Requirements Handbook Companion

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1. Disclaimer

Work in progress!

Here is a list of warnings:

- This work is in progress and subject to constant improvements, so pay attention to dates and versions.
- If you read the PDF version of this material on a browser, the links might not be clickable. Download it instead in your machine and open it with a PDF viewer. The links should be clickable there.

Conventions for this book:

Table 1. Icons signification

Icon	Signification
✓	A precisely referenced requirement this section is satisfying
🐞	A precisely referenced requirement this section is related to
⊗	No corresponding requirement for this section (should be fixed)

2. Context

This repository constitutes the companion of the book: Handbook of requirements and business analysis. It serves as the basis for the future Handbook's site: http://requirements-handbook.org/

3. Overview of PEGS

Work in progress!

This chapter is an overview of PEGS. It aims at making this companion book self-content. We highly recommend, for more details and a full description of the subtleties of PEGS, to read the corresponding handbook. Besides, this chapter does not cover the following aspects of PEGS that handbook fully addresses:

- General principles of requirements (see handbook, chapter 2)
- Quality criteria for requirements (see handbook, chapter 4)
- How to write requirements (see handbook, chapter 6)
- Completeness (see handbook, chapter 11)
- Verification (see handbook, chapter 12)

3.1. Basic principles

Figure 1. The PEGS logo

PEGS takes its name from the proposed organization of requirements in four books (Section 3.2 will detail this books' structure):

Process
: dedicated to...

Environment

Goals

System
: Bla

All this document will follow, as much as possible, the color convention illustrated by the logo (see Figure 1).

3.2. Overall structure

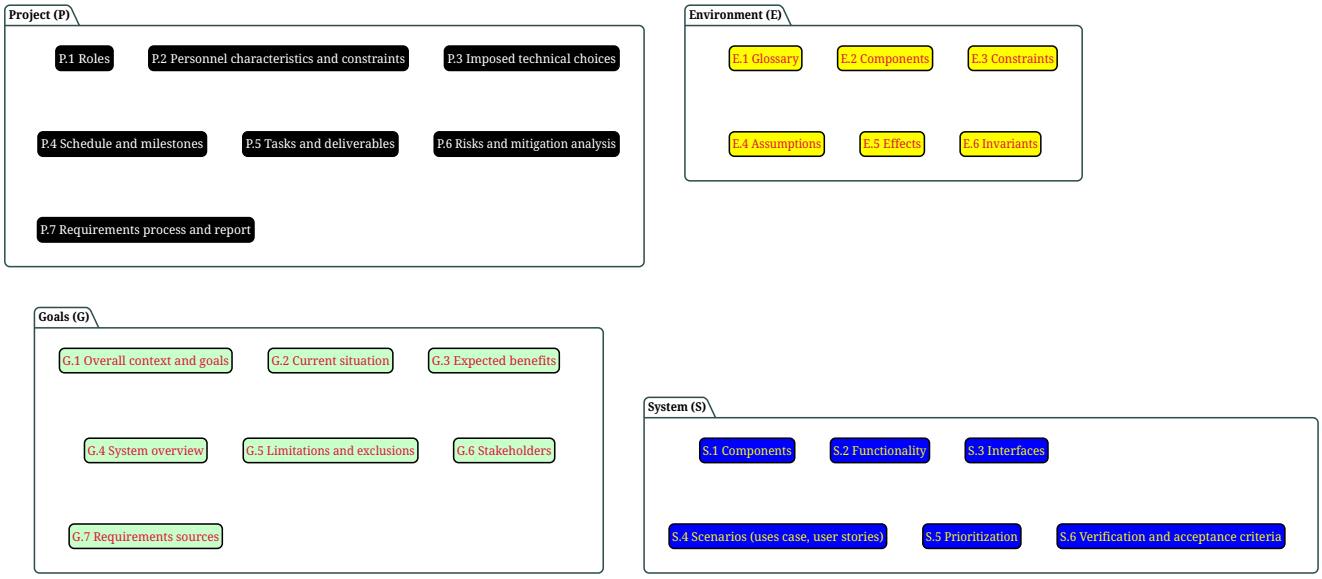

Figure 2. The four books of requirements

This structure can be used to organize a document in books, but also requirements in packages (for example in SysML) or in folders (for example in a spreadsheet).

