

TRACEABILITY Studio:

a SMART tool to automatize the management of traces



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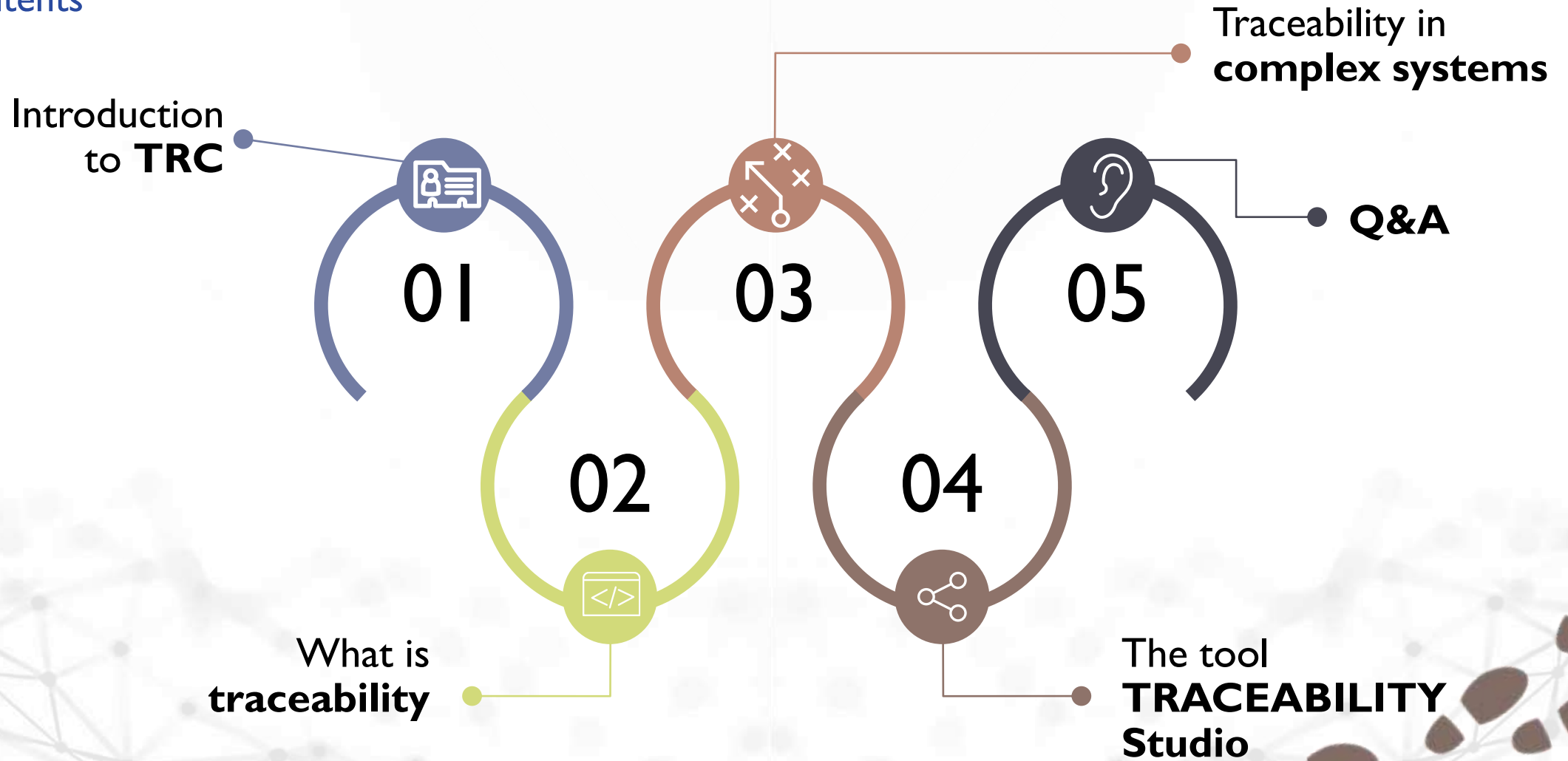


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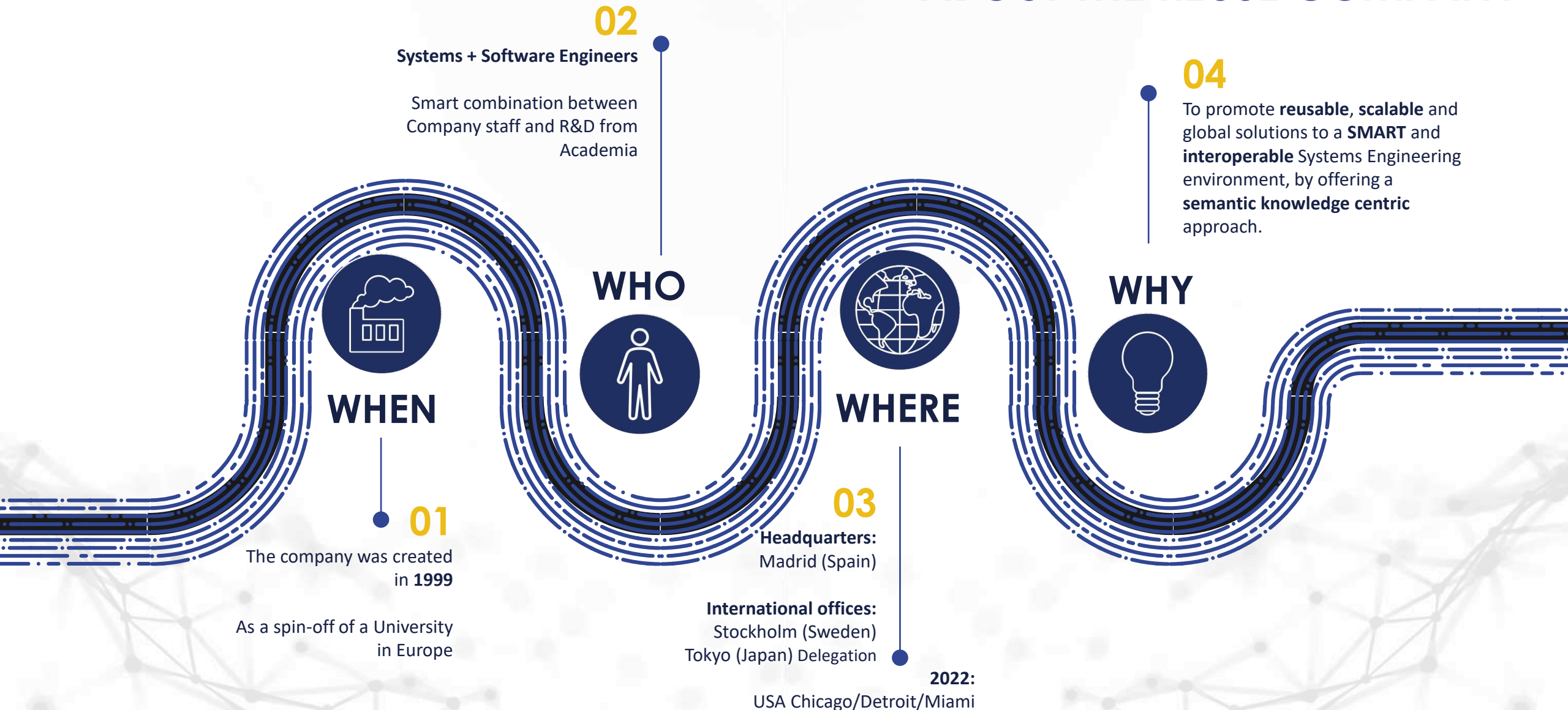


EMEA WS
Europe, Middle East, Africa
Workshop 2021

Contents



ABOUT THE REUSE COMPANY



WHO IS USING OUR TECHNOLOGY?

Aerospace and defense



AIRBUS
GROUP
INNOVATIONS

SAFRAN
AIRCRAFT ENGINES

AIRBUS
DEFENCE & SPACE

esa
European Space Agency

THALES



aes

AIRBUS

THALES
Communications & Security
S.A.S.

HENSOLDT



arianeGROUP

Energy



**FUSION
FOR
ENERGY**



REPSOL

Healthcare



Automotive



RENAULT



TOYOTA

FCA

FIAT CHRYSLER AUTOMOBILES

Other industries



SIEMENS



ELRA
European Land Registry Association

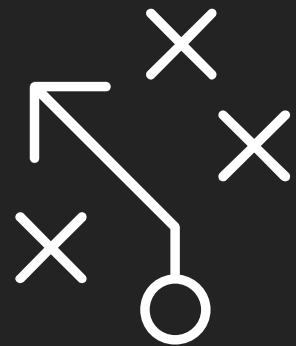
rtve



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lo blanch**
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What is Traceability

What is traceability?

