

European Research Infrastructure supporting Smart Grid and Smart Energy Systems Research, Technology Development, Validation and Roll Out – Second Edition

Project Acronym: **ERIGrid 2.0**

Project Number: **870620**

Technical Report Lab Access User Project

[Lab Access User Project Full Name as it appears in the corresp. proposal] ([Access Project Acronym])

Access Duration: dd/mm/yyyy to dd/mm/yyyy

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User Group Leader: [Name of Lab Access User Group Leader (institution name)]



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Change Log

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List of Abbreviations

CO	Project Coordinator
EC	European Commission
LA	Lab Access
UG	User Group
UP	User Project

Executive Summary

From Wikipedia:¹

An executive summary, or management summary, is a short document or section of a document, produced for business purposes, that summarises a longer report or proposal or a group of related reports in such a way that readers can rapidly become acquainted with a large body of material without having to read it all. It usually contains a brief statement of the problem or proposal covered in the major document(s), background information, concise analysis and main conclusions. It is intended as an aid to decision-making by managers and has been described as the most important part of a business plan.

An executive summary differs from an abstract in that an abstract will usually be shorter and is intended to provide a neutral overview or orientation rather than being a condensed version of the full document. Abstracts are extensively used in academic research where the concept of the executive summary would be meaningless. “An abstract is a brief summarising statement . . . read by parties who are trying to decide whether or not to read the main document”, while “an executive summary, unlike an abstract, is a document in miniature that may be read in place of the longer document”.

Structure:

- Be approximately 1-2 pages long
- Be written in language appropriate for the target audience
- Consist of short, concise paragraphs
- Begin with a summary
- Be written in the same order as the main report
- Only include material present in the main report
- Make recommendations
- Provide a justification
- Have a conclusion
- Be readable separately from the main report
- Sometimes summarise more than one document

¹https://en.wikipedia.org/wiki/Executive_summary

1 Lab-Access User Project Information

1.1 Overview

TODO: “This section should include: title, acronym, host infrastructure, access period, user group members; use the same information as in the corresponding Lab Access User Project Proposal. This section should not be divided into subsections.”

1.2 Research Motivation, Objectives, and Scope

TODO: “This section should briefly outline the research motivation, the corresponding objectives, and the scope of the Lab Access User Project. This section should not be divided into subsections.”

1.3 Structure of the Document

This document is organised as follows: Section 2 briefly outlines the state-of-the-art/state-of-technology that provides the basis of the realised Lab Access (LA) User Project (UP). Section 3 briefly outlines the performed experiments whereas Section 4 summarises the results and conclusions. Potential open issues and suggestions for improvements are discussed in Section 5. Finally, additional information is provided in the Appendix A. Document Guidelines, Appendix B. Heading, and Appendix C. Heading.

2 State-of-the-Art/State-of-Technology

TODO: “This section should briefly outline the underlying state-of-the-art/state-of-technology of the Lab Access User Project. If appropriate, this section can be divided into subsections.”

3 Executed Tests and Experiments

3.1 Test Plan, Standards, Procedures, and Methodology

TODO: “This section should briefly outline the applied test plan, used standards and procedures as well as the corresponding methodology of the Lab Access User Project. If appropriate, this section can be divided into subsections.”

3.2 Test Set-up(s)

TODO: “This section should include implementation details: equipment and communications involved, control strategy, monitoring aspects, etc. of the Lab Access User Project. If appropriate, this section can be divided into subsections.”

3.3 Data Management and Processing

TODO: “This section should briefly outline the used/applied data management and processing strategy of the Lab Access User Project. If appropriate, this section can be divided into subsections.”

4 Results and Conclusions

4.1 Discussion of Results

TODO: “This section should summarise the achieved results of the Lab Access User Project.”

4.2 Conclusions

TODO: “This section should provide the main conclusions of the Lab Access User Project. Especially, the following points need to be addressed in the conclusions:

- The impact of using the ERIGrid 2.0 Lab Access programme (User Group and hosting organisation benefits, scientific advancements, commercial benefits, etc.).
- Where applicable, describe experiences related to the use of the Holistic Test Description (HTD). Does the HTD help in organising the access (e.g., agreeing test objectives and evaluation criteria).
- Where applicable, describe challenges and solutions specific to multi-lab experiments.
- Where applicable, describe challenges and solutions specific to Hardware-in-the-Loop (HIL) experiments.