3.3. Links between the four PEGS

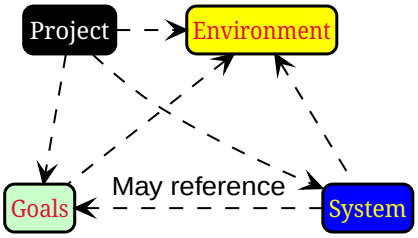

Figure 3. Reference links

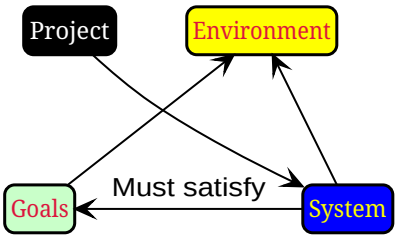

Figure 4. Verification obligations

3.4. The lifecycle model

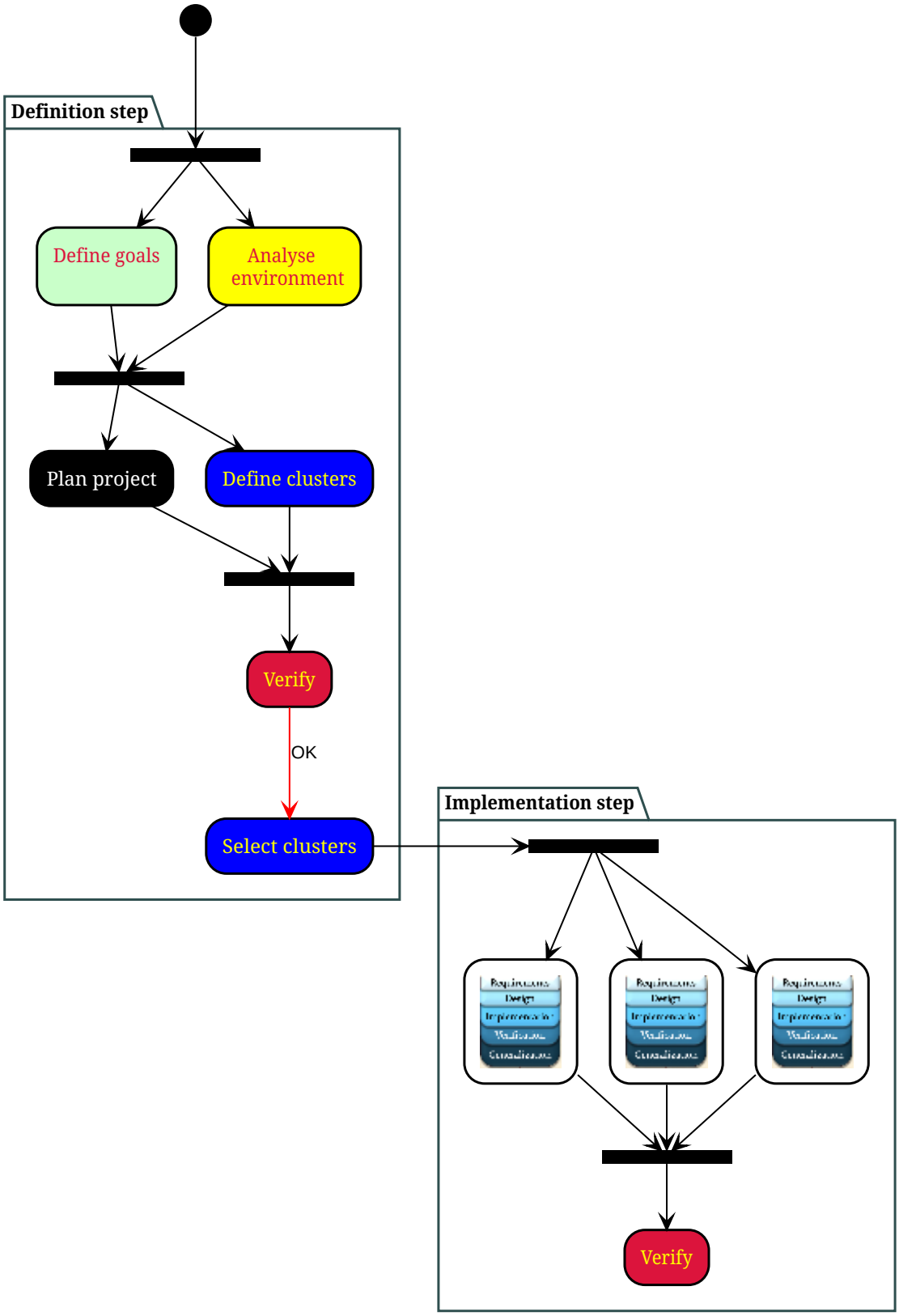

Figure 5. The lifecycle model

4. Case studies

We illustrate the use of PEGS through the following case studies:

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1. The Roborace (see the dedicated repo here)
2. A more information-system-oriented example (one option is this library example)
3. This Companion Book' requirements (see the dedicated repo here)

5. Book templates

We provide a set of Book templates in this companion web site to help you apply PEGS and organize your requirements. Here is the list of the available templates (feel free to contribute by submitting additional templates):

Work in progress

1. DOCX
2. Google Doc (see this example for now)
3. LaTeX (see IEEE example)
4. GitHub
5. SysML

Corresponding Requirement

> This section satisfies this requirement.

References

- Sommerville & Sawyer
- Axel van Lamsweerde
- Klaus Pohl

Appendices

Appendix A: Useful links

- The draft of the Method Book: PDF
- The draft of the Companion Book: Google Doc

Appendix B: Specific implementations

Here is a list of potential mappings between the PEGS:

SysML

- Each PEGS could be a package

- Requirements could be stereotyped (e.g., `[Goals]` or `[System]`)

FORM-L

- M. Thuy could be interested in providing a template for the PEGS in Form-L

RSML

- Florian could integrate the PEGS in the editor

Appendix C: Checks results and issues

URLs

Checking URLs result (last update: 2021-02-23):

```
Lun 22 fév 2021 10:48:30 CET

FILE: README.adoc
[✓] http://se.ethz.ch/~meyer/down/requirements_handbook/REQUIREMENTS.pdf
[/] http://requirements-handbook.org/
[✓]
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[✓] https://github.com/FormalRequirements/companionRequirements
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[✓] https://github.com/FormalRequirements/requirements-handbook-
companion/blob/main/check-results.txt

20 links checked.

FILE: githubImpl.adoc
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[✓] http://requirements-handbook.org/
[✓]
https://docs.google.com/document/d/1HrWCRzyW_iTf1QXFFzEoDvvc66IzMCDb3uXGS5GRWz8/edit?u
sp=sharing
[✓] https://github.com

FILE: overview.adoc
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sp=sharing

3 links checked.
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