13236   }
13237 }
13238
13239 \printTable{{RequestedAndExistingFundingDirectCosts}{A02}}
13240
13241 \begin{FundingDirectCostsTable}[Text]
13242   Consumables for pilot experiments & EUR & 10000 \\
13243   External data analysis & EUR & 5000 \\
13244 \end{FundingDirectCostsTable}
13245
13246 \subsubsection{Requested funding for instrumentation}
13247
13248 \begin{FundingDirectCostsTable}[Text]
13249   Specialised instrument including installation & EUR & 5000 \\
13250 \end{FundingDirectCostsTable}
13251
13252 \printProjectTail

```

### 3.13 Second continuing-project example

This compact but complete file demonstrates another continuing research project and keeps the funding-category examples used by the dummy proposal.

```

13253 \printProjectHead{B01}
13254
13255 \section{Summary}

```

```

13256 \label{B01:summary}
13257
13258 Summarise the continuing project and the work proposed for the new funding
13259 period.
13260
13261 \section{Project progress to date}
13262 \label{B01:project-progress-to-date}
13263
13264 \subsection{Report and current state of research}
13265 \label{B01:report-and-current-state-of-research}
13266
13267 Report the previous work, published and unpublished results, and the current
13268 state of research.
13269
13270 \FloatBarrier
13271
13272 \projectPublicationsHeading
13273 \projectNocite{FAIR2016}
13274 \printProjectBibliography[heading=none]
13275
13276 \section{Project plan}
13277 \label{B01:project-plan}
13278
13279 \begin{aims}
13280   \addAim{1} Complete the mechanistic analysis.
13281   \addAim{2} Validate the findings with CRC partners.
13282 \end{aims}
13283
13284 \begin{workpackages}
13285   \addWP{wp1}{
13286     name={Mechanistic analysis},
13287     description={Complete the mechanistic analysis},
13288     periodStart={1},
13289     periodEnd={10},
13290     style={default},
13291   }
13292   Describe \getWP{wp1}, including methods, milestones, and risks.
13293
13294   \addWP{wp2}{
13295     name={Collaborative validation},
13296     description={Validate the findings with CRC partners},
13297     periodStart={8},
13298     periodEnd={16},
13299     style={alternative},
13300   }
13301   Describe \getWP{wp2} and its links to \getAim{2}.
13302 \end{workpackages}
13303
13304 \printPlot{{Gantt}{B01}}
13305
13306 \FloatBarrier
13307
13308 \section{Relevance of sex, gender and/or diversity in the research project}
13309 \label{B01:relevance-of-sex-gender-and-diversity}
13310
13311 Explain the relevance of sex, gender, and diversity, or justify why they do
13312 not affect this project's research questions and methods.
13313
13314 \section{Role within the Collaborative Research Centre}
13315 \label{B01:role-within-the-collaborative-research-centre}
13316
13317 Describe the role of the project and its reciprocal collaborations.
13318
13319 \printPlot{{ProjectCollaboration}{B01}}
13320
13321 \section{Differentiation from other funded projects}

```

```

13322 \label{B01:differentiation-from-other-funded-projects}
13323
13324 Differentiate the project from other funded work of its project leaders.
13325
13326 \section{Project funding}
13327 \label{B01:project-funding}
13328
13329 \subsection{Previous funding}
13330
13331 State when CRC funding began and list other relevant previous funding.
13332
13333 \subsection{Requested funding}
13334
13335 %% Automatic staff-cost example: sum is intentionally omitted; the class
13336 %% halves the calculated amounts in year1 and year5.
13337 \addEntry[funding]{RequestedFunding}{
13338   ref-project-id = {B01},
13339   funding-type   = {staff},
13340   category       = {groupLeader},
13341   percentage     = {100},
13342   quantity = {
13343     year1 = {2},
13344     year2 = {2},
13345     year3 = {2},
13346     year4 = {2},
13347     year5 = {2}
13348   }
13349 }
13350
13351 %% Explicit staff-cost example: sum overrides the central salary calculation;
13352 %% the concrete year1 and year5 amounts below already represent half-years.
13353 \addEntry[funding]{RequestedFunding}{
13354   ref-project-id = {B01},
13355   funding-type   = {staff},
13356   category       = {postDoc},
13357   percentage     = {100},
13358   quantity = {
13359     year1 = {1},
13360     year2 = {1},
13361     year3 = {1},
13362     year4 = {1},
13363     year5 = {1}
13364   },
13365   sum = {
13366     year1 = {45000},
13367     year2 = {90000},
13368     year3 = {90000},
13369     year4 = {90000},
13370     year5 = {45000}
13371   }
13372 }
13373
13374 \addEntry[funding]{RequestedFunding}{
13375   ref-project-id = {B01},
13376   funding-type   = {globalfunds}, %staff, costs, ...
13377   category       = {Project-wide data stewardship},
13378   sum = {
13379     year1 = {1000},
13380     year2 = {2000},
13381     year3 = {3000},
13382     year4 = {4000},
13383     year5 = {5000}
13384   }
13385 }
13386
13387 \printTable{{RequestedFunding}{B01}}

```

```

13388
13389 \subsubsection{Requested funding for staff for the new funding period}
13390
13391 \addEntry[staff]{RequestedFundingStaff}{
13392   ref-project-id      = {B01},
13393   funding-status      = {requested},
13394   staff-type          = {research},
13395   firstname           = {Researcher},
13396   lastname            = {TBA},
13397   academic-degree     = {},
13398   positionText        = {Research group leader},
13399   field-of-research   = {Translational microbiology},
13400   ref-institution-id  = {ins2},
13401   category            = {groupLeader},
13402   description         = {Coordinates the experimental programme and the
13403     collaborative validation studies.}
13404 }
13405
13406 \printTable{{RequestedFundingStaff}{B01}}
13407
13408 \subsubsection{Requested funding for direct costs for the new funding period}
13409
13410 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13411   ref-project-id      = {B01},
13412   ref-affiliation-id  = {aff2},
13413   financed-by         = {Institutional funds},
13414   sum = {
13415     year1 = {1000},
13416     year2 = {1000},
13417     year3 = {1000},
13418     year4 = {1000},
13419     year5 = {1000}
13420   }
13421 }
13422
13423 \printTable{{RequestedAndExistingFundingDirectCosts}{B01}}
13424
13425 \begin{FundingDirectCostsTable}[Text]
13426   Experimental consumables & EUR & 10000 \\
13427   Data-processing services & EUR & 5000 \\
13428 \end{FundingDirectCostsTable}
13429
13430 \subsubsection{Requested funding for instrumentation for the new funding
13431   period}
13432
13433 \begin{FundingDirectCostsTable}[Text]
13434   No instrumentation requested & EUR & 0 \\
13435 \end{FundingDirectCostsTable}
13436
13437 \printProjectTail

```

### 3.14 Complete ending-project example

Ending projects use a deliberately shorter DFG structure: after the general information printed by `\printProjectHead`, they report project history, published results, and closing funding information. They do not contain a new project plan or a request for another funding period.

```

13438 \printProjectHead{B02}
13439
13440 \section{Project history}
13441 \label{B02:project-history}
13442
13443 \subsection{Report}
13444 \label{B02:report}
13445
13446 \begin{projectReport}
13447 Describe the complete funding history, objectives, methods, results, and

```

```

13448 contribution of the ending project. Citations used only in the report are
13449 printed automatically at the end of this environment. This dummy citation
13450 also demonstrates the exclusion of a result listed below
13451 \autocite{FAIR2016}.
13452 \end{projectReport}
13453
13454 \subsection{Published project results}
13455 \label{B02:published-project-results}
13456
13457 %% Replace the example key with the project's results. Use the literal value
13458 %% none only when a category genuinely produced no result; leaving a value
13459 %% empty keeps a visible drafting instruction.
13460 \printProjectResults{
13461   quality-assured = {FAIR2016},
13462   other           = none,
13463   patents         = none
13464 }
13465
13466 \section{Funding}
13467 \label{B02:funding}
13468
13469 Funding of this project within the Collaborative Research Centre started in
13470 April 2018. The project will be completed by the end of the current funding
13471 period. Replace these dates and, where applicable, add previous funding under
13472 another DFG programme and its reference number.
13473
13474 \subsection{Project staff in the ending funding period}
13475 \label{B02:project-staff-in-the-ending-funding-period}
13476
13477 %% For an ending project, funding-status=requested is printed as
13478 %% ``Staff funded with approved grant money'', matching the DFG form.
13479 \addEntry[staff]{RequestedFundingStaff}{
13480   ref-project-id      = {B02},
13481   funding-status      = {existing},
13482   staff-type          = {research},
13483   ref-person-id       = {per4},
13484   commitment          = {8},
13485   funding-source       = {State funds},
13486   field-of-research    = {Molecular tissue regeneration},
13487   description          = {Led the project, supervised the experimental work,
13488     and integrated its results across the CRC throughout the ending funding
13489     period.}
13490 }
13491
13492 \addEntry[staff]{RequestedFundingStaff}{
13493   ref-project-id      = {B02},
13494   funding-status      = {requested},
13495   staff-type          = {research},
13496   firstname           = {Researcher},
13497   lastname            = {TBA},
13498   academic-degree     = {},
13499   positionText        = {Postdoctoral researcher},
13500   field-of-research    = {Regenerative cell biology},
13501   ref-institution-id  = {ins2},
13502   category            = {postDoc},
13503   description          = {Completed the final validation experiments and data
13504     publication from April 2025 until the end of the current funding period.}
13505 }
13506
13507 \printTable{{RequestedFundingStaff}{B02}}
13508
13509 \printProjectTail

```

### 3.15 Complete continuing service-project example

Service projects use the continuing-project headings while the prose and work packages focus on services, resources, access rules, and collaborative use.

