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Federal Student Aid Enterprise Requirements Management User Guide

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01.00	02/03/2010	Initial Release
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Section 1. Introduction

1.1. Purpose

The purpose of the Federal Student Aid (FSA) Requirements Management User Guide is to provide guidance in the use of Rational RequisitePro, ClearQuest, and ClearCase to support Requirements Management Automation.

The guidelines, rules, and procedures defined in this plan must be adhered to by the people involved in developing and managing the requirements FSA systems.

1.1.1. Scope

The information presented in this user's guide is limited to requirements management activities. This document does not address overall configuration management, software design, software development, verification and validation testing plans, hardware concerns, or any other system areas. All users are expected to have prior experience using RequisitePro, ClearQuest, and ClearCase.

1.2. Intended Audience

Table 1-1 lists the intended users and the purpose for which the users may utilize the information in this document.

Users	Uses
Requirements Management Staff	As a guide to using standard processes and procedures relating to Requirements Management activities

Table 1-1: Intended Audience and Uses

1.3. Document Organization

This document comprises the following sections:

Section 1 – Introduction
Section 2 – Requirements Management Process Overview
Section 3 – Requirements Artifacts
Section 4 – Automating Requirements Management
Appendix A – Acronyms and Abbreviations
Appendix B – Glossary

1.4. References and Related Documents

The following documents were referenced during the development of this requirements management user guide:

- ACS Directive OCIO:1-106, Lifecycle Management Framework
- TASS Automation Recommendations
- TASS Initiative Vision Template
- TASS High-Level Requirements Document Template
- TASS Detailed Requirements Document Template
- TASS User Interface Specifications Document Template
- TASS Initiative Vision Exemplar
- TASS Exemplar High-Level Requirements Document
- TASS Exemplar Detailed Requirements
- TASS User Interface Specifications Document Template
- FSA Lifecycle Management (LCM) Framework
- FSA Enterprise Configuration Management Plan Template
- FSA Enterprise Configuration Management User Guide
- FSA Enterprise Requirements Management Plan Template
- FSA Enterprise Test Management Standard

Section 2. Requirements Management Process

In accordance with the Department of Education's Lifecycle Management (LCM) Framework, requirements management begins with the Initiative Vision phase and continues through part of the Definition phase. After the Initiative Vision has been established, High-Level, Detailed, and User Interface requirements are developed for a specific release of the system under development.

After thorough internal review and validation, but prior to formal submission to FSA, the requirements documents are loaded into RequisitePro. This "loading" process entails importing the documents into a RequisitePro project for the system under development, capturing (tagging) each requirement, entering mandatory attributes, and establishing traceability relationships between dependent requirements. After this "loading" process has been completed, the requirements documents are submitted to FSA for formal review.

After FSA approves the requirements, a formal functional baseline is created. From this point forward, any change to a requirement requires the creation, processing, and formal approval through a Change Request (CR).

The graphic below depicts the necessary steps required to create an initial functional baseline for a system.

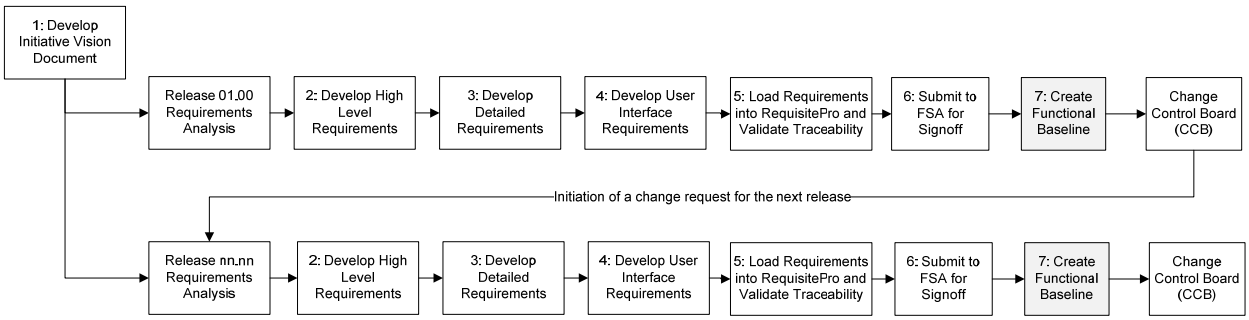

Figure 2-1: High-Level Requirements Management Process

2.1. Requirements Documents

FSA has developed guidance surrounding Requirements Development activities in the form of document templates and exemplar documents. The requirements and documents that will be developed for each FSA system are as follows:

- Stakeholders and Customer Wants and Needs will be captured in the form of an Initiative Vision document
- Business Requirements and Business Scenario will be captured in the form of a High-Level Requirements document

- System Level Requirements and Use Cases will be captured in a Detailed Requirements document
- User interface elements will be captured in a User Interface Specification document

2.2. Requirements Baseline Management

A functional baseline represents the state of the requirements at a point in time. Functional baselines will be created initially after FSA approves the first set of requirements documents for a system and thereafter whenever implementation of one or more change requests (CR) for a system release is approved by the system's Configuration Control Board (CCB).

