The SMARTer way to author requirements

Requirements management is one of the most important processes in many engineering projects.

Writing new requirements is, sometimes, like facing a white paper: authors must know what structure to follow, what terms should be used, what are the measurement units agreed for the project, what are the expected quality policies or checklist to follow...

Requirements Authoring Tool (RAT) is an assistant helping authors during the demanding process of authoring requirements.

Benefits of the tool

Quality:
The quality of your requirements will boost by following always the approved set of grammars and by analyzing all of the agreed best practices, rules, checklists, policies... on the fly.

Time:
Reduce the time of the overall RM process by assisting the requirements authors following a simple principle: "Right the first time" while you reduce the time of the V&V processes.

Money:
Save money by automating the authoring and V&V processes and reducing rework.
The earlier the quality becomes a central part of the process, the more the cost will be reduced.

Requirements Authoring Tool

Requirements Authoring Tool (RAT) is the perfect assistant for System Engineers or Business Analysts while they are writing their requirements. RAT uses a set of agreed upon boilerplates and leads you, step by step, suggesting the next term of your requirement always ensuring the right grammar.

Once a boilerplate has been selected, RAT shows its structure and an example of use. The author only has to select the right terms, with the right semantics, thus ensuring that the right grammar has been followed, and that the proper information has been provided (including all the needed details).
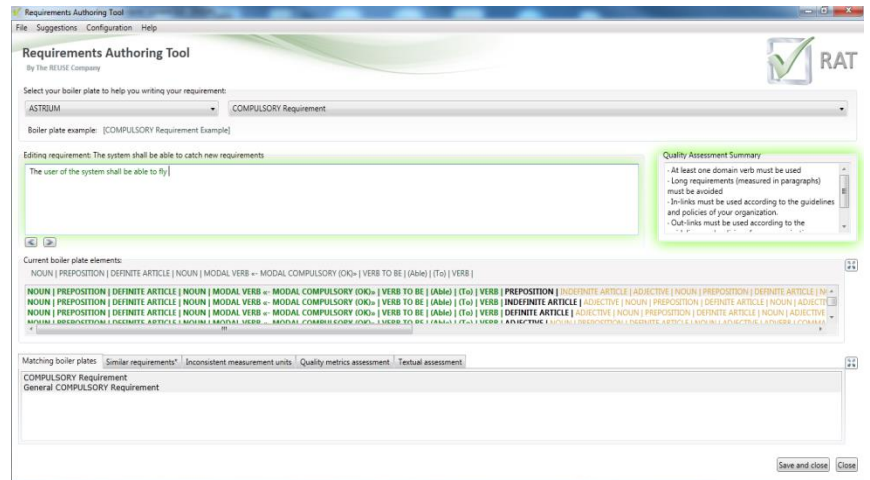
Requirements Authoring Tool implements an *IntelliSense* way of writing. This technique, as experienced within the well-known © Microsoft Visual Studio, provides an accurate way of creating requirements while writing is also speeded up.

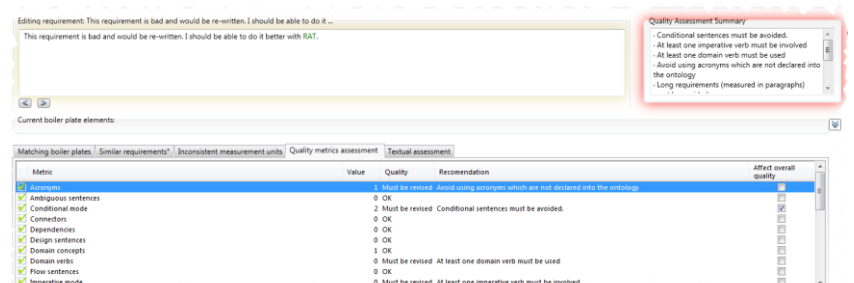By ensuring that the right boilerplate has been met, different benefits are obtained:
- The requirement includes the right pieces of information.
- It will be easier to read and understand by both humans and computer systems.
- The semantic retrieval engine of the suite perfectly understands the requirement.
- The chances to find coupled or inconsistent requirements is increased.

Quality «on the fly»

The Requirements Authoring Tool is also able to provide highly valuable quality information.

All the quality information currently reported by RQA is also generated, «on the fly» by RAT, thus reducing even more the time needed for V&V, peer-review, double checking... In other words, «Right the first time».
Among other metrics, the quality information reported by RAT includes the detection of inconsistences, coupling requirements, ambiguous requirements, non-atomic requirements, use of the wrong verb tense, mode or voice, consistent use of measurement units...

Boilerplates customization

Since not two organizations are alike, RAT is able to use a customizable set of boilerplates. Thanks to its integration to knowledgeMANAGER, boilerplates can be enhanced or created. RAT will be aware of those changes just when the quality manager of the projects agrees.

Furthermore, RAT users can take advantage of a very easy-to-use mechanism to suggest new boilerplates ,or changes to the existing ones, to the knowledge base architects. It is his/her responsibility to apply or deny the suggested changes.

Formalization

Normalization:
The requirements will be consistent with the organization's templates.

Controlled Vocabulary:
Using placeholders allows RAT to suggest controlled vocabulary.

Requirements become formally represented:
Offering many possibilities to be connected outside the Suite: MDE, tests automation, SysML diagramming, change requirements sets, etc.

RAT into the Requirements Quality Suite

RAT is the tool every System Engineer or Business Analysts may need to write better requirements. The behavior and recommendations of this tool are led by:

Requirements Structure and grammar (boilerplates):
- Knowledge Base architects must define a set of accepted boilerplates.
- The Quality Manager of the project must agree what boilerplates can be used in the present project.
- Both roles can check the usage of the agreed boilerplates. This could also lead to identifying missing requirements.
- RAT users may suggest changes on the set of boilerplates as well as in the System Knowledge Base (SKB). Those suggestions must be attended by the knowledge base architects using knowledgeMANAGER.

Requirements quality:
- The Quality Manager must agree on what metrics and quality functions will rule the quality of the project.
- The Quality Manager and Project Manager can check the quality of the project by using RQA.

RAT list of features

Requirements structure (boilerplates)
RAT allows you to select a specific boilerplate
RAT easily warns when the proper structure is being fulfilled, when it has already being fulfilled, or when it is wrong
RAT shows all the feasible boilerplates for a given requirement text
IntelliSense
Quality assessment on the fly
RAT shows a series of quality recommendations while you are writing your requirements
All the metrics and quality functions described in RQA are shown in RAT on the fly
RAT warns when you are involving an incompatible set of measurement units
RAT easily finds semantically similar requirements in order to look for coupling or inconsistences
Integration with the TRC's Requirements Quality Suite
Boilerplates defined and agreed on knowledgeMANAGER are immediately available in RAT
Quality metrics agreed on RQA are also warned «on the fly» by RAT
New boilerplates can be suggested by RAT users to the domain architects
New concepts or relationships can be suggested by RAT users to the domain architects
Integration with RM tools
RAT is fully integrated to IBM DOORS

Contact

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