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# Boosting Requirements Management capabilities in MS Word: Managing Attributes



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THE  
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- Short introduction
- Attributes – What and Why?
- The approach to manage attributes
- Live demo
- Q&A





- **The Systems **ENGINEERING** Suite:**
  - RQA – QUALITY Studio
  - RAT – AUTHORIZING Tool
  - TRACEABILITY Studio
  - V&V Studio
  - KM – Knowledge Manager
- SES ENGINEERING Studio
- **SES ENGINEERING Studio add-in for MS Word**



## The PRESENTER



- ▶ Christer worked in the Medical and Defence sectors at either industrial organisations or as business entrepreneur for over 20 years at various operational and management levels.
- ▶ Currently he is the CEO of REUSE Scandinavia in Sweden which specializes in requirements quality services and tools within the Scandinavian region.
- ▶ Christer is a driven change facilitator and has successfully adopted and implemented international process frameworks and standards within industry.
- ▶ He has in recent years specialised in organisational learning, change management, process improvements, LEAN and Systems Engineering (SE) and Requirements Engineering (RE).



# **Attributes**

## **What and why?**





## Attributes – What are they?

- ▶ An **attribute** is additional information associated with an entity which is used to aid in its definition and management.
- ▶ A **requirement expression** includes a requirement statement and a set of associated attributes.
- ▶ The attributes can be organized within the following five broad categories:
  - ▶ Attributes to help **define needs and requirements statements** and understand their intent.
  - ▶ Attributes associated with **system verification** or **system validation**.
  - ▶ Attributes to help **manage the needs or requirements across the lifecycle**.
  - ▶ Attributes to **show applicability** and enable reuse of the needs and requirements.
  - ▶ Attributes to **aid in product line management**



## Attributes – What's the purpose?

- ▶ The reason for using attributes is to **help the project team better manage the project**
- ▶ **Attributes help support the SE activities** enabling the information contained within the attributes to be structured for ease of processing, filtering, sorting, etc., enabling the needs or requirements to be sorted or selected for further action, and enabling management and insight into the needs and design input requirements definition as well as the development activities of the SOI across its lifecycle.
- ▶ **A word of caution;** as with the use of all information, a “lean” approach should be taken when deciding which attributes will be used. **Do not include a specific attribute unless:**
  - ▶ The project team, their management, or their customer has asked for that attribute
  - ▶ They plan to use the attribute in some manner to manage the project and sets of needs and requirements.

*From: INCOSE Needs and Requirements Manual  
Needs, Requirements, Verification, Validation Across the Lifecycle*





