SVAR – Systematic Verification and Acceptance of Requirements

Reference group meeting

April 18, 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

- Progress report
  - Objective 1: ACC Capability Maturity Model
  - Objective 2: TRVInfra requirements verifiability
  - Objective 2: Machine readable formats for requirements
- Synergies with other ongoing projects in Trafikverket
- Reminder about “Champions”

ACC Capability Maturity Model

Investigation of the attitude towards automated compliance checking

1) to investigate the attitudes of the Swedish industry regarding the acceptance of the automatic compliance checking

2) to identify initial barriers to the adoption of automated regulatory compliance in Sweden

3) to explore the input formats (IFC, GBXML, IFCCowl, IFCXML) and output formats (Report, IFC + JSon report, BFC)

4) Investigate what tools are currently used (e.g. Autodesk Model checker, CARS, Xinaps, SMART Review, Xinaps)

We would like to compare the results with previous work by Beach .

Thomas H. Beach, Jean-Laurent Hippolyte, Yacine Rezgui, „Towards the adoption of automated regulatory compliance checking in the built environment", Automation in Construction Journey, 118 (2020).

Where are we and that is the ambition 2030

0 - No Automation: The current document and drawing based procedures are adequate

1 - Automated Information Exchange: Automating submission of project information for regulatory compliance

2 - Automated Validation: Automating the checking of information for completeness prior to compliance checking.

3 - Partial Automated Assessment: Automatic assessment of some key regulations.

4 - Automated Assessment: Fully Automated assessment but re- quiring final human approval.

5 - Full Automation: Fully automated compliance checking.

Study from 2020 asking about ambition for 2025
We would like to replicate it with the 2030 horizon

Table 3
Level of automation achievable.

Rating	Technology (%)	Political (%)	Commercial (%)
0 - No automation	0%	3.3%	1.7%
1 - Automated information exchange	0%	11.7%	5.0%
2 - Automated validation	8.3%	8.3%	13.3%
3 - Partial automated assessment	40%	21.7%	43.3%
4 - Automated assessment	40%	36.7%	30%
5 - Full automation	17%	18.3%	6.7%

Thomas H. Beach, Jean-Laurent Hippolyte, Yacine Rezgui, „Towards the adoption of automated regulatory compliance checking in the built environment", Automation in Construction Jo urney, 118 (2020).

Obstacles in achieving automated compliance checking

Table 4
Obstacle ratings.

Capability	Mean score
Lack of shared open standards for regulation clauses	3.85
No current tools able to offer complete ability to pre-check for compliance prior to formal submission	3.46
Inability of brief and regulatory requirements to be contractually enforceable	3.45
Lack of existing rule processes to track decisions and uncertainty.	3.36
Lack of defined strict legal responsibility for compliance	3.33
Lack of requirements stipulating use of as proposed/designed and as built structured asset information (e.g. BIM) for non-domestic projects	3.26
Lack of established primacy of structured asset information (e.g. BIM) over documentation and drawings for the purposes of compliance submission	3.21
Lack of requirements stipulating use of proposed/designed and as built structured asset information (e.g. BIM) for all projects	2.85
Lack of Standard data and criteria for social, environment and economic impact assessments	2.83
No model for reduced costs for automated assessment	2.71
Lack of artificial intelligence technologies to interpret between regulations/requirements and proposals, such as natural language processing	2.68
No public rights to see compliance assessments	2.38

Thomas H. Beach, Jean-Laurent Hippolyte, Yacine Rezgui, „Towards the adoption of automated regulatory compliance checking in the built environment", Automation in Construction Jo urney, 118 (2020).

Constructing the roadmap for ACC

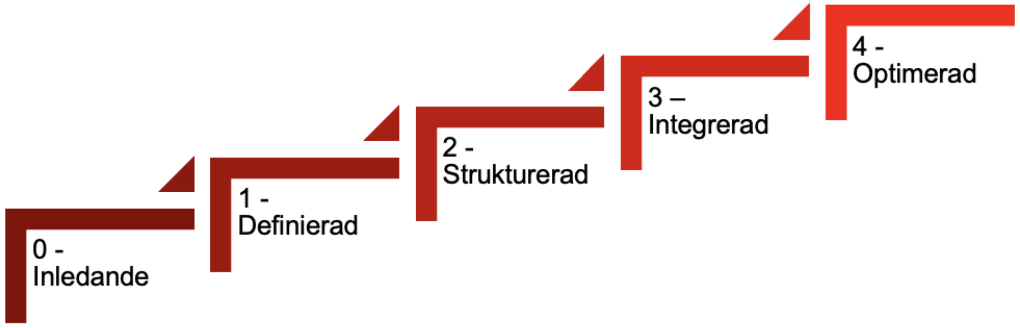


Table 5
Road-map - stages 1 and 2.

No	Capability	Category	Description
Stage 1 - research			
1	Cataloguing and prioritising regulations that are suitable for automation	T	Determining what regulations can currently be automated is a key pre-requisite.
2	Engaging in direct consultation with Ministry of Housing, Communities and Local Government building regulation policy unit and with Building Regulation Advisory Committee	P	Further engage policy makers/implementors in the digitisation agenda
3	Developed green and white papers for presentation to government and establish funding	P	Presentation of the case for digitisation of compliance checking to funding to establish funding to conduct proof of concept prototype
Stage 2 - development of pilot or proof of concept			
4	Development of rule processes to track decisions, feedback, and uncertainty	T	Development of compliance checking processes that are able to deliver the required traceability, feedback methods to allow for the requirements of checking at various points in the asset life cycle
5	Detailed mapping of digitised regulation/requirement/standards processes	T	Development of process map of the industry considering automated compliance checking. Phased to consider steps towards adoption
6	Digitisation to be given voice with policy-implementors	P	Ensure that digitisation is part of the future plan for built environment regulations
7	Development of an understanding of parallel regulations	P	Understand how other regulations influence the digitisation of regulations/ requirements in the built environment

Road-map - stage 3.

