

# RAT - AUTHORIZING TOOL

For SES ENGINEERING Studio



THE  
**REUSE**  
COMPANY

## A SMARTER WAY TO AUTHOR ENGINEERING ITEMS



### ABOUT

Authors of engineering items (requirements, models, architectures, test cases, manuals, risks, etc.) must know what structures to follow, which terms to use, the expected quality policies or checklists to comply with, the level of consistency with other requirements or models... Therefore, writing new requirements or models can sometimes lead to writer's block.

**RAT - AUTHORIZING Tool** is the ideal way to help engineers create different types of artifacts. It helps authors during the demanding process of composing requirement statements or other documentation, hence improving the overall quality of the projects.

**RAT - AUTHORIZING Tool** is the perfect assistant for system analysts/ engineers when writing the system documentation or creating models. RAT leads engineers with a set of agreed-upon patterns, suggests the most suitable content for each piece of written information and always ensures the use of a correct syntax. RAT also provides a real-time quality checking of the items that are being created. Therefore, RAT frees engineers from format concerns (e.g. structure of requirements) allowing them to focus on the engineering decisions: that is, engineers and RAT tool team up to improve the overall quality of your projects.



#### QUALITY

RAT - AUTHORIZING Tool provides real-time quality guidelines when creating new engineering items. Best practices, checklists or rules, such as the INCOSE Guide to Writing Requirements or the EARS patterns, are now closer to system engineers.



#### TIME

The concept "Get it right the first time" can now be applied to requirements, test cases and other document writings... RAT allows a significant reduction of verification loops at different levels (Stakeholder, System, subsystem, component).



#### MONEY

Focusing on requirements quality from the very beginning helps reducing rework and subsequent costs.

#### REAL-TIME QUALITY CHECKING

Based on the catalog of rules and metrics established using the RQA - QUALITY Management Capability (INCOSE, NASA, ECSS...)

#### PATTERN- BASED WRITING

Choose a particular pattern from a preset library of patterns (EARS patterns, Sophist, ECSS...) and easily follow the different slots comprising to a well-formed requirement of the selected type (Functional, Non-Functional, Safety...).

#### CONNECTION TO CONTROLLED VOCABULARY

Either managed in KM - KNOWLEDGE Manager or using the concepts that you've established in your models.

#### CONSISTENCY CHECK

To ensure, in real-time, that your requirement is consistent with other requirements in the same document, in other documents, or even with your models.

#### DETECTION OF OVERLAPPED REQUIREMENTS

With the help of our semantic engine, identify similar requirements to avoid contradictory or redundant statements in your specification.

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### RAT - AUTHORIZING TOOL

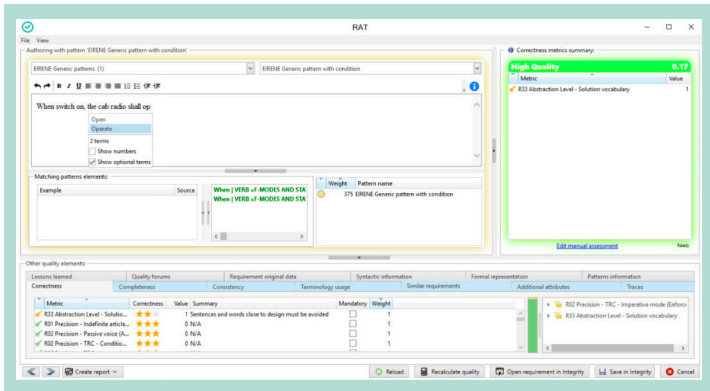
For a **textual artifact**, once a pattern has been selected, **RAT - AUTHORIZING Tool** shows its structure, its description and examples of how it should be used. Authors just need to select the right terms and semantics from a controlled vocabulary which is suggested while typing, thus ensuring that the developed requirement, or any other artifact, has followed the right syntax and it provides the proper information.

**RAT - AUTHORIZING Tool** implements a smart way of writing – a technique that guides authors while writing – thus providing an accurate way of creating consistent requirements and speeding up system documentation writing.