- The capacity to find where a product was made
- What raw material and added components were used
- How it was produced
- Where it was stored
- How it has been released
- All along the logistic chain
- ...
- From beginning to end



What is traceability?: Basic approach

Sample traceability matrix

Requirement Identifiers	Reqs Tested	REQ1 UC 1.1	REQ1 UC 1.2	REQ1 UC 1.3	REQ1 UC 2.1	REQ1 UC 2.2	REQ1 UC 2.3.1	REQ1 UC 2.3.2	REQ1 UC 2.3.3	REQ1 UC 2.4	REQ1 UC 3.1	REQ1 UC 3.2	REQ1 TECH 1.1	REQ1 TECH 1.2	REQ1 TECH 1.3
Test Cases	321	3	2	3	1	1	1	1	1	1	2	3	1	1	1
Tested Implicitly	77														
1.1.1	1	x													
1.1.2	2		x	x											
1.1.3	2	x											x		
1.1.4	1			x											
1.1.5	2	x												x	
1.1.6	1		x												
1.1.7	1			x											
1.2.1	2				x		x								
1.2.2	2					x		x							
1.2.3	2								x	x					
1.3.1	1										x				
1.3.2	1										x				
1.3.3	1											x			
1.3.4	1											x			
1.3.5	1											x			
etc....															
5.6.2	1														x



Might be good as a first step



Allows to check where every requirement comes from



Allows you to check completeness of tests



Ensures that implementation meets specification



Enough for some projects (e.g. SW)



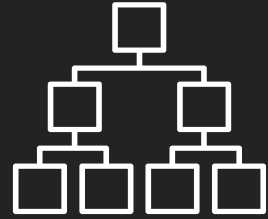
Not enough in complex projects



No support to req. decomposition or design



Doesn't satisfy standards like: ARP4754, DO-174, DO-254, ISO26262...



Traceability in complex S.E. projects

What is traceability?: INCOSE

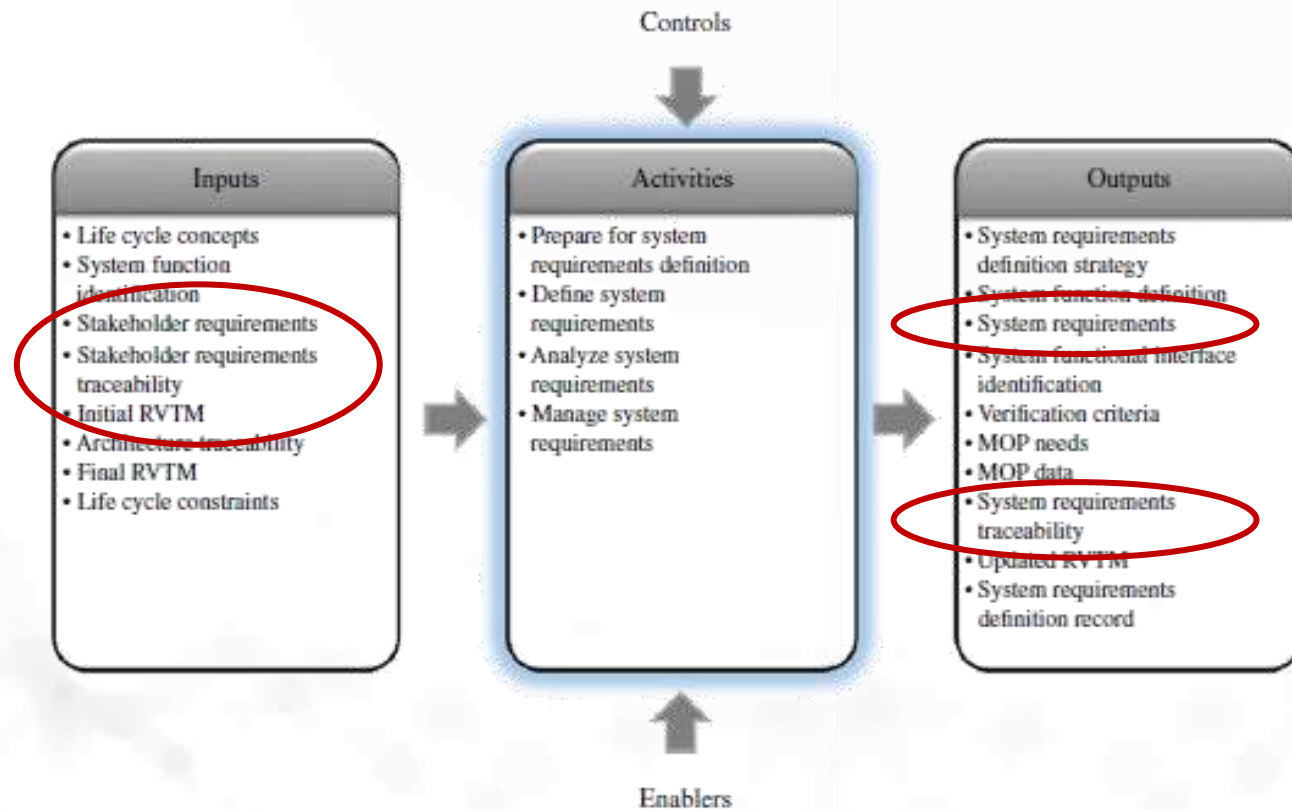


FIGURE 4.5 IPO diagram for the system requirements definition process. INCOSE SEH original figure created by Shortell and Walden. Usage per the INCOSE Notices page. All other rights reserved.

Source: INCOSE Systems Engineering Handbook, Ed. 4

What is traceability?: INCOSE

” **“Manage System Requirements:** Establish and maintain traceability between the system requirements and the relevant elements of the system definition (e.g., stakeholder requirements, architecture elements, interface definitions, analysis results, verification methods or techniques, and allocated, decomposed and derived requirements.”

Source: INCOSE Systems
Engineering Handbook, Ed. 4

” **“Requirement’s traceability is the ability to describe and follow the life of a requirement, in both a forwards and backwards direction (i.e., from its origins, through its development and specification, to its subsequent deployment and use, and through periods of on-going refinement and iteration in any of these phases).”**