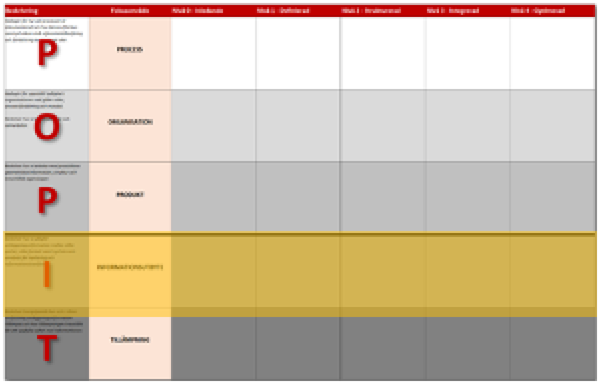
No	Capability	Category	Description
Stage 3 - industrialisation of pilot or proof of concept.			
8	Persistent data linkages between requirements and supplied product to prevent variation on specification	T	Data linkages to prevent use of replacement products within an asset (during construction or in-use) from invalidating compliance with regulations/requirements
9	Chain of custody of materials and data	T	Technologies to support the capturing of chain of custody for materials and their data
10	Accommodate multiple data models and multiple data dictionaries	T	Enable checking tools to support multiple dictionaries and data models
11	Specification of a continual feedback loop process to incorporate appeals/derogations/determinations data in reviewing regulations	T	Defining a process to properly manage reviewing of regulations based on innovations in design
12	Production of audience specific guidance on digitisation of regulations or requirements	C	In order to overcome scepticism and resistance to change guidance will be produced, targeted to specific audiences, to convey the aims/objectives/benefits of digitisation of regulations/requirements. Additionally, will support more complete and consistent BIM usage. This will also grow wider awareness.
13	Detailed evidence-based business model for digitization of regulatory compliance	C	Development of evidence-based business model in order to motivate and showcase benefits of adoption of automated checking. Balancing risk and opportunity. Additionally, this will expose the cost time and resource drains current processes impose.
14	Explore routes to export developed toolchains to international audience and exploit international developments	C	Provides support for the digital compliance services market by increasing international market
15	Creation of standard data and criteria for social, environment and economic impact assessments	P	To reduce the burden of open ended and undefined expectations
16	Conducting Impact assessment of digitisation of regulations	P	

Road-map - stage 4.

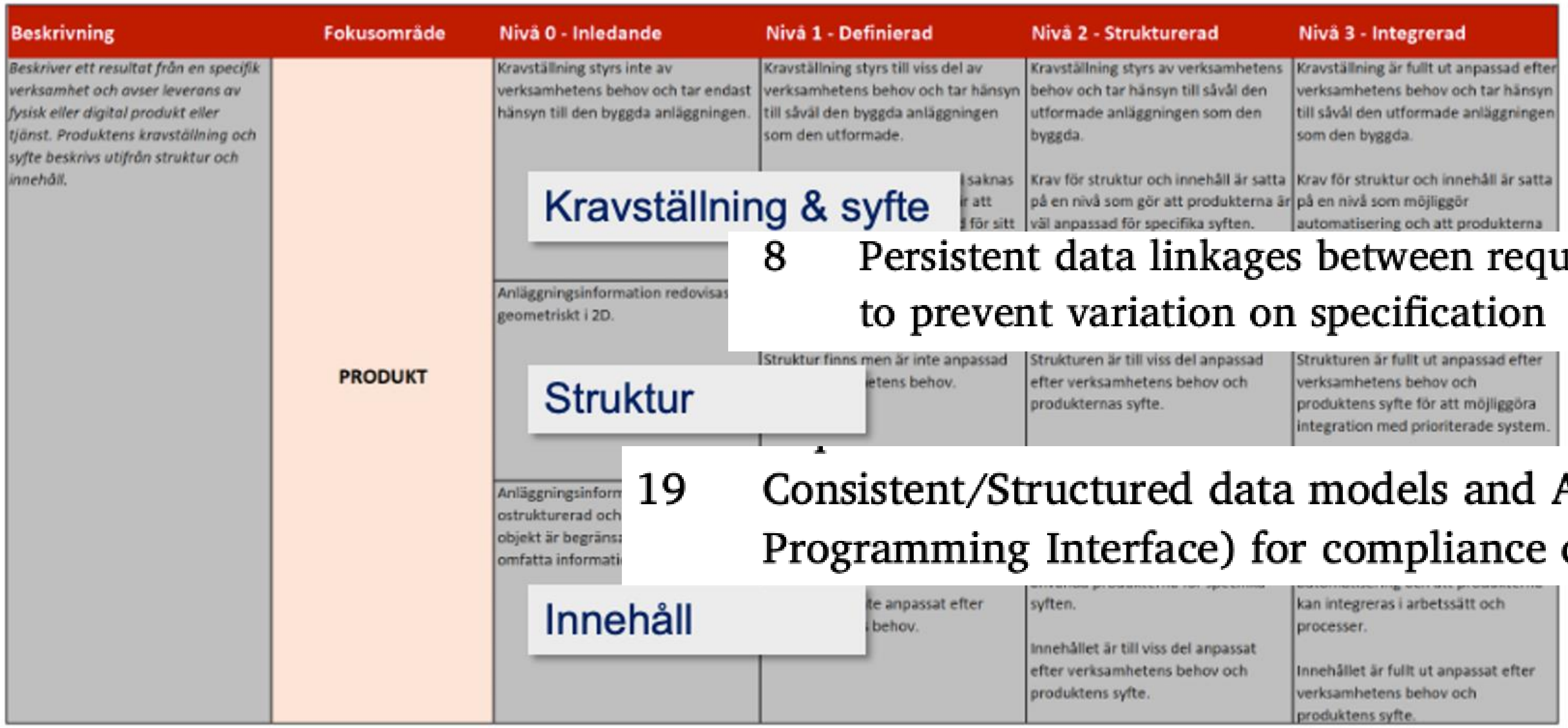
No	Capability	Category	Description
Stage 4 - scaling of industrialised product or process.			
17	Investigation of relationship between regulations and identification of overlaps and gaps	T	Utilisation of digitised regulations to perform details analysis of regulatory landscape
18	Enabling development of generative design based on regulations and requirements	T	Development of approaches to automate the design of assets based on regulations/ requirements
19	Consistent/Structured data models and APIs (Application Programming Interface) for compliance checking	T	Development/improvement of APIs to allow widespread interface with compliance systems
20	Continuously checking the quality of assets using calibrated instrumentation along with other data sources	T	Provides the ability to determine if physical assets comply with regulations/ requirements throughout their life cycle, without the need for extensive human inspection
21	Definition of precise digitised regulation clauses	T	In order to be digitisable regulations must be available for analysis and rewriting so as to reduce the need for interpretation.
22	Calculation method validation services	C	Providing service to enable software tool calculation methodologies (as utilised in checking) to be validated, providing confidence to end-users
23	Develop robust inspection methods/rules to reduce dependence on human inspectors	C	Processes/methods/rules to allow/support implementation of new technology
24	Professional development and training in compliance checking for all that interface with it - including clients and supply chain.	C	Development of training materials and delivery mechanisms for the entire industry (all stakeholders)