## Example of Requirement attributes

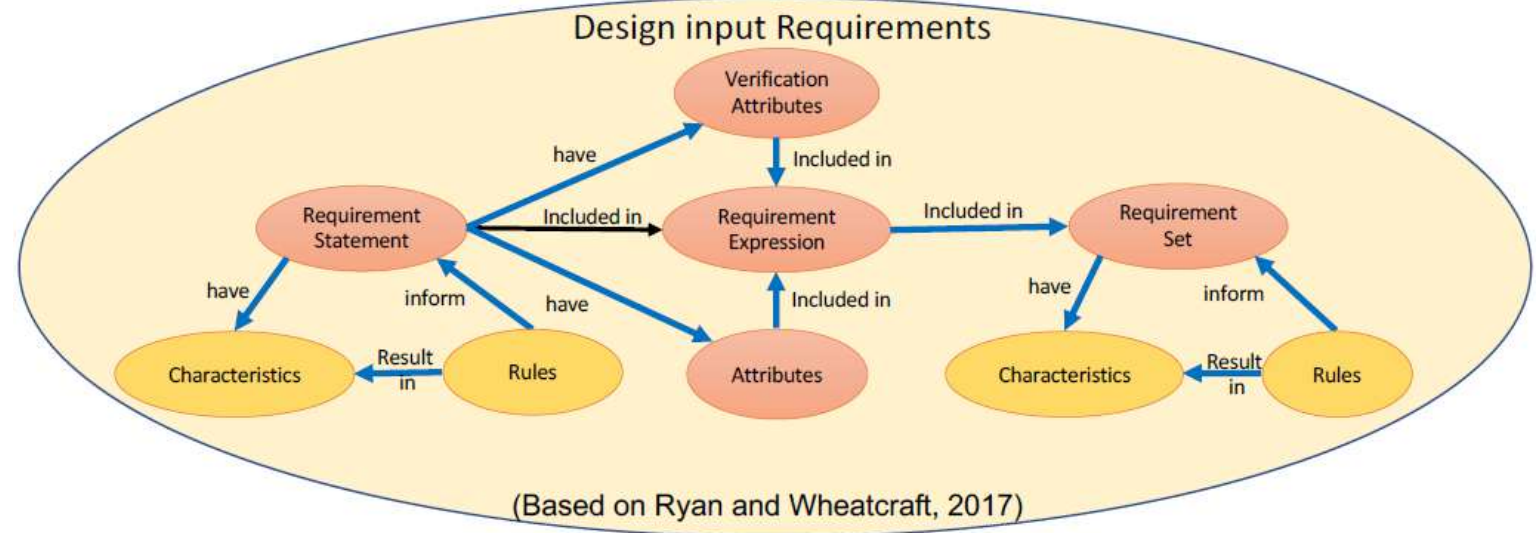
- ▶ **Attributes to Help Define Needs and Requirement and Their Intent:**
  - ▶ Rational
  - ▶ Trace-to-parent
  - ▶ Trace-to-source
  - ▶ State/Mode
- ▶ **Attributes Associated with System Verification and System Validation:**
  - ▶ Verification/Validation Method
  - ▶ Verification/Validation Strategy
  - ▶ Verification/Validation Success Criteria
  - ▶ Verification/Validation Result



## Example of Requirement attributes

### ► Attributes to Show Applicability and Enable Reuse:

- Unique Identifier
- Originator/Owner
- Data entered
- Date changed
- Change proposed
- Change date / Approval date
- Risk
- Implementation status
- Type / Category
- Additional Comments





## Example of Requirement attributes

- ▶ **Attributes to Help Manage the Needs and Requirements:**
  - ▶ Applicability
  - ▶ Country
  - ▶ Market Segment
- ▶ **Attributes to Aid in Product Line Management:**
  - ▶ Product line
  - ▶ Product line variant requirement





**The approach  
To manage  
attributes**

# Example of Requirement attributes – Example from IBM DOORS



Columns and Attributes - DOORS								
Columns								
Attributes								
Types								
Name	Description	Type	DXL based	Default value	Inherit value	Exists for	Multi valued	URI
Absolute Number	System Attribute	Integer	No		No	Object	No	http://jazz.net/ns/m...
Created By	System Attribute	String	No		No	Module & Object	No	http://jazz.net/ns/m...
Created On	System Attribute	Date	No		No	Module & Object	No	http://jazz.net/ns/m...
Created Thru	System Attribute	Created Thru	No	Manual Input	No	Object	No	http://jazz.net/ns/m...
Description	System Attribute	String	No		No	Module	No	http://jazz.net/ns/m...
Last Modified By	System Attribute	String	No		No	Module & Object	No	http://jazz.net/ns/m...
Last Modified On	System Attribute	Date	No		No	Module & Object	No	http://jazz.net/ns/m...
Name	System Attribute	String	No		No	Module	No	http://jazz.net/ns/m...
Object Heading	System Attribute	String	No		No	Object	No	http://jazz.net/ns/m...
Object Short Text	System Attribute	String	No		No	Object	No	http://jazz.net/ns/m...
Object Text	System Attribute	Text	No		No	Object	No	http://jazz.net/ns/m...
Prefix	System Attribute	String	No		No	Module	No	http://jazz.net/ns/m...