A functional baseline is labeled as "major" or "minor". A new functional baseline which increments either the "major" or "minor" release number will be created when there has been a new product baseline in order to synchronize the requirements to the product. The naming of a baseline and creation of it is the responsibility of the system's configuration manager. Additional information concerning this process is documented in the FSA Configuration Management Plan Template and the FSA Enterprise Configuration Management User Guide.

Each functional baseline will include a snapshot of the system's RequisitePro repository as well as any other requirements artifacts which, for whatever reason, are not stored directly in RequisitePro. The RequisitePro snapshot will be created by a member of the FSA Rational Software Group (RSG) at the request of the system's configuration management Team. The snapshot, along with any other requirements artifacts, will be checked into the documentation ClearCase repository by the configuration management team who will then tagged them with the appropriate baseline name.

At a minimum, each functional baseline will consist of the following:

- A snapshot of the RequisitePro project for the system being developed
- Initiative Vision Document saved in PDF format
- High-Level Requirements Document saved in PDF format
- Detailed Requirements Document saved in PDF format
- User Interface Specification Document saved in PDF format

Requirement changes will be managed through the change control process. After one or more CRs have been approved, the changes will be implemented directly in RequisitePro and a new Requirements baseline will be created based on specific milestones for managing the release of the system.

Figure 2-2, Changing a Baselined Requirement represents a high-level perspective of how changes to requirements are managed.

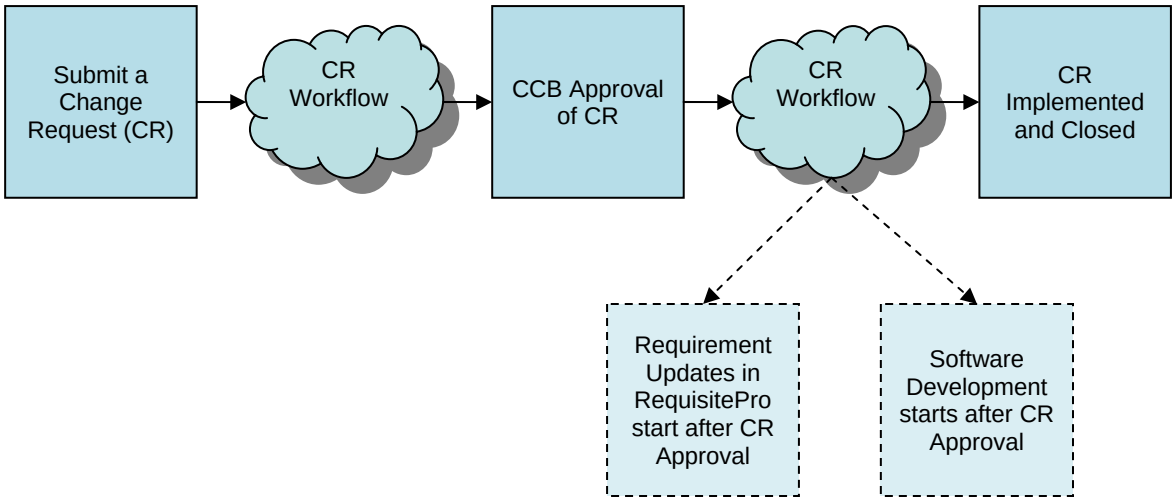

Figure 2-2: Changing a Baselined Requirement

Section 3. Requirements and Related Artifacts

Rational RequisitePro will be the primary tool used to manage requirements. To a lesser capacity, several other Rational tools will be used to support requirements management.

Table 3-1 lists the tools used to support requirements management activities

Tool	Requirements Management Related Use
Rational RequisitePro	Primary tool used to store and manage requirements
Rational ClearQuest	Change Request and Testing Defect Management
Rational ClearCase	Storing functional, design and product baselines.
Rational Quality Manager	Managing test plans and test cases and their relationships to requirements

Table 3-1: Tools Used To Support Requirements Management Activities

Requirements artifacts that exist in a format that is incompatible with RequisitePro, (for example, some COTS formatted file, MS Excel spreadsheets, and Visio drawings) will be maintained by the requirements team and captured as a component of a functional baseline and controlled using Rational ClearCase. A single RequisitePro requirements repository will be used to manage all requirements for a system.

Unless otherwise indicated, the Rational tool related functions described in this document can be performed using any of the interfaces (native-client, thin-client, and web-client) provided by the tool.

NOTE: When printing from the web interface for any of the Rational tools, the tool-specific print function should be used rather than using the browser print function directly.

3.1. Document Types

Four types of documents have been approved for FSA Requirements Management activities. RequisitePro has been tailored to directly support these document types and associated templates. Table 3-2 shows the supported RequisitePro document types as well as the types of requirements captured in each type of document.