Thomas H. Beach, Jean-Laurent Hippolyte, Yacine Rezgui, „Towards the adoption of automated regulatory compliance checking in the built environment", Automation in Construction Jo urney, 118 (2020).

Aligning the Roadmap for ACC with the TRVs maturity models



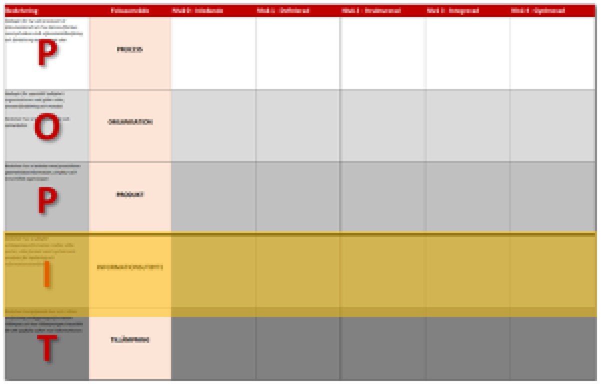
Matrisen - Produkt



8	Persistent data linkages between requirements and supplied product to prevent variation on specification	T
19	Consistent/Structured data models and APIs (Application Programming Interface) for compliance checking	T

Thomas H. Beach, Jean-Laurent Hippolyte, Yacine Rezgui, „Towards the adoption of automated regulatory compliance checking in the built environment", Automation in Construction Jo urney, 118 (2020).

Aligning the Roadmap for ACC with the TRVs maturity models



Matrisen - Process

Beskrivning	Fokusområde	Nivå 0 - Inledande	Nivå 1 - Definierad	Nivå 2 - Strukturerad	Nivå 3 - Integrerad
Beskriver tydligheten i organisationens olika processer, såväl huvudprocesser som del- och stödprocesser, och hur dessa efterlevs samt i vilken utsträckning erfarenhetsåterföring avseende processer sker.	PROCESS	Huvudprocesser är tydliga och dokumenterade.	Huvudprocesserna är tydliga och väl dokumenterade. … g och … ka del- och … eller är otillräcklig.	Huvudprocesser är tydliga och väl dokumenterade. Viss nedbrytning … av del- och stödp…	Huvud-, del- och stödprocesser är tydliga och anpassade efter …
		Huvudprocesser efterlevs inte eller endast i begränsad omfattning.	Stor variation i tolkning och efterlevnad av del- och stödprocesser	Del- och stödprocesser styrs av överenskomna, enkla rutiner som tolkas och efterlevs likartat mellan olika verksamheter.	Del- och stödprocesser är väl inarbetade i arbetssätten med utvecklade rutiner som tolkas likartat mellan olika verksamhet.
		Erfarenhetsåterföring gällande processutveckling är i princip obefintlig. Ingen … sker.	Princip för erfarenhetsåterföring har definierats. Uppföljning och uppdatering av del- … fortfarande	Princip för erfa… implementera… Uppföljning av del- och stödprocesser sker, men uppdatering av dessa genomförs inte i tillräcklig omfattning.	Uppföljning av del- och stödprocesser styrs fullt ut av verksamhetens behov och uppdatering sker efter förutbestämt schema.

