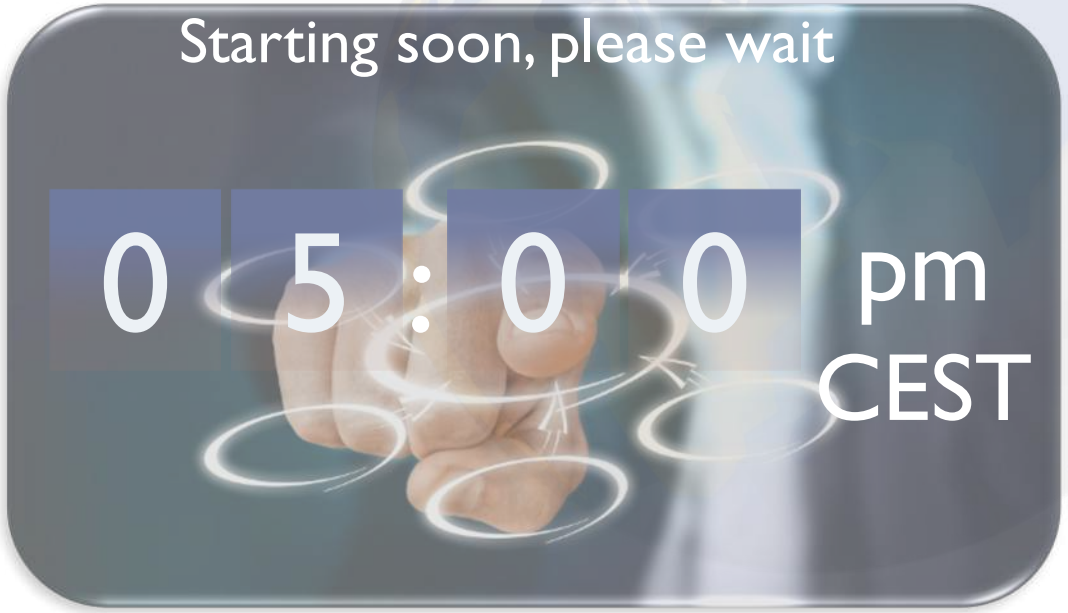
CORRECTNESS
METRICS



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  - You'll be muted all along the Webinar
  - There's a chatting box to ask your questions or send your comments when you want
  - Please address these comments and questions to the user "The REUSE Company" and not to the presenter directly
  - If you have any technical issue please use this chatting box, or mail us at: support@reusecompany.com
  - The Webinar will be recorded. A link to the recording will be sent to you in few days

Improve the quality of your requirements using advanced Correctness metrics in RQA - QUALITY Studio

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THE REUSE COMPANY

- Introduction to The REUSE Company and the speakers
- Why focusing on requirements quality?
- What is requirement correctness?
- RQA – QUALITY Studio and the CCC Approach
- Advanced correctness metrics
- Live demo
- Q&A

01 The company was established in **1999**

As a spin-off of a University in Madrid

02 **System + Software Engineers**

Smart combination between Company staff and R&D from Academia

03 **Headquarters:**
Madrid (Spain)

International offices:
Stockholm (Sweden)
Tokyo (Japan) Delegation

2021:
USA
Chicago/Detroit/Miami

04 To promote a **reusable**, **scalable** and global solution to a **smart** and **interoperable** Systems Engineering environment, by offering a **semantic knowledge centric** approach.

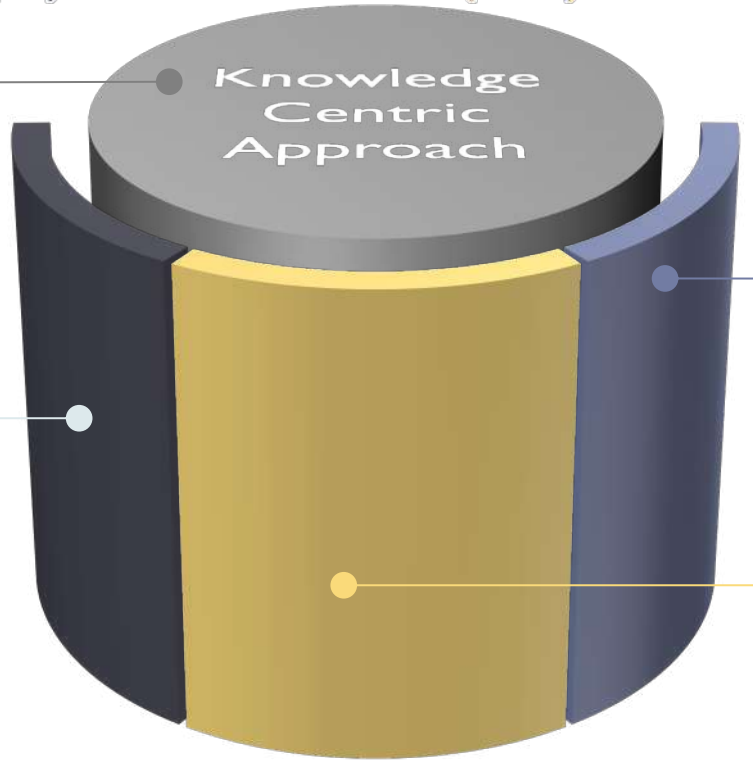
T(he) R(euse) Q(company)(company)

Knowledge Centric Systems Engineering (KCSE)

Global Repositories –
Archiving –
Configuration Management –

TRACEABILITY

Links and Interoperability –
Transformations –
Change management –



QUALITY (ies)

- Quality Management
- Verification & Validation management
- Risks Management
- Smart Authoring

REUSABILITY

- Interoperability
- Retrieval & Archiving
- Adaptability to Existing Toolsets

Ilyes Yousfi

- **Current position:** Sales & Consulting Engineer at The REUSE Company

Ilyes Yousfi got his Master's degree from the University of Montreal (Canada) and the IMT Atlantique School of Engineering (France). Ilyes has 5 years of experience in sales, technical background in energy and mechanical engineering and was involved in a research project around the environmental impacts of end-of-life management of aircrafts.

Passionate about international projects and learning languages, Ilyes speaks 4 languages fluently: English, French, German and Spanish.

Why focusing on Requirements quality?

The consistency problem in systems engineering: NASA 1999

A disaster investigation board reports that NASA's Mars Climate Orbiter burned up in the Martian atmosphere because **engineers failed to convert units from English to metric**.

The **$125 million satellite** was supposed to be the first weather observer on another world.

A NASA review board found that the problem was in the software controlling the orbiter's thrusters. The **software** calculated the force the thrusters needed to exert in ***pounds*** of force. A separate piece of software took in the data assuming it was in the metric unit: ***newtons***.

"*People make errors,*" Gavin said. "*The problem here was not the error. It was* ***the failure of us to look at it end-to-end and find it.*** *It's unfair to rely on any one person.*"

https://www.wired.com/2010/11/1110mars-climate-observer-report/
http://edition.cnn.com/TECH/space/9909/30/mars.metric.02/

"SNCF's failure to verify measurements results in cost of **€50m to modify 1,300 platforms** in one in six regional stations"

"The train due on platform one will not be arriving for the foreseeable future – because **it is too big**."

"RFF sent SNCF the dimensions of stations built less than 30 years ago. It was then discovered – after it was too late – that the trains, due to go into service from now until 2016, were too big by several centimeters for stations built more than 50 years ago."

SNCF said **only 341 trains** – 182 from Alstom and 159 from Bombardier – were affected.

Mind le gap! France spends $15 billion on trains that are too fat for 1,300 station platforms – *Independent*

https://www.theguardian.com/world/2014/may/21/french-railway-operator-sncf-orders-trains-too-big

http://www.independent.co.uk/news/world/europe/french-rail-operator-orders-hundreds-of-new-trains-too-big-for-platforms-9412274.html

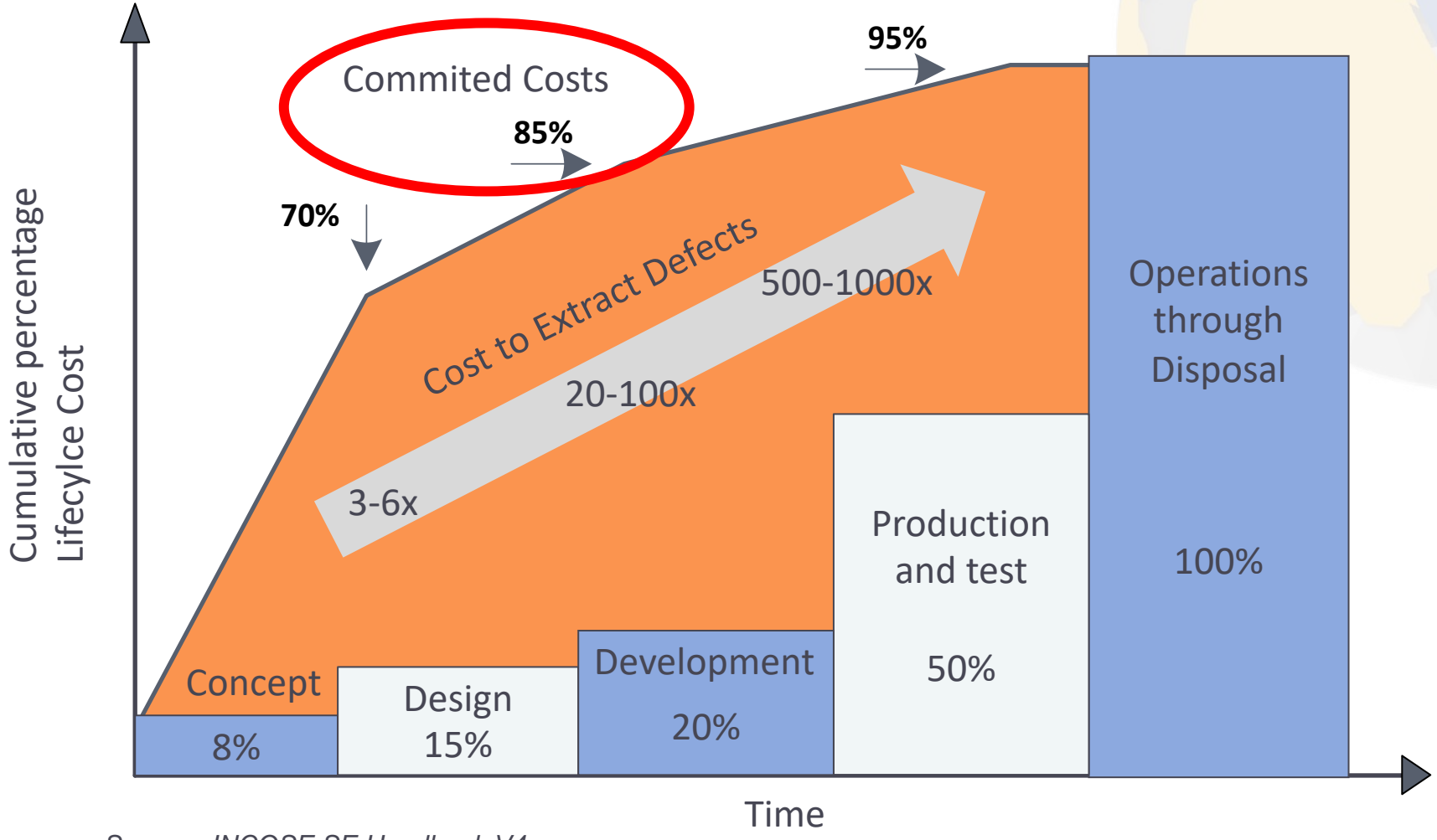
Poor-quality requirements = High odds of failure!

*by Dr. Gina Guillaume-Joseph who studied over 200 failed projects with a total value of **15 billion dollars in sunken cost**. I was not surprised by the result. The main reason for project failure was ranked like this:*

Project failure factor	*Odds of project failure*
Project Schedule Delays	*78,6%*
Changing or Unclear Requirements	*29,9%*
Project Failure in Test Phase	*11,4%*

(Source: Improving Software Project Outcomes Through Predictive Analytics, ENGINEERING MANAGEMENT REVIEW, 2015)

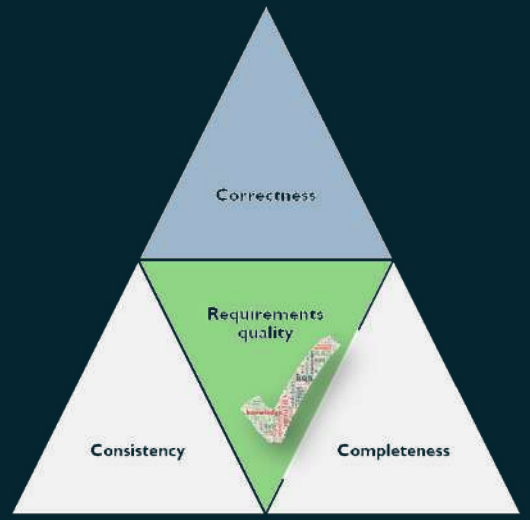
The impact and the source



Source : INCOSE SE Handbook V4

- Some of the issues were reported as **software issues**…
- … while the source was clearly the **requirements**
- And the root cause can be twofold:
  - Wrong engineering decisions
  - Miscommunication and ambiguous requirements
- No matter the root cause, **the impact is huge.**

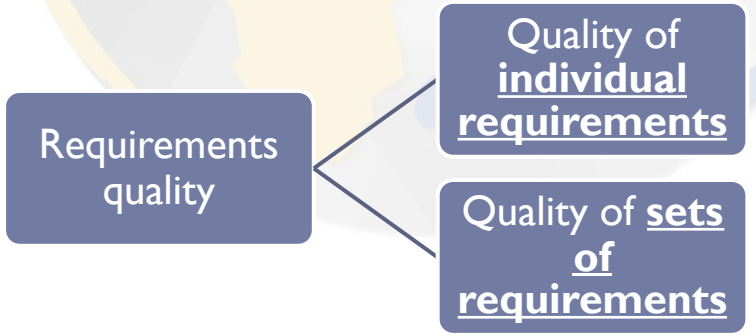
- **How to fix this?** Following the adequate set of tips to write requirements:
  - To reduce miscommunication
  - To streamline the writing of textual requirements, and thus increasing time to study engineering decisions
  - To ease the detection of wrong engineering decisions
  - Even to detect those issues automatically, in real-time

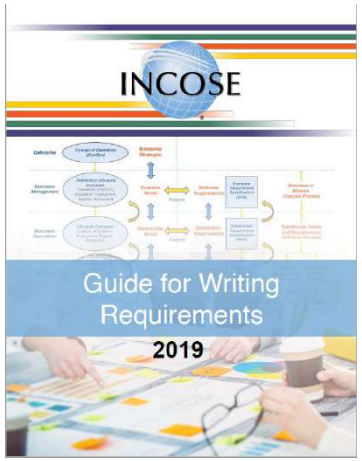


What is Requirements Correctness ?