```

13510
13511 \printProjectHead{Q01}
13512
13513 \section{Summary}
13514 \label{Q01:summary}
13515
13516 Summarise the service portfolio, its scientific purpose, its users, and the
13517 developments planned for the new funding period.
13518
13519 \section{Project progress to date}
13520 \label{Q01:project-progress-to-date}
13521
13522 \subsection{Report and current state of research}
13523 \label{Q01:report-and-current-state-of-research}
13524
13525 Report completed and ongoing services, usage by CRC projects, technical
13526 developments, quality assurance, and relevant service-project research.
13527
13528 \FloatBarrier
13529
13530 \projectPublicationsHeading
13531 \projectNocite{FAIR2016}
13532 \printProjectBibliography[heading=none]
13533
13534 \section{Project plan}
13535 \label{Q01:project-plan}
13536
13537 \begin{aims}
13538   \addAim{1} Maintain and quality-assure the core service portfolio.
13539   \addAim{2} Extend the portfolio for new collaborative requirements.
13540 \end{aims}
13541
13542 \begin{workpackages}
13543   \addWP{wp1}{
13544     name={Core service provision},
13545     description={Provide and quality-assure core services},
13546     periodStart={1},
13547     periodEnd={16},
13548     style={default},
13549   }
13550   Describe access, sample or data handover, turnaround, quality assurance,
13551   responsibilities, and capacity for \getWP{wp1}.
13552
13553   \addWP{wp2}{
13554     name={Service development},
13555     description={Develop and validate new service modules},
13556     periodStart={3},
13557     periodEnd={14},
13558     style={alternative},
13559   }
13560   Describe development milestones and the projects participating in
13561   \getWP{wp2}.
13562 \end{workpackages}
13563
13564 \printPlot{{Gantt}}{Q01}}
13565
13566 \FloatBarrier
13567
13568 \section{Relevance of sex, gender and/or diversity in the research project}
13569 \label{Q01:relevance-of-sex-gender-and-diversity}
13570
13571 Explain relevance for the service methods and the studies supported by them.
13572
13573 \section{Role within the Collaborative Research Centre}
13574 \label{Q01:role-within-the-collaborative-research-centre}
13575

```

```

13576 Describe which projects use the services and how priorities, access, and
13577 collaborations are coordinated.
13578
13579 \printPlot{{ProjectCollaboration}}{Q01}}
13580
13581 \section{Differentiation from other funded projects}
13582 \label{Q01:differentiation-from-other-funded-projects}
13583
13584 Differentiate the CRC service from existing institutional infrastructure and
13585 other funded service activities.
13586
13587 \section{Project funding}
13588 \label{Q01:project-funding}
13589
13590 \subsection{Previous funding}
13591
13592 State when the service project began and describe relevant previous funding.
13593
13594 \subsection{Requested funding}
13595
13596 %% Automatic staff-cost example: sum is intentionally omitted; the class
13597 %% halves the calculated amounts in year1 and year5.
13598 \addEntry[funding]{RequestedFunding}{
13599   ref-project-id = {Q01},
13600   funding-type   = {staff},
13601   category       = {nonResearch},
13602   percentage     = {65},
13603   quantity = {
13604     year1 = {1},
13605     year2 = {1},
13606     year3 = {1},
13607     year4 = {1},
13608     year5 = {1}
13609   }
13610 }
13611
13612 %% Explicit staff-cost example: sum overrides the central salary calculation;
13613 %% the concrete year1 and year5 amounts below already represent half-years.
13614 \addEntry[funding]{RequestedFunding}{
13615   ref-project-id = {Q01},
13616   funding-type   = {staff},
13617   category       = {assistant},
13618   percentage     = {50},
13619   quantity = {
13620     year1 = {1},
13621     year2 = {1},
13622     year3 = {1},
13623     year4 = {1},
13624     year5 = {1}
13625   },
13626   sum = {
13627     year1 = {9000},
13628     year2 = {18000},
13629     year3 = {18000},
13630     year4 = {18000},
13631     year5 = {9000}
13632   }
13633 }
13634
13635 \addEntry[funding]{RequestedFunding}{
13636   ref-project-id = {Q01},
13637   funding-type   = {costs}, %staff, costs, ...
13638   category       = {Invitation},
13639   sum = {
13640     year1 = {1000},
13641     year2 = {2000},

```

```

13642     year3 = {3000},
13643     year4 = {4000},
13644     year5 = {5000}
13645 }
13646 }
13647
13648 \printTable{{RequestedFunding}{Q01}}
13649
13650 \subsubsection{Requested funding for staff for the new funding period}
13651
13652 \addEntry[staff]{RequestedFundingStaff}{
13653   ref-project-id      = {Q01},
13654   funding-status      = {requested},
13655   staff-type          = {nonResearch},
13656   firstname           = {Service},
13657   lastname            = {Specialist},
13658   academic-degree     = {},
13659   positionText        = {Technical specialist},
13660   field-of-research   = {Core-facility services},
13661   ref-institution-id  = {ins1},
13662   category            = {nonResearch},
13663   description         = {Operates the service platform, performs quality
13664     control, and supports participating projects.}
13665 }
13666
13667 \printTable{{RequestedFundingStaff}{Q01}}
13668
13669 \subsubsection{Requested funding for direct costs for the new funding period}
13670
13671 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13672   ref-project-id      = {Q01},
13673   ref-affiliation-id  = {aff1},
13674   financed-by        = {Core-facility funds},
13675   sum = {
13676     year1 = {1000},
13677     year2 = {1000},
13678     year3 = {1000},
13679     year4 = {1000},
13680     year5 = {1000}
13681   }
13682 }
13683
13684 \printTable{{RequestedAndExistingFundingDirectCosts}{Q01}}
13685
13686 \begin{FundingDirectCostsTable}[Text]
13687   Service-specific consumables & EUR & 10000 \\
13688   Maintenance and quality assurance & EUR & 5000 \\
13689 \end{FundingDirectCostsTable}
13690
13691 \subsubsection{Requested funding for instrumentation for the new funding
13692   period}
13693
13694 \begin{FundingDirectCostsTable}[Text]
13695   Service-platform upgrade & EUR & 5000 \\
13696 \end{FundingDirectCostsTable}
13697
13698 \printProjectTail

```

### 3.16 Complete integrated research training group example

The MGK/IRTG project type has its own required narrative and funding headings. This file mirrors that structure instead of pretending it is a conventional research project.

```

13699 \printProjectHead{Q02}
13700
13701 \section{Summary}
13702 \label{Q02:summary}
13703

```

```

13704 Summarise the objectives, development, and added value of the Integrated
13705 Research Training Group.
13706
13707 \section{Tabular report}
13708 \label{Q02:tabular-report}
13709
13710 Provide the required tabular report of all researchers funded by the
13711 Integrated Research Training Group to date.
13712
13713 \section{Qualification programme}
13714 \label{Q02:qualification-programme}
13715
13716 Describe the qualification programme, workshops, courses, retreats, career
13717 development measures, and other training activities.
13718
13719 \section{Management and supervision}
13720 \label{Q02:management-and-supervision}
13721
13722 Describe management responsibilities, recruitment, supervision arrangements,
13723 mentoring, conflict-resolution processes, and quality assurance.
13724
13725 \section{Environment of the Integrated Research Training Group}
13726 \label{Q02:environment-of-the-integrated-research-training-group}
13727
13728 Describe the scientific, institutional, interdisciplinary, and international
13729 training environment.
13730
13731 \section{Interim assessment and outlook}
13732 \label{Q02:interim-assessment-and-outlook}
13733
13734 Assess progress during the current funding period and describe priorities and
13735 measurable objectives for the next funding period.
13736
13737 \section{Project funding}
13738 \label{Q02:project-funding}
13739
13740 \subsection{Previous funding}
13741
13742 The Integrated Research Training Group has been funded within the
13743 Collaborative Research Centre since April 2018. Replace this date and add any
13744 relevant funding under another programme.
13745
13746 %% Declare all monetary rows before the existing-funds overview: that table
13747 %% compares existing direct-cost resources with the requested direct costs.
13748 %% Automatic staff-cost example: sum is intentionally omitted; the class
13749 %% halves the calculated amounts in year1 and year5.
13750 \addEntry[funding]{RequestedFunding}{
13751   ref-project-id = {Q02},
13752   funding-type   = {staff},
13753   category       = {PhD},
13754   percentage     = {65},
13755   quantity = {
13756     year1 = {1},
13757     year2 = {1},
13758     year3 = {1},
13759     year4 = {1},
13760     year5 = {1}
13761   }
13762 }
13763
13764 %% Explicit staff-cost example: sum overrides the central salary calculation;
13765 %% the concrete year1 and year5 amounts below already represent half-years.
13766 \addEntry[funding]{RequestedFunding}{
13767   ref-project-id = {Q02},
13768   funding-type   = {staff},
13769   category       = {nonResearch},

```