Tydlighet i processer

Efterlevnad av process

Erfarenhetsåterföring (avseende processer)

T Development of compliance checking processes that are able to deliver the required traceability, feedback methods to allow for the requirements of checking at various points in the asset life cycle

T Development of process map of the industry considering automated compliance checking. Phased to consider steps towards adoption

Stage 1 - research

1 Cataloguing and prioritising regulations that are suitable for automation T Determining what regulations can currently be automated is a key pre-requisite.

Stage 2 - development of pilot or proof of concept

4 Development of rule processes to track decisions, feedback, and uncertainty T Development of compliance checking processes that are able to deliver the required traceability, feedback methods to allow for the requirements of checking at various points in the asset life cycle

5 Detailed mapping of digitised regulation/requirement/standards processes T Development of process map of the industry considering automated compliance checking. Phased to consider steps towards adoption

Planned next steps

Step 1: Creating a survey instrument (questions)

- we need some help about the population of the survey (IFC network, BIMScandinavia, BIM Allience or maybe only internal TRV?)

Step 2: Instantation of the ACC maturity model as an area in general digitalization maturity models

DiMioS? https://digitalforvaltning.se/dimios/ discuss with Göteborgs Universitet

POPIT

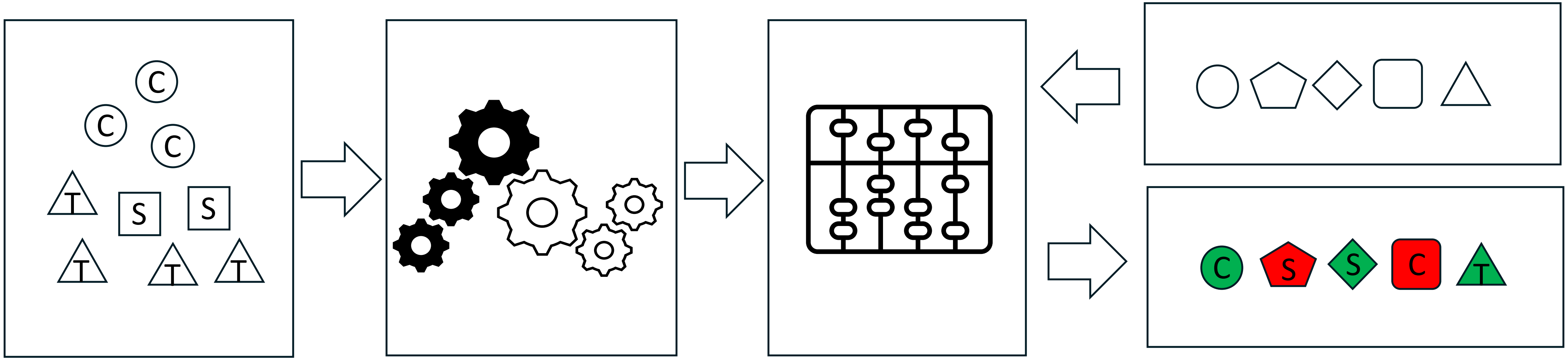
TRVInfra requirements verifiability

Four topics:

- Introduction to supervised machine learning (1 slide)
- TRVInfra requirements export
- Requirements verifiability
- Next steps

Supervised machine learning

Unlabeled data



Training data

E.g. shapes: circles, squares, triangles

Learning algorithm

Examples: decision tree (simple), deep neural network (complex)

Trained model

E.g. a classifier recognizing three types of shapes

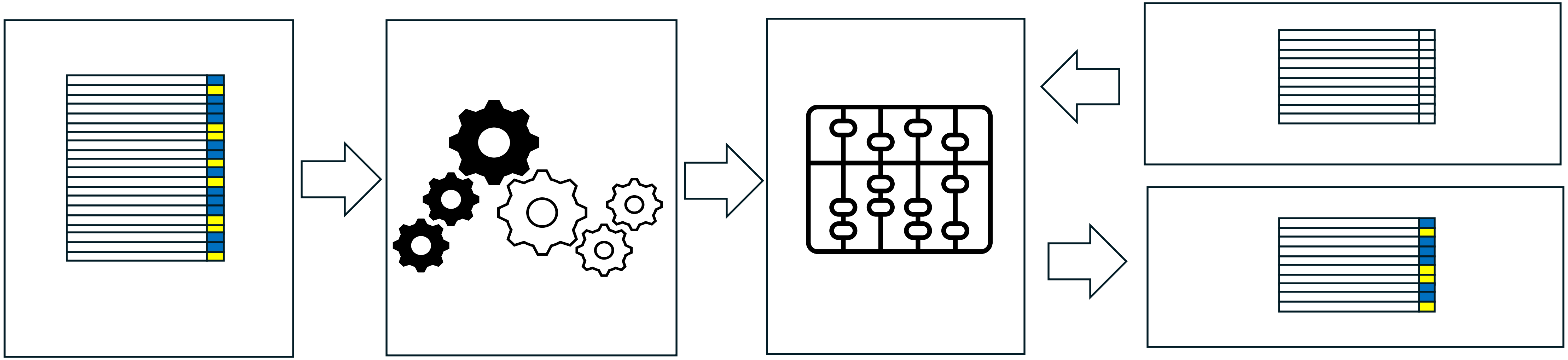
Predictions

TRVInfra requirements

- Database export with 21.300 requirements
- Issue: some requirements seem incomplete
  - K163274: Rälskontaktens känslighet ska vara inställd med kortslutningsbygel på JP3-JP4 beroende på rälstyp enl följande 1.
- Therefore we must know:
  - How many requirements are incomplete?
    - ➢ To decide if we need to do something about it.
  - Which ones are incomplete?
    - ➢ To determine a pattern so the problem can be fixed.
- Why does it matter?
  - Threat of systematic exclusion of a particular type of requirements (non-verifiable or verifiable with a particular technique)