What is requirements correctness?

- **"Getting it right"**
- In the international standards, Correctness refers to :
  - One of the **characteristics** of well-formed requirements
  - **IEEE Std. 830 – Characteristics of individual requirements**
    - **Correct**
    - Unambiguous
    - Ranked
    - Verifiable
    - Modifiable
    - Traceable
    - ...
  - **ISO/IEC 29148 –** Similar characteristics
  - **Domain-specific standards :** ECSS (European Space Agency), NASA, ...
  - **INCOSE Guide for Writing Requirements**
  - **...**



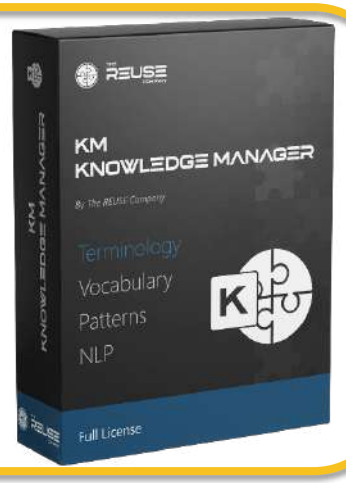


What is RQA – QUALITY Studio?

RQA – QUALITY Studio

Knowledge Management

Capture, creation, **representation**, and **exchange of knowledge** across targeted groups of **stakeholders**



Traceability

Support the **integration** among assets through semantic **interoperability** to discover and keep the **traces** among related elements

Authoring

Definition of requirements and other textual engineering assets based on **real-time analysis** (NLP), **writing assistance**, **identification of similar items**…

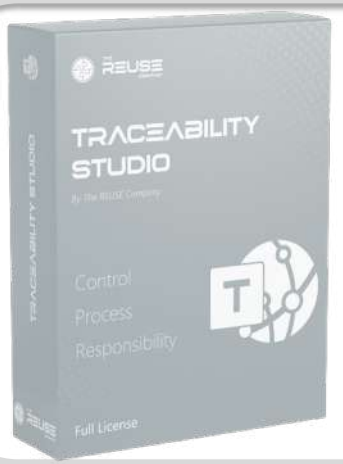
Quality Management

Define, implement and perform **measures** to meet the **quality priorities** that satisfy the **verification** of any engineering element

RQA – QUALITY Studio

Knowledge Management

Capture, creation, **representation**, and **exchange of knowledge** across targeted groups of **stakeholders**



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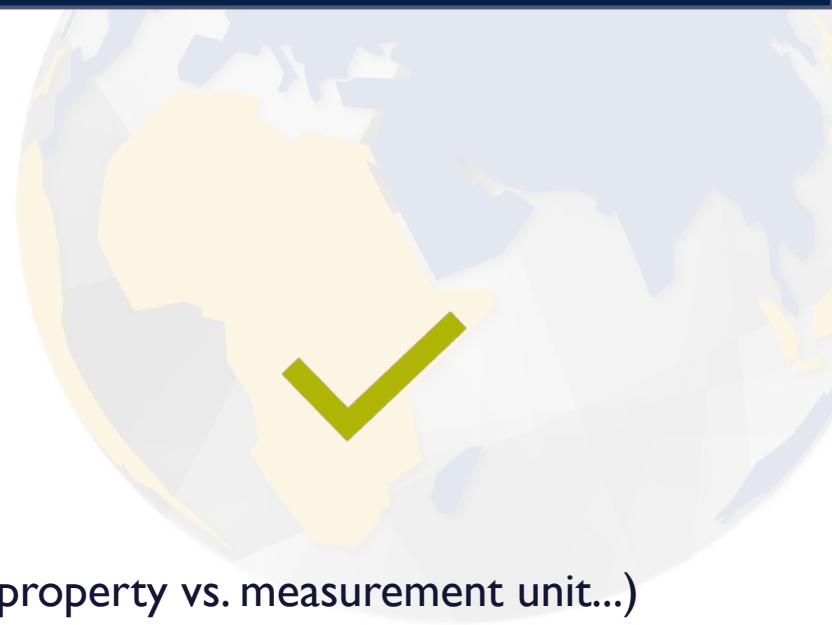
What is requirements correctness?



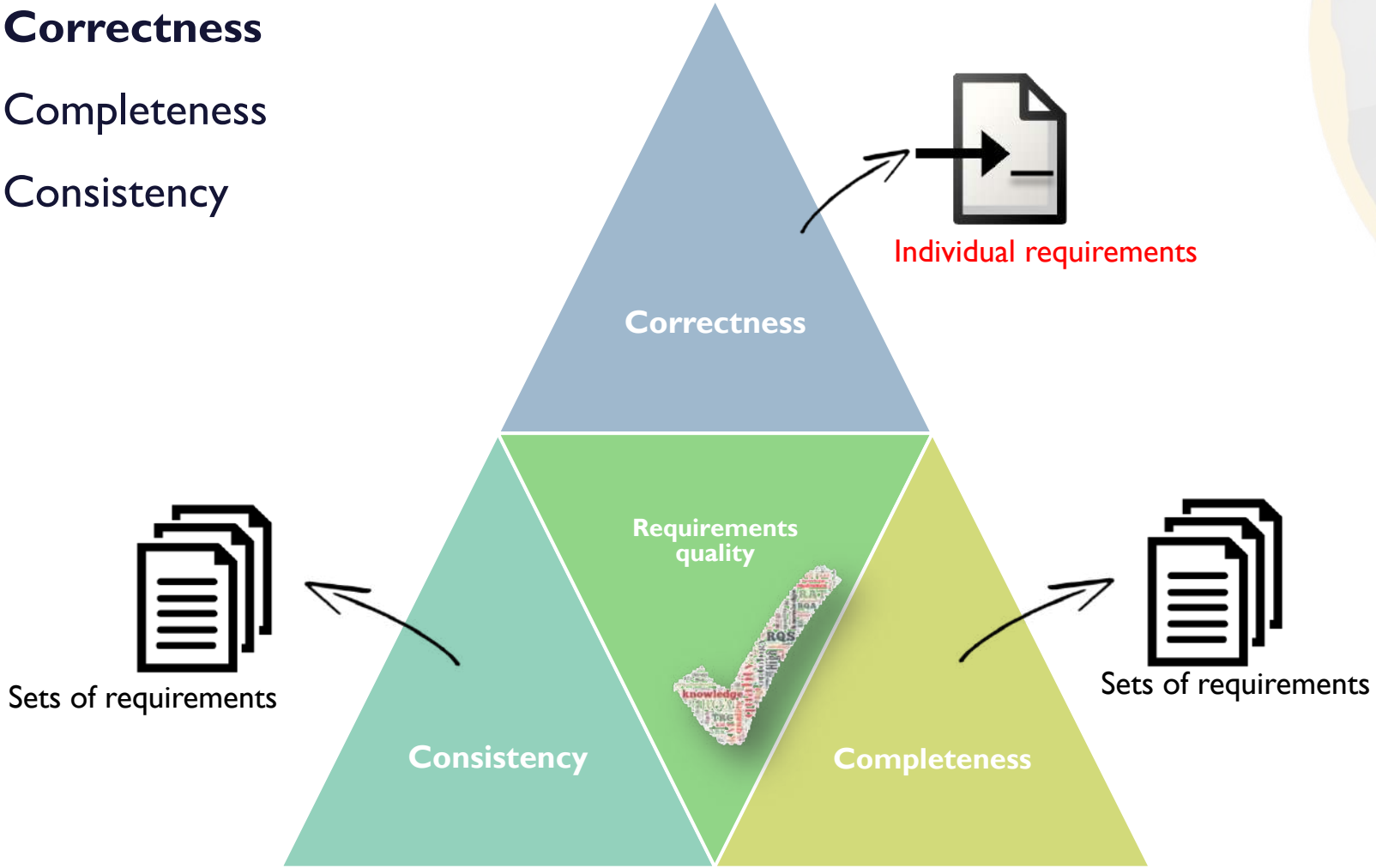
- In the CCC approach, **Correctness** refers to :
  - **All** the characteristics and criteria to check requirements **individually** :
    - Use of defined, precise and understandable words
    - Atomicity
    - Attributes properly defined
    - Relationships between concepts in a requirement (system structure, property vs. measurement unit...)
    - Requirement syntax (Patterns)

- In the default configuration (OOTB database) there are **35** enabled **CORRECTNESS** metrics.

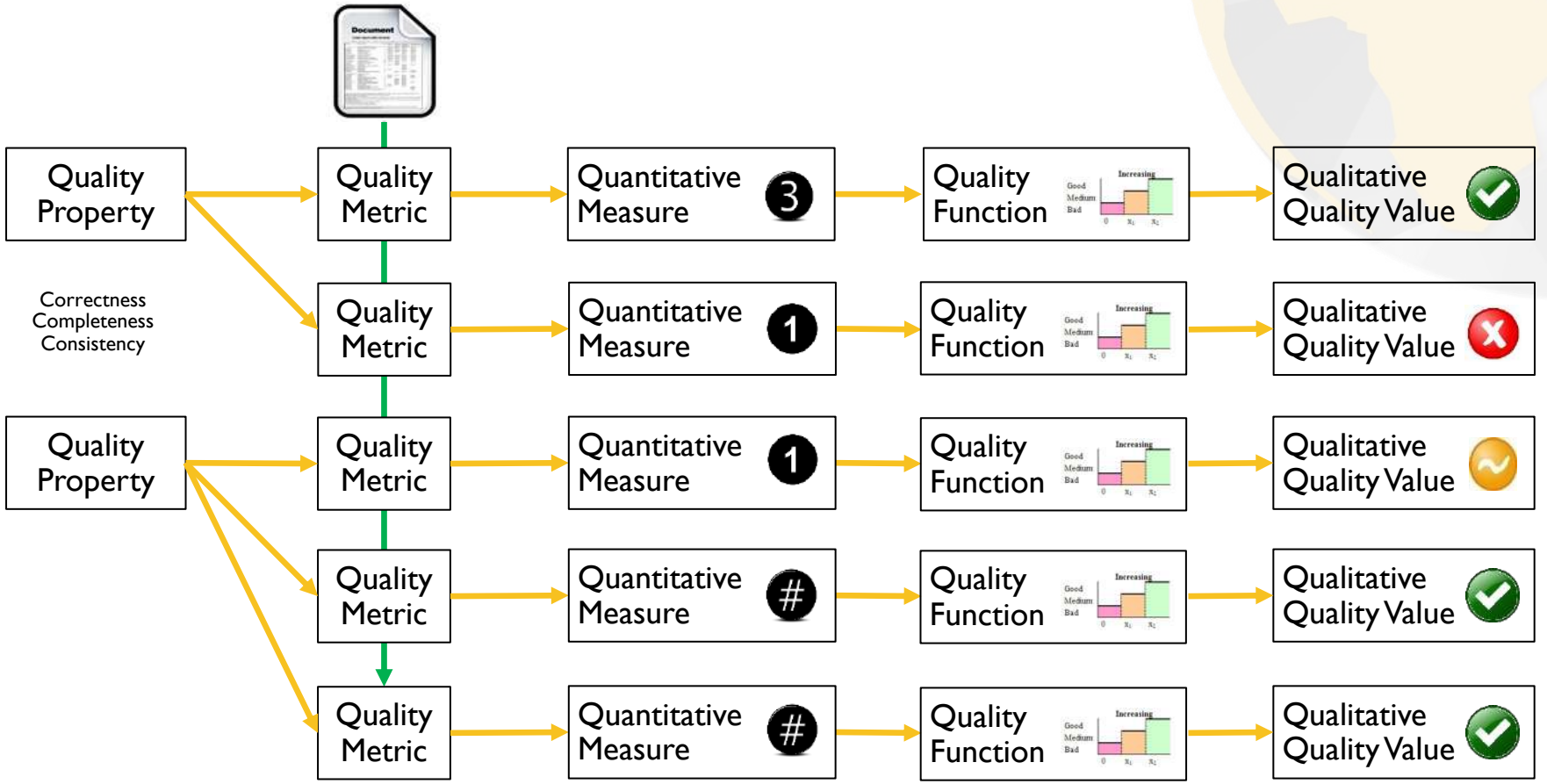
RQA – QUALITY Studio : The 'CCC' Approach

