



What is a Knowledge Library

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What is a Knowledge Library

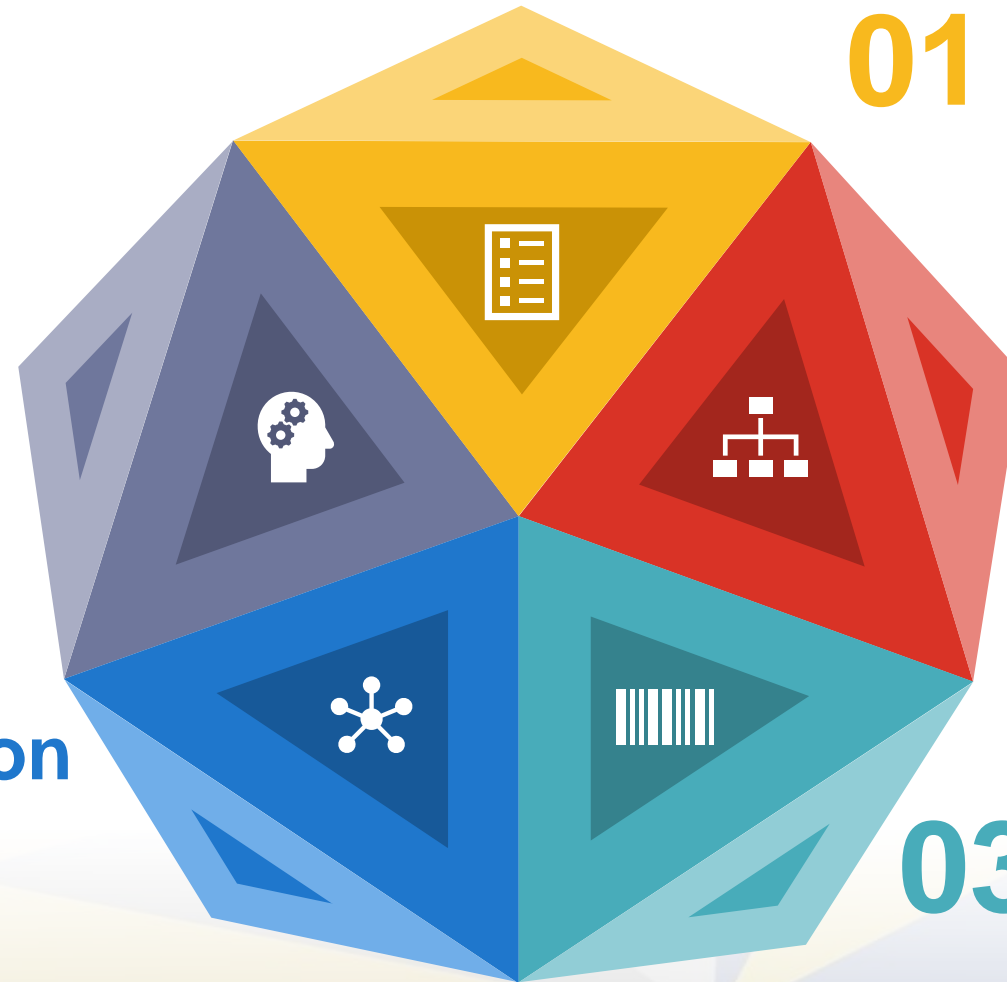
- › A combination of Knowledge items,
 - › of different nature,
 - › at different levels of abstraction
- › Representing a specific business domain or **area of knowledge**
- › With the aim of improving the way projects are managed, including:
 - › the promotion of the principle: **quality** *right the first time*,
 - › enabling semantic search portals to archive and retrieve assets,
 - › thus providing tools to **reuse** assets at different level,
 - › and reducing **time** to market,
 - › improving the way engineers generate (**author**) new assets,
 - › enhancing the way items are inspected and **verified**,
 - › Enabling real **interoperability** mechanisms and services,
 - › reducing **time** to elaborate documents, systems and projects.

What is a Knowledge Libraries



What is a Knowledge Library

What is a Knowledge Libraries



01

Vocabulary/Glossary

Controlled Organizational and Project Vocabulary for a common understanding among stakeholders

02

SCM/Architectures

Capture the system architectures represented in views and models. Establish relationships among system and system elements, and among other system entities. Classifying information by meaning, nature...

