Connecticut Department of Social Services
Enterprise Program Management Office

Requirements Traceability Matrix

Purpose of the Requirements Traceability Matrix

The Requirements Traceability Matrix (RTM) is a document that links requirements throughout the validation process. The purpose of the Requirements Traceability Matrix is to ensure that all requirements defined for a system are tested in the test protocols. The traceability matrix is a tool both for the validation team to ensure that requirements are not lost during the validation project and for auditors to review the validation documentation.

Information to Include

The requirements traceability matrix is usually developed in concurrence with the initial list of requirements (either the User Requirements Specification or Functional Requirements Specification). As the Design Specifications and Test Protocols are developed, the traceability matrix is updated to include the updated documents. Ideally, requirements should be traced to the specific test step in the testing protocol in which they are tested.

How the RTM is used

A requirements traceability matrix is used to check if the current project requirements are being met or to help in the creation of a request for proposal, software requirements specification, various deliverable documents, and project plan tasks.
Change Impact Analysis – if a requirement is changing, trace links inform about related and dependent artifacts. These artifacts can easily be verified and if required, be adjusted. The probability to overlook related artifacts is reduced.
Coverage Analysis – Traceability ensures that no requirements are overlooked. Especially when certifying safety-critical products it is necessary to demonstrate that all requirements are realized.
Project Status Analysis – Tracking of the project status is possible: analyzing the traceability data allows the project manager to see the completion status of the requirements. Requirements without links or with incomplete trace chains (e.g. requirements with implementation but without tests) indicate that further work is necessary. The missing links show which concrete artifacts are missing and need to be realized.
Reuse of Product Components – it is possible to structure requirements and their linked artifacts into packages. These packages can be used for different products.
Persisting Relationships – Often knowledge of a project or product is in the head of specific persons. By use of traceability this knowledge is saved by visualizing the relation between the different artifacts. This knowledge remains even if a person leaves the project.
Test Optimization – By linking requirements, source code, test cases and test results it is easy to identify affected parts of the source code if tests fail. Furthermore, redundant test cases can be identified and eliminated.

Instructions

Enter the information defined below in the corresponding field on the appropriate requirement type tab.

Requirement Types -

- Functional: a functional requirement is any requisite which specifies what the system should do. It describes a particular behavior of function of the solution when certain conditions are met, for example: “Send email when a new customer signs up” or “Open a new account”.
- Non-Functional: A non-functional requirement is a requisite which specifies how the system performs a certain function. It describes how a system should behave and what limits there are on its functionality. Non-functional requirements generally specify the system’s quality attributes or characteristics, for example: “Modified data in a database should be updated for all users accessing it within 2 seconds.”
- Technical: Technical requirements are the technical issues that must be considered to successfully complete a project. These are architectural aspects the solution must meet in order to pass acceptance. E.g. the system's components must be modular and support loosely coupled integration with an Enterprise Service Bus (ESB) through RESTful Web Services. It is important to note that many technical requirements can also be considered non-functional requirements. It is upon the project's analysts to choose the appropriate level of distinction between the two.
- Other: Any other type of requirement not listed above

DSS Project Management recommends the file name be added to the page footer during requirements traceability matrix set up.

Fields

ID *- Enter a unique ID number used to identify the requirement in the requirement traceability matrix*

Associate ID *- Enter the ID of any associated utilities used for requirements tracking such as a repository, pipeline document, contract reference number, etc.*

Business Topic *- Enter a business topic or category to group requirements*

Rqmt Description *- Enter the description of the requirement. When a requirement is "In Test", in the Notes field, indicate the type of test that is in progress, i.e. System,*

Rqmt Status *- Select the current status of the requirement*

- *In Backlog: The requirement has been recorded in the project requirement backlog*
- *In Development: Development has commenced on the requirement*
- *In Test: The requirement is in test*
- *In Acceptance: The requirement is in acceptance criteria review*
- *Complete: The requirement is complete*

Rqmt Source *- Indicate the Source of the Requirement. In the case of "Discovery" annotate the change request in process or approved change control linked to the new requirement*