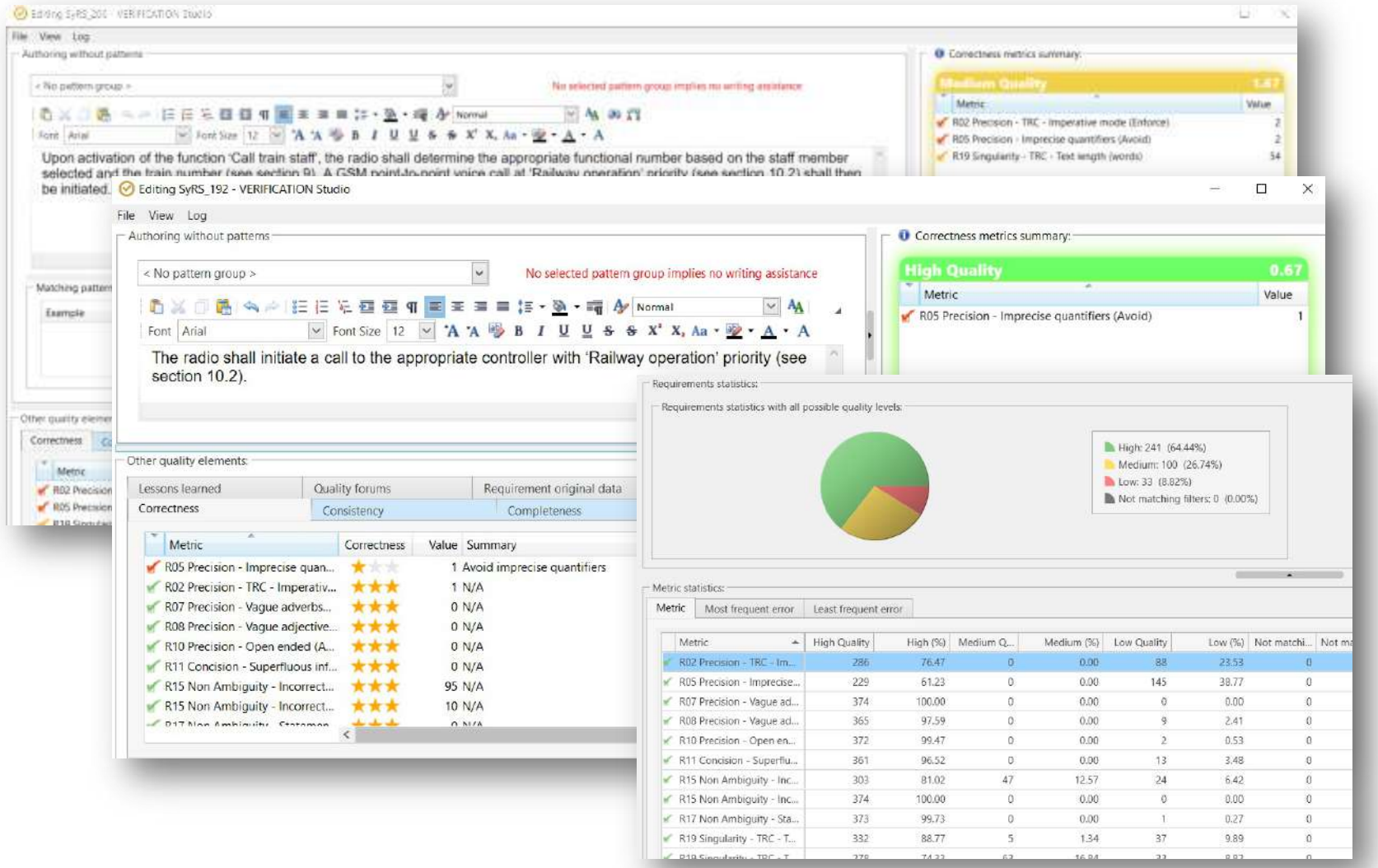
The CCC approach in RQA – QUALITY Studio to assess requirements quality :

- **Correctness**
- Completeness
- Consistency



- Calculate qualitative values for defined Characteristics





Quality Analysis applied to single requirements

The Correctness Quality Set:

- Characteristics coverage
- Ontology dependency
- Effort needed to fix identified error

- For each dimension, 4 different types of metrics:

Fixed metrics — No need of additional configuration

- Ex. : Text length
- Ex.: Passive voice detection…

Parameterized — Requires a parameter to operate

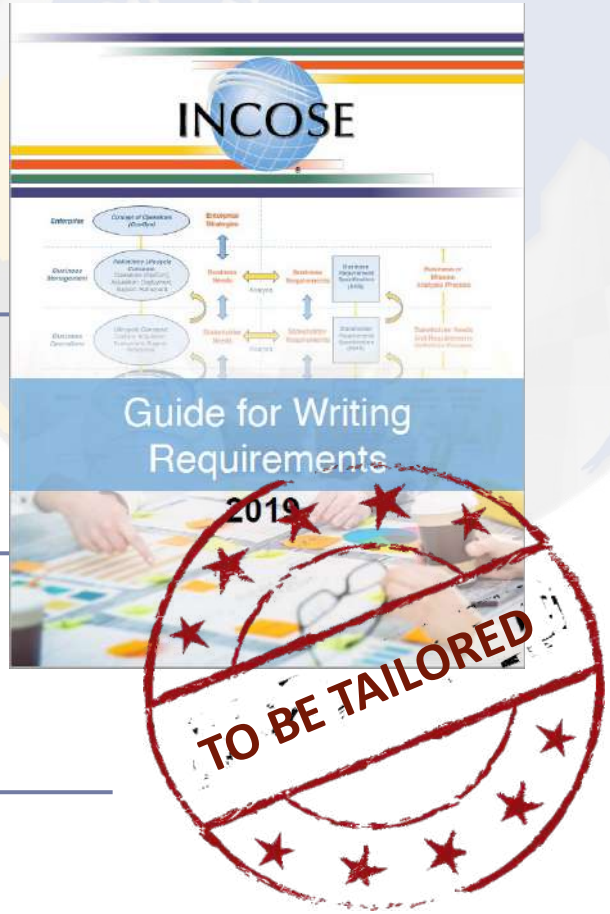
- Ex.: Pattern based metrics (some available out-of-the-box)
- Ex.: Identification of forbidden words (many available out-of-the-box)

Check-list based — As many different check-lists as needed

- Custom-defined check-lists
- Aimed to have manual inspection of work-products

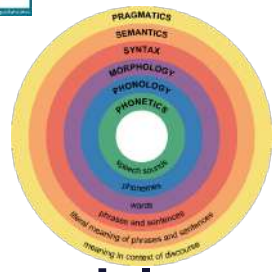
Custom-code — Using C#

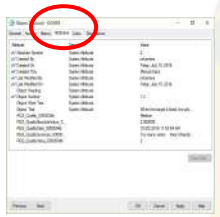
- 5 different interfaces to meet

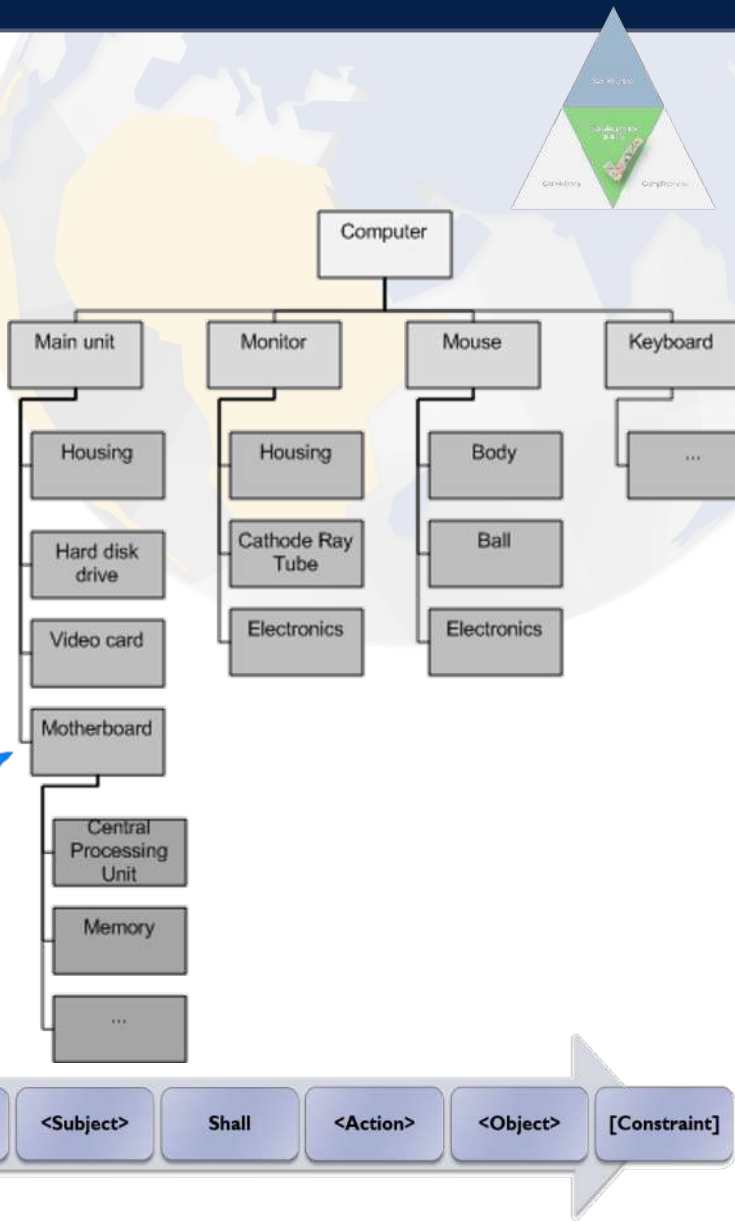


RQA – QUALITY Studio : Correctness metrics

- **Metrics based on information coming from the RMS:**
  - Attributes, links, versions…
- **Metrics based on lists of terms:**
  - Forbidden: ambiguous, pronouns…
  - Restricted: negations…
  - Mandatory: 'shall', 'will', 'should'…
- **Metrics based on linguistic algorithms:**
  - Text length, misspelling, readability….
  - Detection of passive voice, imperative tense…
- **Metrics based on the conformance with models:**
  - Concepts in your requirements coming from PBS, FBS…
- **Metrics based on patterns:**
  - Compliance with different types of requirements patterns
  - Detection of specific structures within the requirements

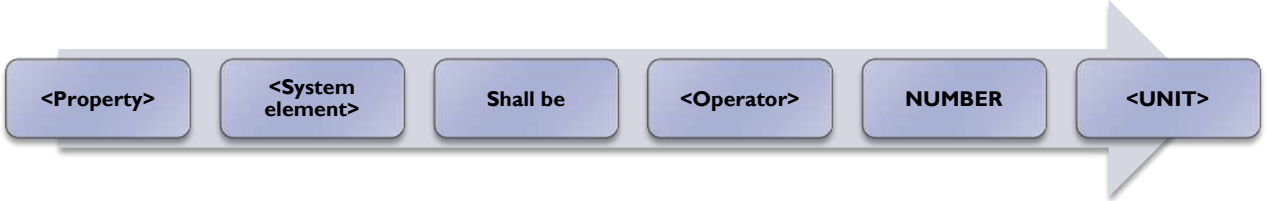




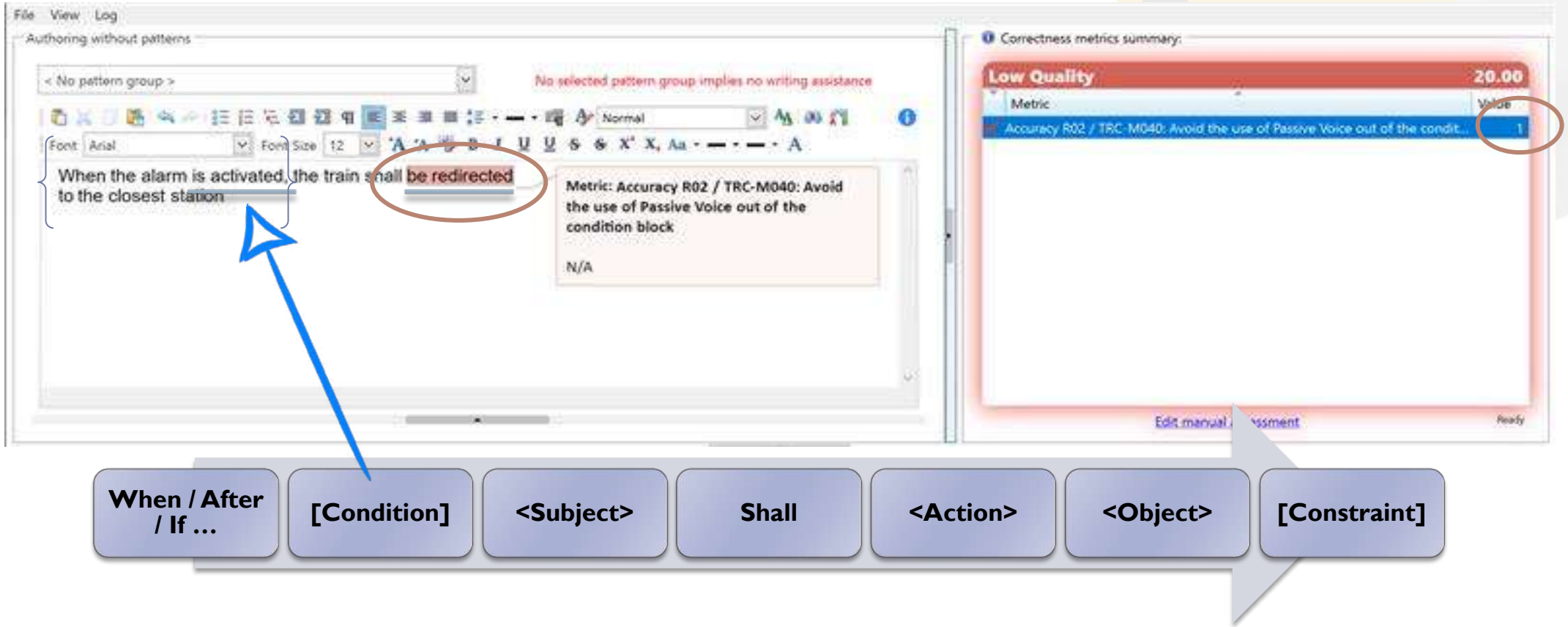


- **Patterns:**
  - Represents the structures every *correct* requirement should meet
  - Different types of requirements → different patterns (templates)
  - Customizable for every domain, customer and content of each requirements document
  - Libraries with sets of patterns
  - Represented as a sequential set of *restrictions*: *placeholders*