03

Patterns

Representing a set of agreed-upon templates (grammars) to create and maintain consistent textual artifacts

05

Reasoning

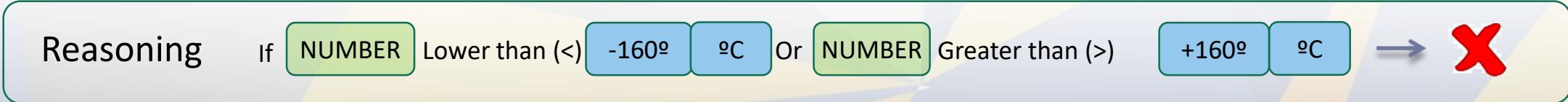
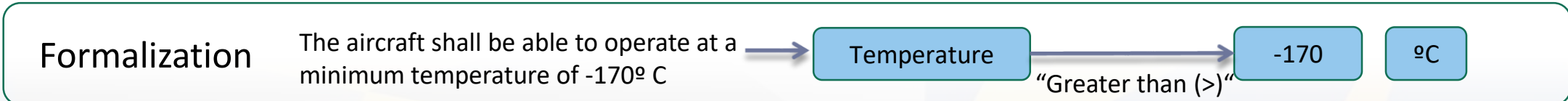
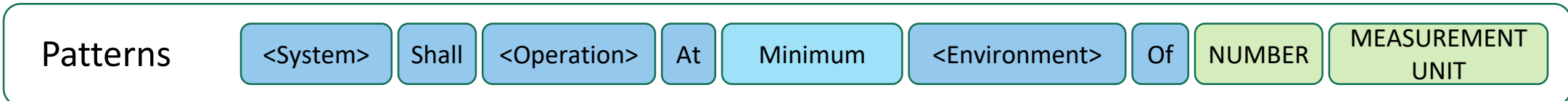
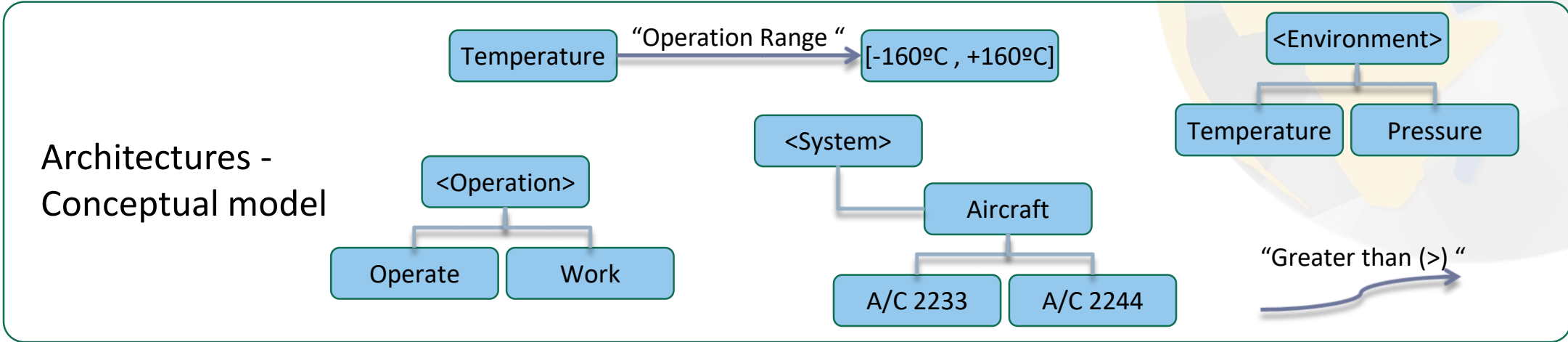
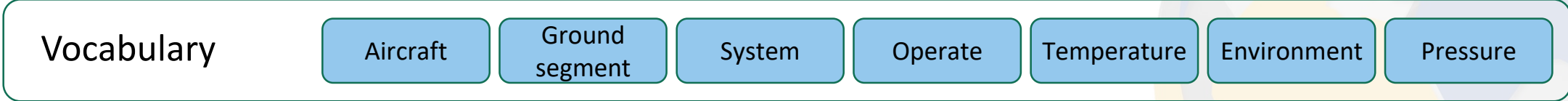
A combination of rules, and actions to infer information from valuable assets and to control the behavioural part of the knowledge library