Applying this methodology to requirements engineering provides several benefits:

- Both humans and computers will read and understand textual artifacts more easily without ambiguity (Correctness).
- The system specification includes all the required information (Completeness).
- The chances of writing redundant and contradictory content are decreased (Consistency).
- Homogeneous vocabulary and grammar across multiple documents improve the consistency of the whole project (**System Consistency**).
- A Semantic Engine “understands” the information stated in a single way (Reuse and Formalization).

The information reported by **RAT - AUTHORIZING Tool** includes out-of-the-box quality metrics for the detection of inconsistency, ambiguity, duplicated items. The real-time quality assessment, as well as the IntelliSense® writing assistant, are both included as plug-ins on top of the major tools for requirements management, risk or testcase management, modelling tools, simulation tools...



### MEASURE THE QUALITY OF REQUIREMENTS, MODELS AND ARTIFACTS IN REAL-TIME

**RAT - AUTHORIZING Tool** provides a quality feedback (based on the rules and metrics assigned in the QUALITY Management Capability of **SES ENGINEERING Studio**) in real-time and highlights defects in the requirement. This reduces the time needed for manual quality inspection, peer-review, double checking, while boosting the quality of engineering items.

All the patterns offered by **RAT - AUTHORIZING Tool** and all the quality metrics checked must be previously defined in **RQA - QUALITY Management Capability of SES ENGINEERING Studio**), ensuring that all the authors, who are collaborating on the same document or model, follow the same rules.

**RAT - AUTHORIZING Tool** can also notify users, in real-time, about the lack of consistency between the currently edited engineering item and others in the same document/project, and even between different types of engineering items.

### INTEGRATION

**RAT - AUTHORIZING Tools** is available as a fully integrated add-in to some of the major Systems Engineering tools: PTC Windchill, Capella, IBM Rhapsody, 3DEXPERIENCE or MS Office.

### PATTERNS CUSTOMIZATION

**RAT - AUTHORIZING Tool** uses a customizable set of textual patterns, which can be easily tailored and managed using the **KM - KNOWLEDGE Manager**.

**RAT - AUTHORIZING Tool** users can benefit from an easy-to-use feature to suggest new patterns or suggest changes to the existing ones. The tool notifies the knowledge architects, who may accept or reject suggested changes to the Knowledge Base, all of this using **KM - KNOWLEDGE Manager** tool.

### REQUIREMENTS AUTHORIZING WITHIN MODELS

When **RAT - AUTHORIZING Tool** is used inside a modelling tool (Capella for example) its advantages increase: You can write requirements following the name conventions of the different model elements, generate automatically links between model elements and requirements, and you can synchronize the requirements with your preferred Requirements Management tool.

### AUTOMATIC IMPORT/EXPORT BETWEEN DIFFERENT SUPPORTED ENVIRONMENTS

**RAT - AUTHORIZING Tool** provides a round-trip mechanism that allows a seamless transfer of engineering items to various tools. To interoperate between different sources of information, e.g. requirements and models, it implements new OSLC specifications enabling exchange of information regardless of its format or the tools used to create it.

### SEMANTIC SEARCH FOR CONSISTENCY CHECKING AND REUSE

**RAT - AUTHORIZING Tool** includes a semantic search engine that identifies the elements that are similar to the one being created/edited. This allows, among others, the reuseability of elements, the identification of overlapped or inconsistent content...

### RAT - AUTHORIZING TOOLS BUILT IN YOUR ASSETS DEVELOPMENT ENVIRONMENTS

**RAT - AUTHORIZING Tool** is able to connect to more than 25 of the most common tools used to develop system documents, specifications, models and many more are yet to come! You can also develop your own connectors to **RAT - AUTHORIZING Tool** using our API.

The available connectors of RAT are detailed in the flyer of **SES ENGINEERING Studio**.

Besides, **RAT - AUTHORIZING Tool** is also available as an add-in on top of several Requirements Management and MBSE tools, including:



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