SVAR – Systematic Verification and Acceptance of Requirements

Reference group meeting

January 17, 2024

Reference group

Pia Schönbeck – Sponsor. Project lead in systemic requirement management.

Oskar Permwall – Specialist in systemic requirement management

Marit Jidemo – Business developer in information management.

Erik Häggström – Area responsible (Background in BIM/GIS, information management in BIM

Rastkar Rauf – technical engineer, Digital project management

Susanne Van Raalte – BIM strategist

Karin Anderson – BIM specialist

Project overview

Duration: October 1, 2023 – September 30, 2025

Three objectives, each with three work packages.

- **Objective 1:** Development of an Automated Compliance Checking Capability Maturity Model (ACC-CMM)
- **Objective 2:** Understand to what degree the compliance checking of requirements (TRVInfra, project-specific) is automatable
- **Objective 3:** Develop procedures for automated, reusable, verification of requirements

Agenda

- BTH/HOCHTIEF ViCon: progress report
- TRV: Reference group's analysis of other, related projects' objectives and comparison to SVAR's objectives
- TRV: How can SVAR contribute to other projects, what input from other projects SVAR can use?
- ALL: Alignment and agreement of the main goal of SVAR: systematic requirements-based verification.
- Identification of champions for the three objectives

Progress report: November – December 2023

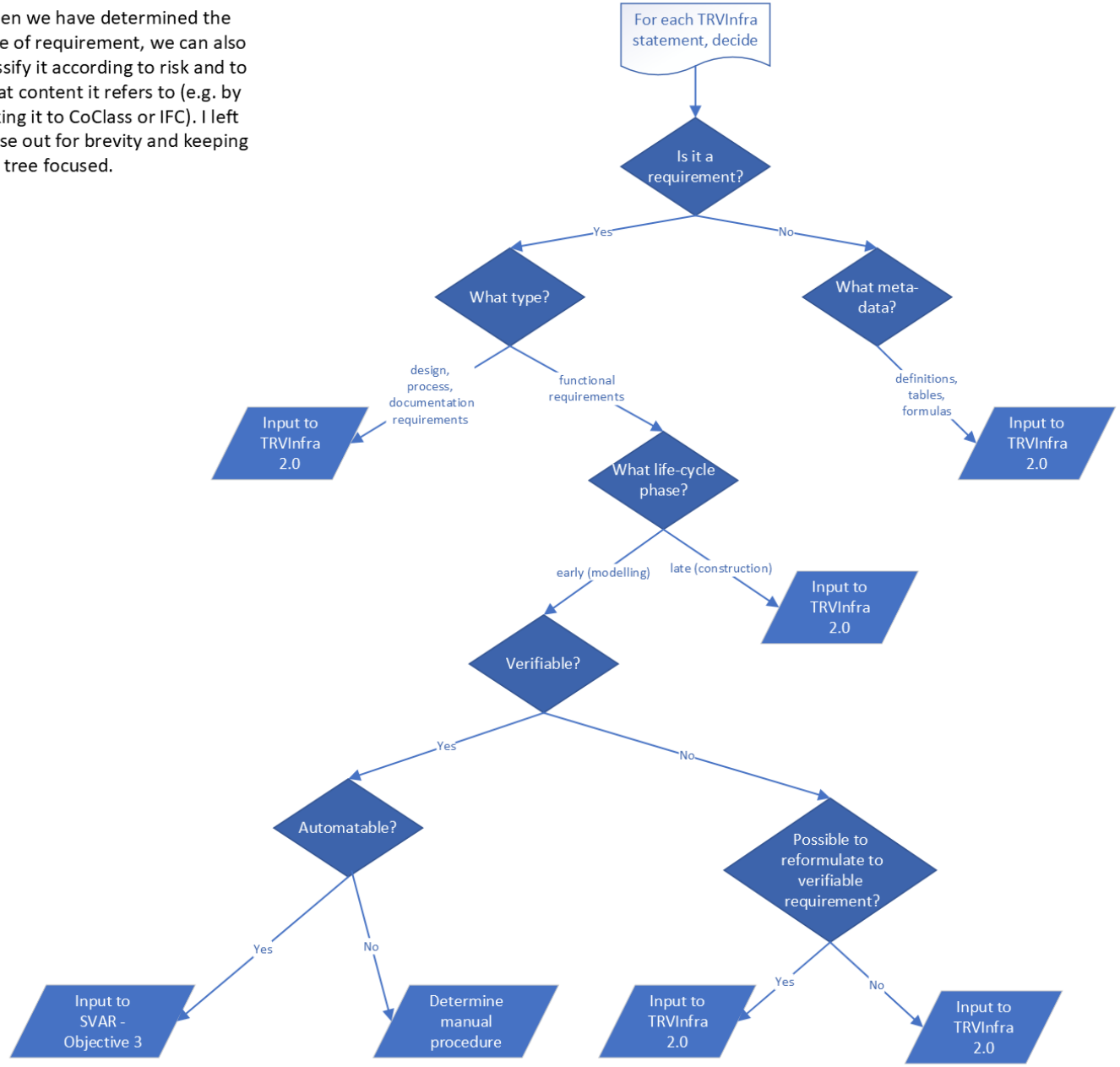
Objective 1

- Literature study about Capability Maturity Models
- Investigating the capabilities of the maturity model by Beach
  - If they are relevant for our case, e.g. political
  - If relevant how it can be measured that TRV has these capabilities
  - What information is needed from TRV for these capabilities

Objective 2: TRVInfra 2.0

We developed this decision tree to illustrate a possible way to analyze the TRVInfra requirements and use these results for TRVInfra 2.0

When we have determined the type of requirement, we can also classify it according to risk and to what content it refers to (e.g. by linking it to CoClass or IFC). I left these out for brevity and keeping the tree focused.