Document Type	Extension	Description	Requirement Type(s)
Initiative Vision Document	IV	Describes the overall project plan; designed to be a high-level document expressing the problem statement, customer wants and needs, stakeholders, and the vision for the to-be solution	Stakeholder (STK), Customer Wants and Needs (CWN)
High-Level Requirements Document	HLR	Describes the business scope and objectives of the project, the "as-is" business process flow, the customer business requirements, the acceptance criteria, and assumptions / constraints	Business Requirements (BUS), Business Scenario (BSC)
Detailed Requirements Document	DR	Provides detailed use cases for the system and establishes the system functional and non-functional requirements	System Requirements (SR), Use Case (UC), Business Rules (BR)
User Interface Specifications	UI	Documents the means by which system users interact with the system, including means of input and output	User Interface Requirements (UI)

Table 3-2: Document Types

3.2. Requirement Types

Requirement types are templates, within RequisitePro, used to organize requirements that are similar in structure and purpose. Requirement types have a common set of attributes, display style, and tag numbering. Table 3-3 shows the supported RequisitePro requirement types.

Requirement Type	Document Type	Description
Stakeholders (STK)	IV	Identifies the various Federal Student Aid stakeholders for a given project
Customer Wants and Needs (CWN)	IV	Identifies the minimum expectations of the stakeholders regarding the abilities of the solution; each business requirement defined in later sections of this document traces back to a particular business want or need defined in this section
Business Requirement (BUS)	HLR	Identifies the high-level capabilities of the system that are directly related to the contributing causes of the problem being solved
Business Scenario (BSC)	HLR	Identifies future business circumstances imagined on the basis of past and present trends, uncertainties, and assumptions; at least one BSC is required
System Requirements (SR)	DR	Describes a specific function or quality the application / system must exhibit to satisfy a (set of) business requirement(s)
Use Case (UC)	DR	Describes a sequence of actions performed by a system that yields a measurable result of value for a particular actor; the detailed functional software requirements. At least one UC is required

Requirement Type	Document Type	Description
Business Rule (BR)	DR	Describes a rule, policy, condition, or algorithm used by the business
User Interface (UI)	UI	Identifies the characteristics of the user interface which can be described in text form

Table 3-3: Requirement Types

3.3. Requirements Traceability

In accordance with FSA standards, a traceability relationship is mandatory for every defined requirement. Traceability indicates a dependency relationship between two requirements. One purpose for traceability is to facilitate gap analysis. In general, traceability relationships are established from high-level requirements to detailed requirements in order to indicate that detailed requirements are derived from or dependent on high-level requirements.

3.3.1. Defined Traceability Relationships

The traceability relationships are identified in Figure 3-1. The figure does not mandate "one-to-one", "one-to-many", "many-to-one", or "many-to-many". It merely shows the relationships that have been defined between the requirement types. Each of these traceability relationship configurations may be appropriate in a specific project.

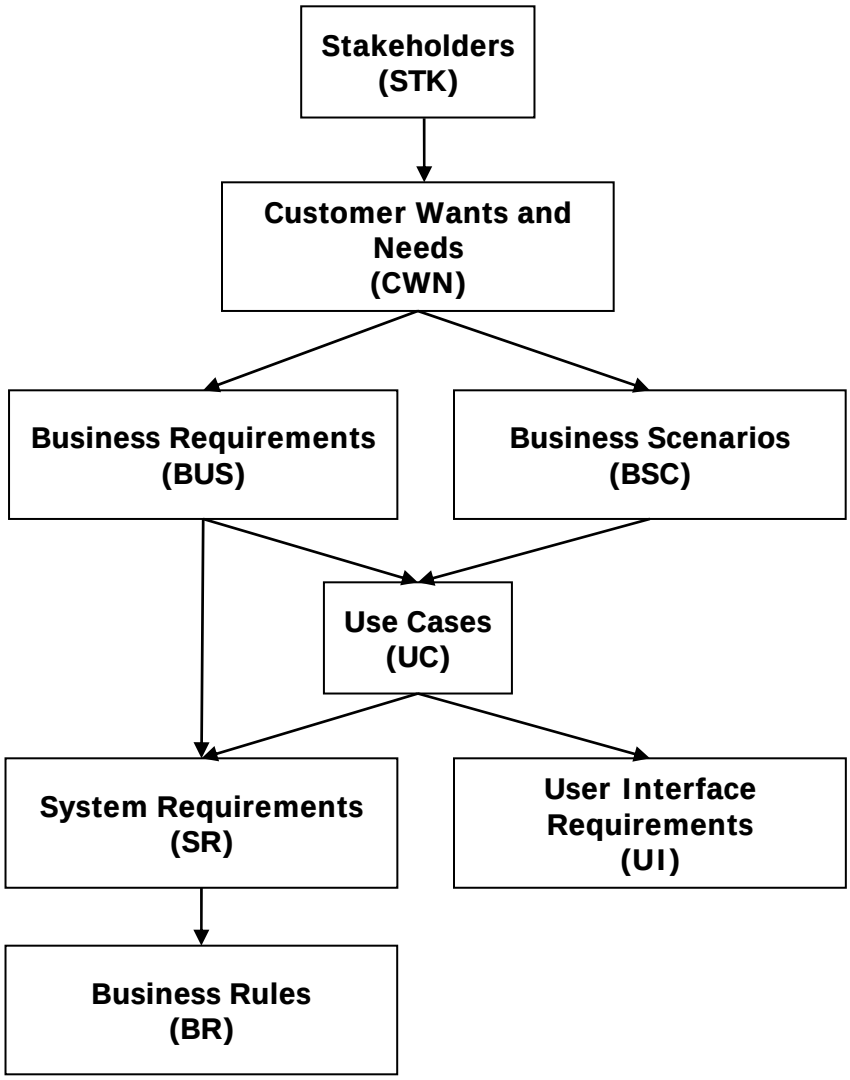

Figure 3-1: Traceability Relationships

3.3.2. Mandatory Traceability Relationships

In accordance FSA standards, traceability relationships are established in order to indicate that detailed requirements are derived from or dependent on high-level requirements. There are specific traceability relationships that are mandatory in order to ensure that enough trace information has been identified to make a gap analysis possible.