TRVInfra requirements incompleteness classification

Unlabeled data (18.300 requirements)



Training data

400 complete and 400 incomplete requirements

Learning algorithm

Deep neural network classifier

Trained model

Large Language Model: BERT (Swedish). 98% accuracy on unseen test data.

Predictions

15.100 complete, 3.200 incomplete (18%)

TRVInfra requirements incompleteness classification

Conclusions

- 18% is too large to ignore, could lead to systematic omission of requirements formulated in a specific way
- Root cause for export issue is unknown, Trafikverket can investigate by identifying patterns in requirements classified as incomplete
- Side effect of this exercise: we have developed the basic workflow for further classifications

Requirements Verifiability

In the construction industry, in the context of automated compliance checking, the following terms are more common:

- Interpretability
- Computability
- Unambiguity

Identified six papers (published between 2015 and 2024) that provide definitions/criteria for verifiable requirements.

S. Malsane et al., “Development of an object model for automated compliance checking,” Automation in Construction, vol. 49, pp. 51–58, Jan. 2015,

- Classification on three levels:
  1. Computer interpretable, information obvious as checkable, simple geometrical rules which when applied to an element can return true or false.
  2. Information is not obvious as checkable, needs human interpretation to understand the exact content and meaning, codes/regulation involves natural language
  3. Clauses which are not suitable for automated compliance checking
- Empirical evaluation:
  - England and Wales Building Regulations that relate to fire safety for dwelling houses
  - Manual analysis
  - 20% of requirements are computer interpretable

M. Uhm et al., "Requirements for computational rule checking of requests for proposals (RFPs) for building designs in South Korea," Advanced Engineering Informatics, vol. 29, no. 3, pp. 602–615, Aug. 2015

- Three criteria for a computer-interpretable requirement:
    1. whether a sentence or data included quantitative or numerical values
    2. whether verbs could be translated into a computer-interpretable expression (function or method)
    3. whether a list of objects included in a sentence had a potential to be included in a BIM model.
- Empirical evaluation:
    - Requests for proposals for building designs in South Korea
    - Manual analysis
    - 14% of requirements were computer-interpretable

W. Solihin and C. Eastman, "Classification of rules for automated BIM rule checking development," Automation in Construction, vol. 53, pp. 69–82, May 2015

- Four classes of rules:
  1. Class 1 - Rules that require a single or small number of explicit data
     - Explicit attributes that can be found in BIM dataset
  2. Class 2 - Rules that require simple derived attribute values
     - Derivation of values from a low number of attributes, e.g. the distance between two objects
  3. Class 3 - Rules that require extended data structure
     - Complex geometrical or spatial relationships between several objects, requiring external modeling tools
  4. Class 4 - Rules that require a "proof of solution"
     - There is no yes/no answer, but evidence is presented to illustrate how a rule is fulfilled.
- No empirical evaluation

J. Soliman-Junior et al., “Automated compliance checking in healthcare building design,” Automation in Construction, vol. 129, p. 103822, Sep. 2021

- A more complex and rich classification
- Reuses and combines previous work (“Nature”, “Logic rule” and “Element” from Uhm et al., Class 1-4 from Solihin and Eastman)
- In my opinion, not orthogonal (overlap between nature and accuracy)
- Empirical evaluation:
  - Healthcare Design Regulations in the UK
  - Manual analysis
  - 47% of requirements were computer-interpretable

M. Unterkalmsteiner and A. Chirtoglou, “Work package 7 – DCAT project, 2022

Verification archetype	Example
Localization of an object	*Fences* must be **placed behind the technology building, seen from the railway**, if the property boundary allows this.
Distance between objects	*Cross-connections*, between up and down tracks, shall be provided with a **maximum distance of 40 km**.
Internal attribute(s) of an object	If the support layer thickness is greater than 120 mm, a **coarser 0/45** *support layer* should be selected for stability reasons.
External attribute(s) of an object	*Railings on railway bridges* shall be designed with **safety nets**.
Geometrical attributes of an object	The *hardened walkways* in the track tunnel should be **1,2 m wide** (minimum free width).
Existence of an object	There should be *emergency lighting* in service and access tunnels.