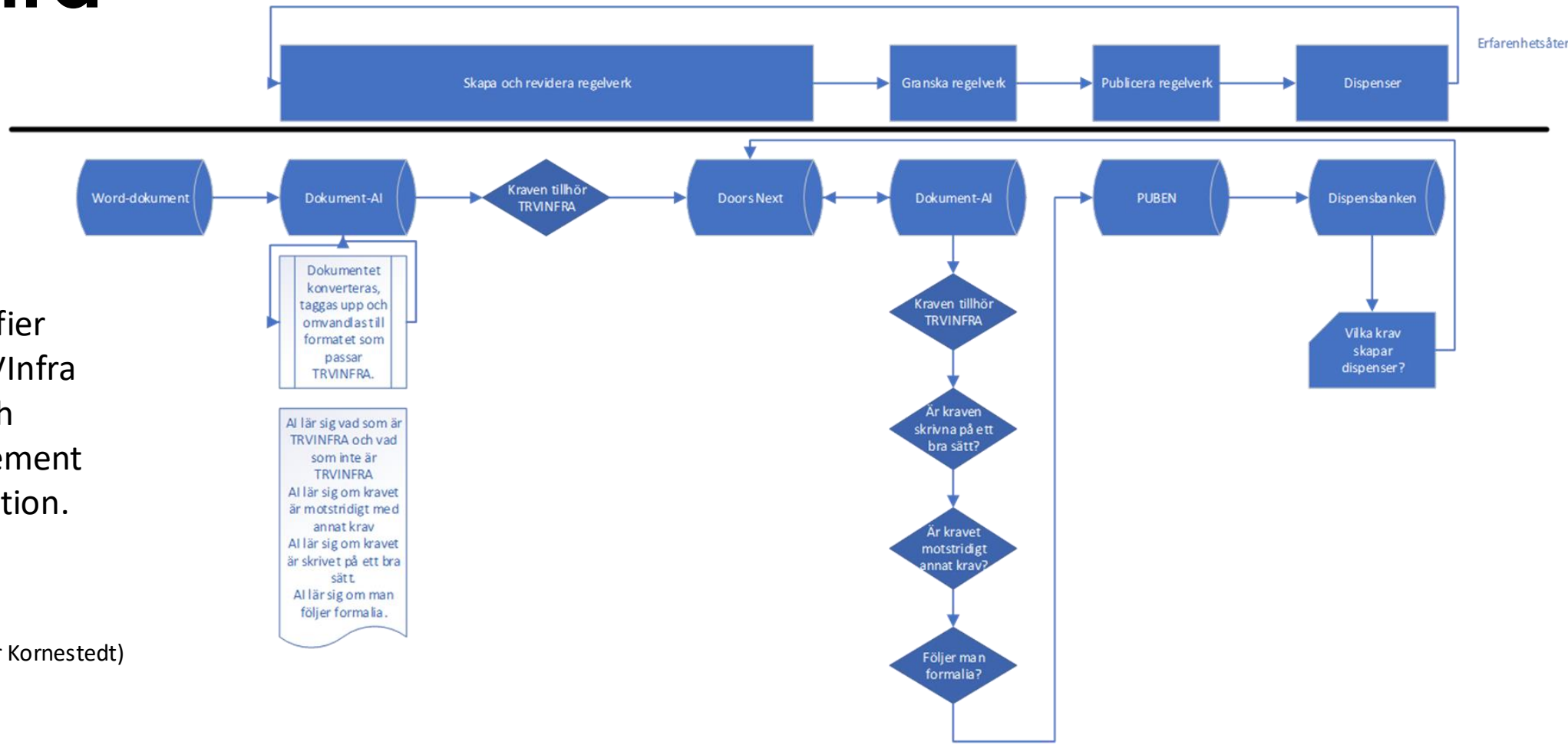


Objective 2

- Positioning of objective with other initiatives / synergies / overlaps.
- Meetings with:
  - Oskar Permvall (TRVInfra 2.0)
  - Jesper Kornestedt (Systematic requirements management)
  - Klas Eckerberg (CoClass and TRVInfra)

Objective 2: Requirement flow into TRVInfra

Idea: train a classifier (using existing TRVInfra data) to distinguish between a requirement and other information.



Source: AI I TRVInfra (Jesper Kornestedt)

Objective 2: CoClass and TRVInfra

- Klas Eckerberg is currently investigating if/how to use CoClass in TRVInfra
- In FoI-project DCAT, we developed a classifier (automated, zero-shot learning) to classify requirements with any classification system (we used CoClass, SB11)
- **Idea:** classifier could be reused here, if there is interest

Objective 3 - Develop procedures for automated, reusable, verification of requirements

Introduction to TRV2.0 (Meeting with Oscar)

- *general idea of TRV2.0*
- *Context of Requirement and Definitions*
- *Specification of Requirements (Preconditions, Advices, Comments)*
- *No standardised types of Requirements*
- *Introduction to usage of Puben and Doors*

Objective 3 - Develop procedures for automated, reusable, verification of requirements

Introduction to Software Landscape for TRV Requirements Management (Meeting with Jesper)

- *Workflow/Connection of Puben and Doors*
- *Related Process Steps per Application*
  - *Puben (Approving/Publishing) - Doors (Reviewing/Working)*
- *Overview on available API connections*
- *Identifying that Vision of Update on Software Landscape is matching to SVAR*