	Requirement Type	Traceability	Requirement Type		Requirement Type
	Stakeholders (STK)	Do not trace back to another requirement.			
Every	Customer Wants and Needs (CWN)	Traces-back-to at least one ->	Stakeholders (STK)		
Every	Business Requirement (BUS)	Traces-back-to at least one ->	Customer Wants and Needs (CWN)		

	Requirement Type	Traceability	Requirement Type		Requirement Type
Every	Business Scenario (BSC)	Traces-back-to at least one ->	Customer Wants and Needs (CWN)		
Every	Use Case (UC)	Traces-back-to at least one ->	Business Requirement (BUS)	or	Business Scenario (BSC)
Every	System Requirements (SR)	Traces-back-to at least one ->	Business Requirement (BUS)	or	Use Case (UC)
Every	Business Rule (BR)	Traces-back-to at least one ->	System Requirement (SR)		
Every	User Interface (UI)	Traces-back-to at least one ->	Use Case (UC)		

Table 3-4: Mandatory Traceability Relationships

3.4. Requirements Attributes

Attributes define a unique structure for requirements and aid in categorizing and sorting requirements. Table 3-5 lists the attributes that have been defined for the various requirement types.

Attribute Name	Description	Type	Mandatory vs. Optional
Status	Defines if the requirement is Valid, Obsolete, or Future	List	Mandatory
Product Release	The latest release that this requirement applies to	List	Mandatory
Requirements Baseline	The latest requirements baseline that modified this requirement	List	Mandatory
External Identifier	The unique identifier for this requirement that can be found in the document; this is in addition to the RequisitePro number	Text	Optional
Date Added	Date the requirement was added	Date	Optional
Added By	Who created the requirement in RequisitePro	Text	Optional
Functional Type	Whether the requirement is functional or non-functional	List	Mandatory in BUS and SR
FR Category	Used to further define a functional requirement	List	Mandatory in BUS and SR when Type=FR
NFR Category	Used to further define a non-functional requirement	List	Mandatory in BUS and SR when Type=NFR
Notes	Available for any applicable comments for this requirement; should be used if any other attribute value selected from a list is "other"	Text	Optional

Attribute Name	Description	Type	Mandatory vs. Optional
Change Request	*System Attribute that provides a bidirectional link between Requisite Pro and ClearQuest*		

Table 3-5: Requirement Attributes

Section 4. Requirements Management Automation

To the degree possible, automation will be used to manage storage, retrieval, changes, and the creation of baselines for requirements related artifacts.

4.1. Requirements Management Tools

An integrated set of tools will be used to manage requirements artifacts. RequisitePro will be used to manage storage and retrieval of requirements and related artifacts while ClearQuest and ClearCase will be used to control changes to functional baselines. Refer to the FSA Enterprise Configuration Management User Guide for additional details related to checking in requirements artifacts and for establishing the functional baseline.

4.1.1. RequisitePro

For each system being developed, a single RequisitePro repository will be used to manage all of the requirements for the system. A standard RequisitePro project structure, shown below, will be used to organize the various requirements artifacts. Figure 4-1 illustrates how a RequisitePro project is structured hierarchically.

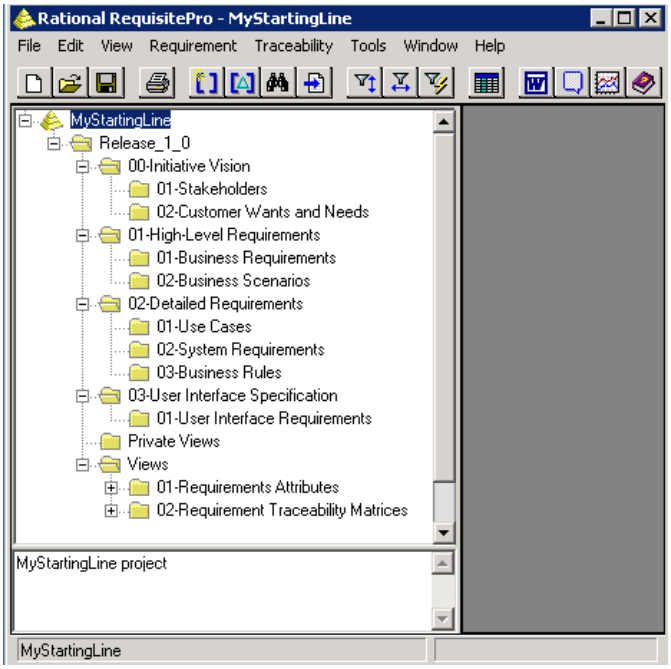

Figure 4-1: RequisitePro Project Structure

The structure is defined as follows:

- **Project Level:** The top level of the RequisitePro project is the name of the project (For Example: MyStartingLine)

- **Release Level**: The next level represents the Release of the project being worked on. In the example above, only 1 release of the project is being worked on.
  - **Document Level**: For each of the documents being developed, a package/folder will be created to store the document, and associated requirements. For the initial release of the system, there will always be 4 document level folders (00-Initiative Vision, 01-High-Level Requirements, 02-Detailed Requirements, and 03-User Interface Specifications).