- Seven archetypes how a requirements can be verified
- Everything else is not (automatically) verifiable
- Overlap with ideas from other authors
- Manual analysis

R. Zhang and N. El-Gohary, "Clustering-Based Approach for Building Code Computability Analysis," Journal of Computing in Civil Engineering, vol. 35, no. 6, p. 04021021, Nov. 2021,

- Linguistic analysis of requirements:
  - Syntactic features (length of sentence, depth of parse tree) as a form to express complexity of a requirement
  - Semantic features (information from requirement, such as the subject, its attributes that need to be complied to, quantifications, restrictions and references). Presence or absence of certain information determines the semantic complexity.
- Empirical evaluation:
  - International Building Code
  - **Automated** analysis: clustering (unsupervised machine learning)
  - 33% of requirements have moderate to high computability

Z. Zheng et al., “A text classification-based approach for evaluating and enhancing the machine interpretability of building codes,” Engineering Applications of Artificial Intelligence, vol. 127, p. 107207, Jan. 2024

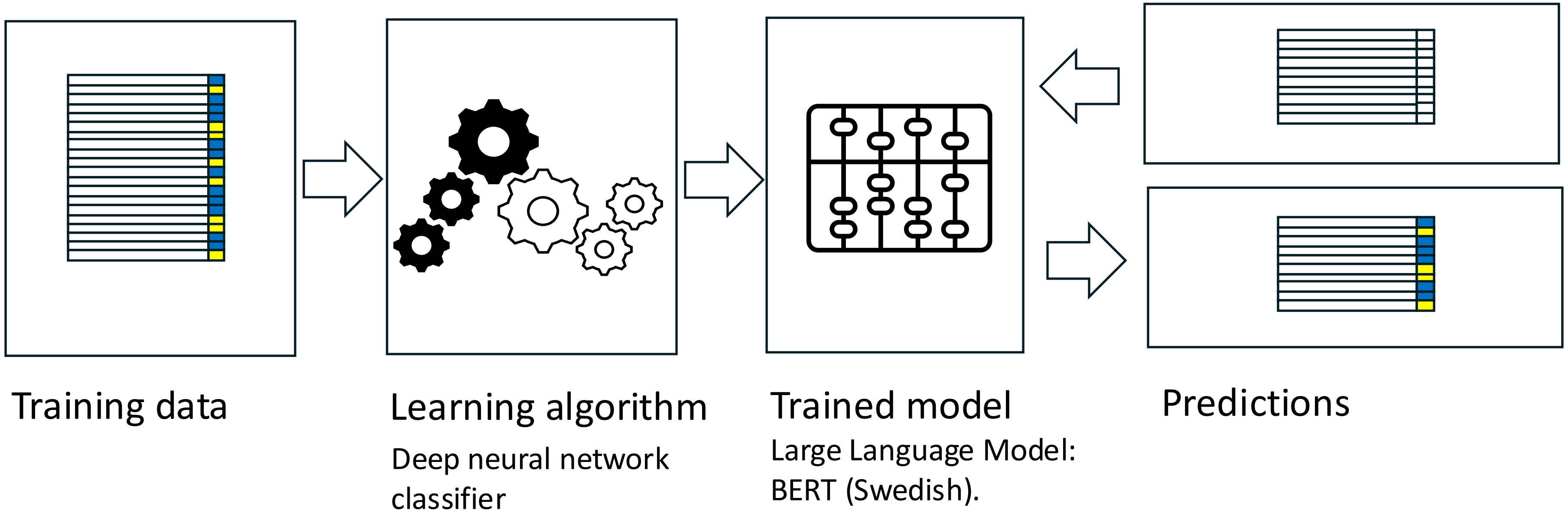
- Seven categories of interpretability
  - Direct: the required information is explicitly available from the BIM model
  - Indirect: the required information is implicitly stored in the BIM model. A set of derivations and calculations should be performed.
  - Method: an extended data structure and domain-specific knowledge are required
  - Reference: external information, including pictures, formulas, and tables is required.
  - General: the clauses provide macro design guidance.
  - Term: the clauses define the terms used in the codes
  - Other: the clauses do not belong to the above six categories
- Empirical evaluation:
  - Chinese building codes
  - **Automated** analysis (supervised machine learning)
  - 34% of requirements are computer-interpretable

Summary

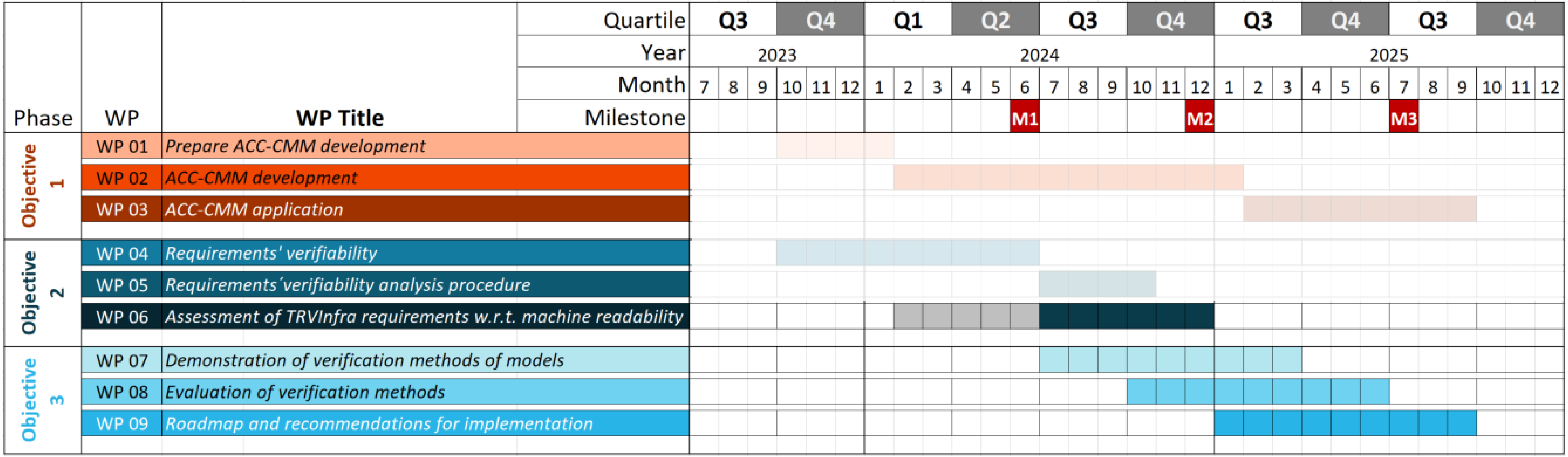
- Definitions of "verifiability" have some overlap, but there is no overall agreement.
- Most analysis on verifiable/interpretable/computable requirements has been done manually, only recently automated methods emerged.
- Overall, 15-45% of requirements are computer-interpretable.
- Two approaches: clustering and classification
  - Clustering: analyses linguistic features to determine requirements' "complexity"
  - Classification: define classes of requirements, create a training dataset, and train a classifier
- My opinion: classification is preferred because the criteria for the classes can be established objectively. The "degree" of complexity in the clustering approach is difficult to interpret and one has to determine the features manually.
- We need to adopt a definition that is compatible with automated analysis, i.e.:
  - Allows us to create a good quality training data set
  - Is useful when we go to work on Objective 3, i.e. develop methods for verification