”

5 Open Issues and Suggestions for Improvements

TODO: “This section should briefly outline open issues and potential suggestions for improvements of the Lab Access User Project.

- Where applicable, describe potential improvements related to the use of the Holistic Test Description (HTD).
- Where applicable, describe gaps in lab capabilities where things can be improved to enable future access or fulfilling objectives that could not be met in the current project.

If appropriate, this section can be divided into subsections.”

References

Lamport, L. (1994). *Latex: a document preparation system: user's guide and reference manual*. Addison-Wesley.

Tan, P.-N., Kumar, V., & Srivastava, J. (2004). Selecting the right objective measure for association analysis. *Information Systems*, 29(4), 293–313.

Appendix A. Document Guidelines

A.1. Report Titles

Reports have a title that is defined in the submitted LA UP proposal. Please stick to the official spelling.

A.2. File Naming

The project will generate many documents (reports) and versions of these reports. It is beneficial to consistently use an agreed file naming format.

ERIGrid2-Report-Lab-Access-User-Project-AccessProjectNumber-AccessProjectAcronym-Status-vn.n.Extension

- Notice the hyphen between the various elements of the file name.
- **ERIGrid2**: Each ERIGrid 2.0 report should be preceded by the project acronym. Notice, there is only one correct spelling of the acronym, i.e., 'ERIGrid 2.0', but for file names 'ERIGrid2' will be used.
- **AccessProjectNumber**: This should be based on the formal LA UP number according to the submission system
- **AccessProjectAcronym**: This should be based on the formal LA UP acronym as stated in the corresponding, submitted proposal.
- **Status**:
 - *draft* = Draft Version – indicates that the drafting of the report is in progress;
 - *final* = Final Version as checked and updated by the User Group (UG) and the hosting institution;
 - *submitted* = submitted version as submitted to the ERIGrid 2.0 Project Coordinator (CO).
- **vn.n**: The version of the report starting from v1.0.
- **Extension**: File extension, e.g., 'docx' for Microsoft Word and 'pdf' for Portable Document Format.

Examples:

- ERIGrid2-Report-Lab-Access-User-Project-116-GRIDPV100-draft-v1.2.docx
- ERIGrid2-Report-Lab-Access-User-Project-116-GRIDPV100-submitted-v1.8.pdf

A.3. Change Log

The Change Log is there to keep track of the changes made to the document. Whenever changes are made to the document, a new version should be created and the changes should be briefly summarised in the Change Log. We anticipate a minimum of three phases of Change Log entries. (1) The researcher responsible for the given report enters the changes as he/she

develops the document. (2) The two reviewers register the changes made in the quality assurance phase. Once the responsible researcher passes the report on to the hosting institution, the status should be changed from 'draft' to 'final'.

A.4. Document Formatting

A.4.1. Headings

Like in many journals and books, it is a good practice not to use more than 3 levels of headings. If you really need more, then by all means do so, but you may first consider how to structure the document with a maximum of three heading levels.

Use the following capitalisation style for all headings: All terms should be capitalised and do not use a full stop at the end.

A.4.2. Captions and Citations

Use the following for captions and cross referencing:

- 'Table 1' for tables, not 'table 1' or 'Tab. 1', etc.
- 'Figure 1' for figures, not 'figure 1' or 'Fig. 1', etc.
- 'Section 1.1.1' to cross-reference other sections, not 'section 1.1.1' or 'S. 1.1.1', etc.

Do not abbreviate the word 'Equation' to 'eq', 'Eqn', etc.

Table captions should be placed above the table and figure captions should be placed below the figure. The captions should succinctly describe the content of the table or figure.

A.4.3. Tables

Producing informative tables is not easy. Avoid grid lines around each table cells (typical for people with little experience in drafting technical papers). The table below (Table 1) is a good example how tables should look like. Make sure that caption appears on the same page as the table. The table caption is above the table!

The table caption should follow the sentence style layout and end with a full stop. The caption as well as the table should be centred.

Each table must be introduced in the deliverable text. Make sure that cross references to tables are correct before submitting the deliverable.

The same (simplified) table using the \LaTeX table feature is shown below (Table 2).

A.4.4. Figures

Good figures/diagrams are even more difficult to produce than tables. Figures should contain legends explaining the symbols in the figure. Avoid surrounding the figure with a box outline. If there are different parts of a figure (e.g., (a), (b), (c)), indicate these clearly. Make sure that the labels within a figure/diagram are spelled consistently within the figure/diagram and are also consistently spelled in the text. Make sure that caption appears on the same page as the

Table 1: Summary of properties of different modelling formalisms. The table below is inserted as graphic.