Source: Gotel and Finkelstein

What is traceability?: INCOSE

Source: INCOSE Systems Engineering Handbook, Ed. 4

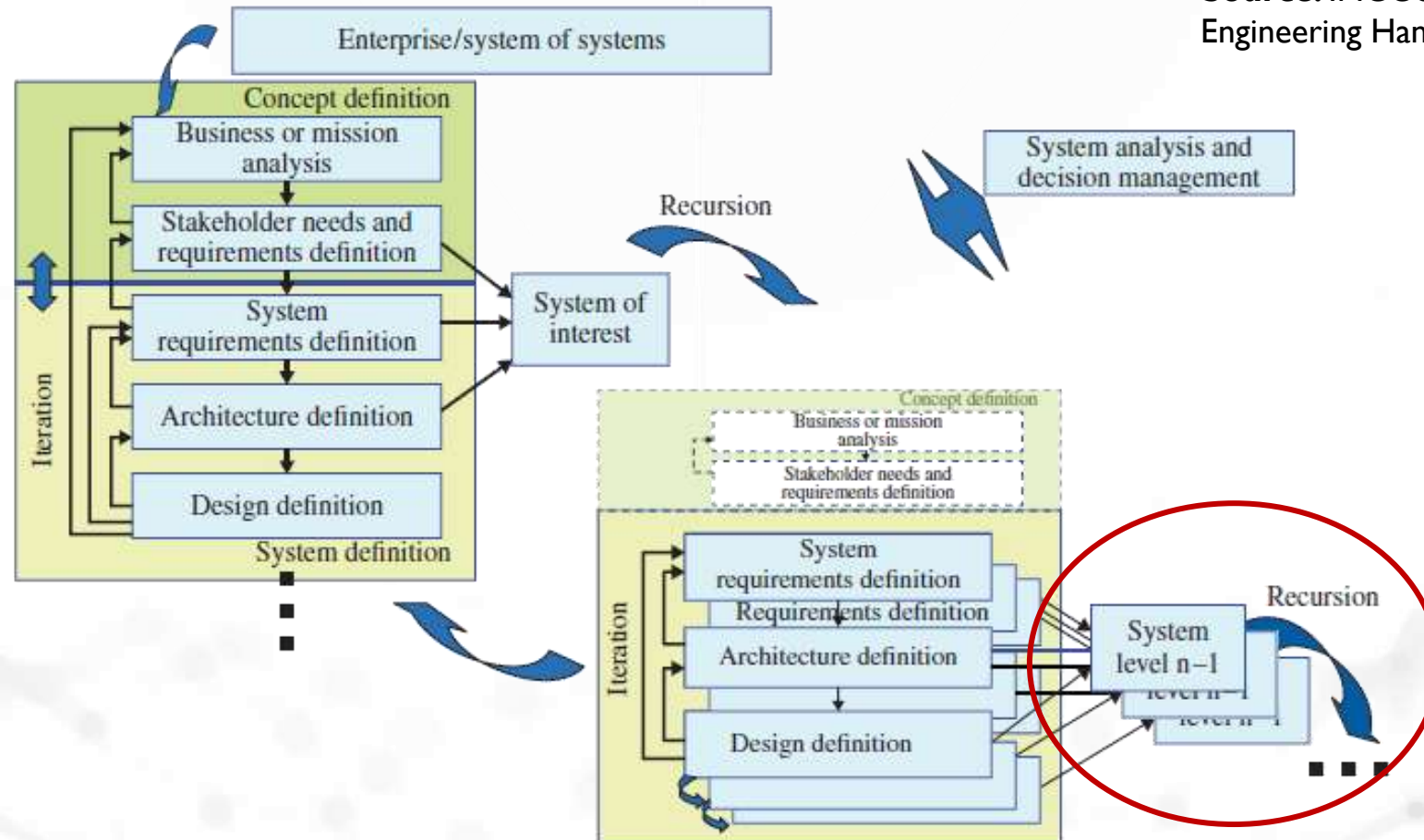
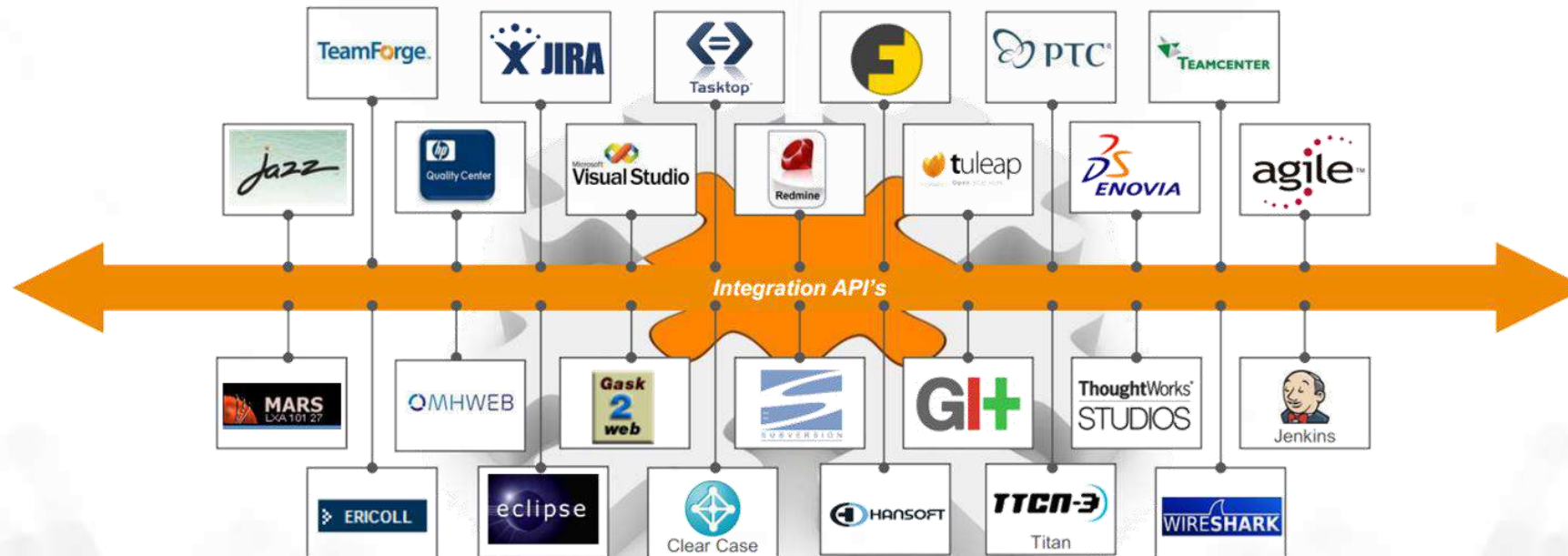


FIGURE 3.5 Iteration and recursion. Reprinted with permission from Garry Roedler. All other rights reserved.

Traceability in complex projects: complex ecosystems

Mats Berglund (Ericsson) <http://www.ices.kth.se/upload/events/13/84404189f85d41a6a7d1cafd0db4ee80.pdf>



- › Multiple **domains**
 - › Different **types of artifacts**
- › Need of **intra-operability**
 - › Intra-domain
- › Need of **interoperability**
 - › Inter-domain

Traceability in complex projects: changes

- Prepare for changes (impact analysis):

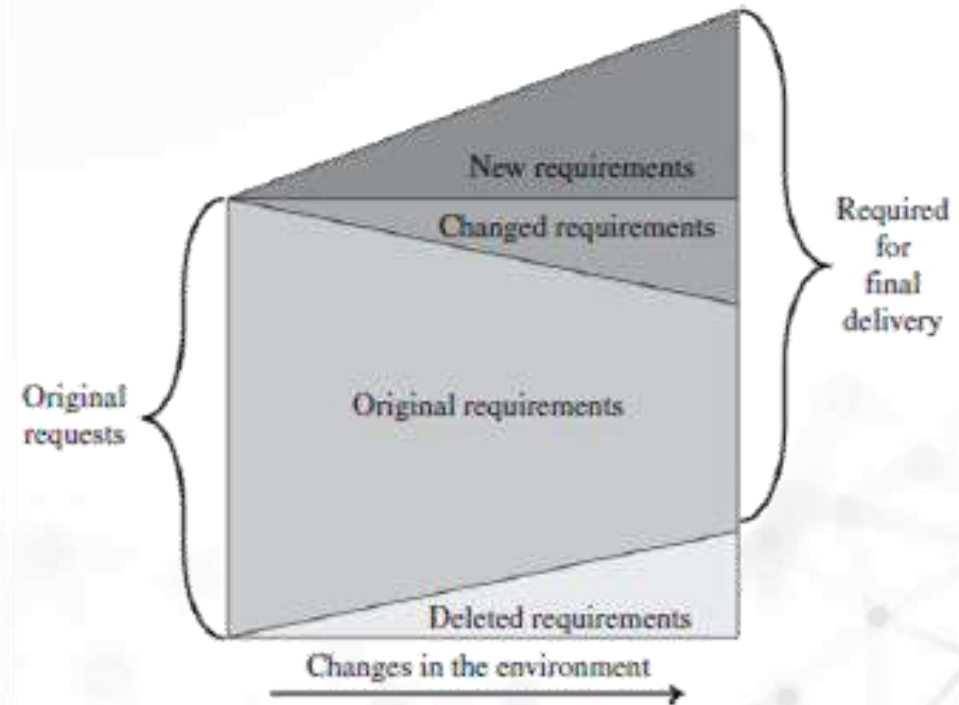
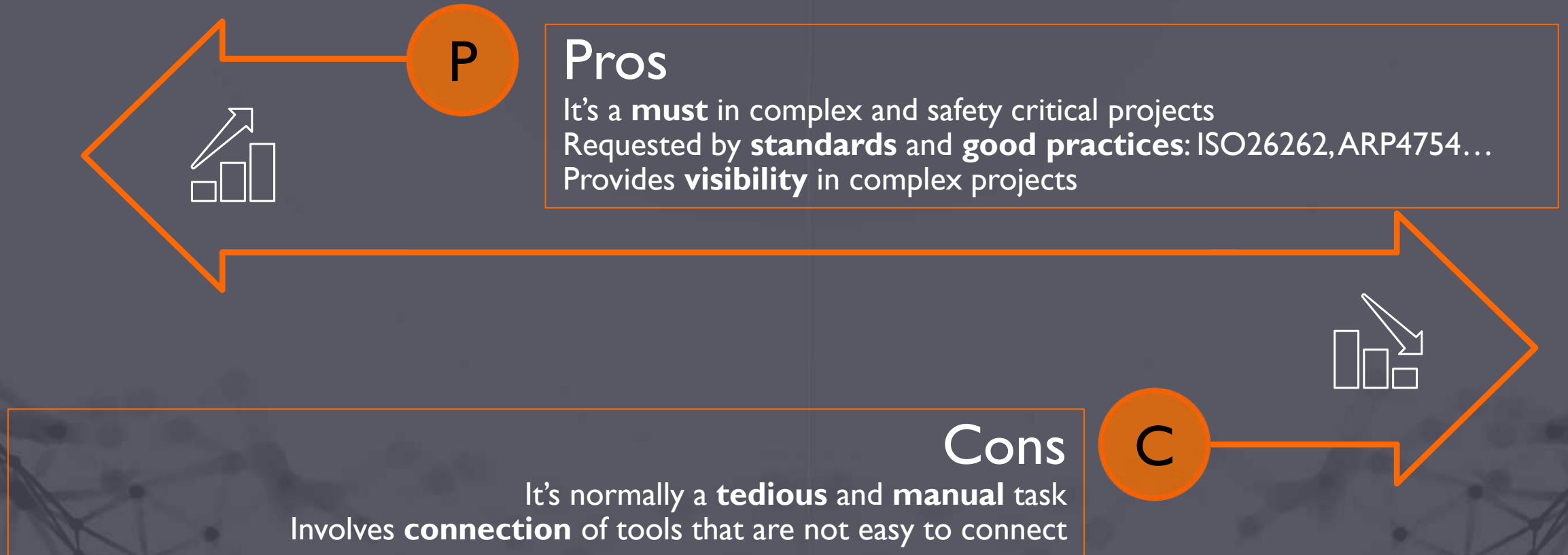


FIGURE 5.9 Requirements changes are inevitable. Derived from (Forsberg et al., 2005) Figure 9.3. Reprinted with permission from Kevin Forsberg. All other rights reserved.