Next steps

1. Determine a classification system based on what we found in literature.
   - Challenge: data set size. The more categories we have, the more training samples we need.
   - Possible solution: weakly-supervised learning (fewer training data needed)
2. Create a training data set
   - I'm confident that this can be done by BTH/HTV. No deep domain knowledge required.
3. Train and evaluate the model
   - Blueprint from recent papers (e.g. Zheng et al. 2024)



Project Schedule



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

Work Package 6
Machine Readability – Approach

Assessment of TRV Infra requirements w.r.t. machine readability

State of the Art Analysis

Online Research
Literature Review
Paper Review
Conference Check
Webinars
etc.

Identification of Standards

Existing Standards
Review of BSI ISO
Project guidelines
Project Recommendations
etc.

Analysis for feasibility

Overview on common Methods and Procedures

Adjustment with results of WP04 in terms of verifiability

Work Package 6
Machine Readability – Definition

Topic	Machine Readable Data	Human Readable Data
Interpretability	complex to interprete for humans	easy to interprete by human
Device	specific device needed to read and interprete	no specific device required
Format	Data must follow approved format	Natural Language
Example	csv, xml, json, html…	pdf, word, text… (including visual formats like images, tables, graphs, films, audio, etc..)
Data Processing	structured data, can be automatically extracted and processed, without human involvement (Analytics, Algorithm)	unstructured data, cannot be processed automatically
Automatic Syndication	Can be easily shared via automatic syndication feeds (via xml)	Cannot be automatically syndicated (documents are manually updated and require manual access to read the content)
FAIR Data Principle*	Compatible	not compatible

Work Package 6
Machine Readability – Definition

FAIR Principle – Enhancing data usability

Findable:	make data findable by providing UID & comprehensive metadata
Accessible:	make data accessible by using standardized communication protocols
Interoperable:	make data usable for various types and workflows by using standardized formats
Reusable:	make data reusable by implementing clear and understandable documentation and data usage licenses

Work Package 6
Machine Readability – Standardized Formats

HTML

```
<table>
  <tr>
    <th>Name</th>
    <th>Age</th>
    <th>City</th>
  </tr>
  <tr>
    <td>Jack</td>
    <td>25</td>
    <td>London</td>
  </tr>
  <tr>
    <td>Jill</td>
    <td>30</td>
    <td>New York</td>
  </tr>
</table>
```

XLSX

Name	Age	City
Jack	25	London
Jill	30	New York

CSV

```
Name,Age,City
Jack,25,London
Jill,30,New York
```

Text

Jack is 25 and lives in London.
Jill is 30 and lives in New York.

XML

```
<persons>
  <person>
    <Name>Jack</Name>
    <Age>25</Age>
    <City>London</City>
  </person>
  <person>
    <Name>Jill</Name>
    <Age>30</Age>
    <City>New York</City>
  </person>
  <person>
```

JSON

```
[
{“Name”: “Jack”, “Age”: 25, “City”: “London”},
{“Name”: “Jill”, “Age”: 30, “City”: “New York”}
]
```

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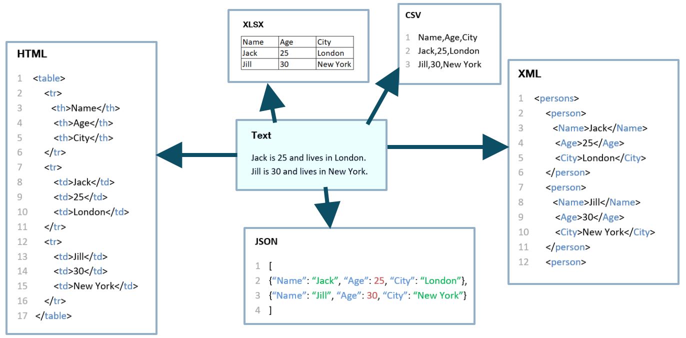
Work Package 6

Machine Readability – Methods for Transformation



Overview Methods for Data Processing

General

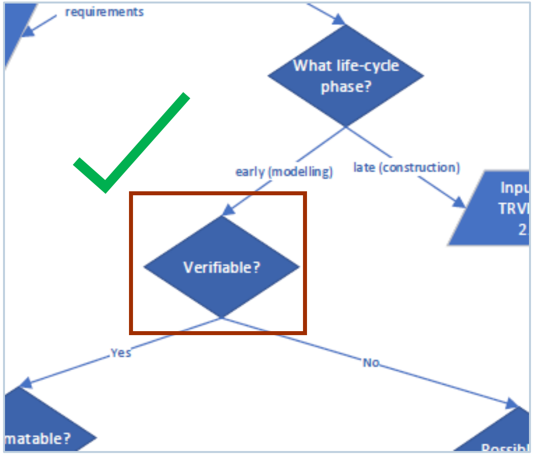
OCR (Optical Character Recognition)
Speech Recognition
Data Extraction Tools
Manual Data Entry
NLP (Natural Language Processing)
RASE (Requirements, Applicability, Selection, Exception)
...