    Since the initiative vision document pertains to all releases of the system, the package/folder "00-Initiative Vision" will be excluded for all Release-Level packages/folders after the initial release.
    - **<Requirements> Level**: For each type of requirement captured in the document, a package/folder will be created to store those requirements. (For example: The Initiative Vision document contains "stakeholder' requirements and "customer wants and needs" requirements. Consequently, the packages/folders "01-Stakeholders" and "Customer Wants and Needs" have been created below the "00-Initiative Vision" package/folder.
  - **Private Views:** This package/folder exists in order for RequisitePro users to store their private views (For example: views that are not visible by other RequisitePro users).
  - **Views Level:** This package/folder exists in order to group standard views and project specific views.
    - **01-Requirements Attributes:** This package contains RequisitePro attribute matrices for each requirement type. These views show each requirement of a particular type as well as the associated attribute values.
    - **02-Requirements Traceability Matrices:** This package contains RequisitePro views that show traceability between the various requirement types. These views can be used to validate required traceability as specified in the system's "Requirements Management Plan".

4.1.2. ClearQuest

For each system, a single ClearQuest repository will be used to manage all of the change requests (CRs) the system. A standard ClearQuest schema/design will be used for all FSA system development efforts in order to ensure consistency in process.

ClearQuest based change requests (CRs) will be created and processed in order to track changes to all types of system assets including requirements. A bidirectional link will be established between a CR managed by ClearQuest and one or more requirements managed by RequisitePro in order to specify which requirement(s) the change request pertains to.

4.1.3. ClearCase

For each system, one or more system specific ClearCase repositories called Version Object Bases (VOBs) will be created in order to control system assets; including requirements artifacts and baselines. When a functional requirements baseline is created, the file based assets associated with the baseline will be checked into a ClearCase VOB by the system's configuration management team.

4.2. Access and Security

Access to the various Rational tools will be granted to users after an FSA Rational Environment User ID Request form has been submitted to and processed by the FSA Rational Environment System Security Officer (SSO). Security protocols for each of the Rational tools is primarily based on a user's membership in one of the groups listed below.

- CMTeam
- CMLead
- DevTeam
- DevLead
- FSA_Mgmt
- OperationsLead
- OperationsTeam
- RequirementsLead
- RequirementsTeam
- SecurityTeam
- TestLead
- TestTeam

The Leads for each group will be members of both the "Lead" group and the "Team" group. For instance: If the user Bob is the CM Lead for the project WidgetDev, he will be a member of the group CM Lead and CM Team.

The ability to view and modify assets stored in the RequisitePro project will be dependent on the RequisitePro group that a user ID has been added to. Table 4-1 summarizes the privileges each of the groups have within RequisitePro.

Group	Privileges
Development Team	Read access to all requirements assets located in RequisitePro repository
FSA Management	Read access to all requirements assets located in RequisitePro repository
Operations Team	Read access to all requirements assets located in RequisitePro repository
Requirements Team	**Read and write** access to all requirements assets located in the RequisitePro repository
Security Team	Read access to all requirements assets located in RequisitePro repository
Test Team	Read access to all requirements assets located in RequisitePro repository

Table 4-1: RequisitePro Security Groups

4.3. Loading Initial Set of Documents and Requirements

As described in Section 2, Requirements Management Process, the initial set of documents (Initiative Vision, High-Level Requirements, Detailed Requirements and User Interface Specifications) will be loaded into RequisitePro just prior to submission to FSA for review and signoff. These documents must be MS-Word documents. The "track changes" feature in MS-Word must not be activated and all previously tracked changes must have been accepted into the document prior to the import.

Each document will be loaded into RequisitePro using the standard RequisitePro "File=>Import" capability. The following guidelines should be adhered to when importing documents into RequisitePro:

1. When prompted to import content, specify "Document Only". You will not be using RequisitePro to parse the documents. Rather, you will "tag" the individual requirements in the document after it has been loaded.
2. When prompted, choose "Yes" to import both the document text and formatting. Do not apply the document formatting associated with the RequisitePro document type that was selected.
3. Ensure that there is no change tracking enabled in an MS-Word document being imported. The document should have been finalized prior to import (in MS-Word 2007: Review tab, Changes group, Accept).

Process Guidance: The "Initiative Vision" document will be loaded once and apply to all releases of the system. For each release of the system, each of the following documents will be developed and loaded into RequisitePro prior to signoff by FSA: High-Level Requirements, Detailed Requirements and User Interface Specifications.

4.4. Managing Changes to Requirements

A change to a Functional Baseline entails one of the following:

- A change to a document
- A change to the text of a requirement
- A change to an attribute value for a requirement
- A change to a traceability relationship between two requirements.