- **Patterns are useful to:**
  - **Reduce false positives** in correctness metrics
  - **Help authors** while they formulate their requirements

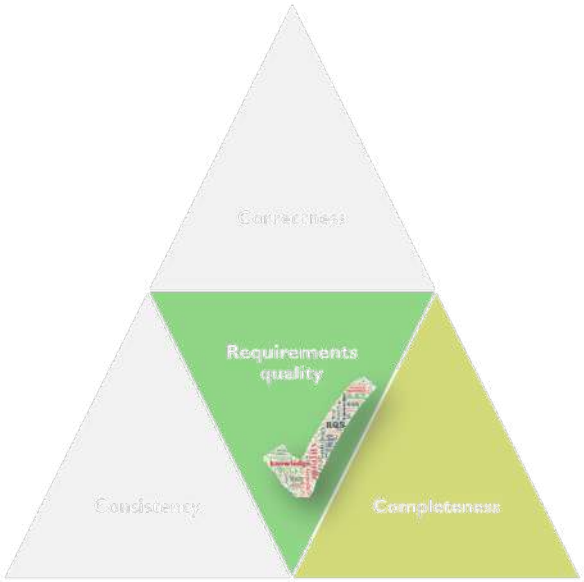


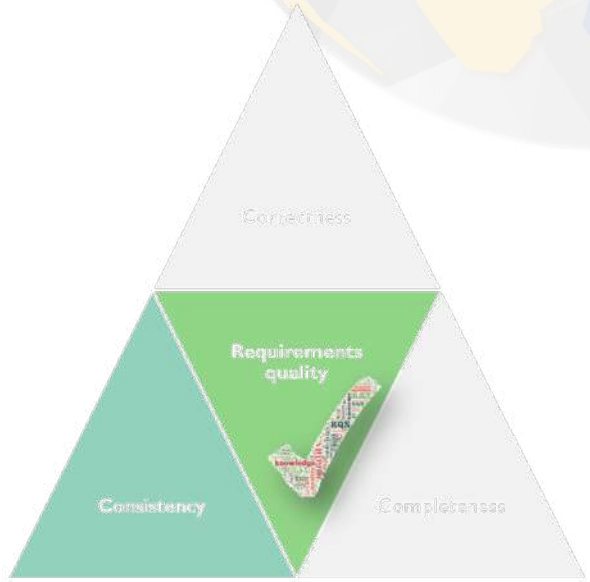
Reduce false positives : Detect the passive voice **only outside condition sentences:**



If you want to start or keep learning about the 2 other dimensions...

TRC WEBINARS

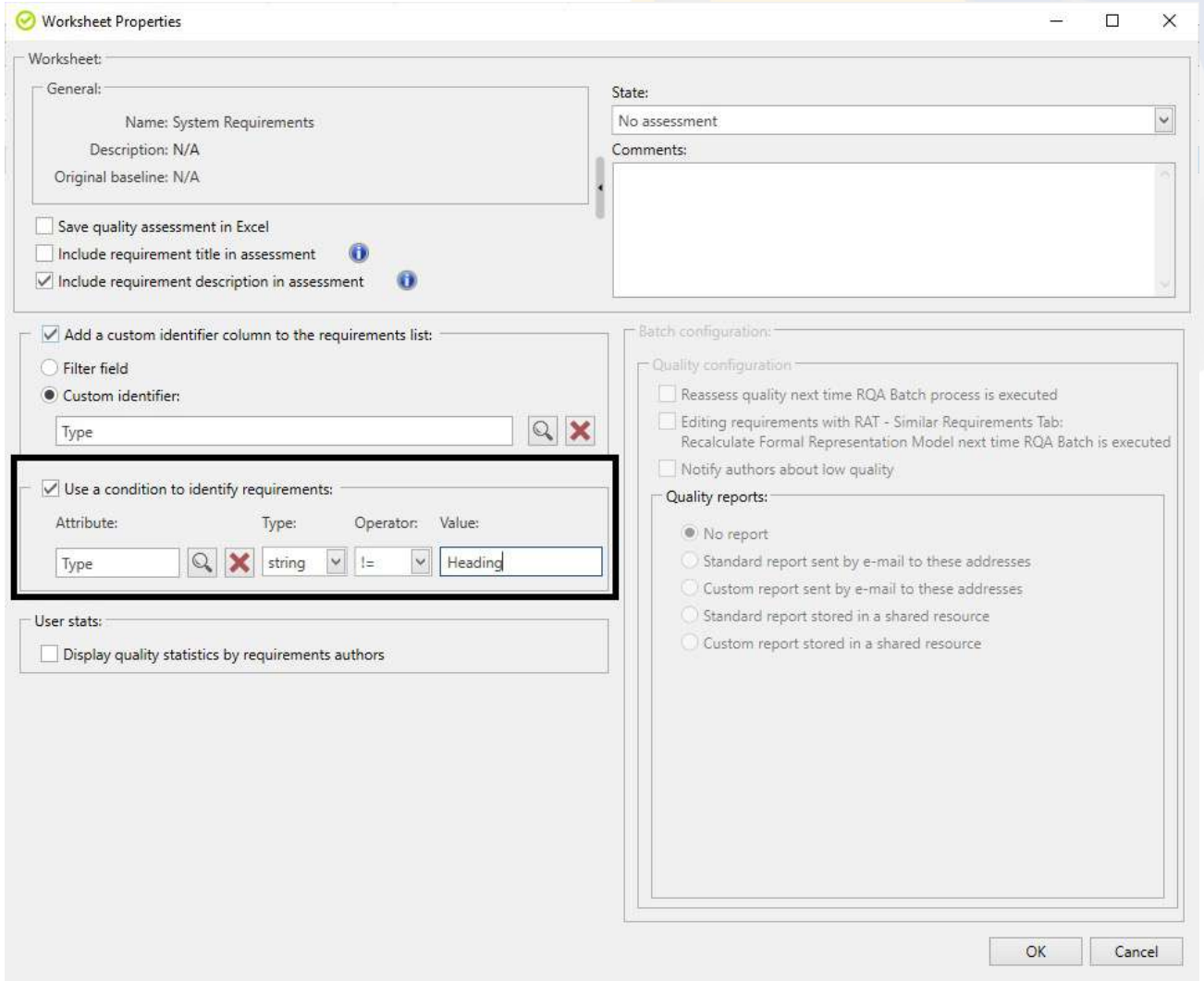




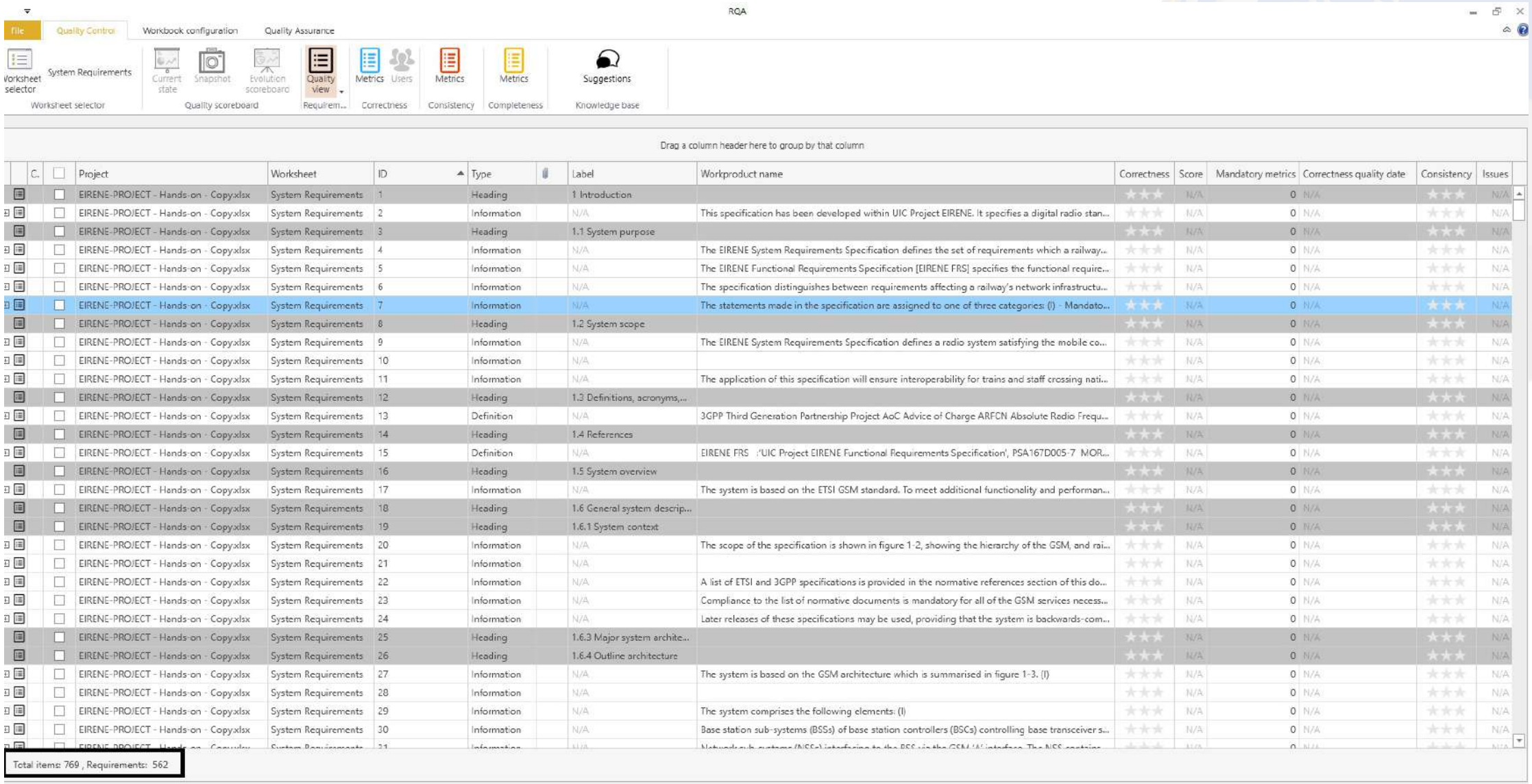
- Completeness : Webinar on September 28th and 30th
- Consistency : Webinar on October 13th and 14th

Advanced Correctness features In RQA – QUALITY Studio

- Based on a *boolean expression*
- Based on *Views* (only for IBM DOORS)
- Based on *Attributes*