New Attribute - DOORS

GeneralAccess (Definition)Access (Value)

Attribute:  
Name:

Description:

Type:

Locale:

☐ DXL attribute

☐ Multi-valued

☐ Default value:

Attribute scope:  
☒ Objects  
☐ Module

Attribute features:  
☐ Inherit value  
☒ Affect change bars  
☒ Affect change dates  
☒ Generate history

☒ Add new attribute to current view



## Example of Requirement attributes – Example from SES

### ► Add/edit/delete attributes

#### ► Types

#### ► Formats

### ► Manage enumerations

### ► Manage workflows

### ► Column management

#### ► Position

#### ► Filtering

The screenshot displays the SES ENGINEERING Studio interface. The top window shows a document titled "JWST Mission Requirements Document.docx" with a table of contents and a list of requirements. The bottom window shows a detailed view of a requirement, "MR-99 The JWST Observatory wet mass shall not exceed 6,159 kilograms." A context menu is open over the requirement table, highlighting the "Attributes" option. The menu also includes options like "Add attribute (and column)", "Manage Enums", "Manage Workflows", and "Manage Attributes".

State in the repository	Image	Visual Workproduct	Owner	Description	Rational	Review od
Loaded		Module - JWST		Module - JWST Mission Requirements Document.docx		
Loaded		MR-99	JWST design team	The JWST Observatory wet mass shall not exceed 6,159 kilograms.		

JWST Mission Requirements Document  
JWST-RQMT-000634  
Revision P

3.7.1.1.2 Maximum Z Excursion  
MR-388 The Observatory shall provide the delta velocity, as computed by the Ground Segment, to maintain the excursion of the orbit about L2 in the Z direction (defined in Figure 3-2) to less than or equal to 500,000 Km.

MR-416 The Observatory shall provide the delta velocity, as computed by the Ground Segment, to maintain the excursion of the orbit about L2 in the Y direction (defined in Figure 3-2) to less than or equal to 800,000 Km.

3.7.1.1.3 Orbit Maximum Y Excursion  
MR-389 The Observatory shall provide the delta velocity, as computed by the Ground Segment, to maintain the excursion of the orbit about L2 in the Y direction (defined in Figure 3-2) to less than or equal to 800,000 Km.

3.7.1.2 Observatory Mass  
3.7.1.2.1 Observatory Mass Allocation  
MR-99 The JWST Observatory wet mass shall not exceed 6,159 kilograms.