```

13770     percentage      = {50},
13771     quantity = {
13772         year1 = {1},
13773         year2 = {1},
13774         year3 = {1},
13775         year4 = {1},
13776         year5 = {1}
13777     },
13778     sum = {
13779         year1 = {15000},
13780         year2 = {30000},
13781         year3 = {30000},
13782         year4 = {30000},
13783         year5 = {15000}
13784     }
13785 }
13786
13787 \addEntry[funding]{RequestedFunding}{
13788     ref-project-id = {Q02},
13789     funding-type   = {costs},
13790     category       = {Qualification programme},
13791     sum = {
13792         year1 = {2000},
13793         year2 = {2000},
13794         year3 = {2000},
13795         year4 = {2000},
13796         year5 = {2000}
13797     }
13798 }
13799
13800 \addEntry[funding]{RequestedFunding}{
13801     ref-project-id = {Q02},
13802     funding-type   = {fellowships},
13803     category       = {Short-term fellowships},
13804     sum = {
13805         year1 = {1000},
13806         year2 = {1000},
13807         year3 = {1000},
13808         year4 = {1000},
13809         year5 = {1000}
13810     }
13811 }
13812
13813 \addEntry[funding]{RequestedFunding}{
13814     ref-project-id = {Q02},
13815     funding-type   = {globalfunds},
13816     category       = {Training and networking},
13817     sum = {
13818         year1 = {3000},
13819         year2 = {3000},
13820         year3 = {3000},
13821         year4 = {3000},
13822         year5 = {3000}
13823     }
13824 }
13825
13826 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13827     ref-project-id      = {Q02},
13828     ref-affiliation-id = {aff2},
13829     financed-by         = {Graduate-school funds},
13830     sum = {
13831         year1 = {1000},
13832         year2 = {1000},
13833         year3 = {1000},
13834         year4 = {1000},
13835         year5 = {1000}

```

```

13836     }
13837 }
13838
13839 \addEntry[staff]{RequestedFundingStaff}{
13840     ref-project-id      = {Q02},
13841     funding-status      = {existing},
13842     staff-type          = {nonResearch},
13843     firstname           = {Taylor},
13844     lastname            = {Trainer},
13845     academic-degree     = {},
13846     positionText        = {Training coordinator},
13847     field-of-research   = {Structured doctoral training},
13848     ref-institution-id  = {ins2},
13849     commitment          = {20},
13850     funding-source       = {Partner University core funds},
13851     description         = {Coordinates recruitment, course administration,
13852         progress monitoring, mentoring, and quality assurance for the
13853         qualification programme.}
13854 }
13855
13856 \subsection{Existing funds for the new funding period}
13857
13858 Describe the coordination, training, staff, and direct-cost resources made
13859 available to the Integrated Research Training Group by the participating
13860 institutions.
13861
13862 \subsubsection*{Existing staff}
13863
13864 \printTable{{RequestedFundingStaff}{Q02}}
13865
13866 \printTable{{RequestedAndExistingFundingDirectCosts}{Q02}}
13867
13868 \subsection{Requested funding}
13869
13870 \printTable{{RequestedFunding}{Q02}}
13871
13872 \subsection{Requested funding for staff}
13873
13874 \begin{FundingDirectCostsTable}[Text]
13875     Doctoral-researcher position: interdisciplinary research and participation
13876     in the complete qualification programme & EUR & 5000 \\
13877 \end{FundingDirectCostsTable}
13878
13879 \subsection{Requested funding for direct costs}
13880
13881 \begin{FundingDirectCostsTable}[Text]
13882     Workshops and transferable-skills courses & EUR & 10000 \\
13883     Visiting researchers and networking & EUR & 5000 \\
13884 \end{FundingDirectCostsTable}
13885
13886 \subsection{Requested funding for fellowships}
13887
13888 \begin{FundingDirectCostsTable}[Text]
13889     Short-term research fellowships: state the type of fellowship, average
13890     number of fellows, average duration, monthly allowance per person, and
13891     justification & EUR & 5000 \\
13892 \end{FundingDirectCostsTable}
13893
13894 \subsection{Requested global funds}
13895
13896 \begin{FundingDirectCostsTable}[Text]
13897     Training and networking measures: explain the purpose, allocation rules,
13898     selection process, and administration & EUR & 15000 \\
13899 \end{FundingDirectCostsTable}
13900
13901 \printProjectTail

```

### 3.17 Complete central administrative-project example

The central administrative project has a dedicated DFG structure. It does not reuse the summary, research-progress, publication, project-plan, or instrumentation headings of a continuing research project.

```
13902 \printProjectHead{Q03}
13903
13904 \section{Documentation of the central activities of the Collaborative
13905   Research Centre}
13906 \label{Q03:documentation-of-central-activities}
13907
13908 Document governance and decision-making, scientific coordination, reporting,
13909 internal communication, data stewardship, publication support, equal-
13910 opportunity measures, early-career support, outreach, and the interfaces with
13911 all applicant and participating institutions. Distinguish CRC-specific tasks
13912 from permanent institutional duties and state responsibilities, workflows,
13913 results from the current period, and priorities for the new funding period.
13914
13915 \section{Project funding}
13916 \label{Q03:project-funding}
13917
13918 %% The existing-funds overview includes the requested direct-cost total, so
13919 %% all monetary records are declared before either table is printed.
13920 %% Automatic staff-cost example: sum is intentionally omitted. The class
13921 %% applies the half-year factor to year1 and year5.
13922 \addEntry[funding]{RequestedFunding}{
13923   ref-project-id = {Q03},
13924   funding-type   = {staff},
13925   category       = {nonResearch},
13926   percentage     = {100},
13927   quantity = {
13928     year1 = {1},
13929     year2 = {1},
13930     year3 = {1},
13931     year4 = {1},
13932     year5 = {1}
13933   }
13934 }
13935
13936 %% Explicit staff-cost example: the stated sums override the salary settings;
13937 %% year1 and year5 below already represent half-years.
13938 \addEntry[funding]{RequestedFunding}{
13939   ref-project-id = {Q03},
13940   funding-type   = {staff},
13941   category       = {assistant},
13942   percentage     = {50},
13943   quantity = {
13944     year1 = {1},
13945     year2 = {1},
13946     year3 = {1},
13947     year4 = {1},
13948     year5 = {1}
13949   },
13950   sum = {
13951     year1 = {12500},
13952     year2 = {25000},
13953     year3 = {25000},
13954     year4 = {25000},
13955     year5 = {12500}
13956   }
13957 }
13958
13959 \addEntry[funding]{RequestedFunding}{
13960   ref-project-id = {Q03},
13961   funding-type   = {costs},
13962   category       = {Central coordination and communication},
13963   sum = {
```