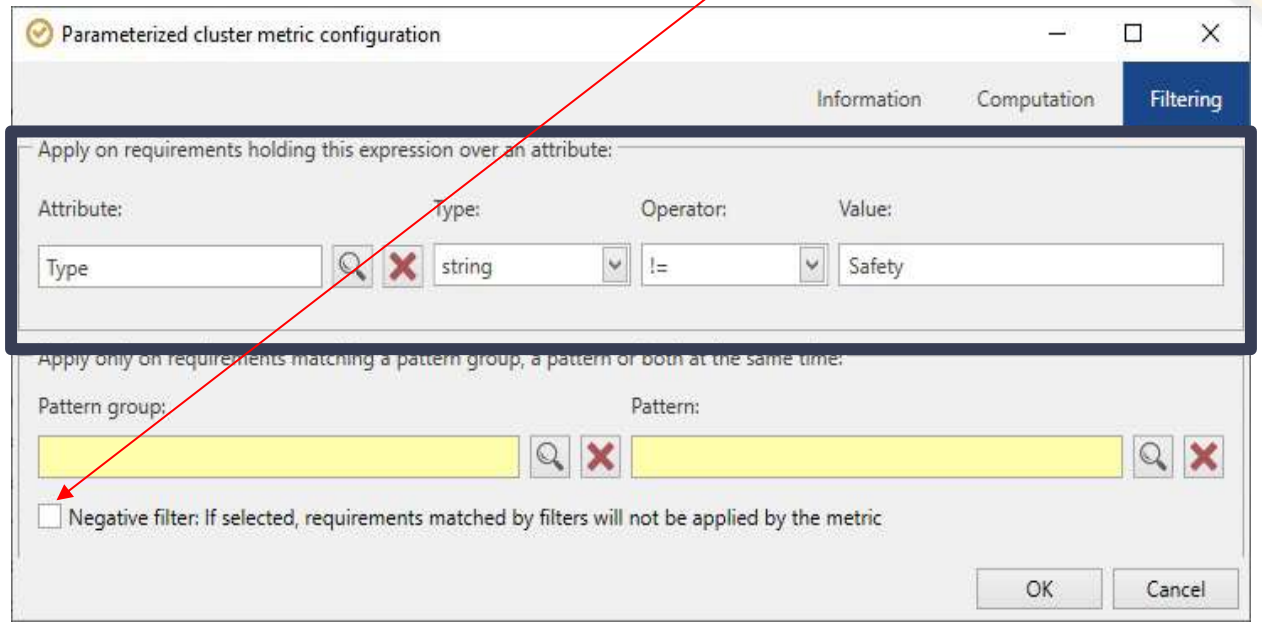


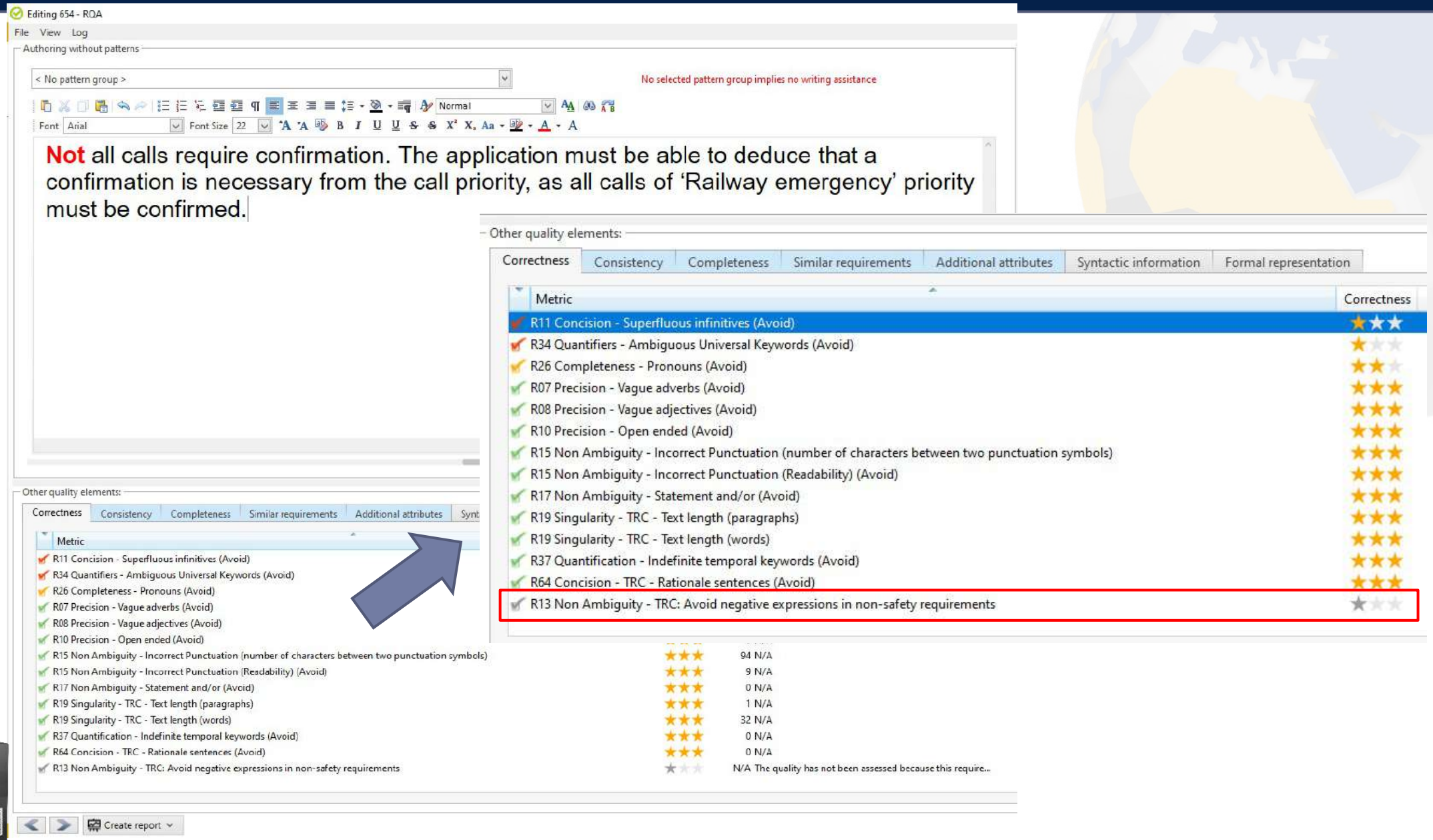
Filtering objects



Computation vs. Filtering : Filtering

- This metric **WILL NOT BE** analysed when the requirement is (not) matching the filtering expression (string, Boolean, Regular expression, ...)
  - Filering based on *Attributes*
  - Filtering based on *Patterns*

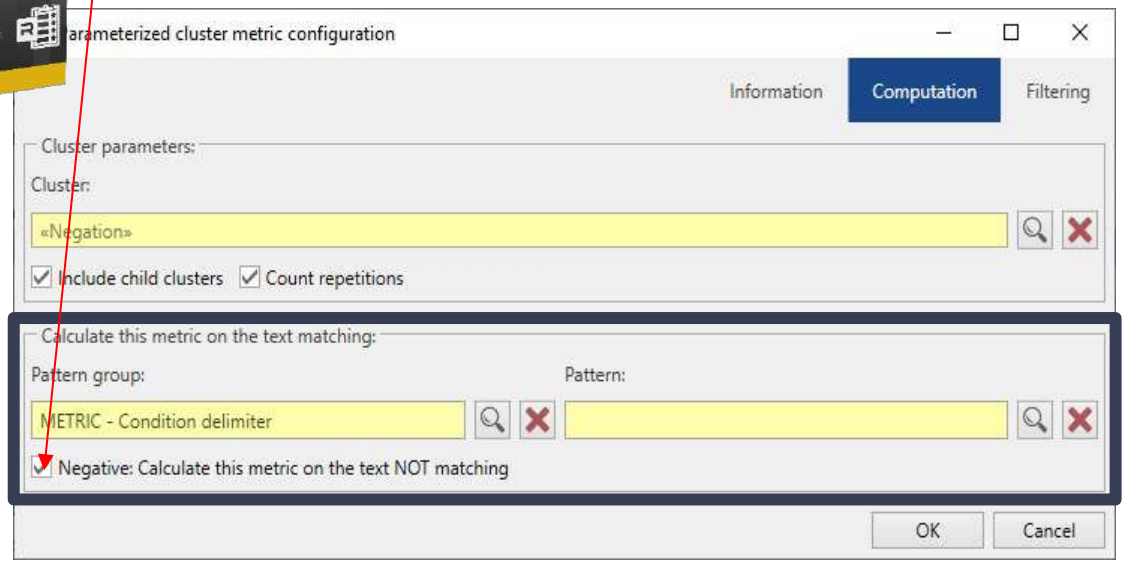


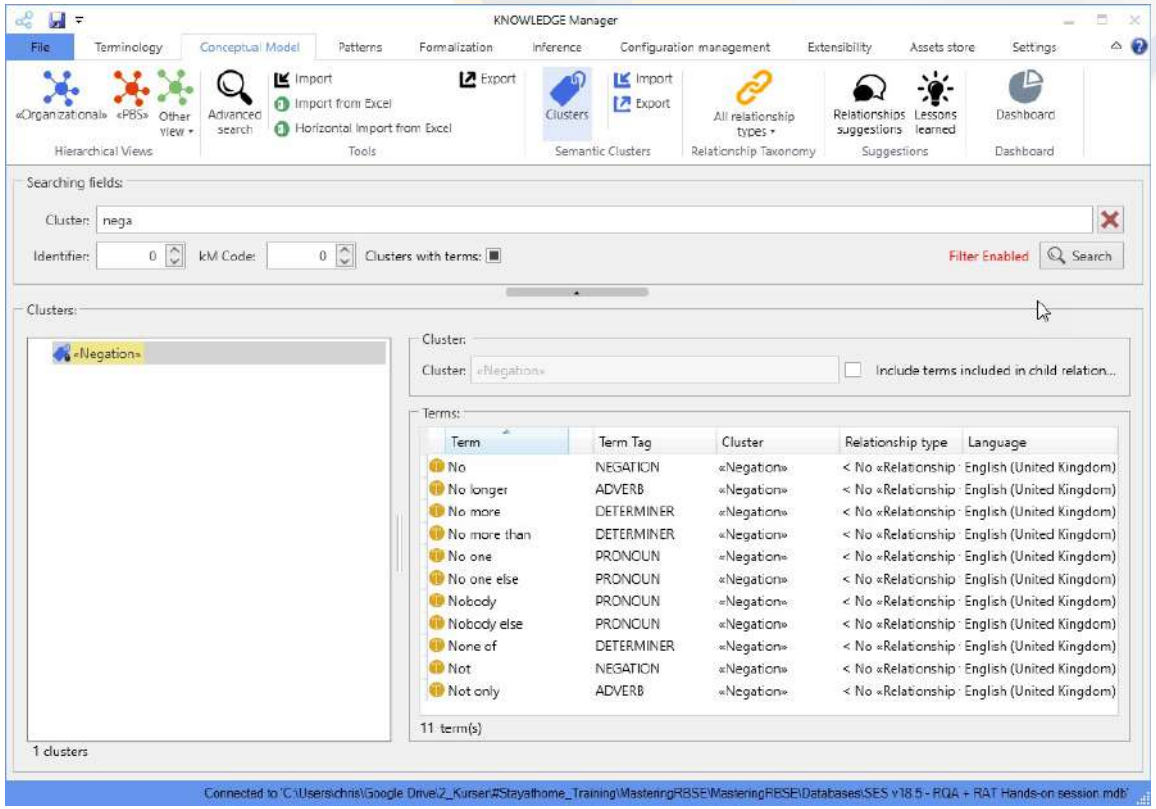


Computation vs. Filtering : Computation

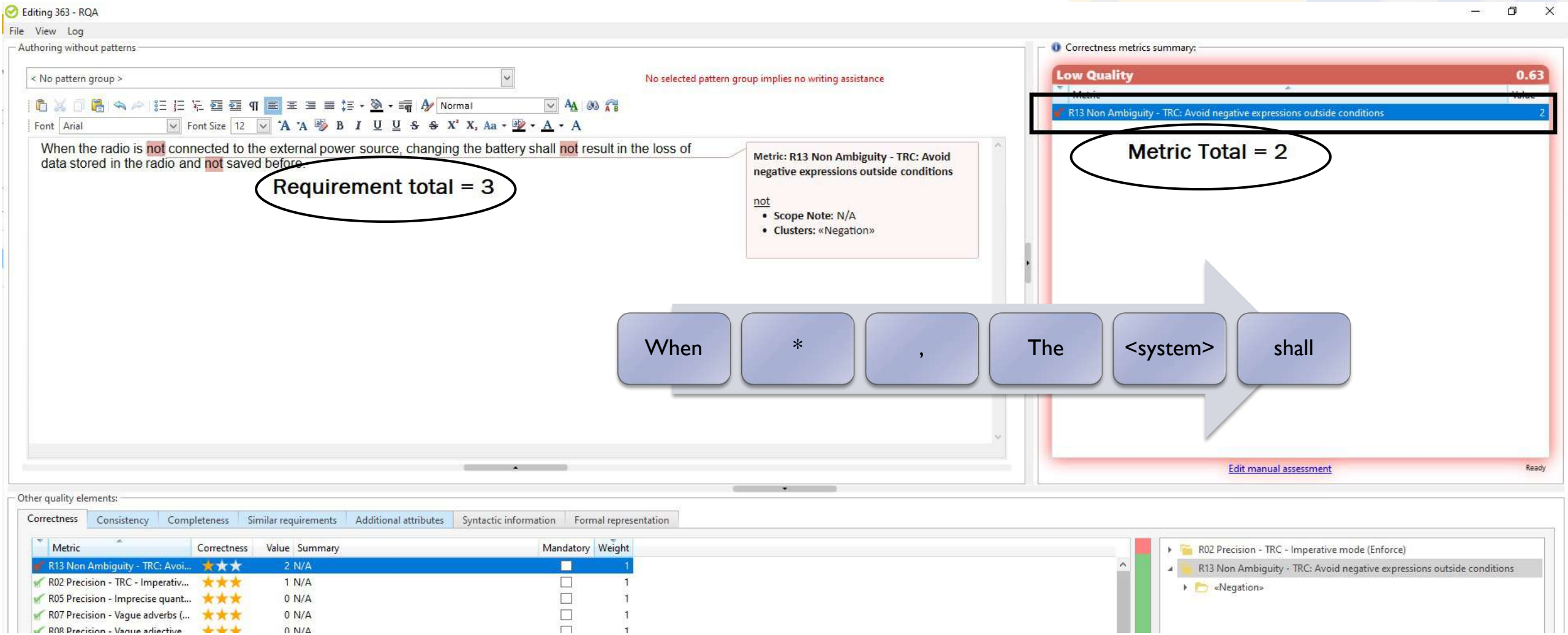
- This metric **WILL BE** analysed and the issues **<u>counted</u> ONLY WHEN** the requirement is (not) matching the filtering expression (string, Boolean, Regular expression, ...)