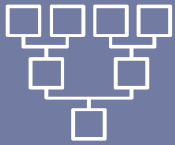




Main capabilities of **TRACEABILITY Studio**

TRACEABILITY Studio: Features

Connections



Connection to data sources

- Connection to multiple types of sources
- Graphical definition of a project map

→ Click Here

Traceability



Traceability management

- Management of types of traces
- Management of traces
- Statistics, completeness reports...
- Impact analysis

→ Click Here

Semantics



Semantic approach

- Automatic suggested links
- SMART suspect links management

→ Click Here

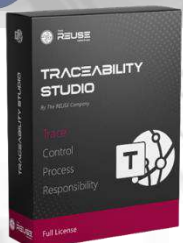
Reporting




















Our qualifications














- OOTB reports
- Custom reports in MS Word
- Custom code reports











→ Click Here


















SES Engineering Studio: Connectors V21.1

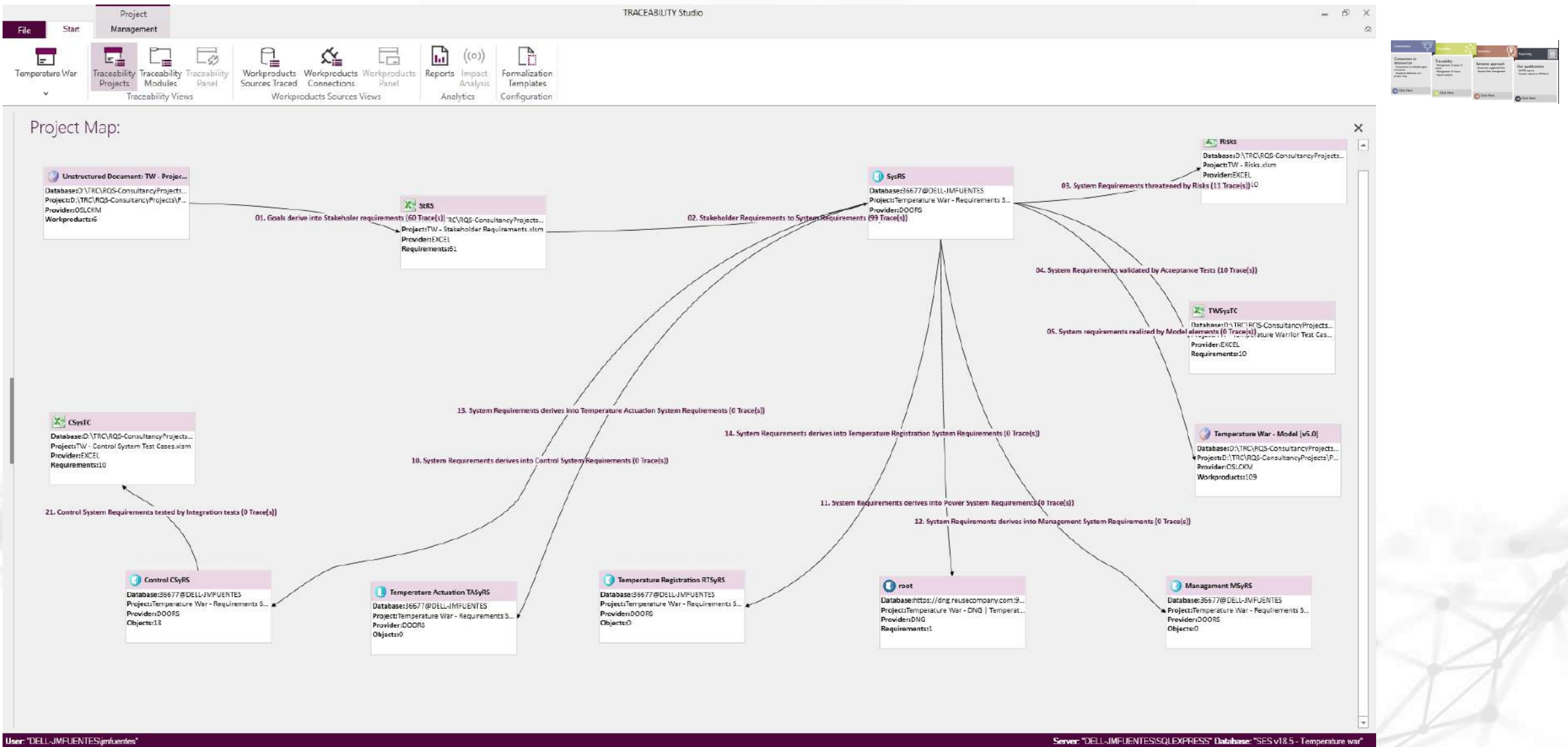
Requirements and Textual Oriented Tools		Microsoft Excel Requirements
		Microsoft Excel USDM Requirements
		Microsoft Word Documents (and Requirements)
		Reqtify
		Siemens Polarion
		Siemens Teamcenter
		SRT
		DOORS
		DNG
		PTC ILM / PTC Winschid / Integrity
		VISURE
		Reqif
		3DX
		Textual File (Plain Text)
Functional Behaviour		Dynamic Linked Library
		FMU Connector
		Microsoft Excel Functions

Logical Modeling and Functional Modeling		Cameo Systems Modeler
		Cameo Systems Modeler XML
		Capella
		Magic Draw XML
		Papyrus
		PowerPoint
		Rhapsody XMI
		Rhapsody
		Siemens Teamcenter
		Visio
		EA
		EA XMI
		XMI

Physical Modeling		Altium Designer*
		Dynamic Linked Library
		Microsoft Excel Functions
		FMU Connector
		PowerPoint*
		Siemens Teamcenter*
		Simulink
		Simulink Files*
		OpenModelica
		Visio*

Others		ASCE
		CruiseControl .NET
		DocuWare
		Excel Tabular File
		Pure Variants
		Siemens Teamcenter
		Customer Defined Connection to own Information
		XML
		Microsoft Word
		OWL, PROTÉGÉ
		Open API
		Databases (Oracle, SQL Server, MySQL, MS Access)
		Textual File (Plain Text)
		CRML
		Multimedia

Main features: connection to data sources



Main features: traceability management

File

Start

View

Trace

Workproducts

Traceability Panel

Derives

Trace Elements

Remove trace(s)

Trace Details

Evaluate suspect trace(s)

Suspect Links

Pattern Matching

Semantic Retrieval

Execution Suggest

Custom Code Tasks

Export traces to RMS

Export

10. System Requirements derives into Control System Requirements

Temperature War - Requirements Specification | SysRS (Source):

Absolute...	Physical...	Object Heading	Object Description
SysR1	DCORS://D...		The Temperature Warrior shall be able to measure the physical environment temperature.
SysR10	DCORS://D...		In order to control and coordinate the operations, the Temperature Warrior shall have a Control S...
SysR100	DCORS://D...		The Temperature Warrior capable of maintaining the temperature within the range for the most ti...
SysR101	DCORS://D...		The Temperature Warrior shall receive a larger amount of points the higher their ranking positio...
SysR102	DCORS://D...		The execution rounds shall be separated by configuration breaks.
SysR103	DCORS://D...		The Temperature Warrior's reconfiguration shall have a limited time of 2 minutes.
SysR104	DCORS://D...		The order of reconfiguration shall be defined by the ranking of each Temperature Warrior.
SysR105	DCORS://D...		Before every round, the required parameters shall be specified by the competition regulator.
SysR106	DCORS://D...		Before every round, a single or several temperature ranges shall be defined.
SysR107	DCORS://D...		Before every round, the time for the round shall be defined.
SysR108	DCORS://D...		Before every round, the maximum cadence for the temperature to be measured shall be defined.
SysR109	DCORS://D...		All Temperature Warriors shall compete physically in a common area (arena) autonomously.
SysR11	DCORS://D...		In order to allow user interaction, the Temperature Warrior shall have a Management System.
SysR110	DCORS://D...		The arena shall consist on three contiguous 50x50 squares.
SysR111	DCORS://D...		The competition should take place in an environmental temperature between 7 °C and 22 °C
SysR112	DCORS://D...		During the competition, they Temperature Warrior shall be in release mode.
SysR113	DCORS://D...		During the competition, the code shall not be modified.