	Static (s), dynamic (d)	Discrete (d), continuous (c)	Deterministic (d), stochastic (s)	Qualitative (ql), quantitative (qn)	Coarse (c), average (a), fine (f) grained
DG	s		d	ql	c
BYN	s ^a	d,c	s	qn	c
BNN	d	d	d	ql	c
GLN	d	d	d	ql	a
NLDE	d	c	d	qn	a,f
PLDE	d	c	d	ql,qn ^c	a
QDE	d	d	d	ql	a,f
PDE	d	c ^b	d	qn	a,f
SME	d	d	s	qn	f
R	d	d	d	ql	a,f

^aGeneralization to dynamic Boolean networks is possible.

^bSpatial dimension is often discretized.

^cQualitative analysis of models is possible.

Table 2: Summary of properties of different modelling formalisms. The table below is produced using L^AT_EX's table environment.

	Static	Discrete	Deterministic	Qualitative	Coarse
DG	s		d	ql	c
BYN	s	d,c	s	qn	c
BNN	d	d	d	ql	c
GLN	d	c	d	qn	a,f

figure. The figure caption is below the figure. See an example of a figure and its caption below (Figure 1).

Each figure must be introduced in the deliverable text. Make sure that cross references to figures are correct before submitting the deliverable.

The figure caption should follow the sentence style layout and end with a full stop. The figure caption as well as the figure should be centred.

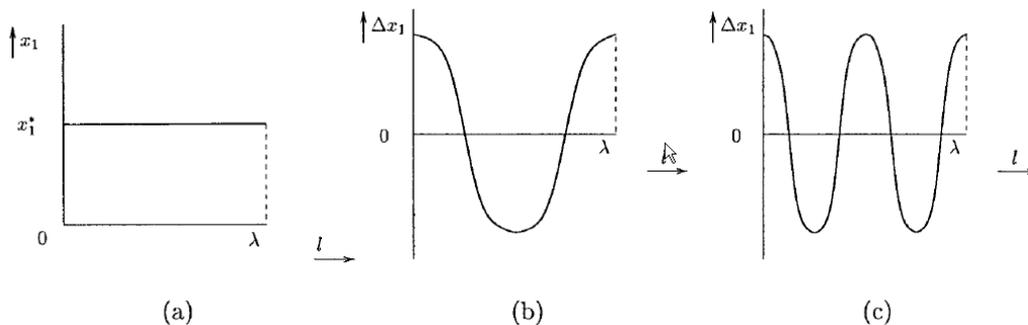


Figure 1: Caption caption caption caption caption caption caption caption caption. (a) Caption caption caption, (b) Caption caption caption, (c) Caption caption caption.

A.4.5. Footnotes

This² is a footnote.

A.5. Language and Notation

There are a few things we should consider when writing documents in terms of language. The question is not deeply philosophical in the sense of whether one or the other approach is fundamentally correct (or wrong). It is more the case of maintaining a certain level of consistency across the project.

Since British/UK English is the official version of English within the European Commission (EC), we should by default use UK English spelling (and adopt a spell-checker set to UK English). Nevertheless, US spelling is also fine – the main issue to ensure is to be consistent within a given deliverable.

Quotation marks. UK English (unlike US), use single quotation marks (‘X’) instead of double quotation marks (“X”). At least maintain consistency within a document.

- It is claimed that Y is ‘superior’ to X.
- ‘Good morning, Dave,’ greeted HAL.

Do not use quotation marks to indicate emphasis – use italics, bold or underline style instead.

The accepted standard for separating orders of magnitude in large figures is not ‘,’ or ‘”’ (quotation mark) or ‘.’, but a non-breaking (small) space.

- This is inappropriate: 1,000,000 or 1.000.000 or 1’000’000 (very bad!)
- This is good: 1 000 000.

Capitalisation. Use capitalisation according to English grammar rules. If someone is interested, see capitalisation rules:³

Tense. Use past tense when describing activities and tasks (experiments, developments, etc) carried out in the past.

- A test bed was set up to ...
- The evaluation revealed that ...

Use present tense when describing the ideas, design, systems, etc. that exist in the present.

- The system supports the following exchange formats ...
- A key property of the system is its ability to ...