- *Contract*
- *RFP*
- *SOW*
- *Project Charter*
- *Discovery*

Rqmt Owner *- Enter name of person responsible to manage the requirement*

Work Product/Artifact Name - *Enter the Work Product or Artifact Name for cross-referencing; such as name of the requirements document or user story or use case.*

Test Case ID *- Enter the Test Case ID that will include this Business Requirement. In the event of multiple test IDs against a single requirement, list each ID comma-delimited OR break the requirement into smaller requirements for each test ID and list on separate lines. For example: "Rqmt AAA" becomes "Rqmt AAA:Child Rqmt 001", "Rqmt AAA:Child Rqmt 002", "Rqmt AAA:Child Rqmt 003", ...*

Acceptance Criteria *- Enter the result of the acceptance criteria review. The purpose of the acceptance criteria review is for the development team to demonstrate to the project owners, analysts and QA engineers that a feature or function meets all acceptance criteria and is ready for testing.*

- *Met - All acceptance criteria were met.*
- *Not Met - One or more acceptance criteria were not met.*

Test Result *- Enter the result from testing per the test case. Choose from the list.*

- *Pass: The test case passed*
- *Fail: The test case failed*

Notes *- Enter notes as appropriate*

Functional Requirements Traceability Matrix

PROJECT NAME:	
PROJECT MANAGER:	

ID	Associate ID	Business Topic	Rqmt Description	Rqmt Status	Rqmt Source	Rqmt Owner	Work Product/Artifact Name	Test Case ID	Acceptance Criteria	Test Result	Notes
1											
2											
3											
4											
5											

Functional Requirements Traceability Matrix

ID	Associate ID	Business Topic	Rqmt Description	Rqmt Status	Rqmt Source	Rqmt Owner	Work Product/Artifact Name	Test Case ID	Acceptance Criteria	Test Result	Notes

** To ADD a row to this list, SELECT an unnumbered row above, RIGHT CLICK and SELECT Insert. Add a sequential number in the first column "ID"*

Non-Functional Requirements Traceability Matrix

PROJECT NAME:	
PROJECT MANAGER:	

ID	Associate ID	Business Topic	Rqmt Description	Rqmt Status	Rqmt Source	Rqmt Owner	Work Product/Artifact Name	Test Case ID	Acceptance Criteria	Test Result	Notes
1											
2											
3											
4											
5											

Non-Functional Requirements Traceability Matrix

** To ADD a row to this list, SELECT an unnumbered row above, RIGHT CLICK and SELECT Insert. Add a sequential number in the first column "ID"*

Technical Requirements Traceability Matrix

PROJECT NAME:	
PROJECT MANAGER:	

ID	Associate ID	Business Topic	Rqmt Description	Rqmt Status	Rqmt Source	Rqmt Owner	Work Product/Artifact Name	Test Case ID	Acceptance Criteria	Test Result	Notes
1											
2											
3											
4											
5											

Technical Requirements Traceability Matrix

** To ADD a row to this list, SELECT an unnumbered row above, RIGHT CLICK and SELECT Insert. Add a sequential number in the first column "ID"*

Requirements Traceability Matrix: Other

PROJECT NAME:	
PROJECT MANAGER:	

ID	Associate ID	Business Topic	Rqmt Description	Rqmt Status	Rqmt Source	Rqmt Owner	Work Product/Artifact Name	Test Case ID	Acceptance Criteria	Test Result	Notes
1											
2											
3											
4											
5											

Requirements Traceability Matrix: Other

** To ADD a row to this list, SELECT an unnumbered row above, RIGHT CLICK and SELECT Insert. Add a sequential number in the first column "ID"*

Requirements Traceability Matrix Summary

The tables below are suitable for copy and paste into project status reports. The summaries are calculated from the different Rqmts Traceability Matrix tabs for the listed columns and their values. Note that columns that do not contain a value selected from the drop down will not be counted. This spreadsheet is locked to preserve the formulas contained herein. The password to unlock this page is "dss".

PROJECT NAME:	
PROJECT MANAGER:	

Requirement Status				
In Backlog	In Development	In Test	In Acceptance	Complete
0	0	0	0	0

Requirement Source				
Contract	RFP	SOW	Project Charter	Discovery
0	0	0	0	0

Acceptance Criteria	
Met	Not Met
0	0

Test Results	
Pass	Fail
0	0