```

13964     year1 = {2000},
13965     year2 = {2000},
13966     year3 = {2000},
13967     year4 = {2000},
13968     year5 = {2000}
13969 }
13970 }
13971
13972 \addEntry[funding]{RequestedFunding}{
13973     ref-project-id = {Q03},
13974     funding-type   = {globalfunds},
13975     category       = {Central measures},
13976     sum = {
13977         year1 = {2000},
13978         year2 = {2000},
13979         year3 = {2000},
13980         year4 = {2000},
13981         year5 = {2000}
13982     }
13983 }
13984
13985 \addEntry[staff]{RequestedFundingStaff}{
13986     ref-project-id      = {Q03},
13987     funding-status      = {existing},
13988     staff-type          = {nonResearch},
13989     ref-person-id       = {man1},
13990     field-of-research   = {Research management},
13991     commitment          = {20},
13992     funding-source      = {Partner University core funds},
13993     description         = {Coordinates governance, reporting, internal
13994         communication, central measures, and interfaces with applicant and
13995         participating institutions.}
13996 }
13997
13998 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
13999     ref-project-id      = {Q03},
14000     ref-affiliation-id  = {aff1},
14001     financed-by        = {Central university funds},
14002     sum = {
14003         year1 = {1000},
14004         year2 = {1000},
14005         year3 = {1000},
14006         year4 = {1000},
14007         year5 = {1000}
14008     }
14009 }
14010
14011 \subsection{Existing funds for the new funding period}
14012
14013 Describe the central staff, facilities, and direct-cost resources contributed
14014 by the applicant and participating institutions.
14015
14016 \subsubsection*{Existing staff}
14017
14018 \printTable{{RequestedFundingStaff}{Q03}}
14019
14020 \printTable{{RequestedAndExistingFundingDirectCosts}{Q03}}
14021
14022 \subsection{Requested funding for the new funding period}
14023
14024 \printTable{{RequestedFunding}{Q03}}
14025
14026 \subsection{Requested funding for staff}
14027
14028 \begin{FundingDirectCostsTable}[Text]
14029     Scientific coordination: justify the category, percentage, period, and

```

```

14030 CRC-specific responsibilities & EUR & 5000 \\
14031 \end{FundingDirectCostsTable}
14032
14033 \subsection{Requested funding for direct costs}
14034
14035 \begin{FundingDirectCostsTable}[Text]
14036 Governance meetings and scientific exchange & EUR & 10000 \\
14037 Communication and outreach & EUR & 5000 \\
14038 \end{FundingDirectCostsTable}
14039
14040 \subsection{Requested global funds}
14041
14042 \begin{FundingDirectCostsTable}[Text]
14043 Central measures: explain the purpose, allocation rules, selection process,
14044 and administration & EUR & 10000 \\
14045 \end{FundingDirectCostsTable}
14046
14047 \printProjectTail
14048
14049 \chapter{Bylaws of the Collaborative Research Centre} %4
14050 \printThumbIndex{4}
14051 \cohead{Bylaws of the \crc}%
14052 \cehead{Bylaws of the \crc}%
14053
14054 \begin{bylaws}
14055 \item Name, coordinating
14056 \dfgApplicantAffiliationsTF{university}{universities}, and purpose of the \crc
14057 \begin{bylaws}
14058 \item The \crc (CRC) \enquote{\dfgCRCName\space --\space\dfgCRCNameAddon}
14059 is a legally dependent institution of \theCRAffiliation.
14060
14061 \item The \crc conducts interrelated research on microbial signalling,
14062 epithelial barriers, immune regulation, and organ function. It is
14063 divided into research project areas and central projects.
14064
14065 \item The \crc promotes interaction with other research institutions,
14066 supports researchers in early career phases, and fosters responsible
14067 international cooperation, equity, and equal opportunity.
14068 \end{bylaws}
14069
14070 \item Membership and governing bodies
14071 \begin{bylaws}
14072 \item Members are the project leaders and persons appointed to central
14073 scientific or administrative responsibilities by the general assembly.
14074 \item The governing bodies are the general assembly, the spokesperson, and
14075 the steering committee. The general assembly elects the spokesperson
14076 and steering committee for the applicable funding period.
14077 \item The steering committee prepares strategic and budgetary decisions,
14078 monitors milestones, and reports to the general assembly at least once
14079 per year.
14080 \end{bylaws}
14081
14082 \item Decisions and allocation of shared resources
14083 \begin{bylaws}
14084 \item Decisions are normally taken by simple majority of members present;
14085 changes to these bylaws require a two-thirds majority.
14086 \item Shared funds and infrastructure are allocated through documented,
14087 transparent procedures based on scientific need, feasibility, and equal
14088 access across participating projects.
14089 \item Members disclose conflicts of interest and do not participate in the
14090 corresponding deliberation or decision.
14091 \end{bylaws}
14092
14093 \item Research integrity, equity, and conflict resolution
14094 \begin{bylaws}
14095 \item All members follow the applicable rules of good research practice,

```

```

14096         data protection, animal welfare, research ethics, and occupational safety.
14097         \item The CRC implements equal-opportunity and accessibility measures and
14098         monitors participation in recruitment, training, and governance.
14099         \item Concerns may be raised confidentially with the spokesperson, the CRC
14100         management, or the competent independent offices of the participating
14101         institutions.
14102     \end{bylaws}
14103
14104     \item Research-data governance
14105     \begin{bylaws}
14106         \item Projects document data, code, samples, access rights, retention, and
14107         publication in project-specific data-management plans.
14108         \item Central data stewardship defines common metadata and quality
14109         standards, manages controlled access, and supports publication according
14110         to the FAIR principles and applicable legal requirements.
14111     \end{bylaws}
14112 \end{bylaws}
14113 \chapter{Declarations} %5
14114 \printThumbIndex{5}
14115 I/We hereby confirm the accuracy of the information contained in the proposal, including the research p
14116
14117 The \emph{DFG Rules of Procedure for Dealing with Scientific Misconduct}
14118 (\emph{known as VerfOwF})
14119 apply to individuals with a high level of scientific/\-academic responsibility in connection with fundi
14120 academic responsibility in the project proposal submitted by the \dfgApplicantAffiliationsTF{university
14121
14122 In submitting this proposal, all project leaders undertake to comply with the
14123 relevant discipline-specific research ethics guidelines, to determine whether
14124 a statement from the responsible ethics committee is required and, where
14125 necessary, to obtain it in good time before the start of funding. They will
14126 inform the DFG immediately if an ethics committee expresses substantive
14127 concerns or issues a negative statement and will submit the statement if the
14128 DFG requests it.
14129
14129 The DFG takes the protection of your personal data very seriously.
14130 Please note the DFG's data protection notice on research funding, which can be viewed and downloaded a
14131 \url{www.dfg.de/privacy_policy}
14132
14133 Please forward this information to those individuals whose data will be processed by the DFG because t
14134
14135 I/We have read the DFG's data protection notice.
14136
14137 I/We consent to the processing and transfer of special categories of personal
14138 data (including the data of all parties involved) for the purposes stated in the
14139 Privacy Policy if, after careful consideration, I/we provide such data either
14140 now or at a later date.\par
14141 \vfill
14142
14143 \printSignaturesWithRole{spokesperson}{(Spokesperson~of~\crc)}
14144 \printSignaturesWithRole{rector}
14145 {(Rector,~chancellor,~or~president~of~
14146 \getEntry[affiliation]{\theAffiliationOfRoleID}{name}})

```

### 3.18 Backmatter File

The final page suppresses running headers and page numbers and delegates the complete layout to the project-overview table defined by the class.

```

14147 \pagestyle{empty}
14148 \printTable{projectOverview}

```

### 3.19 Project collaboration plot test

This focused test is deliberately independent of the proposal metadata. It contains active, ending, and reference-only projects; duplicate and reverse-only declarations; and calls both supported collaboration layouts.

```

14149 %% Compile from the generated local directory with:
14150 %%    lualatex -interaction=nonstopmode -halt-on-error test-project-collaboration.tex

```

```

14151 %%
14152 %% This test is deliberately self-contained. The image switch is initially
14153 %% false so the fast project option prevents the proposal metadata from loading.
14154 %% Immediately after \begin{document} the image switch is enabled so dummy
14155 %% project entries are retained and the plots below exercise their focused-mode
14156 %% dispatch without disabling the other fast-mode reductions.
14157 \documentclass[
14158     fastcompile-project = true,
14159     fastcompile-project-show-images = false,
14160     english
14161 ]{dfg-crc}
14162
14163 \begin{document}
14164
14165 \ExplSyntaxOn
14166 \bool_set_true:N \l_@@_class_fastcompile_project_show_images_bool
14167 \ExplSyntaxOff
14168
14169 %% #1 is either empty or a complete project-area assignment; #2 is the
14170 %% project id, #3 status (C/N/E), #4 collaborations, and #5 reference-only.
14171 \NewDocumentCommand{\AddDummyProjectEntry}{m m m m m}{
14172     \addEntry{project}{
14173         id                = {#2},
14174         #1
14175         number            = {#2},
14176         name              = {Dummy project #2},
14177         project-status    = {#3},
14178         project-type      = {research},
14179         consider-for-lists = {true},
14180         reference-only    = {#5},
14181         ref-person-id     = {},
14182         collaborations    = {#4},
14183         research-area     = {},
14184         legal-issues     = {
14185             L1 = {no},
14186             L1a = {},
14187             L2 = {no},
14188             L2a = {},
14189             L3 = {no},
14190             L4 = {no},
14191             L5 = {no},
14192             L5a = {},
14193             L6 = {no},
14194             L7 = {no},
14195             L7a = {}
14196         }
14197     }
14198 }
14199 %% Omitting the optional area leaves the project-area database column absent
14200 %% until the first plot and therefore exercises both schema and ID fallbacks.
14201 \NewDocumentCommand{\AddDummyProject}{o m m m m}{
14202     \IfNoValueTF{#1}
14203     { \AddDummyProjectEntry{}{#2}{#3}{#4}{#5} }
14204     { \AddDummyProjectEntry{project-area={#1},}{#2}{#3}{#4}{#5} }
14205 }
14206
14207 %% Active project area A. All repeats B06 deliberately to test that an
14208 %% undirected relation declared twice is collapsed.
14209 \AddDummyProject{A02}{C}{}{false}
14210 \AddDummyProject{A03}{C}{}{false}
14211 \AddDummyProject{A05}{C}{}{false}
14212 \AddDummyProject{A09}{C}{}{false}
14213 \AddDummyProject{A10}{C}{}{false}
14214 \AddDummyProject{A11}{C}{B06}{false}
14215 \AddDummyProject{A12}{N}{}{false}
14216 \AddDummyProject{A13}{N}{}{false}

```

