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 the method

⚠ Work in progress!

This chapter is an overview of PEGS. Its 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.
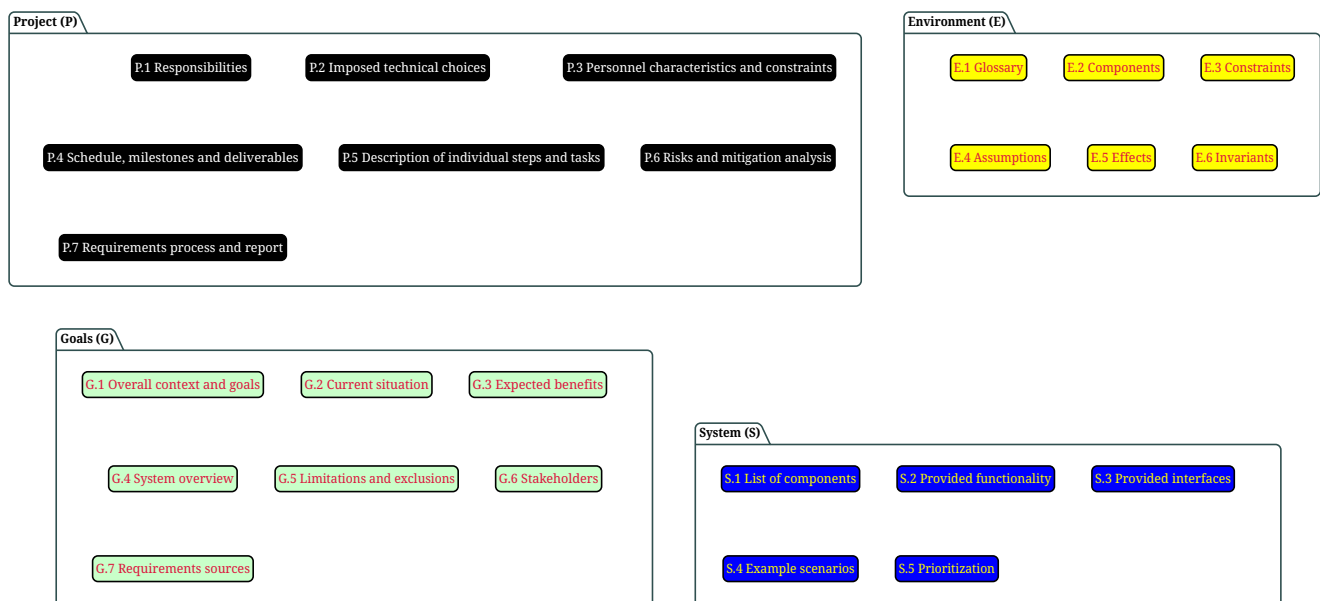

Figure 1. The PEGS logo

3.1. Overall structure

Project (P)
P.1 Responsibilities   P.2 Imposed technical choices   P.3 Personnel characteristics and constraints
P.4 Schedule, milestones and deliverables   P.5 Description of individual steps and tasks   P.6 Risks and mitigation analysis
P.7 Requirements process and report

Environment (E)
E.1 Glossary   E.2 Components   E.3 Constraints
E.4 Assumptions   E.5 Effects   E.6 Invariants

Goals (G)
G.1 Overall context and goals   G.2 Current situation   G.3 Expected benefits
G.4 System overview   G.5 Limitations and exclusions   G.6 Stakeholders
G.7 Requirements sources

System (S)
S.1 List of components   S.2 Provided functionality   S.3 Provided interfaces
S.4 Example scenarios   S.5 Prioritization

Figure 2. The four books of requirements

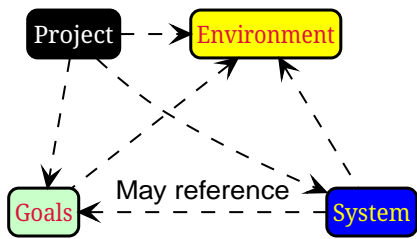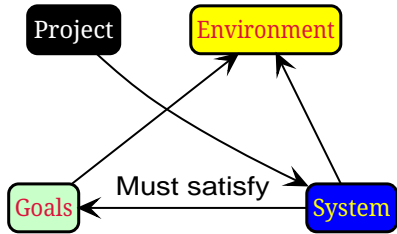## 3.2. Links between the four PEGS