When | * | , | The | <system> | shall



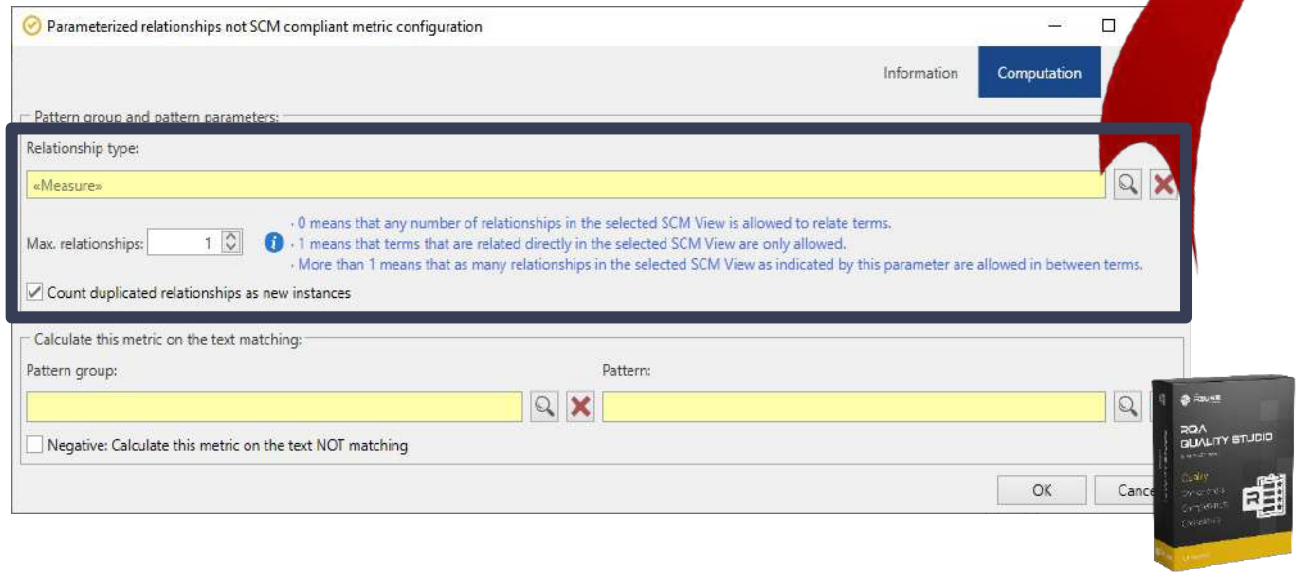


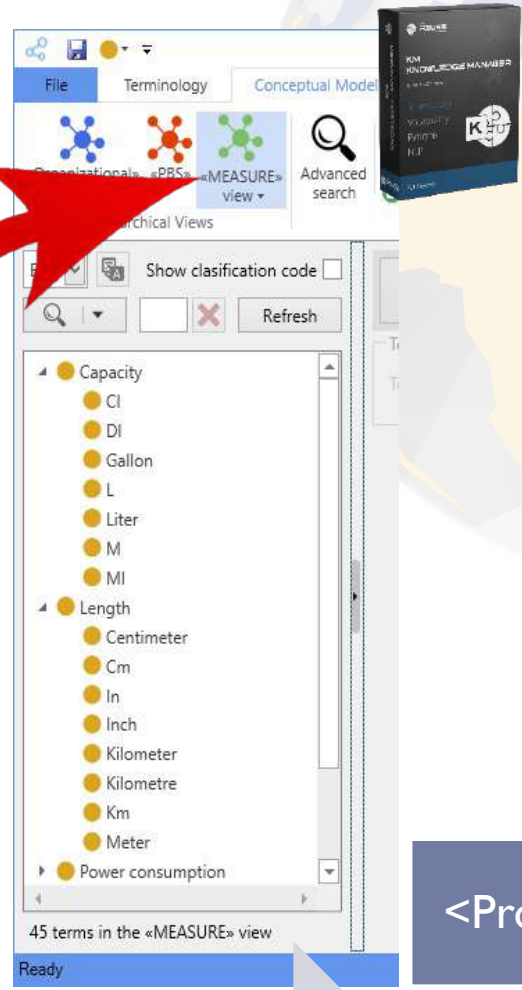
Computation vs. Filtering : Computation

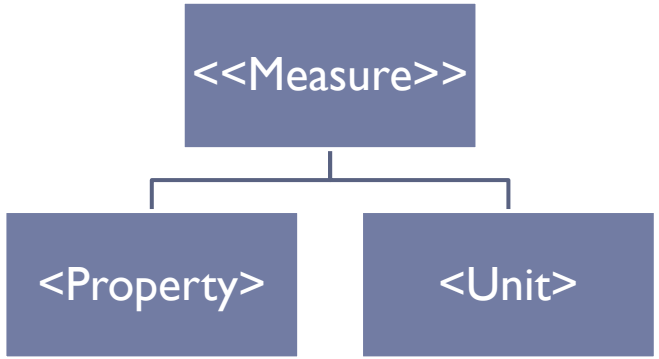


Correctness metrics - Advanced parametrized metrics

- **Metrics based on System Conceptual Models:**
  - Detect inadequate Unit for a Characteristic
  - Control values for a given *signal/property* from an en



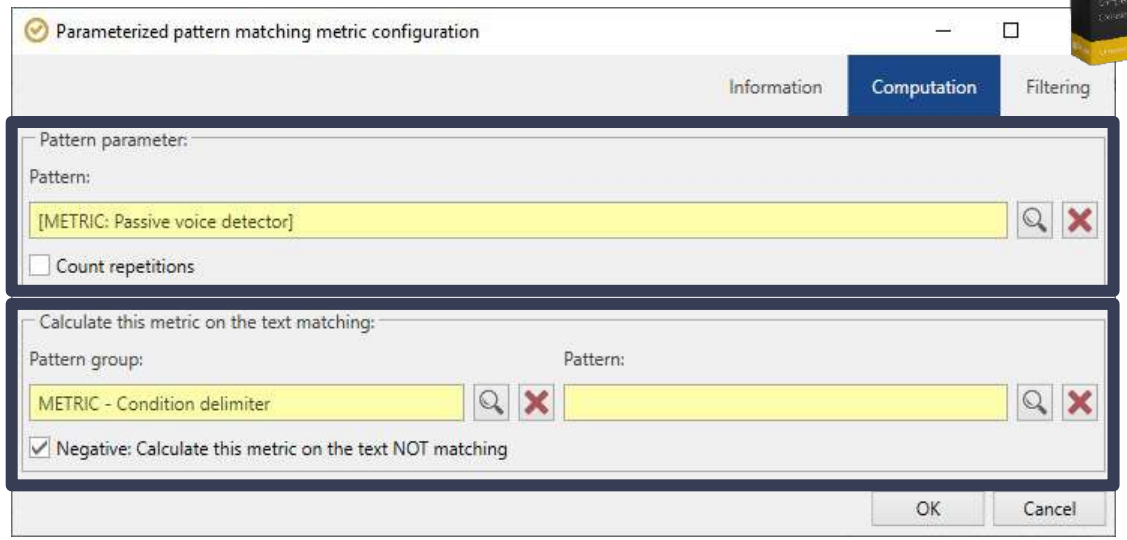




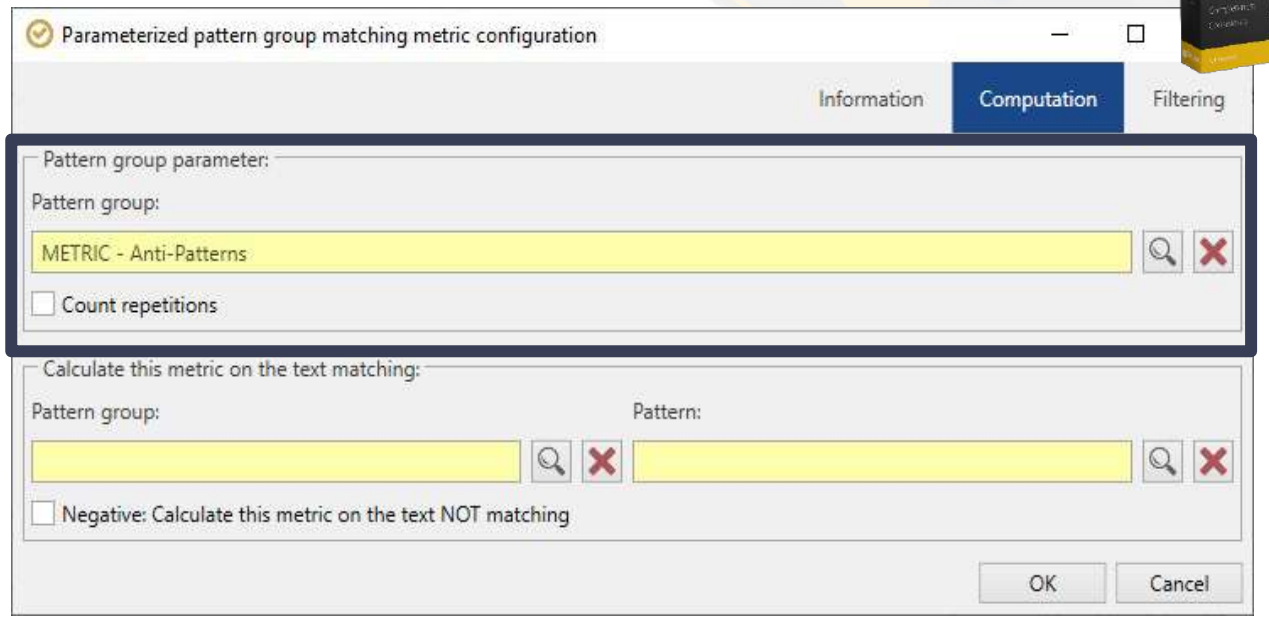
The | <Property> | Of the | <system element> | shall be | NUMBER | UNIT

Correctness metrics - Advanced parametrized metrics

- **Metrics based on Patterns:**
  - Avoid the use of Passive Voice after out of the condition block
  - Avoid the use of Indefinite Articles before an Entity

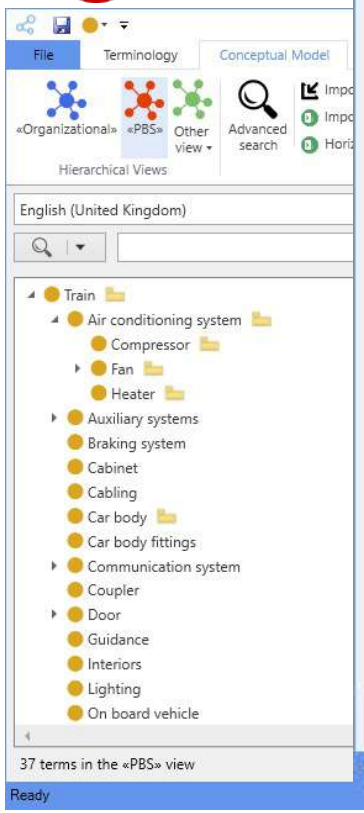


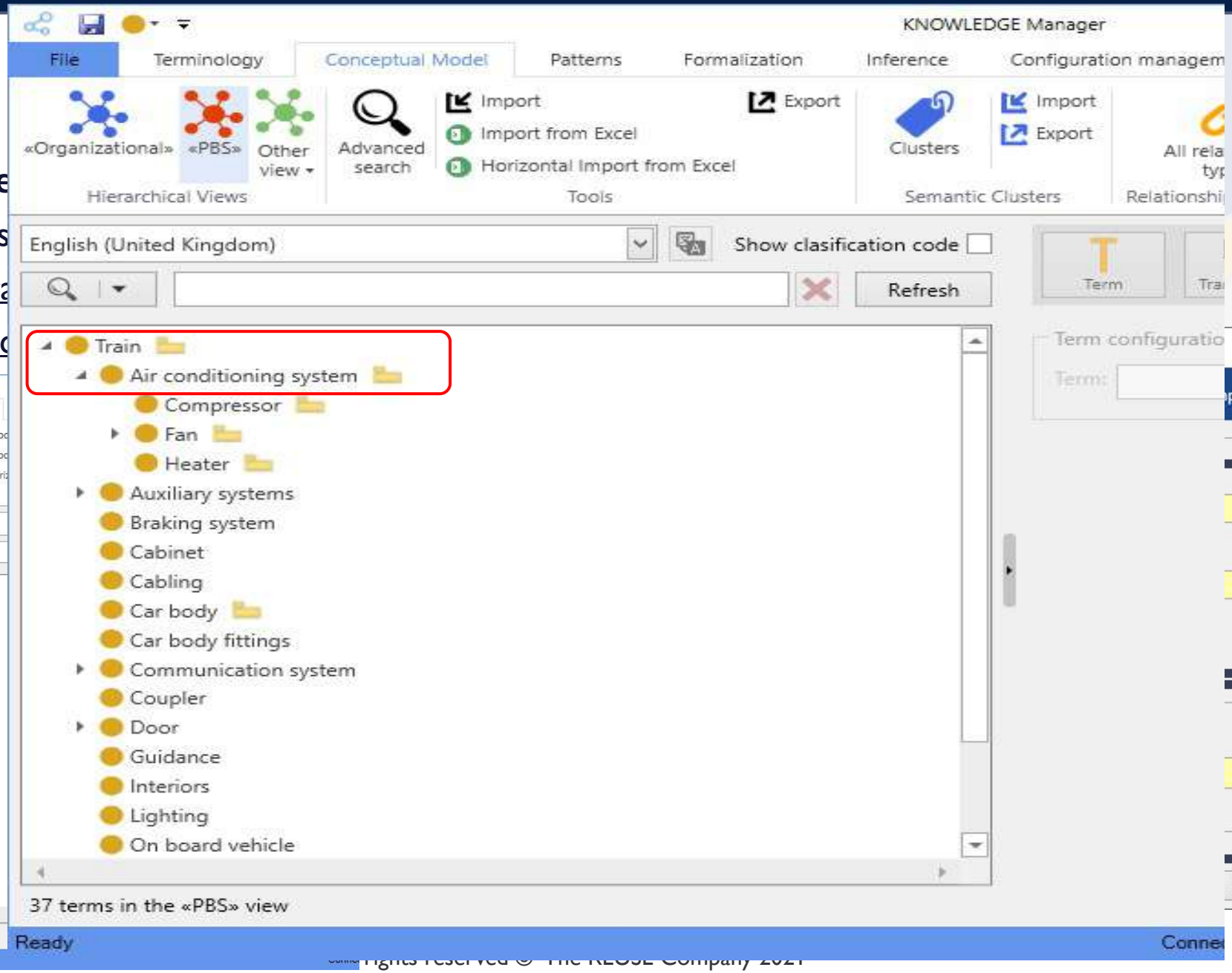
- **Metrics based on Pattern groups:**
  - Avoid inadequate grammar structures:
    - There + MODAL+ be …
    - There has to be
    - NOUN + shall + be + designed + to