```

14217
14218 %% A04 is ending and A00 is reference-only. Neither may occur in a plot.
14219 \AddDummyProject{A04}{E}{}{false}
14220 \AddDummyProject{A00}{C}{}{true}
14221
14222 %% Active project area B. The A04 relation checks ending-project filtering.
14223 \AddDummyProject{B01}{C}{}{false}
14224 \AddDummyProject{B04}{C}{}{false}
14225 \AddDummyProject{B05}{C}{}{false}
14226 \AddDummyProject{B06}{C}
14227     {A00,A04,A11,A12,B01,B04,B05,B07,B10}
14228     {false}
14229 \AddDummyProject{B07}{C}{}{false}
14230 \AddDummyProject{B08}{C}{}{false}
14231 \AddDummyProject{B09}{C}{}{false}
14232 \AddDummyProject{B10}{N}{}{false}
14233
14234 %% Active project area Q. Q02 declares B06 in the reverse direction only.
14235 \AddDummyProject{Q01}{C}{}{false}
14236 \AddDummyProject{Q02}{C}{B06}{false}
14237 \AddDummyProject{Q03}{C}{}{false}
14238 \AddDummyProject{Q04}{C}{}{false}
14239
14240 %% Focused image mode must retain Gantt rows created through the same data path
14241 %% as ordinary project work packages.
14242 \addEntry[gantt]{gant-B06}{
14243     id = {wp1},
14244     name = {Dummy work package},
14245     description = {Dummy Gantt bar},
14246     periodStart = {1},
14247     periodEnd = {4},
14248     style = {default}
14249 }
14250
14251 \printPlot{{Gantt}{B06}}
14252
14253 %% The first plot is deliberately called before any project-area key has been
14254 %% entered. It exercises the missing-column and ID-prefix fallbacks.
14255 \printPlot{{ProjectCollaboration}[layout=heatmap]{B06}
14256     [Many collaborations are shown here.]}
14257
14258 \clearpage
14259
14260 %% Explicit project areas need not match the project-ID prefix. The longer
14261 %% service-area label exercises dynamic label measurement, while the options
14262 %% exercise explicit color mappings for otherwise unknown areas.
14263 \AddDummyProject[C]{X01}{C}{B06}{false}
14264 \AddDummyProject[Shared services]{Y01}{N}{}{false}
14265 \ExplSyntaxOn
14266 \@@_project_count_build:
14267 \prop_get:NnN \g_@@_project_count_area_prop { C } \l_tmpa_tl
14268 \int_compare:nNnF { \l_tmpa_tl } = { 1 }
14269     { \PackageError{test}{Expected~one~project~in~dynamic~area~C}{} }
14270 \prop_get:NnN \g_@@_project_count_area_prop { SHARED~SERVICES } \l_tmpa_tl
14271 \int_compare:nNnF { \l_tmpa_tl } = { 1 }
14272     { \PackageError{test}{Expected~one~project~in~dynamic~Shared~services~area}{} }
14273 \ExplSyntaxOff
14274 \printPlot{{ProjectCollaboration}[
14275     layout=heatmap,
14276     area-colors={C=cyan!70!black,Shared services=orange!80!black}
14277 ]{B07}}
14278
14279 \clearpage
14280
14281 %% Select the low arc layout with arcs explicitly. Every displayed arc reaches the
14282 %% same vertical peak, IDs should sit inside the boxes, and each area rule should

```

```

14283 %% span its boxes; additional caption text follows the id.
14284 \printPlot{{ProjectCollaboration}[
14285     layout=arc,
14286     arcs=true,
14287     area-palette={orange!80!black,violet!75!black,teal!70!black}
14288 ]{B06}
14289     [Dummy metadata; A04 and A00 are intentionally omitted.]}
14290
14291 \clearpage
14292
14293 %% The same full-width node strip can be shown without connecting arcs.
14294 \printPlot{{ProjectCollaboration}[arcs=false]{B06}}
14295
14296 \clearpage
14297
14298 %% Turning the image switch off again must restore the fast-mode plot skip.
14299 \ExplSyntaxOn
14300 \bool_set_false:N \l_@@_class_fastcompile_project_show_images_bool
14301 \ExplSyntaxOff
14302 \printPlot{{ProjectCollaboration}{B06}}
14303
14304 \end{document}

```

### 3.20 Nested work-package reference test

This focused test creates repeated child-counter values under three parent work packages. It catches both loss of later references during sorting and ranges that incorrectly cross a parent boundary.

```

14305 %% Compile from the generated local directory with:
14306 %% latexmk -lualatex -g -halt-on-error test-workpackage-references.tex
14307 \documentclass[
14308     fastcompile-project = true,
14309     fastcompile-project-show-images = false,
14310     english
14311 ]{dfg-crc}
14312
14313 \begin{document}
14314
14315 \ExplSyntaxOn
14316 \tl_set:Nn \l__tmp_current_project_tl {WPTEST}
14317 \ExplSyntaxOff
14318
14319 \begin{workpackages}
14320     \addWP{wp1}{name={Parent one}}
14321     Parent one.
14322     \begin{workpackages}
14323         \addWP{wp1a}{} Child 1a.
14324         \addWP{wp1b}{} Child 1b.
14325         \addWP{wp1c}{} Child 1c.
14326         \addWP{wp1d}{} Child 1d.
14327     \end{workpackages}
14328
14329     \addWP{wp2}{name={Parent two}}
14330     Parent two.
14331     \begin{workpackages}
14332         \addWP{wp2a}{} Child 2a.
14333         \addWP{wp2b}{} Child 2b.
14334     \end{workpackages}
14335
14336     \addWP{wp3}{name={Parent three}}
14337     Parent three.
14338     \begin{workpackages}
14339         \addWP{wp3a}{} Child 3a.
14340         \addWP{wp3b}{} Child 3b.
14341         \addWP{wp3c}{} Child 3c.
14342     \end{workpackages}
14343 \end{workpackages}
14344

```

```

14345 \noindent Range result:
14346 \getWP{wp1b,wp1c,wp1d,wp2b,wp3c}.
14347
14348 \noindent Unordered result:
14349 \getWP{wp2b,wp3c,wp1d}.
14350
14351 \end{document}

```

### 3.21 Existing direct-cost overview test

This focused two-pass test prints section 2.1.1 before declaring the project-level rows. On the following run, the auxiliary-file mirror must restore those rows early enough for the table and the assertions.