Total objects: 119

Traces:

Ident...	Source	Target	State	Trace type	Created b
578242	SysR119	CSyR1	Suggested	«Flow-Down»	DELL-JMI
578243	SysR82	CSyR19	Suggested	«Flow-Down»	DELL-JMI
578248	SysR111	CSyR20	Suggested	«Allocates»	DELL-JMI
578249	SysR19	CSyR13	Suggested	«Allocates»	DELL-JMI
578250	SysR19	CSyR14	Suggested	«Allocates»	DELL-JMI
578251	SysR20	CSyR13	Suggested	«Allocates»	DELL-JMI
578252	SysR20	CSyR14	Suggested	«Allocates»	DELL-JMI
578253	SysR18	CSyR10	Suggested	«Derives»	DELL-JMI

Traces(s): 8

TRACEABILITY Studio

Traceability Module:

Information

Documents

Suspect traces evaluation

Semantic configuration

Name:

10. System Requirements derives into Control System Requirements

Selected trace types:

Name

Allocates

Derives

Flow-Down

Nº of trace types: 3

Description:

Both System Requirements and Control System Re...

Select trace type

Trace types:

Search...

Trace type

«Allocates»

«Derives»

«Flow-Down»

«Hierarchical related workproducts with common concepts»

«Realizes»

«Specifies»

«Suggested Traceability»

«Threatens»

«Traceability»

«Validates»

«Verifies»

Add...

Edit...

Select all

Invert selection

Select none

Copy selection to clipboard

Refresh

Nº of trace types: 11

Only showing non-deleted and non-deleted terms

OK

Cancel

Main features: traceability management

4

1

TRACEABILITY Studio

File

Start

Trace

Workproducts

Edit Module Config

Derives

Trace Elements

Remove trace(s)

Trace Details

Evaluate suspect

Pattern Matching

Semantic Retrieval Execution Suggest

Custom Code Tasks

Export traces to RMS Export

«Allocates»

«Derives»

«Flow-Down»

10. SysR111 to Control System Requirements

Temperature War - Requirements Specification | SysR111 (Source):

	Absolute...	Physical...	Object Heading	Object Description	Traced	Traces
☐ SysR1		DOORS//D...		The Temperature Warrior shall be able to measure the physical environment temperature.	<input type="checkbox"/>	0
☐ SysR10		DOORS//D...		In order to control and coordinate the operations, the Temperature Warrior shall have a Control Sy...	<input type="checkbox"/>	0
☐ SysR100		DOORS//D...		The Temperature Warrior capable of maintaining the temperature within the range for the most tim...	<input type="checkbox"/>	0
☐ SysR101		DOORS//D...		The Temperature Warrior shall receive a larger amount of points the higher their ranking position i...	<input type="checkbox"/>	0
☐ SysR102		DOORS//D...		The execution rounds shall be separated by configuration breaks.	<input type="checkbox"/>	0
☐ SysR103		DOORS//D...		The Temperature Warrior's reconfiguration shall have a limited time of 2 minutes.	<input type="checkbox"/>	0
☐ SysR104		DOORS//D...		The order of reconfiguration shall be defined by the ranking of each Temperature Warrior.	<input type="checkbox"/>	0
☐ SysR105		DOORS//D...		Before every round, the required parameters shall be specified by the competition regulator.	<input type="checkbox"/>	0
☐ SysR106		DOORS//D...		Before every round, a single or several temperature ranges shall be defined.	<input type="checkbox"/>	0
☐ SysR107		DOORS//D...		Before every round, the time for the round shall be defined.	<input type="checkbox"/>	0
☐ SysR108		DOORS//D...		Before every round, the maximum cadence for the temperature to be measur...	<input type="checkbox"/>	0
☐ SysR109		DOORS//D...		All Temperature Warriors shall compete physically in a common area (are...	<input type="checkbox"/>	0
☐ SysR11		DOORS//D...		In order to allow user interaction, the Temperature Warrior shall have a Ma...	<input type="checkbox"/>	0
☐ SysR110		DOORS//D...		The arena shall consist on three contiguous 50x50 squares.	<input type="checkbox"/>	0
☑ SysR111		DOORS//D...		The competition should take place in an environmental temperature between 7 °C and 22 °C	<input checked="" type="checkbox"/>	1
☐ SysR112		DOORS//D...		During the competition, they Temperature Warrior shall be in release mode.	<input type="checkbox"/>	0
☐ SysR113		DOORS//D...		During the competition, the code shall not be modified.	<input type="checkbox"/>	0

Total objects: 119

Selected objects: 1

Temperature War - Requirements Specification | Control CSyRS (Target):

	Absolute...	Physical...	Object Heading	Object Description	Traced	Traces
☑ CSyR1		DOORS//D...		The Control System weight could be 450 gr	<input checked="" type="checkbox"/>	1
☐ CSyR10		DOORS//D...		When the configuration parameters are validated, the Control System shall activate the Ready mo...	<input type="checkbox"/>	0
☐ CSyR11		DOORS//D...		The Control System shall activate the Configuration mode during the input of configuration param...	<input type="checkbox"/>	0
☐ CSyR12		DOORS//D...		When the Administrator inputs the configuration parameters and selects the Finish option, the Con...	<input type="checkbox"/>	0
☐ CSyR13		DOORS//D...		When the maximum temperature threshold is exceeded, the Control System shall shut down the T...	<input checked="" type="checkbox"/>	2
☐ CSyR14		DOORS//D...		When the minimum temperature threshold is exceeded, the Control System shall shut down the T...	<input checked="" type="checkbox"/>	2
☐ CSyR15		DOORS//D...		When the Temperature Warrior is in Validation mode and the input configuration parameters are e...	<input type="checkbox"/>	0
☐ CSyR16		DOORS//D...		When the Temperature Warrior is in Ready mode and the Start Combat option is selected, the Co...	<input type="checkbox"/>	0
☑ CSyR19		DOORS//D...		The control system power consumption shall be 1 w.	<input checked="" type="checkbox"/>	1
☐ CSyR2		DOORS//D...		The Control System shall be a Netduino 2 Plus.	<input type="checkbox"/>	0
☑ CSyR20		DOORS//D...		The competition shall take place in an environmental temperature between 7 °C and 22 °C	<input checked="" type="checkbox"/>	1
☐ CSyR3		DOORS//D...		The Control System shall contain the temperature regulation software.	<input type="checkbox"/>	0
☐ CSyR4		DOORS//D...		The Control System shall send electric signals to control the activity of the Temperature Actuator...	<input type="checkbox"/>	0
☐ CSyR5		DOORS//D...		The Control System shall be physically connected to the Temperature Actuator System.	<input type="checkbox"/>	0
☐ CSyR6		DOORS//D...		The Control System shall be physically connected to the Management System.	<input type="checkbox"/>	0
☐ CSyR7		DOORS//D...		The Control System shall be physically connected to the Temperature Registration System.	<input type="checkbox"/>	0
☐ CSyR8		DOORS//D...		The Control System system shall be powered by the Power system.	<input type="checkbox"/>	0

Total objects: 18

Selected objects: 1

Traces:

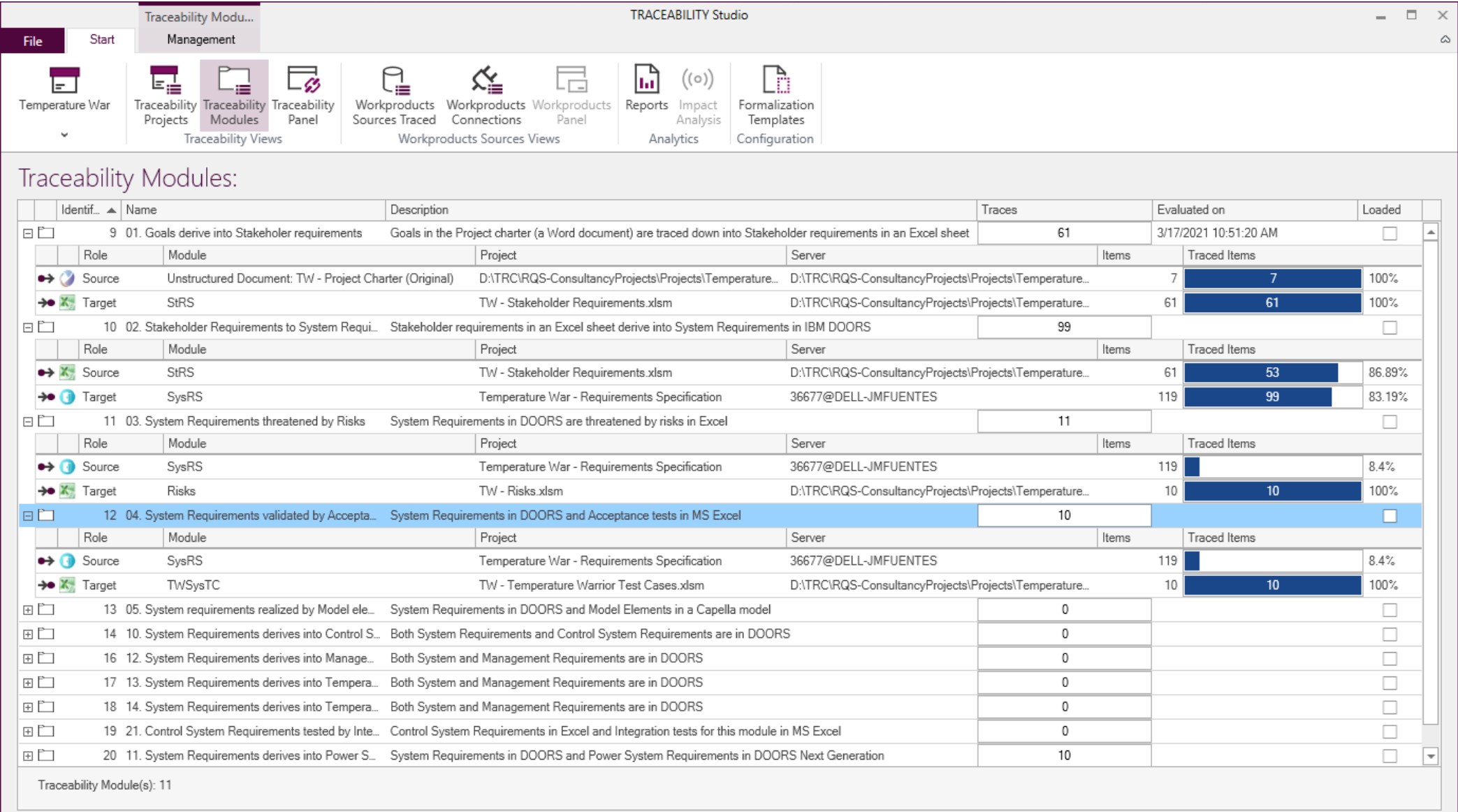
	Ident...	Source	Target	State	Trace type	Created by	Created on	Last modified by	Last modified on	Semantic similarity	Rationale
🔗	578242	SysR119	CSyR1	Suggested	«Flow-Down»	DELL-JMFUENTES\jmfuen...	3/12/2021 6:45:15 PM	DELL-JMFUENTES\jmfuen...	3/12/2021 6:45:15 PM	50.00%	Hierarchical View «PBS»; Hierarchical View Concept 1 <<Temperature wa...
🔗	578243	SysR82	CSyR19	Suggested	«Flow-Down»	DELL-JMFUENTES\jmfuen...	3/12/2021 6:45:15 PM	DELL-JMFUENTES\jmfuen...	3/12/2021 6:45:15 PM	38.00%	Hierarchical View «PBS»; Hierarchical View Concept 1 <<Temperature wa...
🔗	578248	SysR111	CSyR20	Suggested	«Allocates»	DELL-JMFUENTES\jmfuen...	3/12/2021 6:49:40 PM	DELL-JMFUENTES\jmfuen...	3/12/2021 6:49:40 PM	100.00%	
🔗	578249	SysR19	CSyR13	Suggested	«Allocates»	DELL-JMFUENTES\jmfuen...	3/12/2021 6:50:38 PM	DELL-JMFUENTES\jmfuen...	3/12/2021 6:50:38 PM	88.00%	
🔗	578250	SysR19	CSyR14	Suggested	«Allocates»	DELL-JMFUENTES\jmfuen...	3/12/2021 6:50:38 PM	DELL-JMFUENTES\jmfuen...	3/12/2021 6:50:38 PM	75.00%	
🔗	578251	SysR20	CSyR13	Suggested	«Allocates»	DELL-JMFUENTES\jmfuen...	3/12/2021 6:50:38 PM	DELL-JMFUENTES\jmfuen...	3/12/2021 6:50:38 PM	75.00%	
🔗	578252	SysR20	CSyR14	Suggested	«Allocates»	DELL-JMFUENTES\jmfuen...	3/12/2021 6:50:38 PM	DELL-JMFUENTES\jmfuen...	3/12/2021 6:50:38 PM	88.00%	
🔗	578253	SysR18	CSyR10	Suggested	«Derives»	DELL-JMFUENTES\jmfuen...	3/15/2021 5:14:57 PM	DELL-JMFUENTES\jmfuen...	3/15/2021 5:14:57 PM	57.00%	
🔗	578264	SysR111	CSyR20	Consistent	«Allocates»	DELL-JMFUENTES\jmfuen...	3/16/2021 12:48:37 PM	DELL-JMFUENTES\jmfuen...	3/16/2021 12:48:37 PM	100.00%	

Traces(s): 8

User: "DELL-JMFUENTES\jmfuentes"

Server: "DELL-JMFUENTES\SQLEXPRESS" Database: "SES v18.5 - Temperature war"

Main features: statistics



Main features: impact analysis

File

Start

View

Trace

Workproducts

Edit Module

Derives Configuration

Trace Elements

Remove trace(s) Manage

Trace Details

Evaluate suspect trace(s) Suspect Links

Pattern Matching

Semantic

TRACEABILITY Studio - Impact Analysis

Impact Analysis

01. Goals derive into Stakeholder requirements

D:\TRC\RQS-Consultancy\Projects\Projects\Temperature War\Documentation\TW - Pr

Absolute...	Physical...	Workproduct Heading	Workproduct Description
GOAL-001	D:\TRC\RQ...	PARAGRAPH	Develop a system invol
GOAL-002	D:\TRC\RQ...	PARAGRAPH	Develop a system capa
GOAL-003	D:\TRC\RQ...	PARAGRAPH	The system developed
GOAL-004	D:\TRC\RQ...	PARAGRAPH	The system developed
GOAL-005	D:\TRC\RQ...	PARAGRAPH	Participate and win the
GOAL-006	D:\TRC\RQ...	PARAGRAPH	Complete the developn

Total workproducts: 6

Traces:

Ident...	Source	Target
578058	GOAL-001	SH-02
578059	GOAL-001	SH-05
578060	GOAL-001	SH-06
578061	GOAL-001	SH-12
578062	GOAL-001	SH-16
578063	GOAL-001	SH-17
578064	GOAL-001	SH-18
578065	GOAL-001	SH-19
578066	GOAL-001	SH-20
578067	GOAL-001	SH-22

Traces(s): 60

SysRS1 SysRS

SysRS3 SysRS

SysRS50 SysRS

SysRS6 SysRS

SysRS8 SysRS

SysRS7 SysRS

SysRS9 SysRS

SH-31 SHRS

SH-05 SHRS

SH-41 SHRS

SH-35 SHRS

SH-17 SHRS

SH-22 SHRS

SH-33 SHRS

SH-37 SHRS

SH-19 SHRS

SH-34 SHRS

SH-44 SHRS

SH-40 SHRS

SH-36 SHRS

SH-32 SHRS

SH-06 SHRS

SH-45 SHRS

SH-30 SHRS

GOAL-001

User: "DELL-JMFUENTES\jmfuentes"

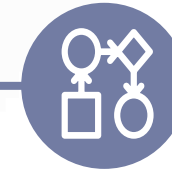
Server: DELL-JMFUENTES\SQLEXPRESS Database: SES V18.5 - Temperature war

COMPANY

Main features: semantic approach

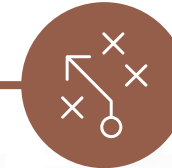
Semantic suggestions

- New traces can be automatically suggested
- Following different algorithms
- Even your own algorithms can be easily coded in the tool
- Among any type of item (textual, models...)