4.4.1. Change Request Workflow

A request to change a requirement will follow the workflow below. Upon approval by the system's configuration control board (CCB), the change request (CR) will be transitioned to the Development state. After the CR has been approved for "Development" the requirement can be changed in RequisitePro. A bidirectional link between the CR and the Requirement should be created in order to trace the change request to the requirement being changed.

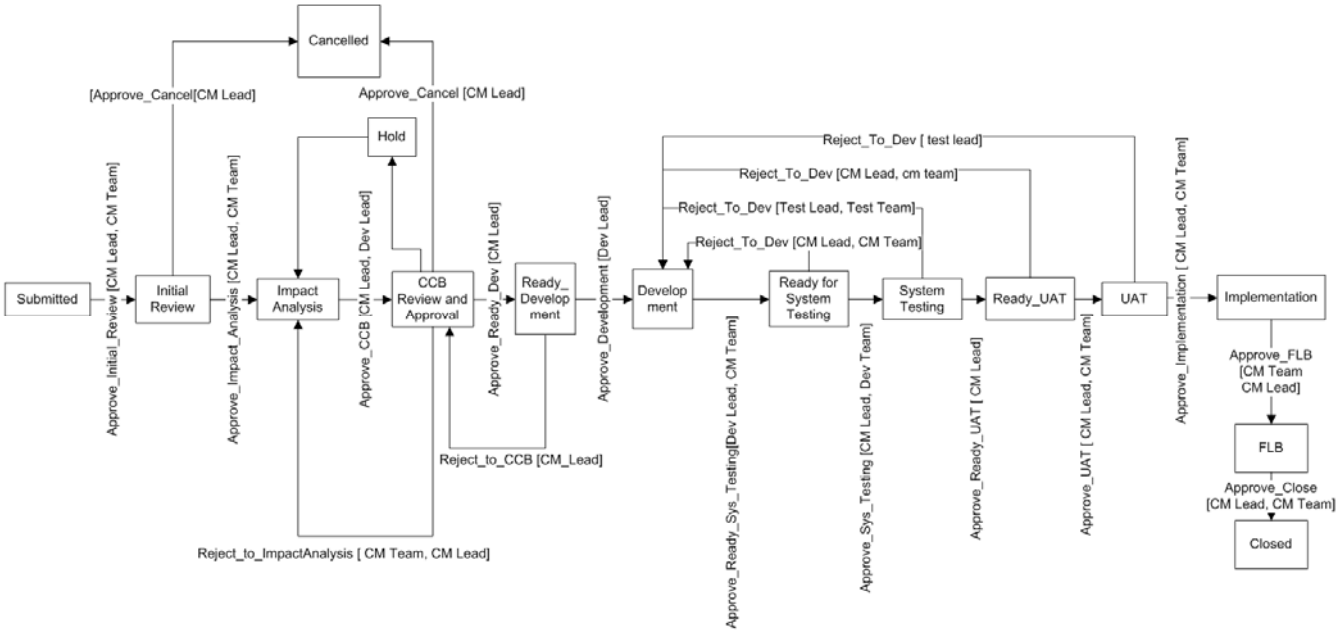

Figure 4-2: Change Request Workflow

4.4.2. Requirement Change Scenarios

The following scenarios represent the most common types of changes to requirements:

1. Obsolete Requirement
2. Deferred Requirement
3. Partially Deferred Requirement
4. Revised Requirement - Current Release
5. Revised Requirement - Supersedes Requirement in Older Release

In all cases, the changes will be documented in the revisions section of the Requirements Document to which the change applies. The term "revisions section" refers to a new section that should be added to the end of each document where requirements are tagged. Each document that contains tagged requirements should have a section added to the end of the document where copies of all deferred, partially deferred and obsoleted requirements plus free form notes should be placed. There will never be actual tagged requirements in the revision section as this section is used provide historical information only. Additionally, the following attributes of the requirement will need to be updated: ***Status***, ***Product Release***, and ***Requirements Baseline***.

Scenario 1: Obsolete Requirement

In this scenario, it is determined that an older requirement is no longer valid for the current release.

RequisitePro Procedures

- The requirement text will be moved to the revision section of the current document with a comment indicating that it is obsolete.

- The "Status" attribute will be set to Obsolete and a comment will be added to the Notes attribute indicating why the requirement is obsolete.

Scenario 2: Deferred Requirement
In this scenario, the requirement in question will NOT be implemented in the current release but, rather, deferred to some future release.

RequisitePro Procedures
- The requirement text will be moved to the revision section of the current document with a comment indicating that it has been deferred to a future release.
- The "Status" attribute will be set to Obsolete and a comment will be added to the Notes attribute indicating why the requirement is obsolete.
- The new requirement will be created in the appropriate requirements document for the new release.

Scenario 3: Partially Deferred Requirement
In this scenario, a portion of the requirement in question will NOT be implemented in the current release but, rather, deferred to some future release.

RequisitePro Procedures
- The requirement text will be copied to the revision section of the current document with a comment indicating that part of it has been deferred to a future release.
- The original requirement will be modified in place to represent what will be implemented in the current release.
- The deferred content of the requirement will be created in the appropriate requirements document for the new release.