```

14352 %% Compile from the generated local directory with:
14353 %% latexmk -lualatex -g -halt-on-error test-existing-funds-direct-costs.tex
14354 \documentclass[english,final=true]{dfg-crc}
14355
14356 \providecommand{\dfgDirectCostsAuxReady}{0}
14357
14358 %% Ending-period values remain explicit because they describe the preceding
14359 %% funding period rather than the project requests below.
14360 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
14361   year=1, applicant=4300, participant=1200, other-funds=500
14362 }
14363 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
14364   year=2, applicant=0, participant=0, other-funds=0
14365 }
14366 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
14367   year=3, applicant=0, participant=0, other-funds=0
14368 }
14369 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
14370   year=4, applicant=0, participant=0, other-funds=0
14371 }
14372 \addEntry[funding]{PreviousExistingFundsDirectCosts}{
14373   year=5, applicant=0, participant=0, other-funds=0
14374 }
14375
14376 \begin{document}
14377
14378 \section*{Overview of existing funds for direct costs}
14379
14380 %% The second and later passes must see the rows restored from the auxiliary
14381 %% file before the live project declarations below are encountered.
14382 \ifnum\dfgDirectCostsAuxReady=1\relax
14383   \ExplSyntaxOn
14384   \cs_set_eq:NN
14385     \@@_direct_costs_test_show_saved:nnN
14386     \@@_show_calculated_number:nnN
14387   \cs_set_protected:Npn
14388     \@@_show_calculated_number:nnN #1#2#3 { }
14389   \cs_new_protected:Npn \@@_direct_costs_test_expect:nnn #1#2#3
14390   {
14391     \getSumRequestedFundingDirectCosts
14392       [RequestedAndExistingFundingDirectCostsOverview]{#1}{#2}
14393     \DTLconverttodecimal {\SumRequestedFundingDirectCosts} \l_tmpa_tl
14394     \fp_compare:nNf {\l_tmpa_tl} = {#3}
14395     {
14396       \PackageError{direct-costs-test}
14397         {Expected~#1/#2~sum~#3,~got~\SumRequestedFundingDirectCosts}
14398         {The~section~2.1.1~overview~classification~is~incorrect.}
14399     }
14400   }
14401   \@@_direct_costs_test_expect:nnn {1}{applicant}{5000}
14402   \@@_direct_costs_test_expect:nnn {1}{participant}{2100}
14403   \@@_direct_costs_test_expect:nnn {1}{other-funds}{300}
14404   \@@_direct_costs_test_expect:nnn {1}{all}{7400}
14405   \@@_direct_costs_test_expect:nnn {all}{applicant}{25000}
14406   \@@_direct_costs_test_expect:nnn {all}{participant}{10500}

```

```

14407 \@@_direct_costs_test_expect:nnn {all}{other-funds}{1500}
14408 \@@_direct_costs_test_expect:nnn {all}{all}{37000}
14409 \cs_set_eq:NN
14410 \@@_show_calculated_number:nnN
14411 \@@_direct_costs_test_show_saved:nnN
14412 \iow_term:n
14413 {DIRECT~COSTS~TEST~PASS:~auxiliary~restore,~classification,~and~totals}
14414 \ExplSyntaxOff
14415 \fi
14416
14417 \printTable{ExistingFundsDirectCosts}
14418
14419 %% These rows intentionally occur after the overview. aff1 is the applicant
14420 %% affiliation in the generated metadata; aff2 is a participating affiliation.
14421 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
14422   ref-project-id      = {A01},
14423   ref-affiliation-id = {aff1},
14424   financed-by         = {Applicant university core support},
14425   sum = {
14426     year1 = {5000}, year2 = {5000}, year3 = {5000},
14427     year4 = {5000}, year5 = {5000}
14428   }
14429 }
14430 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
14431   ref-project-id      = {B01},
14432   ref-affiliation-id = {aff2},
14433   financed-by         = {Participating university core support},
14434   sum = {
14435     year1 = {2100}, year2 = {2100}, year3 = {2100},
14436     year4 = {2100}, year5 = {2100}
14437   }
14438 }
14439 \addEntry[funding]{RequestedAndExistingFundingDirectCosts}{
14440   ref-project-id      = {Q01},
14441   ref-affiliation-id = {other-funds},
14442   financed-by         = {External grant},
14443   sum = {
14444     year1 = {300}, year2 = {300}, year3 = {300},
14445     year4 = {300}, year5 = {300}
14446   }
14447 }
14448
14449 \makeatletter
14450 \protected@write\@auxout{}{%
14451   \string\gdef\string\dfgDirectCostsAuxReady{1}}
14452 \makeatother
14453
14454 \end{document}

```

The focused release regression test covers the four staff-roster groups and the automatic monetary calculation used when staff rows omit sum.

```

14455 \documentclass[
14456   english,
14457   final=true
14458 ]{dfg-crc}
14459
14460 % Check the shipped defaults before exercising proposal-specific overrides.
14461 \ExplSyntaxOn
14462 \fp_compare:nNnF { \dfgSalaryProf } = { 123600 }
14463 {
14464   \PackageError{test}
14465     {Expected~default~professor~salary~123600,~got~\dfgSalaryProf}
14466     {The~default~salary~setting~is~incorrect.}
14467 }
14468 \fp_compare:nNnF { \dfgMouseHousing } = { 0.75 }
14469 {
14470   \PackageError{test}

```

```

14471         {Expected~default~mouse~housing~rate~0.75,~got~\dfgMouseHousing}
14472         {The~default~animal-housing~setting~is~incorrect.}
14473     }
14474     \bool_if:NF \l_@@_custom_project_pi_once_per_section_bool
14475     {
14476         \PackageError{test}
14477         {Expected~projectPIOncePerSection~to~default~to~true}
14478         {The~project/PI~reference~setting~has~the~wrong~default.}
14479     }
14480     \bool_if:NT \l_@@_custom_projects_table_institution_abbreviations_bool
14481     {
14482         \PackageError{test}
14483         {Expected~projectsTableInstitutionAbbreviations~to~default~to~false}
14484         {The~ProjectsTable~institution~display~setting~has~the~wrong~default.}
14485     }
14486     % The project-leaders table must obey the same institution-label setting.
14487     \tl_new:N \l_@@_test_pl_institution_options_tl
14488     \group_begin:
14489     \RenewDocumentCommand{\InstitutionsList}{O{person} m o}
14490     {
14491         \IfNoValueTF{#3}
14492         { \tl_set:Nn \l_@@_test_pl_institution_options_tl { full-name } }
14493         { \tl_set:Nn \l_@@_test_pl_institution_options_tl {#3} }
14494     }
14495     \bool_set_false:N \l_@@_custom_projects_table_institution_abbreviations_bool
14496     \dfgPLInstitutionList{test-person}
14497     \tl_if_eq:VnF \l_@@_test_pl_institution_options_tl { full-name }
14498     {
14499         \PackageError{test}
14500         {ProjectLeadersTable~used~an~abbreviation~while~the~setting~was~false}
14501         {The~project-leader~institution~formatter~must~use~full~names.}
14502     }
14503     \bool_set_true:N \l_@@_custom_projects_table_institution_abbreviations_bool
14504     \dfgPLInstitutionList{test-person}
14505     \tl_if_eq:VnF \l_@@_test_pl_institution_options_tl { abbreviation }
14506     {
14507         \PackageError{test}
14508         {ProjectLeadersTable~did~not~use~an~abbreviation~while~the~setting~was~true}
14509         {The~project-leader~institution~formatter~must~use~abbreviations.}
14510     }
14511     \iow_term:n {TEST~PASS:~project-leader~institution~labels~follow~the~setting}
14512     \group_end:
14513     \ExplSyntaxOff
14514
14515     % A later entry with the same database-local id must replace the earlier row
14516     % without increasing the database row count.
14517     \addEntry{institution}{
14518         id                = {duplicate-id-regression},
14519         name               = {First institution name},
14520         abbreviation       = {FIRST},
14521         ref-affiliation-id = {aff1}
14522     }
14523     \ExplSyntaxOn
14524     \int_new:N \l_@@_test_duplicate_id_row_count_int
14525     \tl_new:N \l_@@_test_duplicate_id_name_tl
14526     \int_set:Nn \l_@@_test_duplicate_id_row_count_int
14527     { \DTLrowcount{institution} }
14528     \ExplSyntaxOff
14529     \addEntry{institution}{
14530         id                = {duplicate-id-regression},
14531         name               = {Replacement institution name},
14532         abbreviation       = {SECOND},
14533         ref-affiliation-id = {aff2}
14534     }
14535     \ExplSyntaxOn
14536     \int_compare:nNnF

```