Suspicious links

- SMART algorithms to detect changes on any traced item
- Visually reported to the user
- To allow a seamless yet thorough change management



Trace management

- Defined manually
- Imported from native tools (*)

Main features: semantic approach

File

Start

View

Trace

Workproducts

Edit Module Configuration

Derives

Trace Elements Manage

Remove trace(s)

Trace Details

Evaluate suspect trace(s)

Suspect Links

Pattern Matching

Semantic Retrieval Execution Suggest

Custom Code Tasks

Export traces to RMS

Export

02. Stakeholder Requirements to System Requirements

TW - Stakeholder Requirements.xlsm | STRS (Source):

Code	Physical...	Title	Description
SH-01	FILE:///D:\T...		The Temperature Warrior shall be capable of adjusting its physical environment ambient temperat...
SH-02	FILE:///D:\T...		Depending on the selected configuration, the Temperature Warrior shall be capable of displaying i...
SH-03	FILE:///D:\T...		The Temperature Warrior shall be able to register the time period in which the temperature of the...
SH-04	FILE:///D:\T...		At the end of each round, the Temperature Warrior shall display the time in which the temperature...
SH-05	FILE:///D:\T...		The Temperature Warrior shall be able to control the operation of all devices using the control and...
SH-06	FILE:///D:\T...		The Temperature Warrior shall be configurable.
SH-07	FILE:///D:\T...		The temperature range shall be defined in simple or complex form.
SH-08	FILE:///D:\T...		The maximum temperature allowed for the definition of the temperature ranges shall be 30 °C.
SH-09	FILE:///D:\T...		The minimum temperature allowed for the definition of the temperature ranges shall be 12 °C.
SH-10	FILE:///D:\T...		During the configuration state, the Temperature Warrior shall allow the input of temperature range...
SH-11	FILE:///D:\T...		The simple temperature range shall consist of a single temperature interval throughout the whole t...
SH-12	FILE:///D:\T...		The configuration of the Temperature Warrior shall be via HTTP connection.
SH-13	FILE:///D:\T...		The complex temperature range shall consist of several intervals defined for a portion of time withi...
SH-14	FILE:///D:\T...		The Temperature Warrior shall be configured receiving the temperature range definition.
SH-15	FILE:///D:\T...		The Temperature Warrior shall be configurable prior to every execution.
SH-16	FILE:///D:\T...		The Temperature Warrior shall receive the maximum time during which the temperature must be...
SH-17	FILE:///D:\T...		The Temperature Warrior shall be configured using a laptop connected to a router.

Total requirements: 61

Traces:

Ident...	Source	Target	State	Trace type	Created by
578118	SH-01	SysR1	Consistent	«Derives»	DELL-JMFUENT...
578119	SH-01	SysR2	Consistent	«Derives»	DELL-JMFUENT...
578120	SH-01	SysR25	Consistent	«Derives»	DELL-JMFUENT...
578121	SH-02	SysR49	Consistent	«Derives»	DELL-JMFUENT...
578122	SH-02	SysR50	Consistent	«Derives»	DELL-JMFUENTESjmfuen...
578123	SH-02	SysR51	Consistent	«Derives»	DELL-JMFUENTESjmfuen...
578124	SH-02	SysR53	Consistent	«Derives»	DELL-JMFUENTESjmfuen...
578125	SH-02	SysR6	Consistent	«Derives»	DELL-JMFUENTESjmfuen...
578126	SH-02	SysR7	Consistent	«Derives»	DELL-JMFUENTESjmfuen...
578127	SH-02	SysR8	Consistent	«Derives»	DELL-JMFUENTESjmfuen...

Traces(s): 99

Traceability suggestion - Suggest traces based on custom tasks

Tasks:

Identifier	Name	Enabled	Language
648	Find Trace Suggestions By Property Allocation On Thesaurus View	<input checked="" type="checkbox"/>	English / United
649	Find Trace Suggestion Using Occurrences and Synonyms On The Same Cluster	<input type="checkbox"/>	
650	Find Trace Suggestions Using Occurrences On Hierarchical View	<input type="checkbox"/>	
651	Find Trace Suggestions By Checking Workproduct Name Is Included On Other Textual Workproduct Descr	<input type="checkbox"/>	
652	Import from Excel	<input type="checkbox"/>	
653	Import from DOORS	<input type="checkbox"/>	

6 task(s)

Add task

Edit task

☒ Enabled

Delete task(s)

Duplicate task(s)

Run

Search...

Select all

Invert selection

Select none

Export...

Copy selection to clipboard

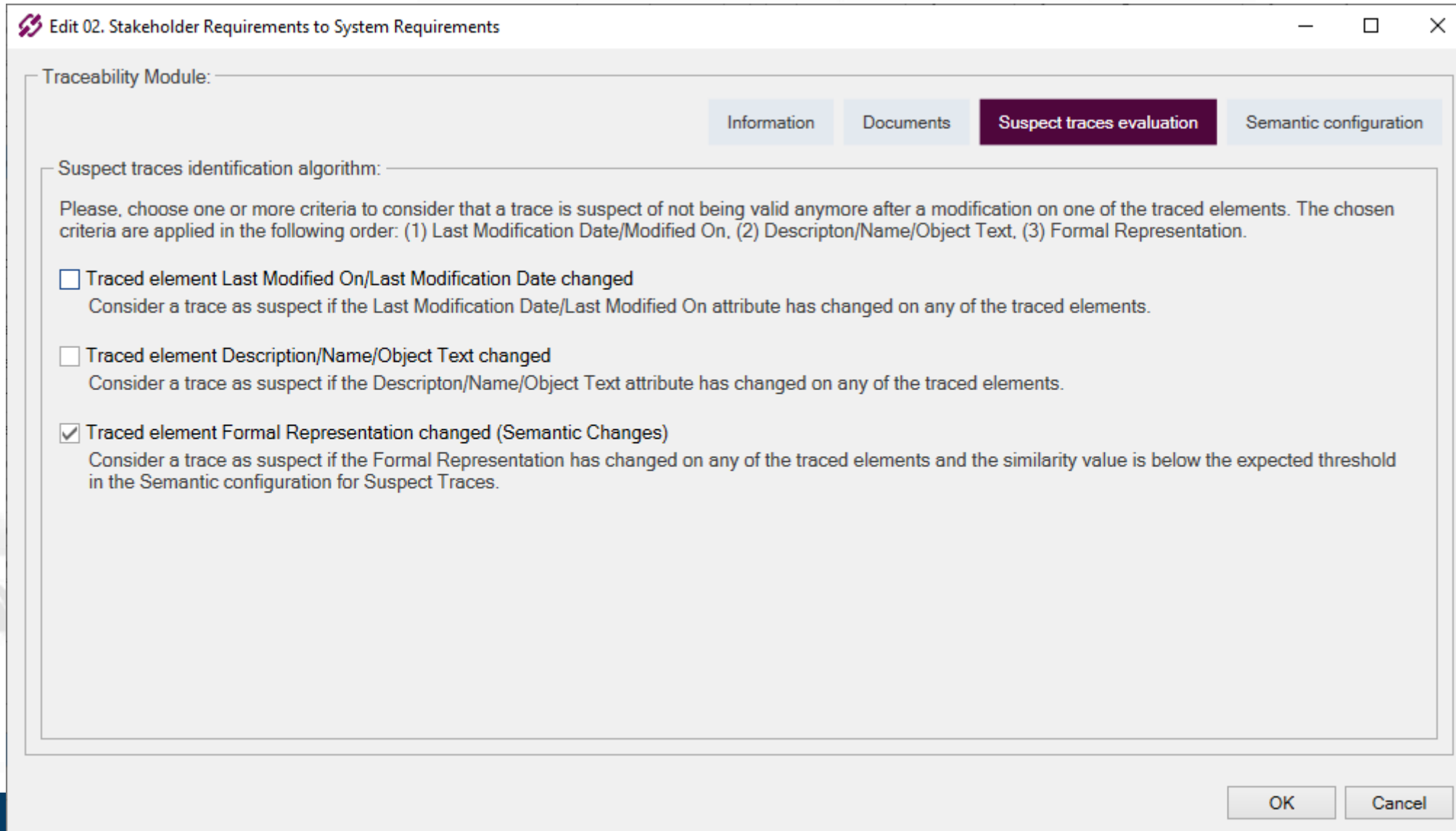
Close

User: "DELL-JMFUENTES\jmfuentes"

Server: "DELL-JMFUENTES\SQLEXPRESS" Database: "SES v18.5 - Temperature war"

THE REUSE COMPANY

Main features: semantic approach



Traceability Module:

Information Documents **Suspect traces evaluation** Semantic configuration

Suspect traces identification algorithm:

Please, choose one or more criteria to consider that a trace is suspect of not being valid anymore after a modification on one of the traced elements. The chosen criteria are applied in the following order: (1) Last Modification Date/Modified On, (2) Descripton/Name/Object Text, (3) Formal Representation.

- ☐ Traced element Last Modified On/Last Modification Date changed
Consider a trace as suspect if the Last Modification Date/Last Modified On attribute has changed on any of the traced elements.
- ☐ Traced element Description/Name/Object Text changed
Consider a trace as suspect if the Descripton/Name/Object Text attribute has changed on any of the traced elements.
- ☒ Traced element Formal Representation changed (Semantic Changes)
Consider a trace as suspect if the Formal Representation has changed on any of the traced elements and the similarity value is below the expected threshold in the Semantic configuration for Suspect Traces.