Objective 3 - Develop procedures for automated, reusable, verification of requirements

Introduction to Usage of IFC4.3 (Meeting with Karin)

- *Overview on IFC File for Infrastructure Project*
  - *Current structuring*
  - *IFC Classes*
  - *General modelling approach*
- *Provision of IFC4 and IFC4.3 files*
  - *Review and Data Analysis*

Objective 3 - Develop procedures for automated, reusable, verification of requirements

Research Tasks

- *Review of documentation of "HDMI_BilagaE1-AP5-KravställningIT_PM"*

State of the Art Analysis

- *Machine readable formats in comparison to human readable data*
- *IFC Standards HOCHTIEF and other Infrastructure Projects*
- *Requirements Management Systems other clients*
    - *e.g. Experience/Approach of Doors*

Reference group's analysis of other, related projects' objectives and comparison to SVAR's objectives

Reference group

How can SVAR contribute to other projects, what input from other projects SVAR can use?

Martin/Göran

Discussion on project goal

Any concerns from the reference group's internal meetings?

Champions for project outcomes

Motivation: critique from previous research projects that results are not transferred to TRV

Idea: have one person from TRV "champion" the results and drive dissemination/adoption in TRV *after* the project

Goal: find in 2024 champion(s), based on the results we achieve.

Ambition: start in 2025 with dissemination/promotion, before the project ends in September

Next steps

- Summary of action points for All
- Date for next reference group meeting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