Scenario 4: Revised Requirement – Current Release

RequisitePro Procedures
- The requirement text is modified within the current release.
- A comment is made in the notes attribute as to the reason for the revision.

Scenario 5: Revised Requirement – Supersedes Requirement in Older Release
In this scenario, a requirement in an older release is superseded by a requirement in a new release.

RequisitePro Procedures
- A new requirement is documented in the new requirements document for the release.
- The requirement that has been superseded will be moved to the revisions section of the old requirements document with a comment that the old requirement has been superseded by the new requirement.
- The value of the old requirement's Status attribute will be set to "Obsolete" and a comment will be added to the Notes attribute indicating the reason that the requirement was superseded.

4.5. Requirements Reporting

RequisitePro views are the feature that displays formatted information about requirements, their attributes and their traces that is stored within RequisitePro for the project. Views may be created and customized by filtering on attribute values and choosing which attributes to display in the created view.

4.5.1. Report Generation for Print and Export

Views are best examined interactively through the RequisitePro tool. The built-in capability to automatically generate an external report file that is printable or viewable outside of RequisitePro is limited. A view may be exported to a CSV (comma separated value) file but neither to a pdf file nor any other integrated report building tool. There is no direct, built-in report formatting or report builder facility that will be available to FSA projects from RequisitePro.

The CSV formatted files may be opened with MS-Excel and manipulated to create reports in any manner that the FSA project team chooses to implement but large attribute and traceability matrices may prove unwieldy to work with using MS-Excel. It may be necessary to manually create gap analysis reports using the displayed or exported data viewable from a customized, filtered attribute or traceability view that an FSA project creates. FSA Rational will provide user support for the creation of customized and filtered RequisitePro views.

The CSV files are also possible inputs to more sophisticated reporting tools such as Crystal Reports, Business Objects, Actuate and others but FSA Rational will not be able to provide support or guidance on any of these external reporting tools.

4.5.2. Attribute Matrix Views

The following attribute matrix views have been defined in order to present the complete list of each type of requirement along with their associated attributes:

- Business Requirements
- Business Rules
- Business Scenarios
- Customer Wants and Needs
- Stakeholders
- System Requirements
- Use Cases
- User Interface Requirements

Figure 4-3 illustrates the attribute matrix views that are standard for FSA.

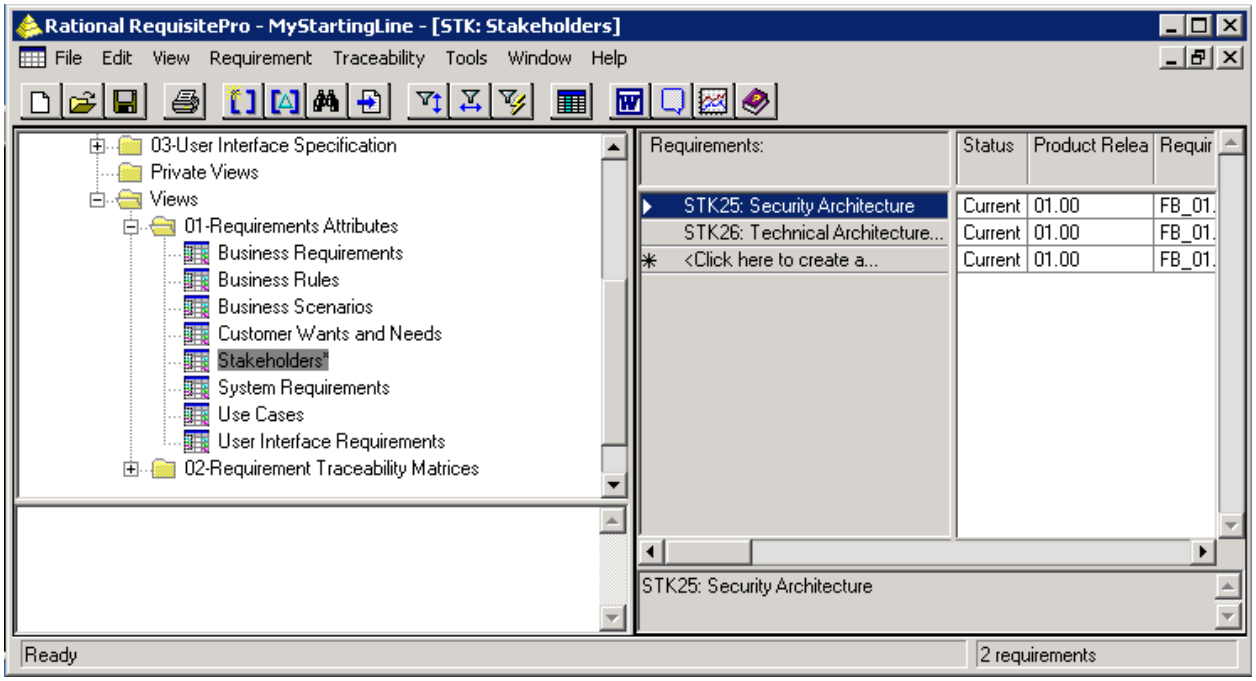

Figure 4-3: RequisitePro Attributes Matrix Views

4.5.3. Traceability Matrix Views

The following standard traceability matrix views have been defined in order to assist in the validation of relationships between the various requirement types:

- Stakeholder traced to Customer Wants and Needs
- Customer Wants and Needs traced to Business Scenarios
- Customer Wants and Needs traced to System Requirements
- Business Requirements traced to Use Case
- Business Requirements traced to System Requirements
- Business Scenarios traced to Use Cases
- Use Cases traced to System Requirements
- System Requirements traced to Business Rules
- Use Cases traced to User Interface Requirements

These views can be used to identify requirements that do not have the required dependency as specified in Section 3.3. Figure 4-4 is an example of one of the traceability views. For example, the view "Stakeholder traced to Customer Wants and Needs" could be used to validate that all "Customer Wants and Needs" (CWN) requirements were derived from stakeholder requirements. In order to perform this validation, the RequisitePro user would follow the steps below:

1. Open the view "Stakeholder traced to Customer Wants and Needs"
2. Visually scan through the list of Customer Wants and Needs (CWN) requirements searching for ones that are NOT traced from a "Stakeholder" (STK) requirement. In the example below, CWN13 should be further analyzed because it does not have a traceability relationship from any of the Stakeholder (STK) requirements.

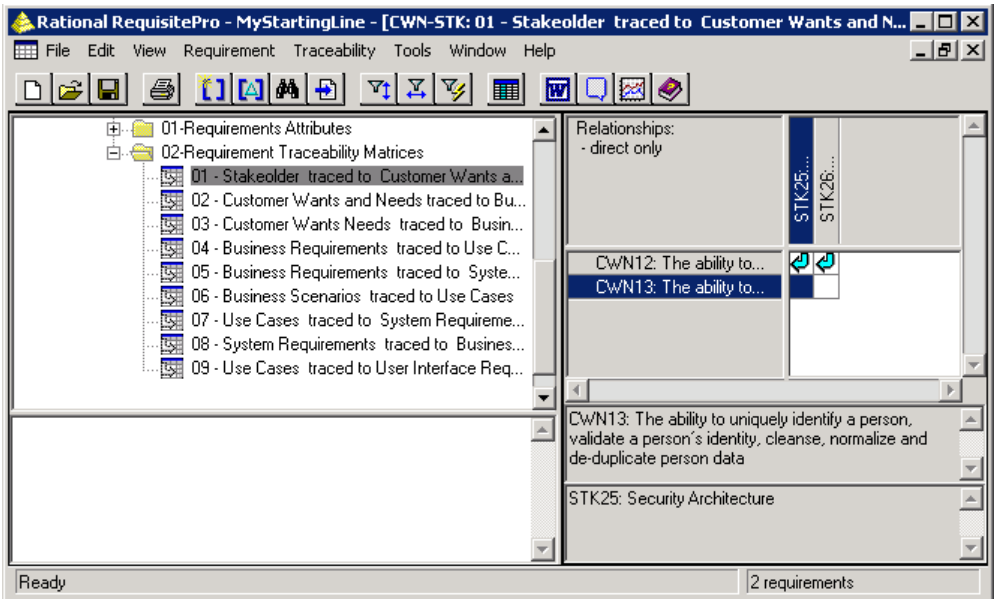

Figure 4-4: Example of a Traceability Matrix View

4.6. Tailoring the Environment

While each FSA Project will begin with a standard RequisitePro configuration, allowances may been made for Project specific tailoring. The office of the CIO and FSA Projects may submit changes to the RequisitePro project structure through the FSA Rational Environment Request System (FRERS). These requests will be analyzed in order to determine if it should be implemented at the project level, at the enterprise level or at all. The disposition of the change request will be performed by the FSA Rational System Change Control Board.

Project specific changes will be categorized and documented as tailored elements of the standard enterprise solution. The process for implementing a change at an enterprise level is as follows: An impact analysis will be performed on each RequisitePro project that was developed based on the Enterprise Standard. If, after analysis, the FSA Project Point of Contact and the FSA Rational System Change Control Board feel that the change is warranted, the change will be implemented for the Project.

Appendix A: Acronyms and Abbreviations

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Acronym	Definition
CCB	Configuration Control Board
CM	Configuration Management
CR	Change Request
FSA	Federal Student Aid
LCM	Lifecycle Management
RMP	Requirements Management Plan
TASS	Technical Architecture Core Support Services

Appendix B: Glossary

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Term	Definition
Framework	A structured approach of required stages, key activities and core deliverables that provides a foundation for aligning existing interrelated processes within the Department—regardless of system lifecycle methodology employed.
Functional Baseline	The state of the requirements at a point in time.
General Support System (GSS)	An interconnected information resource under the same direct management control that shares common functionality. A system normally includes hardware, software, information, data, applications, communications, facilities and people. It provides support for a variety of users or applications, or both.
Project Manager	Staff person who is responsible for creating deliverables and ensuring that business and technical reviews are executed and required deliverables are completed. This individual is also responsible for managing the day-to-day operations of the Department's IT solutions.
Quality Assurance (QA)	A discipline within project management to objectively monitor control and ensure the completion of key activities and required core deliverables throughout the lifecycle.
System	A collection of components (hardware, software, interfaces) organized to accomplish a specific function or set of functions; generally considered to be a self-sufficient item in its intended operational use.