Correctness metrics - Advanced parametrized metrics

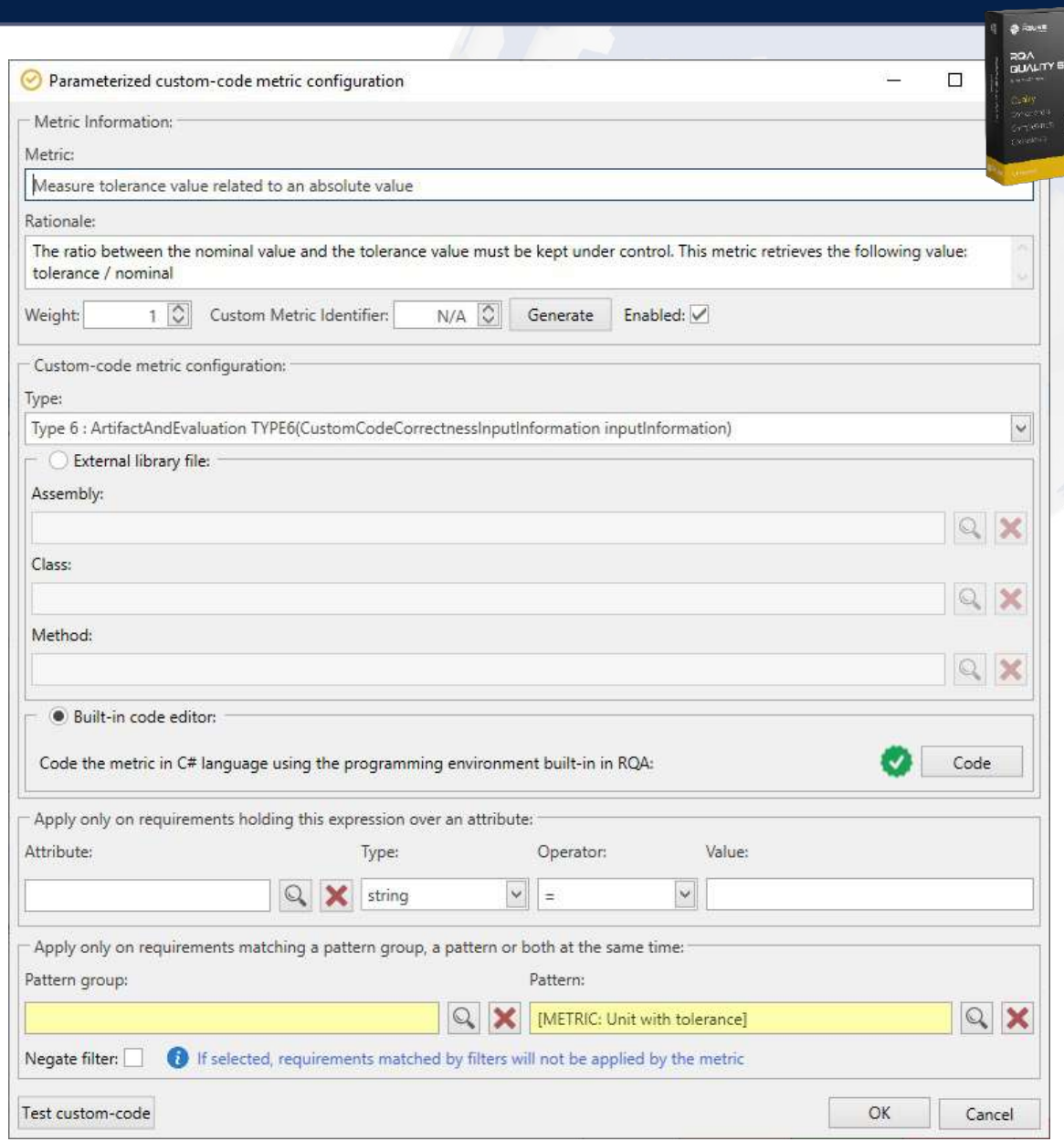
- **Metrics base**
  - Detecting s
    - The tra
    - The a/c





Correctness metrics - Advanced parametrized metrics

- **Metrics based on Custom code:**
  - Ensure tolerance values are in an adequate value range



- **Metrics based on Custom code:**
  - Ensure tolerance values are in an adequate value range

Editing 2 - RQA

File View Log

Authoring without patterns

< No pattern group >

No selected pattern group implies no writing assistance

Normal

Font Arial Font Size 18

The voltage of the system shall be 230 V ± 30 %

Correctness metrics summary:

Low Quality 0.25

Metric	Value
Realism R26 / Tolerance R33 / TRC-M525: Ensure tolerance value are within an adequate value range	0.3

Metric:
Realism R26 / Tolerance R33 / TRC-M525: Ensure tolerance value are within an adequate value range

Quality:

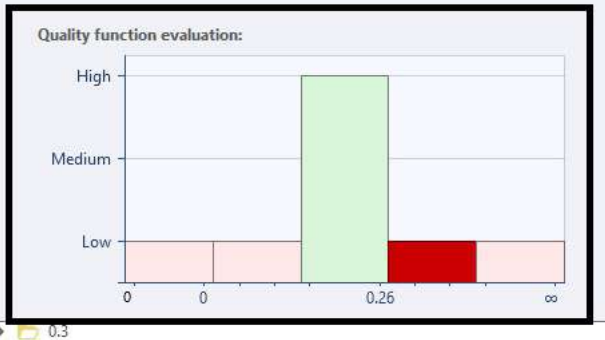
Concepts found:
N/A

Mandatory:
False

Summary:
Tolerance is higher than expected

Recommendation:

Quality function evaluation:



Other quality elements:

Correctness | Consistency | Completeness | Similar requirements | Additional attributes | Syntactic information | Formal representation

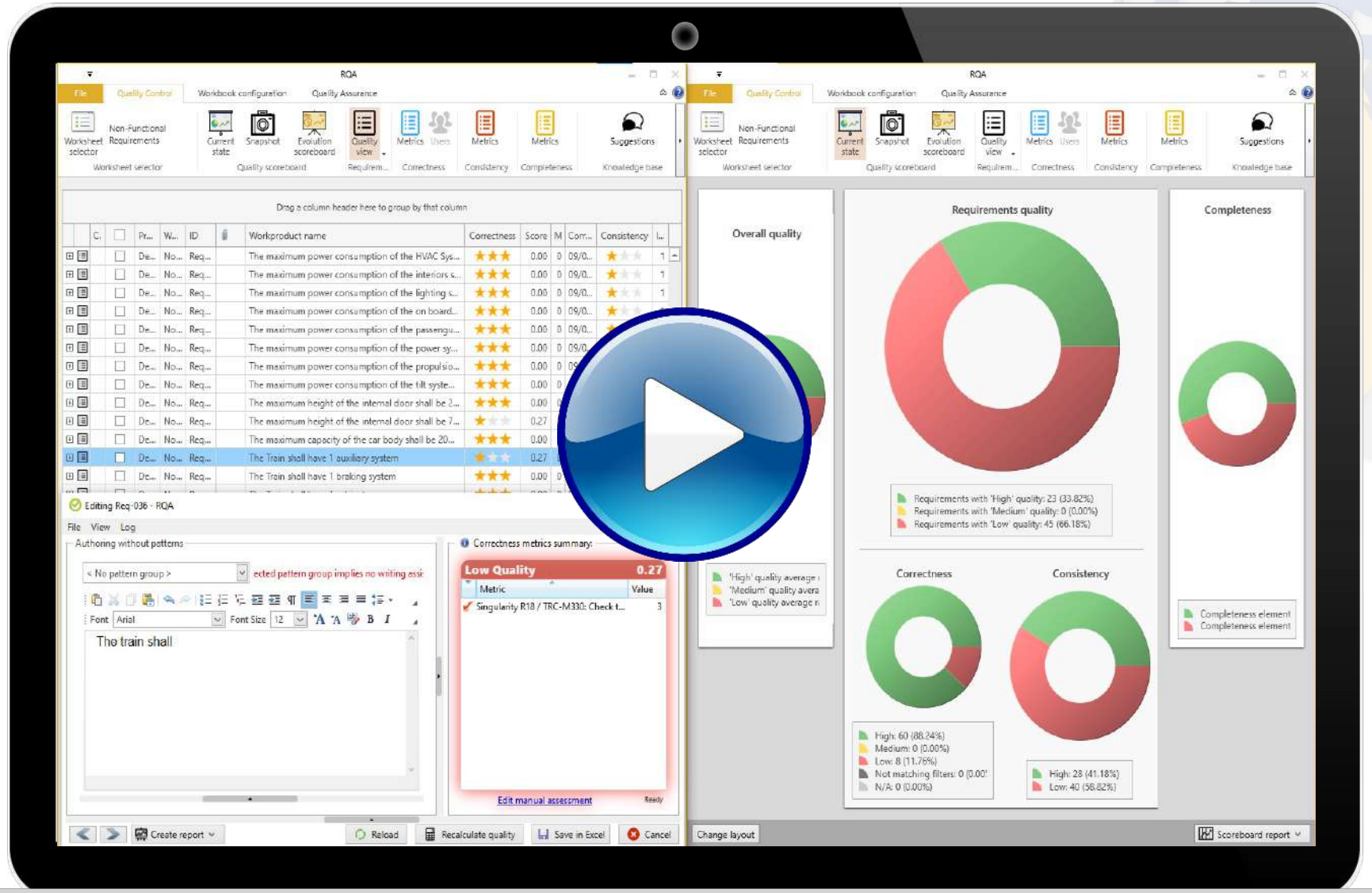
Metric	Correctness	Value	Summary	Mandatory	Weight
Realism R26 / Tolerance R33 / T...	★★★	0.3	Tolerance is higher than expected		1
Abstraction R31 / TRC-M500: A...	★★★	0	N/A		1
Accuracy R01 / TRC-M365: Ave...	★★★	0	N/A		1

0.3

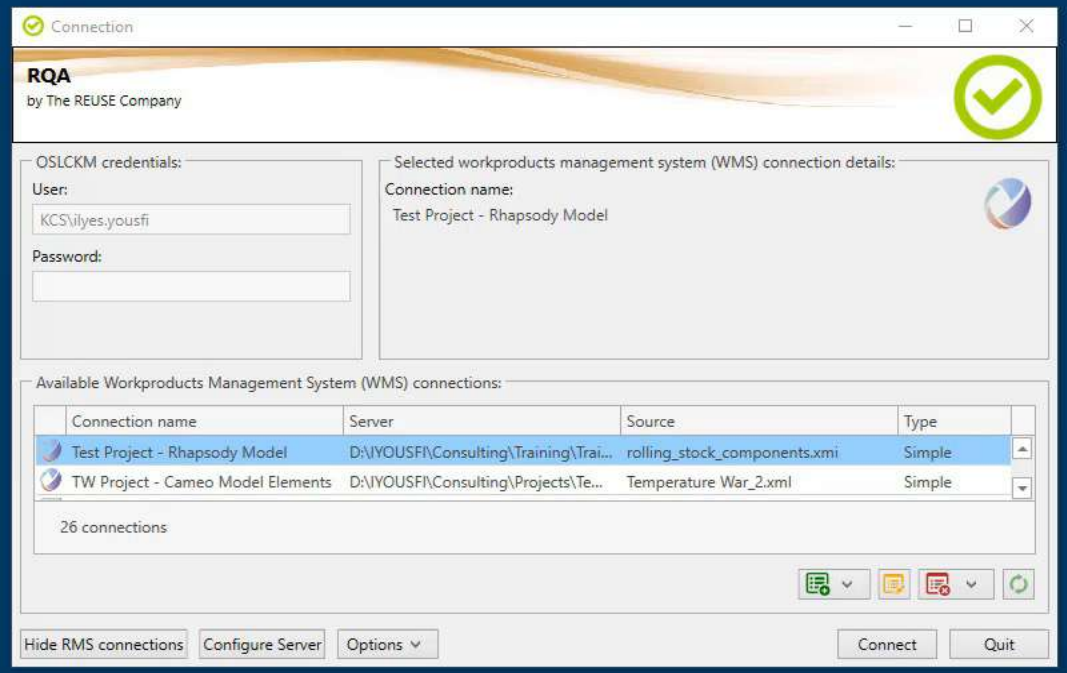
Singularity R18 / Conditions R27 / TRC-M360: Check the number of Modal Verbs

Real-time quality assessment using advanced Correctness metrics

Demo



Live Demo - #1 Filtering requirements



Live Demo - #2 Metrics computation

RQA

File | Quality Control | Workbook configuration | Quality Assurance

Worksheet selector | TWSysR | Current state | Snapshot | Evolution scoreboard | Quality view | Metrics | Users | Metrics | Metrics | Suggestions

Worksheet selector | Quality scoreboard | Requirem... | Correctness | Consistency | Completeness | Knowledge base

