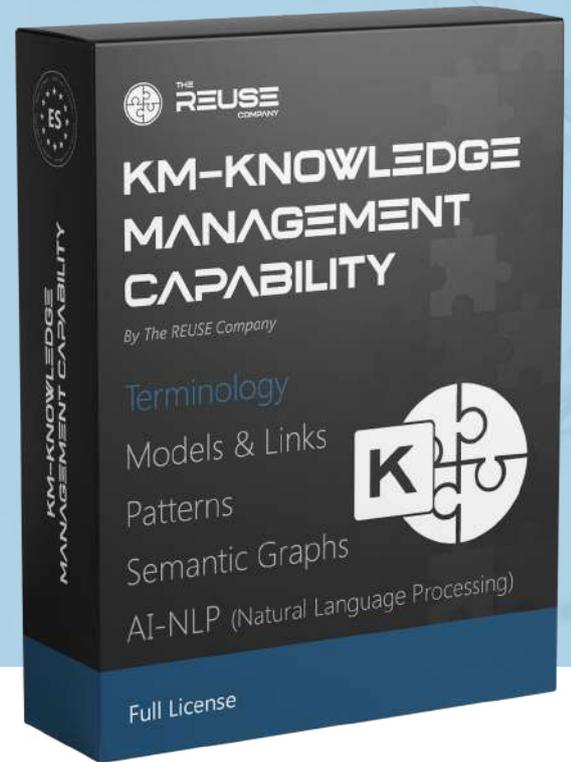


KM - KNOWLEDGE MANAGEMENT CAPABILITY

For the SES ENGINEERING Studio



A SMARTER WAY TO DIGITALIZE YOUR KNOWLEDGE



ABOUT

Knowledge is one of the most valuable assets in your organization. The key driver to success in any system or software project is to reuse knowledge assets. These include engineers' explicit and tacit knowledge, and guidelines defining the organizational know-how.

Knowledge should therefore be gathered from different sources, stored in secure repositories, and accessed by the appointed personnel at the appropriate time.

KM - KNOWLEDGE Management Capability allows you to manage knowledge from the systems engineering point of view and to store valuable information from requirements, models, system architectures and other documents in a common System Knowledge Base.



QUALITY

The more knowledge you manage in KM - KNOWLEDGE Management Capability, the more advanced analysis can be performed by the SES ENGINEERING Studio different Capability: RQA, V&V, RAT and TRACEABILITY, etc.



TIME

KM eases knowledge sharing and reuse activities among different engineering tools, allowing users to evolve and update Ontologies seamlessly.



MONEY

Proper knowledge management is an asset for the organization that translates into earnings and savings.

AUTHORITATIVE SOURCE OF TRUTH

KM - KNOWLEDGE Management Capability permits to create a specific ontology in order to address the full complexity of the project's context and tackle any kind of semantic structure required.

A controlled vocabulary is a must in order to facilitate consistency across the different work products developed during the life cycle of a project.

Ontologies in KM help establishing specific relationships between terms in order to fully represent a project's context: synonyms, parent-child dependencies, subsystems, functional structures, etc.

PATTERNS

The feature of creating patterns is a flexible solution to satisfy the personalized preferences while writing the requirements. It helps to optimize the editing process, standardize the writing approach and englobe any possible variations within the requirements' specifications.

INTERFACE WITH EXTERNAL SOURCES

As your project knowledge can be stored in several different formats (e.g. SysML/UML models, simulations, tables, external databases, ...) KM - KNOWLEDGE Management Capability enables interfacing with several external sources so that the ontology includes multiple sources of truth.



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MANAGING KNOWLEDGE REPOSITORIES

KM - KNOWLEDGE Management Capability is designed to manage all the knowledge needed for your system or software intensive projects (breakdown structures, terms, acronyms, restrictions, etc.). Knowledge is stored within a System Knowledge Repository (SKR) and is organized in ontologies (called System Knowledge Base - SKB) and knowledge libraries. The Ontology and the libraries are used by the **SES ENGINEERING Studio** for quality analysis, Requirements and textual work products authoring, to identify different types of link traces, to transform from requirements to models or test cases, identification of reusable products, etc.

KM - KNOWLEDGE Management Capability enables the management of the System Knowledge Repository, its System Knowledge Base, and all assets involved in the life cycle of your systems.