3.7.1.2.2 Mission-Unique Launch Vehicle Accommodation



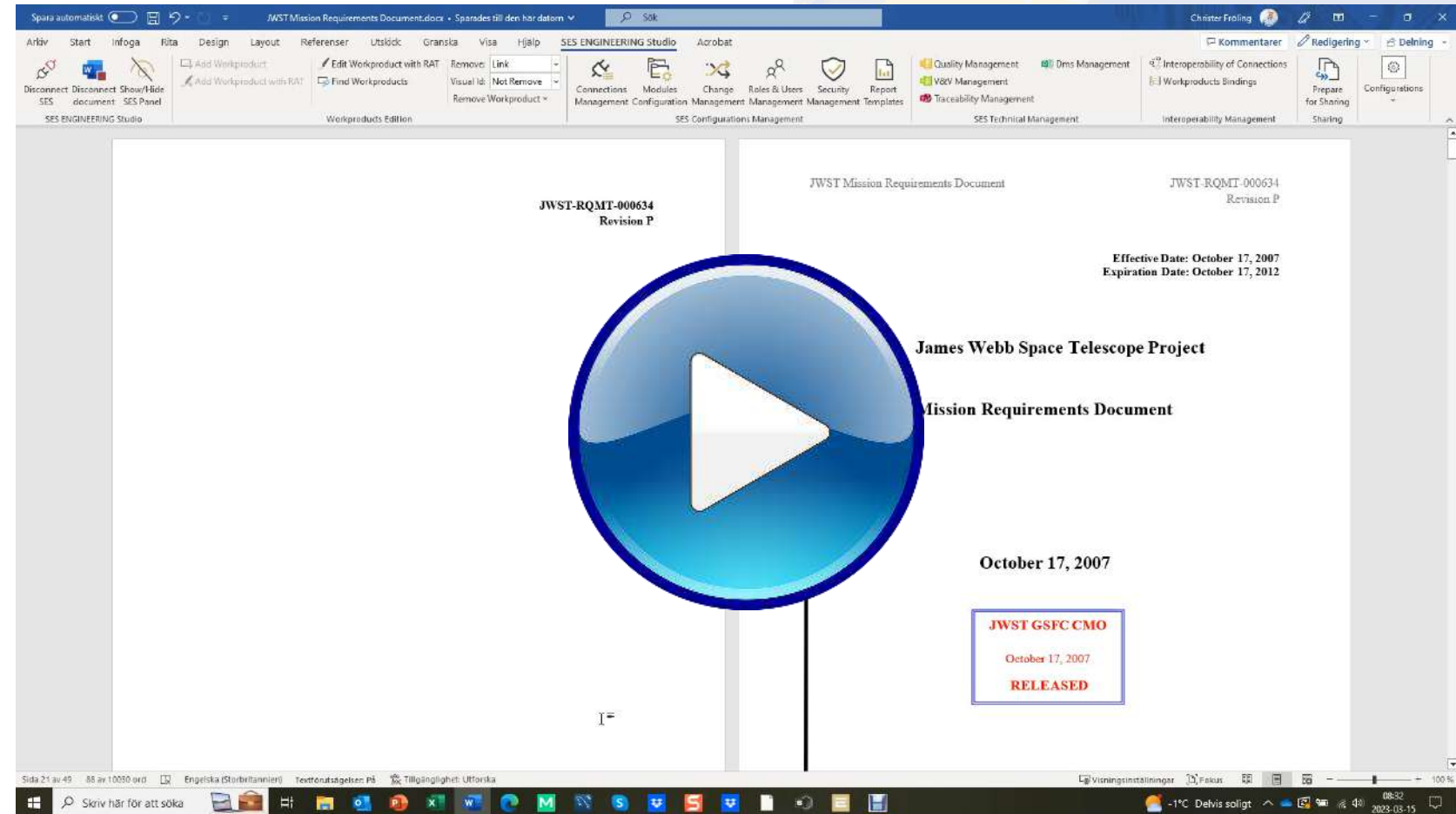


**Demonstration**



## Steps:

1. Open MS-Word
2. Connect to your ontology
3. Open SES Engineering Studio
4. View the attribute options
5. Add an attribute
6. Perform change and show workflow management







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## Boosting MS Word with Requirements Management Capabilities

1. Introduction to the MS Word Add-in of SES ENGINEERING Studio
2. Writing high-quality requirements in MS Word
3. Parsing existing MS Word documents using different techniques
4. Managing requirement attributes in MS Word
5. Managing requirement baselines and versions in MS Word
6. Managing traceability in MS Word
7. Transforming MS Word requirements
8. Propagating changes from traceability links
9. Collaboration
10. Reporting Systems Engineering artifacts through MS Word

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15 '  
webinar

## Episode 5. Managing requirements baselines and versions in MS Word.

This episode will cover how the SES ENGINEERING Studio provides basic Requirements Management capabilities like **managing requirements versions, baselining** of a set of requirements as well as change management. All while using MS Word and the SES Add-in to perform your requirements work.

### Date:

Tuesday, March 29<sup>th</sup>, 2023, 5:00 PM CET (Madrid)/ 5:00 PM JST (Tokyo)/ 7:00 PM AEDT (Sydney)

Thursday, March 30<sup>th</sup>, 2023, 9:00 PM CET (Madrid)/ 8:00 AM PST (Los Angeles)/ 11:00 AM EST (Detroit)





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