Drag a column header here to group by that column

C.	Project	Worksheet	Type	Label	Workproduct name	Correctness	Score	Mandator...	Correctness quality date	Consistency	Issues
	TW - System Requirem...	TWSysR	Physical Design	NFR-30	The Temperature Warrior will utilize the connection plate TW-E40 1020 for the connections establishment.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-32	The Temperature Warrior shall receive electric power through a micro USB cable attached to an external power source.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-33	The Temperature Warrior shall be powered with a 5V current.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Safety	NFR-34	The maximum total power installed in the Temperature Warrior component shall be inferior to 4000 W.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Safety	NFR-35	The maximum power installed of each Temperature Warrior component shall be inferior to 2000 W.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Safety	NFR-36	The Temperature Warrior shall have a grounding.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Software Interface	NFR-37	The Temperature Warrior shall be connected to an external router to obtain connectivity.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Hardware Interface	NFR-38	The Temperature Warrior shall connect to an external router using an ethernet cable RJ45-IP4.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-48	Before starting the competition, an individual checking shall be conducted to verify and validate the fulfilment of the...		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-49	The incompletion of any test section shall divert to the failure of the subject.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-50	The competition shall be completed according to the rules defined within the Project Charter documentation.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-51	The competition shall consist on several rounds.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-52	The Temperature Warrior capable of maintaining the temperature within the range for the most time shall win the ro...		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-53	The Temperature Warrior shall receive a larger amount of points the higher their ranking position is in the round.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-54	The execution rounds shall be separated by configuration breaks.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-55	The Temperature Warrior's reconfiguration shall have a limited time of 2 minutes.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-56	The order of reconfiguration shall be defined by the ranking of each Temperature Warrior.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-57	Before every round, the required parameters shall be specified by the competition regulator.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-58	Before every round, a single or several temperature ranges shall be defined.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-59	Before every round, the time for the round shall be defined.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-60	Before every round, the maximum cadence for the temperature to be measured shall be defined.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-61	All Temperature Warriors shall compete physically in a common area (arena) autonomously.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-62	The arena shall consist on three contiguous 50x50 squares.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-63	The competition shall take place in an environment between 20 and 22 °C.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-64	During the competition, they Temperature Warrior shall be in release mode.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-65	During the competition, the code shall not be modified.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Competition	NFR-66	The Temperature Warrior shall be physically disconnected to control laptop (CL).		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-67	The software of the Temperature Warrior shall be developed in C#.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-70	The Temperature Warrior shall be built utilizing physical components.		N/A	0	N/A		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-71	The Temperature Warrior shall weight less than 50 kg.		N/A	0	N/A		N/A

Total items: 107 , Requirements: 107

Hide non-requirement | Custom report | Short worksheet quality report | Full worksheet quality report | Assess quality | Author work-product

Live Demo - #3 Computation vs. Filtering

RQA

File | Quality Control | Workbook configuration | Quality Assurance

Worksheet selector | TWSysR | Current state | Snapshot | Evolution scoreboard | Quality view | Metrics | Users | Metrics | Metrics | Suggestions

Worksheet selector | Quality scoreboard | Requirem... | Correctness | Consistency | Completeness | Knowledge base

Drag a column header here to group by that column

C.	Project	Worksheet	Type	Label	Workproduct name	Correct...	Score	Mandatory metr...	Correctness quality date	Consistency	Issues
	TW - System Requirem...	TWSysR	Functional	SR-01	The Temperature Warrior shall be able to measure the physical environment temperature.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requirem...	TWSysR	Functional	SR-03	The Temperature Warrior shall be capable of increasing the environment temperature.	★★★	0.00	0	06/09/2021 22:27:59		N/A
	TW - System Requirem...	TWSysR	Functional	SR-04	The Temperature Warrior shall be capable of decreasing the environment temperature.	★★★	0.00	0	06/09/2021 22:27:58		N/A
	TW - System Requirem...	TWSysR	Functional	SR-08	The Temperature Warrior shall be able to display on the screen the combat time remaining.	★★★	0.00	0	06/09/2021 22:27:59		N/A
	TW - System Requirem...	TWSysR	Configuration	SR-21	The Temperature Warrior shall assure all required parameters are input according to the displayed instructions.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requirem...	TWSysR	Functional	SR-23	The Temperature Warrior shall display the ready mode interface if all input parameters are correct.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requirem...	TWSysR	Functional	SR-26	The system's operational activity shall be autonomous during combat phase.	★★★	0.00	0	06/09/2021 22:27:55		N/A
	TW - System Requirem...	TWSysR	Configuration	SR-30	The Temperature Warrior shall allow the configuration of the temporal duration of the combat.	★★★	0.00	0	06/09/2021 22:27:58	★★★	N/A
	TW - System Requirem...	TWSysR	Configuration	SR-31	The Temperature Warrior shall allow the configuration of the sensor's maximum temperature threshold.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requirem...	TWSysR	Configuration	SR-32	The Temperature Warrior shall allow the configuration of the sensor's minimum temperature threshold.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requirem...	TWSysR	Configuration	SR-33	The Temperature Warrior shall allow the configuration of the sensor's temperature control time.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requirem...	TWSysR	User Interface	SR-42	The laptop shall be able to send all configuration input parameters.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requirem...	TWSysR	User Interface	SR-43	The control laptop shall be able to request the change to ready mode.	★★★	0.00	0	06/09/2021 22:27:54		N/A
	TW - System Requirem...	TWSysR	User Interface	SR-45	The control laptop shall be able to request the Temperature Warrior changing into combat mode when being in ready mode.	★★★	0.00	0	06/09/2021 22:27:55		N/A
	TW - System Requirem...	TWSysR	Physical Design	SR-47	The Temperature Warrior shall regulate the surrounding temperature utilizing a software algorithm.	★★★	0.00	0	06/09/2021 22:27:56		N/A
	TW - System Requirem...	TWSysR	Standards Compliance	NFR-09	The configuration of the Temperature Warrior regarding the temporal duration in combat mode shall be in seconds.	★★★	0.00	0	06/09/2021 22:27:56		N/A
	TW - System Requirem...	TWSysR	Safety	NFR-15	The operators of the Temperature Warrior shall utilize at all times insulating footwear with plastic materials.	★★★	0.00	0	06/09/2021 22:27:54		N/A
	TW - System Requirem...	TWSysR	Configuration	NFR-20	The maximum temperature allowed for the definition of the temperature ranges shall be between 28 °C and 30 °C.	★★★	0.00	0	06/09/2021 22:27:57		N/A
	TW - System Requirem...	TWSysR	Configuration	NFR-21	The minimum temperature allowed for the definition of the temperature ranges shall be between 10 and 12 °C.	★★★	0.00	0	06/09/2021 22:27:58		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-24	The protective walls of the Temperature Warrior shall protect at most 5 cm x 5 cm.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-26	The maximum wingspan of the Temperature Warrior shall not exceed 50 cm x 50 cm x 50 cm.	★★★	0.00	0	06/09/2021 22:27:54		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-27	The Temperature Warrior shall use a motherboard Netduino Plus 2 as physical control Temperature Warrior.	★★★	0.00	0	06/09/2021 22:27:55		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-28	The Temperature Warrior shall utilize, at least, a temperature sensor TMP36GT9 for the environment temperature measurement.	★★★	0.00	0	06/09/2021 22:27:56		N/A
	TW - System Requirem...	TWSysR	Physical Design	NFR-29	The Temperature Warrior shall utilize the Lumex LCD-S301C31TR screen for the information visualization.	★★★	0.00	0	06/09/2021 22:27:56		N/A
	TW - System Requirem...	TWSysR	Safety	NFR-34	The maximum total power installed in the Temperature Warrior component shall be inferior to 4000	★★★	0.00	0	06/09/2021 22:27:53		N/A

Total items: 107 , Requirements: 107

Hide non-requirement | Custom report | Short worksheet quality report | Full worksheet quality report | Assess quality | Author work-product

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Live Demo - #4 Create an Advanced Correctness metric

RQA

File | Quality Control | Workbook configuration | Quality Assurance

Worksheet selector: TWSysR
Quality scoreboard: Current state | Snapshot | Evolution scoreboard
Requirem...: Quality view
Correctness: Metrics | Users
Consistency: Metrics
Completeness: Metrics
Knowledge base: Suggestions

Drag a column header here to group by that column

C.	Project	Worksheet	Type	Label	Workproduct name	Correctness	Score	Mandatory metri...	Correctness quality date	Consistency	Issues
	TW - System Requireme...	TWSysR	Functional	SR-01	The Temperature Warrior shall be able to measure the physical environment temperature.	★★★	0.00	0	06/09/2021 22:27:53	★★★	N/A
	TW - System Requireme...	TWSysR	Functional	SR-02	The Temperature Warrior shall be able to modify its physical environment temperature.	★	0.32	0	06/09/2021 22:27:59		N/A
	TW - System Requireme...	TWSysR	Functional	SR-03	The Temperature Warrior shall be capable of increasing the environment temperature.	★★★	0.00	0	06/09/2021 22:27:59		N/A
	TW - System Requireme...	TWSysR	Functional	SR-04	The Temperature Warrior shall be capable of decreasing the environment temperature.	★★★	0.00	0	06/09/2021 22:27:58		N/A
	TW - System Requireme...	TWSysR	Functional	SR-05	The Temperature Warrior shall be able to keep track of the time in which the temperature of the sensor is within the previously defined thresholds to its functional release.	★	1.12	0	06/09/2021 22:27:59		N/A
	TW - System Requireme...	TWSysR	Functional	SR-06	The Temperature Warrior shall be able to display on a screen the measured temperature by the sensor.	★★	0.16	0	06/09/2021 22:27:59		N/A
	TW - System Requireme...	TWSysR	Functional	SR-07	The Temperature Warrior shall be able to display on a screen the temperature range within which the sensor must be maintained.	★	0.96	0	06/09/2021 22:27:59		N/A
	TW - System Requireme...	TWSysR	Functional	SR-08	The Temperature Warrior shall be able to display on the screen the combat time remaining.	★★★	0.00	0	06/09/2021 22:27:59		N/A
	TW - System Requireme...	TWSysR	Functional	SR-09	At the end of each round, the Temperature Warrior shall be able to display on the screen the time in which the temperature of the sensor has been within the thresholds.	★	0.32	0	06/09/2021 22:27:59		N/A
	TW - System Requireme...	TWSysR	Architectural	SR-10	In order to control and coordinate the operations, the Temperature Warrior shall have a Control System.	★	0.64	0	06/09/2021 22:27:59		N/A
	TW - System Requireme...	TWSysR	Architectural	SR-11	In order to allow user interaction, the Temperature Warrior shall have a Management System.	★	0.32	0	06/09/2021 22:27:53		N/A
	TW - System Requireme...	TWSysR	Architectural	SR-12	In order to manage the environment temperature, the Temperature Warrior shall have a Temperature Actuation System.	★	0.64	0	06/09/2021 22:27:53		N/A
	TW - System Requireme...	TWSysR	Architectural	SR-13	In order to register the environment temperature, the Temperature Warrior shall have a Temperature Registration System.	★	0.32	0	06/09/2021 22:27:54		N/A
	TW - System Requireme...	TWSysR	Architectural	SR-14	In order to provide the energy resources required, the Temperature Warrior shall have a Power System.	★	0.32	0	06/09/2021 22:27:54		N/A
	TW - System Requireme...	TWSysR	Functional	SR-15	The Temperature Warrior shall operate in the following modes: configuration prepared and combat.	★	0.32	0	06/09/2021 22:27:55		N/A
	TW - System Requireme...	TWSysR	Functional	SR-16	The Temperature Warrior shall operate in the configuration mode during the input of temperature ranges, refresh and combat times, as perimeters defined for the battle.	★	0.32	0	06/09/2021 22:27:56		N/A
	TW - System Requireme...	TWSysR	Functional	SR-17	The Temperature Warrior shall change to validation mode when the user inputs the corresponding values and presses the finish input interface.	★★	0.16	0	06/09/2021 22:27:56		N/A
	TW - System Requireme...	TWSysR	Functional	SR-18	The Temperature Warrior shall enter the ready mode when the configuration mode input parameters are validated.	★	0.32	0	06/09/2021 22:27:57		N/A
	TW - System Requireme...	TWSysR	Functional	SR-19	The Temperature Warrior shall be able to control that the maximum temperature threshold is not exceeded by shutting itself down.	★	0.80	0	06/09/2021 22:27:58		N/A
	TW - System Requireme...	TWSysR	Functional	SR-20	The Temperature Warrior shall be able to control that the minimum temperature threshold is not exceeded by shutting itself down.	★	0.80	0	06/09/2021 22:27:58		N/A
	TW - System Requireme...	TWSysR	Configuration	SR-21	The Temperature Warrior shall assure all required parameters are input according to the displayed instructions.	★★★	0.00	0	06/09/2021 22:27:53		N/A
	TW - System Requireme...	TWSysR	Functional	SR-22	The Temperature Warrior shall remain in configuration mode whenever any of the input parameters is empty or considered to be incorrect.	★	0.80	0	06/09/2021 22:27:53		N/A

Total items: 107 , Requirements: 107

Hide non-requirement | Custom report | Short worksheet quality report | Full worksheet quality report | Assess quality | Author work-product

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Q&A

- **Completeness: tips and tricks to address the most challenging topic towards high-quality specifications**
  - According to many different surveys and studies, requirements completeness is the factor that impacts the most when verifying requirements quality.
  - This webinar will show how lacking completeness can impact systems engineering projects and review some tips and tricks to reduce the gap between an actual specification and the ideal 'complete' specification. Asking the proper questions contributes to reducing this gap, so we'll see some of those questions (you are welcome to prepare and share yours during the session).
  - This webinar will provide more detail on this topic and show how the tool RQA – QUALITY Studio can contribute to complete specifications.
  - **Dates:** September 28 and 30, 2021
  - https://www.reusecompany.com/webinars/completeness-tips-and-tricks-to-address-the-most-challenging-topic-towards-high-quality-specifications


Q&A

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