04

Formalization

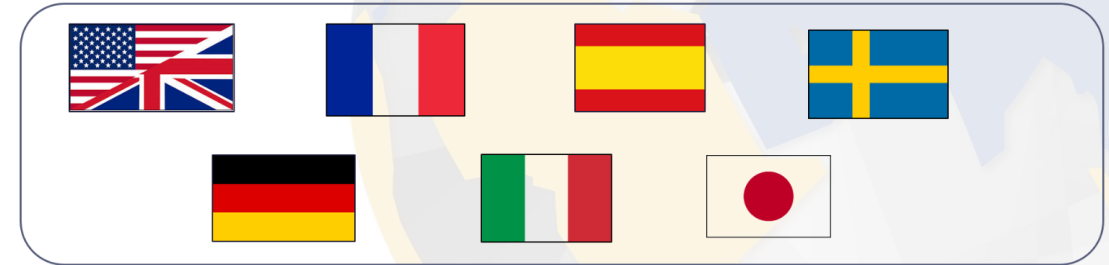
Representation of assets semantic through SRL – System Representation Language

Example of Knowledge Library



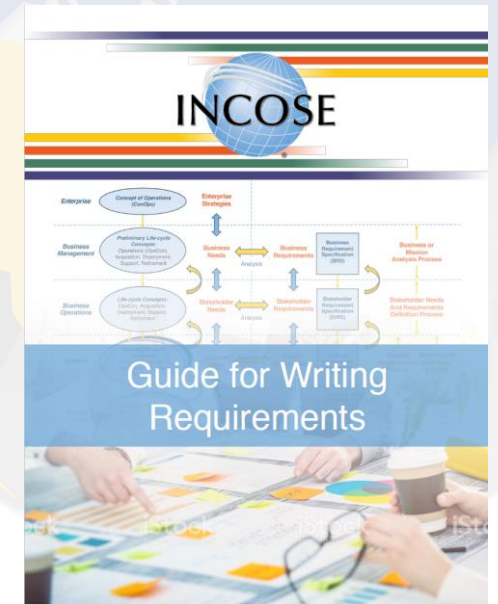
Libraries available: localized OOTB

- › A *basic* library for each of the supported languages is available at: ReuseCompany.com
- › These out-of-the-box libraries include:
 - › The *core* vocabulary of the language: mainly determiners, prepositions, adverbs, connectors, modal verbs...
 - › The most common verbs (actions) in the language
 - › The list of metrics to assess the Quality of requirements as suggested by The REUSE Company. This list can be tailored with the Systems Engineering Suite tools
 - › A set of patterns to write well-formed requirements



Libraries available: INCOSE Rules

- INCOSE – International Council on Systems Engineering
- Publishes a series of best practices widely followed by the Systems Engineering Community
- This includes the Guide for Writing Requirements
- This Knowledge Library includes:
 - Quality metrics mapping the quality rules represented in the INCOSE Guide
 - Rules mostly focused on the *correctness* dimension, but also coping with *consistency* and *completeness*
 - These rules are also addressing the list of *requirements Quality characteristics* as described in: ISO/IEC 29148



Libraries available: ECSS

- ECSS – European Cooperation for Space Standardization
- Represents a series of standards widely followed by all the space industry in Europe
 - This includes the ESA – European Space Agency, the main national space agencies in Europe, and all the subcontractors
- This Knowledge Library includes:
 - The glossary and taxonomy as described in ECSS-S-ST-00-01C – Glossary of terms (1 October 2012)
 - The different types of requirements as described in ECSS-E-ST-10-06C – Technical requirements specification (6 March 2009)
 - Specific patterns (boilerplates) for the different types of requirements described in ECSS-E-ST-10-06C – Technical requirements specification (6 March 2009)
 - The rules for high-quality requirements as described in ECSS-E-ST-10-06C – Technical requirements specification (6 March 2009)
 - The recommendation for wording as described in ECSS-E-ST-10-06C – Technical requirements specification (6 March 2009)