```

14537 { \DTLrowcount{institution} }
14538 =
14539 { \l_@@_test_duplicate_id_row_count_int }
14540 {
14541   \PackageError{test}
14542     {Duplicate~id~replacement~changed~the~database~row~count}
14543     {The~later~entry~must~replace~the~earlier~row.}
14544 }
14545 \DTLgetvalueforkey
14546   {\l_@@_test_duplicate_id_name_tl}
14547   {name}{institution}{id}{duplicate-id-regression}
14548 \tl_if_eq:VnF \l_@@_test_duplicate_id_name_tl
14549   {Replacement~institution~name}
14550   {
14551     \PackageError{test}
14552       {Duplicate~id~lookup~did~not~return~the~later~entry}
14553       {The~later~entry~must~replace~the~earlier~row.}
14554   }
14555 \iow_term:n {TEST~PASS:~duplicate~database~id~uses~the~later~entry}
14556 \ExplSyntaxOff
14557
14558 \changeSettings{
14559   salary@prof = 120000,
14560   salary@PhD = 80000,
14561   animalHousing@mouse = 0.80,
14562   animalHousing@mouseGnotobiotic= 4.10,
14563   animalHousing@rat = 1.50,
14564 }
14565
14566 % A preamble declaration is immediately mirrored into the proposal-wide
14567 % overview database and exercises the non-empty instrumentation-table branch.
14568 \addEntry[funding]{RequestedFunding}{
14569   ref-project-id = {A01},
14570   funding-type = {instrumentation},
14571   category = {Test microscope},
14572   sum = {
14573     year1 = {10000},
14574     year2 = {0},
14575     year3 = {0},
14576     year4 = {0},
14577     year5 = {0}
14578   }
14579 }
14580
14581 \begin{document}
14582
14583 \changeSettings{projectPIOOncePerSection=false}
14584 \section*{Natural-language project-reference lists}
14585
14586 Two projects: \getProject{A01,B01}.
14587
14588 Three projects: \getProject{A01,B01,Q01}.
14589
14590 \begin{tblr}{colspec={lX[l]}}
14591 Two table projects & \getProject{A01,B01} & \\
14592 Three table projects & \getProject{A01,B01,Q01} & \\
14593 PI command in table & \getProjectPI{A01,B01} & \\
14594 \end{tblr}
14595
14596 % The focused-project fallback has no project database but should retain the
14597 % same natural-language separators for its visible identifiers.
14598 \ExplSyntaxOn
14599 \bool_set_true:N \l_@@_class_fastcompile_project_bool
14600 \ExplSyntaxOff
14601 Fast-mode projects: \getProject{A01,B01,Q01}.
14602 Fast-mode project with PI command: \getProjectPI{B01}.

```

```

14603 \begin{tblr}{colspec={lX[l]}}
14604 Fast table & \getProject{A01,B01,Q01} \\
14605 \end{tblr}
14606 \ExplSyntaxOn
14607 \bool_set_false:N \l_@@_class_fastcompile_project_bool
14608 \ExplSyntaxOff
14609
14610 \changeSettings{projectPIOOncePerSection=true}
14611 \section*{Project/PI references once per section}
14612
14613 First reference through \verb|\getProject|: \getProject{B01}.
14614
14615 Repeated reference through \verb|\getProjectPI|: \getProjectPI{B01}.
14616
14617 Mixed repeated/new list through \verb|\getProject|: \getProject{B01,Q01}.
14618
14619 \section*{Project/PI state reset at the next section}
14620
14621 First reference after reset through \verb|\getProjectPI|: \getProjectPI{B01}.
14622
14623 Repeated reference after reset through \verb|\getProject|: \getProject{B01}.
14624
14625 \changeSettings{projectPIOOncePerSection=false}
14626 \section*{Repeated project/PI names enabled}
14627
14628 First reference with repetition enabled: \getProjectPI{B01}.
14629
14630 Second reference with repetition enabled: \getProjectPI{B01}.
14631
14632 Compact \verb|\getProject| with repetition enabled: \getProject{B01}.
14633
14634 \begingroup
14635 \ExplSyntaxOn
14636 \tl_set:Nn \l__tmp_current_project_tl {B01}
14637 \ExplSyntaxOff
14638 Current-project reference: \getProjectPI{B01}.
14639 \endgroup
14640
14641 \changeSettings{projectPIOOncePerSection=true}
14642
14643 \section*{Requested funding for staff for the new funding period}
14644
14645 % Existing non-research staff may leave the field-of-research cell empty; the
14646 % cell is greyed out without displaying a missing-value placeholder.
14647 \ExplSyntaxOn
14648 % Optional positions must not introduce warnings, placeholders, or empty lines.
14649 % Populated values, including values inherited from a person, remain visible.
14650 \group_begin:
14651 \cs_set_protected:Npn \@@_rfs_warn_missing:n #1
14652 { \PackageError{test}{Unexpected~staff~warning:~#1}{Position~is~optional.} }
14653 \cs_set_protected:Npn \@@_test_staff_position:nn #1#2
14654 {
14655   \@@_rfs_row_clear:
14656   \keys_set:nn { dfg / requested-funding-staff-row } {#1}
14657   \@@_rfs_resolve_person:
14658   \@@_rfs_make_name_cell:
14659   \bool_if:NT \l_@@_rfs_name_incomplete_bool
14660     { \PackageError{test}{Optional~position~marked~the~name~incomplete}{} }
14661   \tl_if_blank:nTF {#2}
14662   {
14663     \exp_args:NV \str_if_in:nnT \l_@@_rfs_name_cell_tl { \newline }
14664     { \PackageError{test}{Empty~position~added~a~line~break}{} }
14665     \exp_args:NV \str_if_in:nnT \l_@@_rfs_name_cell_tl { ( }
14666     { \PackageError{test}{Empty~position~added~parentheses}{} }
14667   }
14668   {

```

```

14669     \exp_args:NV \str_if_in:nnF \l_@@_rfs_name_cell_tl { (#2) }
14670     { \PackageError{test}{Populated~position~was~not~rendered}{} }
14671   }
14672 }
14673 \@@_test_staff_position:nn { lastname={TBA} } {}
14674 \@@_test_staff_position:nn { lastname={TBA}, positionText={} } {}
14675 \@@_test_staff_position:nn
14676   { firstname={Alex}, lastname={Example}, positionText={~} } {}
14677 \@@_test_staff_position:nn
14678   { lastname={TBA}, positionText={Research~assistant} } {Research~assistant}
14679 \@@_test_staff_position:nn
14680   { firstname={Alex}, lastname={Example}, positionText={Research~assistant} }
14681   {Research~assistant}
14682 \@@_test_staff_position:nn
14683   { ref-person-id={perl}, funding-status={existing} }
14684   {Professor~and~Director}
14685 \@@_rfs_row_clear:
14686 \keys_set:nn { dfg / requested-funding-staff-row }
14687   { ref-person-id={perl}, funding-status={existing} }
14688 \@@_rfs_resolve_person:
14689 \tl_clear:N \l_@@_rfs_position_tl
14690 \@@_rfs_make_name_cell:
14691 \exp_args:NV \str_if_in:nnT \l_@@_rfs_name_cell_tl { \newline }
14692   { \PackageError{test}{Resolved~staff~with~no~position~added~a~line~break}{} }
14693 \exp_args:NV \str_if_in:nnF \l_@@_rfs_name_cell_tl { \textbf{Sample} }
14694   { \PackageError{test}{Existing~staff~lost~their~bold~surname}{} }
14695 \iow_term:n {TEST~PASS:~optional~staff~position~rendering}
14696 \group_end:
14697
14698 \group_begin:
14699 \tl_set:Nn \l_@@_rfs_funding_status_tl { existing }
14700 \tl_set:Nn \l_@@_rfs_staff_type_tl { nonResearch }
14701 \tl_clear:N \l_@@_rfs_field_tl
14702 \tl_set:Nn \l_@@_rfs_field_cell_tl { stale }
14703 \cs_set_protected:Npn \@@_rfs_warn_missing:n #1
14704   {
14705     \PackageError{test}
14706       {Empty~field-of-research~warned~for~existing~non-research~staff}
14707       {This~field~is~optional~for~that~staff~group.}
14708   }
14709 \@@_rfs_make_field_cell:
14710 \tl_if_eq:NnF \l_@@_rfs_field_cell_tl
14711   { \SetCell{bg=tableNoValue} }
14712   {
14713     \PackageError{test}
14714       {Empty~field-of-research~was~not~greyed~out~correctly}
14715       {The~cell~must~contain~only~the~tableNoValue~background~marker.}
14716   }
14717 \iow_term:n
14718   {TEST~PASS:~existing~non-research~staff~field~is~greyed~out}
14719 \group_end:
14720
14721 % A person reference or an explicit institution must provide the relationship
14722 % needed by the proposal-wide existing-staff overview.
14723 \group_begin:
14724 \int_zero:N \l_tmpa_int
14725 \cs_set_protected:Npn
14726   \@@_requested_funding_staff_warn_missing_institution:
14727   { \int_incr:N \l_tmpa_int }
14728 \@@_requested_funding_staff_validate:n
14729   {
14730     ref-project-id = {A01},
14731     funding-status = {existing},
14732     staff-type = {research},
14733     lastname = {TBA}
14734   }

```