Large numbers. Use explicit format or scientific notation for large numbers

- Use 1 200 000 000, not 1.2bn or 1,200,000,000
- Or use $1.20 \cdot 10^9$ or 1.20×10^9

²The footnote is at the bottom of the same page where the footnote is cited and the font size is only 9 pt. Footnotes are useful to for including nasty-looking long Web references which would look terrible if used in the main flow of the text.

³<http://andromeda.rutgers.edu/~jlynch/Writing/c.html>, <http://www.grammarbook.com/punctuation/capital.asp>

Small numbers. As usual, unless in tables and similar elements, use one, two, ... , twelve for numbers < 13 , and 13, 14, ..., for large numbers.

Numbers and units. Use small space (In \LaTeX : `\smallspace` or `\smallspace`) to separate figures from units. E.g.,

- 10 GB, not 10GB
- 2.13 s not 2.13s

Bits, bytes and pieces. Use the following terms and abbreviations for bytes (sometimes it is better to use the full term than the abbreviation).

Bits:

kb or Kb	kilobit	10 ³
Mb	megabit	10 ⁶
Gb	gigabit	10 ⁹
Tb	terabit	10 ¹²

Bytes:

kB or KB	kilobyte	10 ³
MB	megabyte	10 ⁶
GB	gigabyte	10 ⁹
TB	terabyte	10 ¹²

Number of decimals. When a number is expressed in the scientific notation, the number of significant digits (or significant figures) is the number of digits needed to express the number to within the uncertainty of calculation. For example, if a quantity is known to be 1.234 ± 0.002 , four figures would be significant⁴.

Unless there is a good reason, do not use more than three fractional digits or places (the number of digits following the point).

Other issues. Avoid overly long sentences. Certain rules suggest that sentence over approximately 20 words become difficult to understand and should therefore be avoided.

A.6. \LaTeX Style Files

To use the latex template, copy the contents of this directory and use `report.tex` as the master file of your report (after renaming it as required). The necessary files are:

- `erigrid2.sty`
- `istcover.sty`
- `istprog.sty`
- `graphics/`
 - `erigrid2-coverbkg.pdf`
 - `erigrid2-logo.pdf`

Use the following macros to populate the tables on the cover and on page two:

- `\istChange{}{}{}{}`: for setting change log items. The first argument is the date, the second is the reports's version number, the third, the author's name, and the fourth the

⁴<http://mathworld.wolfram.com/SignificantDigits.html>

summary of changes made. You may add as many of these commands as you like. They will be stored and added to the table on the second page.

- `\ProjectAcronym{}`, `\ProjectFullTitle{}`, `\ProjectRefNo{}`: these are pre-set to the obvious values.
- `\delivNumber{}`: LA UP number
- `\delivName{}`: LA UP full title
- `\delivShortTitle{}`: LA UP acronym
- `\delivResponsible{}`: persons in charge of the report
- `\delivVersion{}`: version as vn.n
- `\ActualDate{}`: date of submission
- `\delivAuthor{}`: Lead author(s)
- `\delivFPAuthor{}`: Co-author(s)
- `\delivStatus{}`: (d)raft or (f)inal
- `\delivKeywords{}`: well defined keywords ...

These declarations must appear before you issue the `\makecover` command, at the beginning of the report.

A.7. Formatting Bibliographical References

By default, references should use APA style (as, e.g., used in Google Scholar) and be ordered in alphabetic order. See for example (Tan, Kumar, & Srivastava, 2004), in the list below.

Other styles are also OK, nevertheless the authors should make sure that within a single document the notation to references and their citation should be consistent. In the text, the references should ideally be referred to by the author name and year, e.g., (Lamport, 1994); however, referencing by reference number is also acceptable.

A.8. Associated Outputs

If appropriate, please include a section with details of any datasets, code or other resources being released with this report.

The work described in this report has resulted in the following resources:

Description	URL	Availability
My Dataset 1	http://hdl.handle.net/12345	Public (Apache 2.0)
My Dataset 2	http://hdl.handle.net/54321	Private (consortium only)
My Code	github.com/erigrd2/xxx	Public (GPL3)

Appendix B. Heading

B.1. Heading

TODO: "Explain the content of the appendix."

B.2. Heading

TODO: "Explain the content of the appendix."

Appendix C. Heading

C.1. Heading

TODO: "Explain the content of the appendix."

C.2. Heading

TODO: "Explain the content of the appendix."

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