Libraries available: EARS

- EARS – Easy Approach to Requirements Syntax
- Developed at Rolls-Royce with the aim to reduce ambiguity in stakeholder requirements
- EARS includes a number of requirements patterns (aka boilerplates, templates)
- This Knowledge Library includes:
 - A taxonomy of the different types of requirements as suggested by EARS
 - One or more patterns following all these different types of requirements
 - The examples and usage guide proposed at EARS

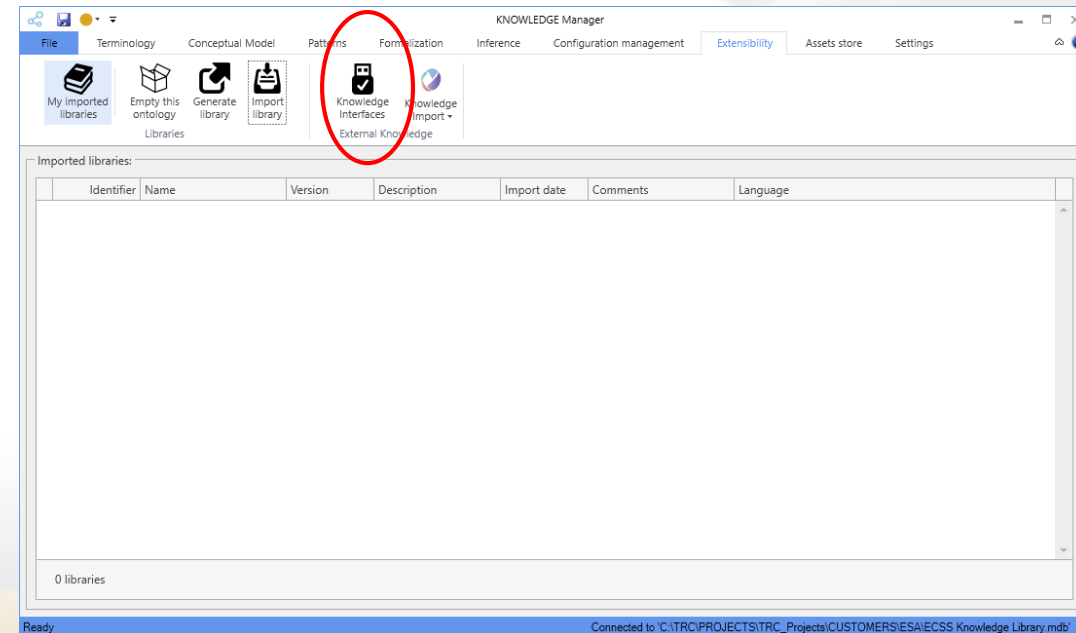
How to import and use a Knowledge Library

- To use a Knowledge Library you'll need the following tools:
 - Knowledge Manager:
 - To merge any of the libraries with your current Knowledge database
 - To customize dictionaries/glossaries: adding your own custom content to the content provided by the library
 - VERIFICATION Studio / Quality Studio / Requirements Authoring Tool:
 - To customize requirements quality rules
 - To automatically check requirements quality of your requirements
 - To write requirements following the list of suggested patterns, use any of the terms included in the glossary, check requirements quality in real-time...



How to import and use a Knowledge Library

- Follow these steps to download and merge a Knowledge Library with your own content:
 1. Download the library from our website: <https://www.reusecompany.com/libraries-documents>
 2. Store the library in your hard-disk: a *.lib* file
 3. Open Knowledge Manager and connect to your Knowledge repository
 4. Click on the *Extensibility* tab, then click on *Import library*:
 5. Select the library in your hard-disk



How to import and use a Knowledge Library

- Once the library is imported, this content can be treated as *native* content
- However, you'll be able to:
 - Remove all the content included through the library
 - Replace the library by a newer version of the same library
 - Compare the content of different versions of the library
 - Wrap the content of the library in a *larger* library including your own content
 - Other configuration management features...





Thank you

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