KM AND SYSTEMS ENGINEERING

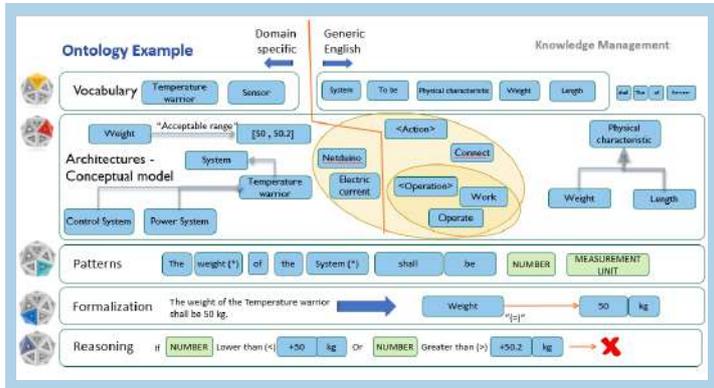
KM - KNOWLEDGE Management Capability is the core tool for the Knowledge Centric Systems Engineering approach which aims to take advantage of all the knowledge developed during the System definition phase and thus making it available to subsequent projects.

Our approach to the knowledge management consists of 5 steps:

1. Fill your ontology with the domain-specific vocabulary on top of the already-included generic vocabulary.
2. Build hierarchical structures and create relationships between the terms of your ontology.
3. Design the semantic structures, patterns, that you can reuse while writing the requirements.
4. Formalize meaningful relationships between the semantic structures and the terms within them.
5. Add extra rules to facilitate the guided reasoning process within your ontology.



An example of the 5 steps put into practice can be observed on the following schema:

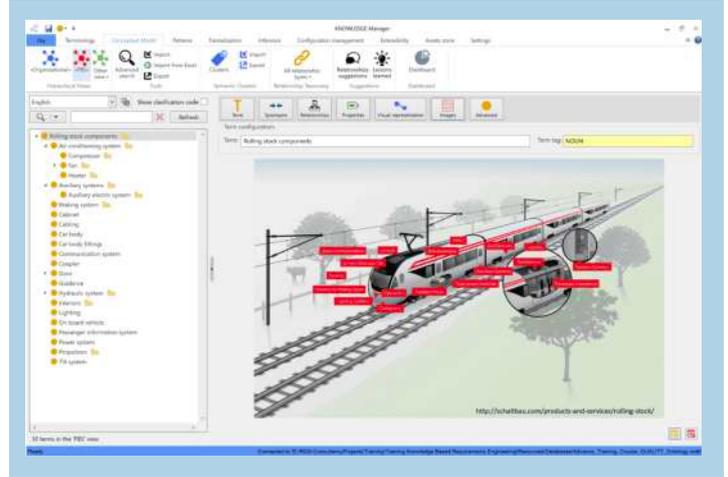


TEXTUAL PATTERNS

Textual Patterns represent the grammatical structure that a natural language sentence needs to follow according to an organization's policies and know-how. The different packages conforming the **SES ENGINEERING Studio** apply patterns to state which guidelines should apply to the project's requirements, risks, etc. either for writing new statements or to assess their quality. For instance, the requirement "When switched on, the Cab radio should be applied within a temperature range of -20C to +70C", matches the following pattern in **KM - KNOWLEDGE Management Capability**:

SEMANTIC INDEXING AND RETREIVAL

Using Natural Language Processing tools and Artificial Intelligence algorithms, KM provides a semantic search engine that enables the search and reuse of all sort of information based on its actual meaning.



LIBRARIES

KM - KNOWLEDGE Management Capability provides the capability to use Knowledge Libraries: combinations of Knowledge items of different nature and levels of abstraction that can be reused in numerous projects. Knowledge management based on Libraries is the best way to blend knowledge in a flexible way. The REUSE Company provides a wide catalogue of Libraries ready to plug and play. Our current set of libraries is:

- INCOSE Knowledge Library
- EARS Knowledge Library
- SOPHIST Master Patterns Library
- NASA Knowledge Library
- ECSS Knowledge Library
- Requirements with Numbers Library
- BABOK® Library

For more information regarding each library in particular, and access to a download link, scan the following code:



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