IFC Relevance

mvdXML
Rule Table
BIMRL (Rule Language)
IFC Constraints Model
...

Work Package 6

Machine Readability – Next Steps / Align with WP4

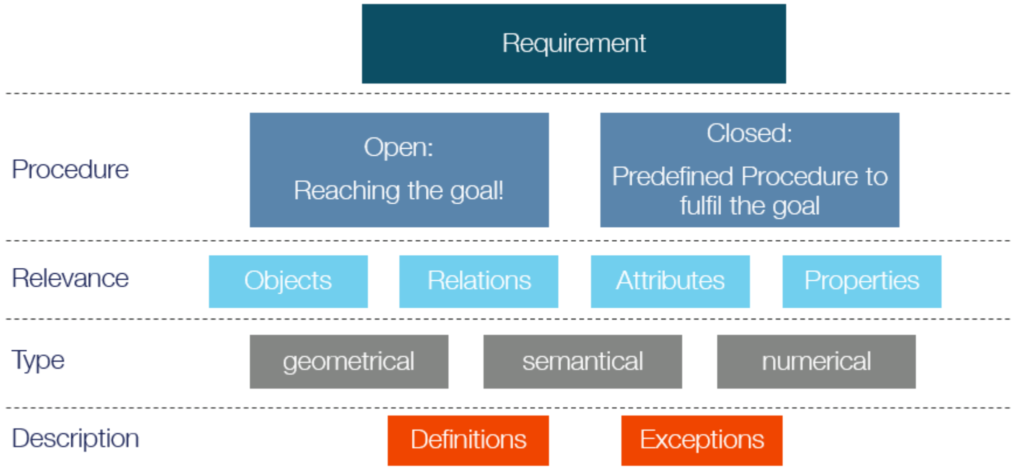


WP4 ➡

- **Identify** 2-5 typical/most relevant requirements
- **Select** applicable methods for transformation
  - According to TRV landscape
  - Respecting Effort/Benefit Analysis
  - Rating according to Feasibility for TRV
  - Testing IFC Constraints as of TRV interest
- **Transform** requirements into machine-readable formats
- **Review** of General Process of Requirements Management to identify Integration Points for Automation

Work Package 7
Demonstration of verification methods of models

- Transfer approaches to **Information Delivery Manual**
- Overview about **Exchange information Requirements**
- Set up specific model checks as **proof of concept**
- Create **demonstrators** for different requirements
- Elaborate **Templates** of verification methods for open standards (e.g. IFC)
- Evaluate use of **Information Delivery Specifications** (IDS)



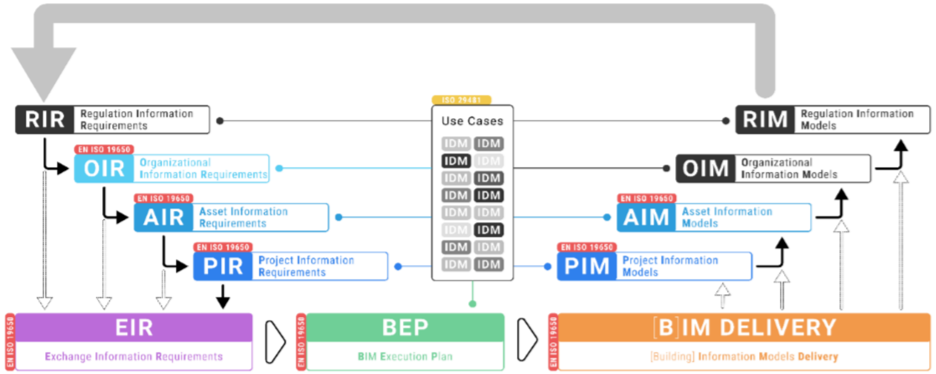
Work Package 8
Evaluation of verification methods

- Elaborate an **evaluation concept** based on Demonstrators, which covers the main aspects to implement new technologies (e.g. people, technology, processes and policies)
- verify that the developed verification methods are according to the **needs of the stakeholders** (User Stories)
- Feedback from stakeholders involved will be gathered, evaluated and used to **optimize the handling** of the verification methods

Work Package 9

Roadmap and recommendations for implementation

- create a starting point for developing a **verification library**, which enables stakeholders to verify different kinds of requirements
- Combine several examples of optimized verification checks
- **Guidelines** as well as **templates** will be elaborated on:
  - how to define a suitable Information Delivery Manual,
  - how to derive the Information Delivery Specification
  - how to create verification methods.



Synergies with other projects

- Objective 1: Digital mognad / Program anläggningsinformation
- Objective 2: Susanne van Raalte (Chalmers project)
- …

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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