Figure 3. Reference links

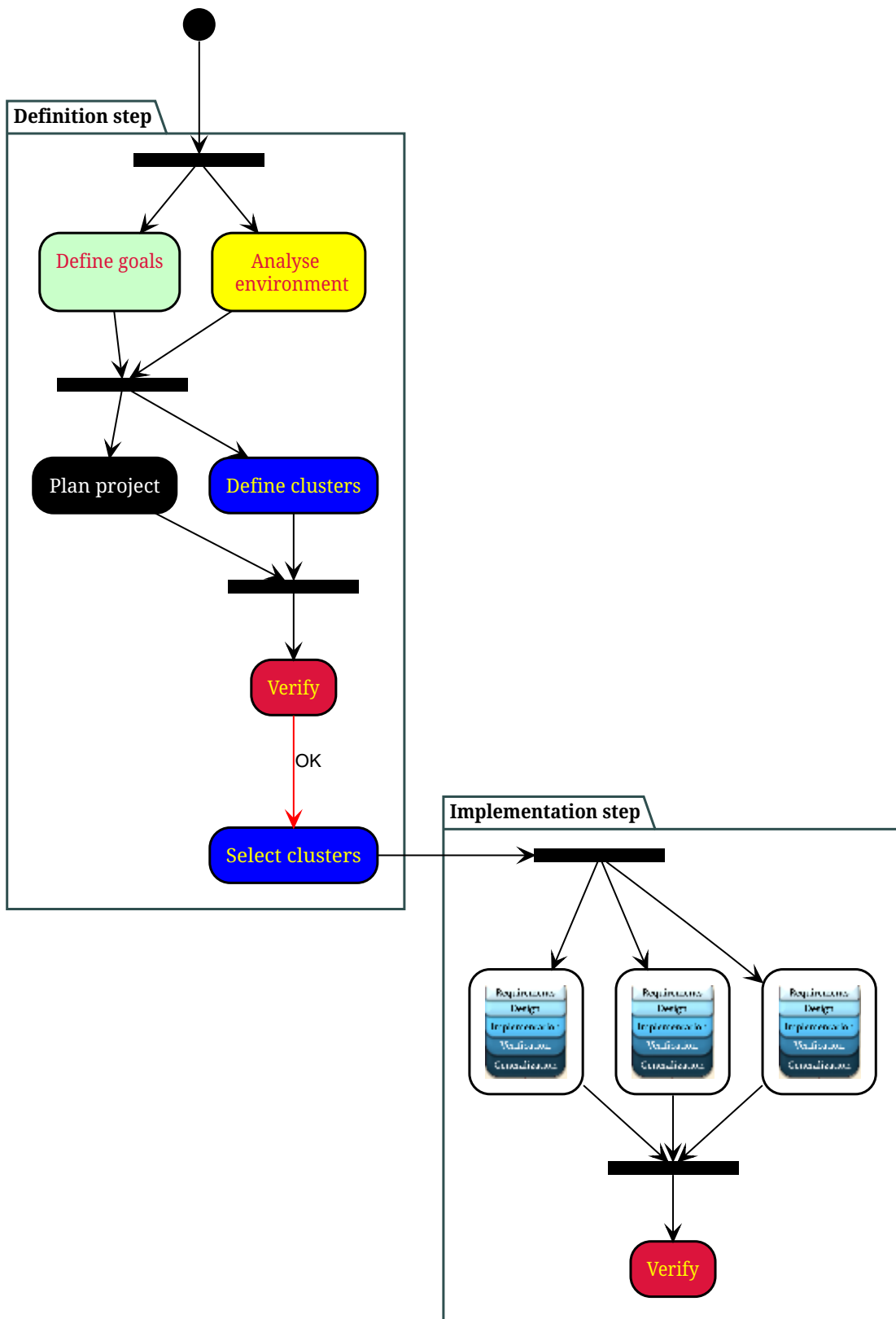*Figure 4. Verification obligations*

3.3. The lifecycle model

Figure 5. The lifecycle model

4. Case studies

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

> ⚠️   Work in progress

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

⊘ *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: 2021-02-12):

```
Ven 12 fév 2021 14:52:59 CET

FILE: README.adoc
[] http://se.ethz.ch/~meyer/down/requirements_handbook/REQUIREMENTS.pdf
[/] http://requirements-handbook.org/
[]
https://docs.google.com/document/d/1HrWCRzyW_iTf1QXFFzEoDvvc66IzMCDb3uXGS5GRWz8/edit?u
sp=sharing
[] https://github.com/FormalRequirements/requirements-handbook
[] https://FormalRequirements.github.io/requirements-handbook
[] https://formalrequirements.github.io/companionRequirements
[] https://gist.github.com/rxaviers/7360908
[] https://github.com/FormalRequirements/requirements-
handbook/workflows/Check%20URLs/badge.svg
[] https://github.com/FormalRequirements/requirements-handbook/actions
[] https://img.shields.io/badge/License-MIT-yellow.svg
[] https://opensource.org/licenses/MIT
[] https://img.shields.io/badge/Gitpod-ready--to--code-blue?logo=gitpod
[] https://gitpod.io/#https://github.com/FormalRequirements/requirements-handbook
[] https://img.shields.io/badge/PDF-Download-blue
[] https://github.com/FormalRequirements/requirements-handbook/blob/main/README.pdf
[] https://github.com/FormalRequirements/roboraceRequirements
[] https://github.com/ddd-by-examples/library?ref=hackernoon.com#domain-description
[] https://github.com/FormalRequirements/companionRequirements
[] https://github.com/jpeisenbarth/SRS-Tex

19 links checked.

FILE: githubImpl.adoc
[] http://se.ethz.ch/~meyer/down/requirements_handbook/REQUIREMENTS.pdf
[/] http://requirements-handbook.org/
[]
https://docs.google.com/document/d/1HrWCRzyW_iTf1QXFFzEoDvvc66IzMCDb3uXGS5GRWz8/edit?u
sp=sharing
[] https://github.com

4 links checked.

FILE: overview.adoc
[] http://se.ethz.ch/~meyer/down/requirements_handbook/REQUIREMENTS.pdf
[/] http://requirements-handbook.org/
[]
https://docs.google.com/document/d/1HrWCRzyW_iTf1QXFFzEoDvvc66IzMCDb3uXGS5GRWz8/edit?u
sp=sharing

3 links checked.
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