```

14735 \@@_requested_funding_staff_validate:n
14736 {
14737     ref-project-id = {A01},
14738     funding-status = {existing},
14739     staff-type = {research},
14740     lastname = {TBA},
14741     ref-institution-id = {ins1}
14742 }
14743 \@@_requested_funding_staff_validate:n
14744 {
14745     ref-project-id = {A01},
14746     funding-status = {existing},
14747     staff-type = {research},
14748     ref-person-id = {per1}
14749 }
14750 \int_compare:nNnF { \l_tmpa_int } = { 1 }
14751 {
14752     \PackageError{test}
14753     {Anonymous~staff~institution~validation~fired~\int_use:N\l_tmpa_int~times}
14754     {It~must~fire~exactly~once,~only~when~both~reference~keys~are~empty.}
14755 }
14756 \iow_term:n {TEST~PASS:~anonymous~staff~require~an~institution}
14757 \group_end:
14758 \ExplSyntaxOff
14759
14760 \addEntry[staff]{RequestedFundingStaff}{
14761     ref-project-id      = {A01},
14762     ref-person-id       = {per1},
14763     funding-status      = {existing},
14764     staff-type          = {research},
14765     field-of-research   = {Microbiome research},
14766     ref-institution-id  = {ins1},
14767     commitment          = {8},
14768     category            = {prof},
14769     funding-source      = {University funds},
14770     description         = {
14771         Coordinates sample processing and integrates microbiome measurements with
14772         the project's experimental work.
14773     }
14774 }
14775
14776 \addEntry[staff]{RequestedFundingStaff}{
14777     ref-project-id      = {A01},
14778     funding-status      = {existing},
14779     staff-type          = {nonResearch},
14780     firstname           = {Bob},
14781     lastname            = {Existing},
14782     academic-degree     = {--},
14783     positionText        = {Technical assistant},
14784     ref-institution-id  = {ins2},
14785     commitment          = {10},
14786     category            = {nonResearch},
14787     funding-source      = {University funds},
14788     description         = {
14789         Maintains the sample archive, prepares laboratory material, and documents
14790         quality-control procedures.
14791     }
14792 }
14793
14794 \addEntry[staff]{RequestedFundingStaff}{
14795     ref-project-id      = {A01},
14796     funding-status      = {requested},
14797     staff-type          = {research},
14798     lastname            = {TBA},
14799     positionText        = {Postdoctoral researcher},
14800     field-of-research   = {Immunometabolism},

```

```

14801   ref-institution-id = {ins1,ins2},
14802   category           = {postDoc},
14803   description         = {
14804       Performs the mechanistic experiments, analyses the multi-omics data, and
14805       prepares the resulting manuscripts.
14806   }
14807 }
14808
14809 \addEntry[staff]{RequestedFundingStaff}{
14810   ref-project-id      = {A01},
14811   funding-status      = {requested},
14812   staff-type         = {nonResearch},
14813   firstname          = {Dana},
14814   lastname           = {Requested},
14815   academic-degree    = {--},
14816   positionText       = {Technical assistant},
14817   field-of-research  = {Cell culture},
14818   ref-institution-id = {ins2},
14819   category           = {nonResearch},
14820   description        = {
14821       Supports cell-culture experiments, records reagent use, and performs the
14822       routine technical quality checks.
14823   }
14824 }
14825
14826 \printTable{{RequestedFundingStaff}{A01}}
14827
14828 \clearpage
14829 \section*{Overview of existing staff reused in chapter 2}
14830
14831 % The explicit database option lets this focused test read the live rows above.
14832 % In the proposal, \printTable{OverviewExistingStaff} uses the auxiliary-file
14833 % mirror because chapter 2 precedes the individual project declarations.
14834 \printTable[RequestedFundingStaff]{OverviewExistingStaff}
14835
14836 \clearpage
14837 \section*{Automatic calculation of requested staff funding}
14838
14839 The following two entries deliberately omit the \texttt{sum} key. The full-
14840 year values and their half-year counterparts are:
14841 \begin{itemize}
14842   \item Professor:  $\frac{120000}{100} \times 100/100 \times 2$ 
14843     =  $\frac{240000}{100}$ , or  $\frac{120000}{100}$  in years 1 and 5.
14844   \item Doctoral researcher:  $\frac{80000}{100} \times 65/100 \times 1$ 
14845     =  $\frac{52000}{100}$ , or  $\frac{26000}{100}$  in years 1 and 5.
14846 \end{itemize}
14847
14848 \addEntry[funding]{RequestedFunding}{
14849   ref-project-id = {A01},
14850   funding-type   = {staff},
14851   category       = {prof},
14852   percentage     = {100},
14853   quantity       = {
14854     year1 = {2},
14855     year2 = {2},
14856     year3 = {2},
14857     year4 = {2},
14858     year5 = {2}
14859   }
14860 }
14861
14862 \addEntry[funding]{RequestedFunding}{
14863   ref-project-id = {A01},
14864   funding-type   = {staff},
14865   category       = {PhD},
14866   percentage     = {65},

```

```

14867     quantity      = {
14868         year1 = {1},
14869         year2 = {1},
14870         year3 = {1},
14871         year4 = {1},
14872         year5 = {1}
14873     }
14874 }
14875
14876 \ExplSyntaxOn
14877 \@@_funding_sum_set:Nnnnn \l_tmpa_tl
14878   {RequestedFunding}{A01}{staff}{sum-year1}
14879 \fp_compare:nNnF {\l_tmpa_tl} = {146000}
14880 {
14881   \PackageError{test}
14882     {Expected~half-year~1~staff~sum~146000,~got~\l_tmpa_tl}
14883     {The~automatic~salary~calculation~is~incorrect.}
14884 }
14885 \@@_funding_sum_set:Nnnnn \l_tmpa_tl
14886   {RequestedFunding}{A01}{staff}{sum-year2}
14887 \fp_compare:nNnF {\l_tmpa_tl} = {292000}
14888 {
14889   \PackageError{test}
14890     {Expected~full-year~2~staff~sum~292000,~got~\l_tmpa_tl}
14891     {The~automatic~salary~calculation~is~incorrect.}
14892 }
14893 \@@_funding_sum_set:Nnnnn \l_tmpa_tl
14894   {RequestedFunding}{A01}{staff}{sum-year5}
14895 \fp_compare:nNnF {\l_tmpa_tl} = {146000}
14896 {
14897   \PackageError{test}
14898     {Expected~half-year~5~staff~sum~146000,~got~\l_tmpa_tl}
14899     {The~automatic~salary~calculation~is~incorrect.}
14900 }
14901 \@@_funding_sum_set:Nnnnn \l_tmpa_tl
14902   {RequestedFunding}{A01}{staff}
14903   {sum-year1,sum-year2,sum-year3,sum-year4,sum-year5}
14904 \fp_compare:nNnF {\l_tmpa_tl} = {1168000}
14905 {
14906   \PackageError{test}
14907     {Expected~five-year~staff~sum~1168000,~got~\l_tmpa_tl}
14908     {The~automatic~salary~calculation~is~incorrect.}
14909 }
14910 \iow_term:n
14911   {TEST~PASS:~custom~staff~sums~~~146000/292000/146000~and~1168000~total}
14912 \ExplSyntaxOff
14913
14914 \printTable{{RequestedFunding}{A01}}
14915
14916 Expected combined amount in years 1 and 5: \num{146000}; in years 2--4:
14917 \num{292000}. Expected amount over all five funding columns: \num{1168000}.
14918
14919 \clearpage
14920 \section*{Requested-instrumentation overview states}
14921
14922 \addEntry[funding]{NoInstrumentationFunding}{
14923   ref-project-id = {A01},
14924   funding-type   = {costs},
14925   category       = {Consumables},
14926   sum            = {
14927     year1 = {1000},
14928     year2 = {1000},
14929     year3 = {1000},
14930     year4 = {1000},
14931     year5 = {1000}
14932   }

```

```

14933 }
14934 \OverviewFundsRequestedInstrumentationTable[NoInstrumentationFunding]
14935
14936 \printTable{OverviewFundsRequestedInstrumentation}
14937
14938 \clearpage
14939 \section*{Configurable animal-housing rates}
14940
14941 \addEntry{UpkeepLaboratoryAnimals}{
14942     ref-project-id    = {A01},
14943     species           = {mouse},
14944     quantity          = {10},
14945     weeks-kept        = {4},
14946     purchasing-costs  = {20},
14947     requested-funds   = {100},
14948     existing-funds    = {0}
14949 }
14950 \addEntry{UpkeepLaboratoryAnimals}{
14951     ref-project-id    = {A01},
14952     species           = {mouse-gnotobiotic},
14953     quantity          = {2},
14954     weeks-kept        = {4},
14955     purchasing-costs  = {20},
14956     requested-funds   = {50},
14957     existing-funds    = {0}
14958 }
14959 \addEntry{UpkeepLaboratoryAnimals}{
14960     ref-project-id    = {A01},
14961     species           = {rat},
14962     quantity          = {3},
14963     weeks-kept        = {4},
14964     purchasing-costs  = {25},
14965     requested-funds   = {75},
14966     existing-funds    = {0}
14967 }
14968 \printTable{UpkeepLaboratoryAnimals}
14969
14970 \end{document}

```

**Starting now a template CV file.**

```

14971 \documentclass[english, cv]{dfg-crc}
14972 \begin{document}
14973 \input{content/00_titlepage}
14974 \dfgCVsection
14975 % %% \dfgCV{MM}
14976 \end{document}

```

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