OK Cancel



Main features: reporting

The screenshot shows the Microsoft Word interface with the 'Traceability Report Plugin' ribbon. The 'Trace' tab is selected, and a dropdown menu is open, showing options: Code, Description, Is Textual Element, Creation Date, Modification Date, and Author. The main content area displays a report titled '3 Project Modules' with a table of contents, a '3.1 Traceability Module Name' section, and a 'TRACES' table.

3 Project Modules

Module Iterator

3.1 Traceability Module Name

Module descriptor:

Traceability Module Description

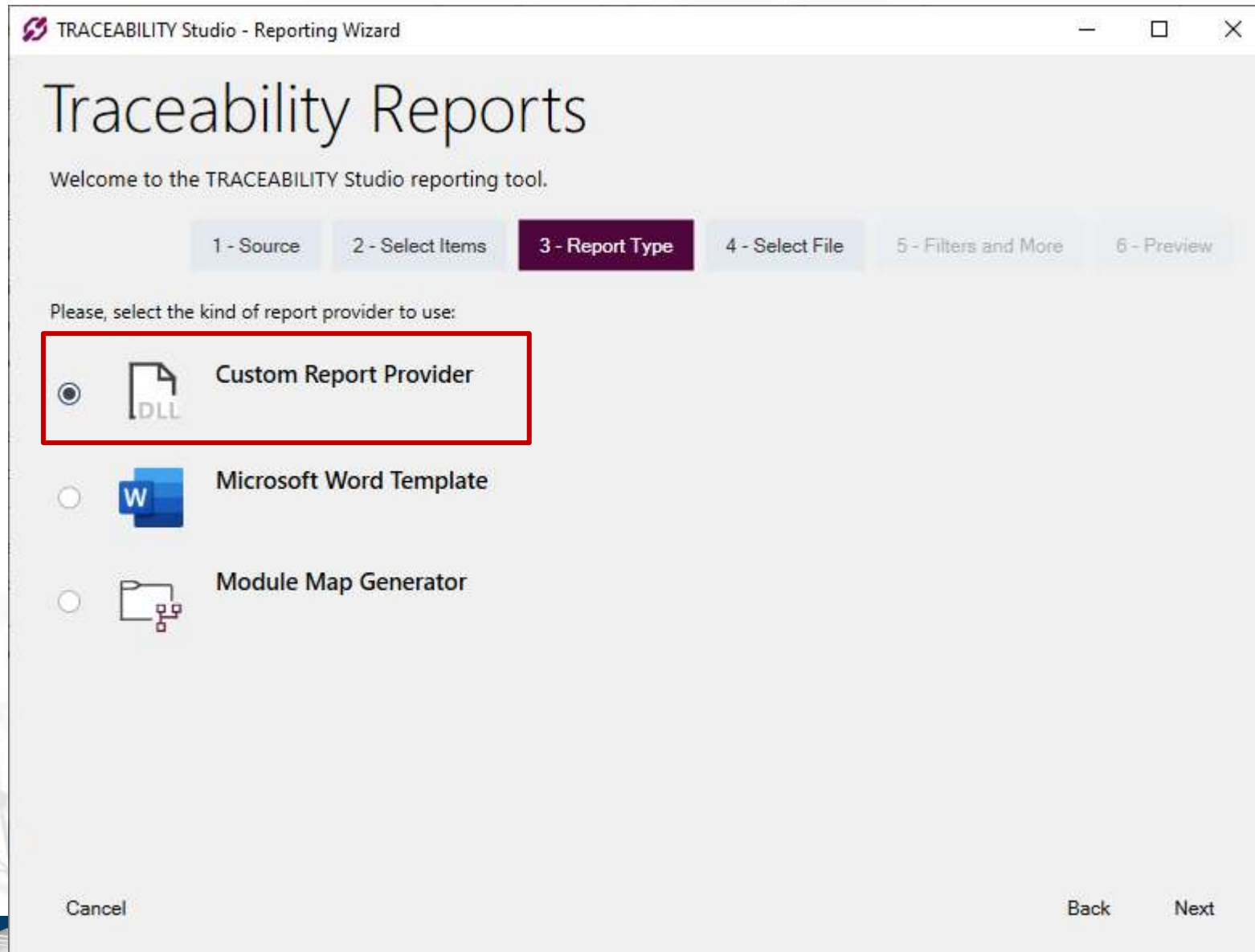
Source		Target	
Server	Source.Server Name	Server	Target.Server Name
Project	Source.Project Name	Project	Target.Project Name
Document	Source.Document Name	Document	Target.Document Name
Num. items	Source.TotalItems	Num. items	Target.TotalItems

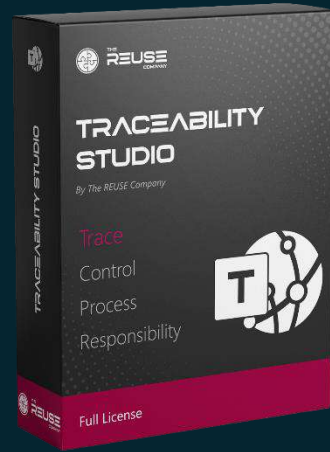
TRACES:

Trace Iterator	State	Source	Target	Target.Description
Relationship Kind	State	Source.Code	Source.Description	Target.Code
				Target.Description

Page 9 of 11 1 of 295 words English (United States) 110%

Main features: reporting





TRACEABILITY Studio Demo

Live Demo

11. System Requirements derives into Power System Requirements

Temperature War - Requirements Specification | SysRS (Source):

Abstract N.	Physical Pa.	Object Heading	Object Description	Tr.	Traces
SysR119	DOORS:ID.		The Temperature Warior shall weight less than 50 kg.	<input checked="" type="checkbox"/>	1
SysR83	DOORS:ID.		The maximum power installed of each Temperature Warior component shall be inferior to 2000 W.	<input checked="" type="checkbox"/>	1
SysR82	DOORS:ID.		The maximum power consumption installed in the Temperature Warior component shall be inferior to 4000 W.	<input checked="" type="checkbox"/>	1
SysR81	DOORS:ID.		The Temperature Warior shall be powered with a 5V current.	<input checked="" type="checkbox"/>	1
SysR74	DOORS:ID.		The maximum nitrogen of the Temperature Warior shall not exceed 50cm x 50cm x 50cm.	<input checked="" type="checkbox"/>	1
SysR14	DOORS:ID.		In order to provide the energy resources required, the Temperature Warior shall have a Power System.	<input checked="" type="checkbox"/>	1
SysR118	DOORS:ID.		The Temperature Warior shall be built utilizing physical components.	<input checked="" type="checkbox"/>	1
SysR117	DOORS:ID.		If any borrowed component is damaged, the consequent working team shall lose their initial bond.	<input checked="" type="checkbox"/>	1
SysR116	DOORS:ID.		The Temperature Warior shall retain from polluting the environment.	<input checked="" type="checkbox"/>	1
SysR115	DOORS:ID.		The software of the Temperature Warior shall be developed in C#.	<input checked="" type="checkbox"/>	1
SysR114	DOORS:ID.		The Temperature Warior shall be physically disconnected to control laptop (CL).	<input checked="" type="checkbox"/>	1
SysR113	DOORS:ID.		During the competition, the code shall not be modified.	<input checked="" type="checkbox"/>	1
SysR112	DOORS:ID.		During the competition, the Temperature Warior shall be in release mode.	<input checked="" type="checkbox"/>	1
SysR111	DOORS:ID.		The competition should take place in an environmental temperature between 7 °C and 22 °C.	<input checked="" type="checkbox"/>	1
SysR110	DOORS:ID.		The arena shall consist on three contiguous 50x50 squares.	<input checked="" type="checkbox"/>	1

Total objects: 119

Traces:

Ident.	Source	Target	State	Trace type	Created by	Created on	Last modified by	Last modified on	Semantic similarity	Rationale
578283	SysR74	1343	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:54 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:54 PM	0.00%	
578282	SysR74	1342	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:54 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:54 PM	0.00%	
578261	SysR74	1341	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:54 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:54 PM	0.00%	
578260	SysR81	1340	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:37 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:37 PM	0.00%	
578259	SysR81	1339	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:34 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:34 PM	0.00%	
578258	SysR119	1336	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:21 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:21 PM	0.00%	
578257	SysR83	1332	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:11 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:11 PM	0.00%	
578256	SysR82	1332	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:11 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:11 PM	0.00%	
578255	SysR81	1332	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:11 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:11 PM	0.00%	
578254	SysR14	1332	Consistent	Allocation	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:11 PM	DELL-JMFUENTES\jmfuentes	3/15/2021 6:44:11 PM	0.00%	

Traces(s): 10

User: "DELL-JMFUENTES\jmfuentes" Server: "DELL-JMFUENTES\SQLEXPRESS" Database: "SES-v185 - Temperature war"



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