

IIBA[®] Vendor Showcase



Non-Functional Requirements Analysis

December 12, 2013

Vision and Mission

Vision

The world's leading association for Business Analysis professionals

Mission

Develop and maintain standards for the practice of business analysis and for the certification of its practitioners

IIBA[®] is an international not-for-profit professional association for business analysts.

Tom Karasmanis



IIBA Product Manager

- Tom Karasmanis is a Senior Consultant with 25 years' experience in Information Technology, including roles as a Business Architect, Business/Systems Analyst, Project Leader, Technical Architect, and Software Engineer. He has worked in financial services, publishing, healthcare, public sector and telecommunications.
- Tom served as Chief Architect of the IIBA from 2009 to 2011. He is currently IIBA Product Manager of *Being a BA: Technical Excellence* and *Vendor Showcase*. Tom is a management consultant in business architecture and business analysis, assisting organizations to build or improve their BA practices. He speaks regularly at international conferences.
- Tom holds a Bachelor of Applied Science in Chemical Engineering from the University of Toronto and is active in the business analysis and business architecture communities.

Outline

- Introductions and Housekeeping 12:00
- Vendor Presentations 12:05
 - **TopTeam Analyst** 12:05
 - **Blueprint** 12:25
- Questions and Answers 12:42
- Close 12:59

Question and Answer

How to Ask Questions

- Use the Question box to ask questions. Selected questions will be answered at the end, but you can ask at any time.
- Include the vendor's name if you want a specific vendor to respond.
- Short, specific questions, please!

IIBA Host
Tom Karasmanis



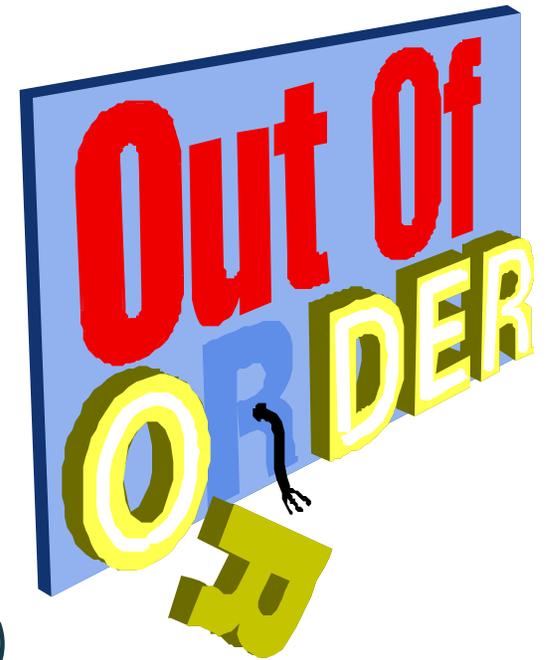
Ashu Potnis



Tony Higgins

So ... it's not working?

(From BABOK[®] Guide v2.0, section 9.17)



NON-FUNCTIONAL REQUIREMENTS ANALYSIS

What Are Non-Functional Requirements?

Requirements structure

—(From BABOK® Guide v2.0)

- Business Requirements
- Stakeholder Requirements
- Solution Requirements
 - Functional Requirements
 - *Non-functional Requirements* ***
- Transition Requirements

What Are Non-Functional Requirements?

- Capture conditions that do not directly relate to the behavior or functionality of the solution
- Instead, they describe environmental conditions under which the solution must remain effective or qualities that the systems must have
- Quality or supplementary requirements

What Are Non-Functional Requirements?

- Can include requirements related to:
- Capacity
- Speed (Response time, Throughput)
- Security
- Availability
- Scalability
- ... and more

What Is Requirements Analysis?

- Describes how business analysts prioritize and progressively elaborate stakeholder and ***solution requirements*** in order to enable the project team to implement a solution that will meet the needs of the sponsoring organization and stakeholders
 - Includes non-functional requirements

What Is Requirements Analysis?

- Involves analyzing stakeholder needs to define solutions that meet those needs, assessing the current state of the business to identify and recommend improvements, and the verification and validation of the resulting *requirements*
- Includes non-functional requirements

What Is Non-functional Requirements Analysis?

–BABOK® Guide v2.0, section 9.17

- The purpose of non-functional requirements is to describe the required qualities of a system, such as its usability and performance characteristics. These supplement the documentation of functional requirements, which describe the behavior of the system.

What Is Non-functional Requirements Analysis?

–BABOK® Guide v2.0, section 9.17

- Categories (*ISO 9126*)
 - Reliability
 - Performance Efficiency
 - Operability
 - Security
 - Compatibility
 - Maintainability
 - Transferability

What Is Non-functional Requirements Analysis?

–BABOK® Guide v2.0, section 9.17

- Measurement
 - Include one or more measures of success
 - How do we know we met the requirement
 - Requires to adequately test requirement
- Documentation
 - The system shall ...
- SMART

Importance – Why Bother?

- Essentially describe the target quality of the system, so ...
 - Missing non-functional requirements (missing quality) impacts every functional requirement
 - Could affect adoption
 - Could be compliance issues
 - Careful! Too much could impact time and cost
- Often require technical expertise
 - Could be done by System Analysts

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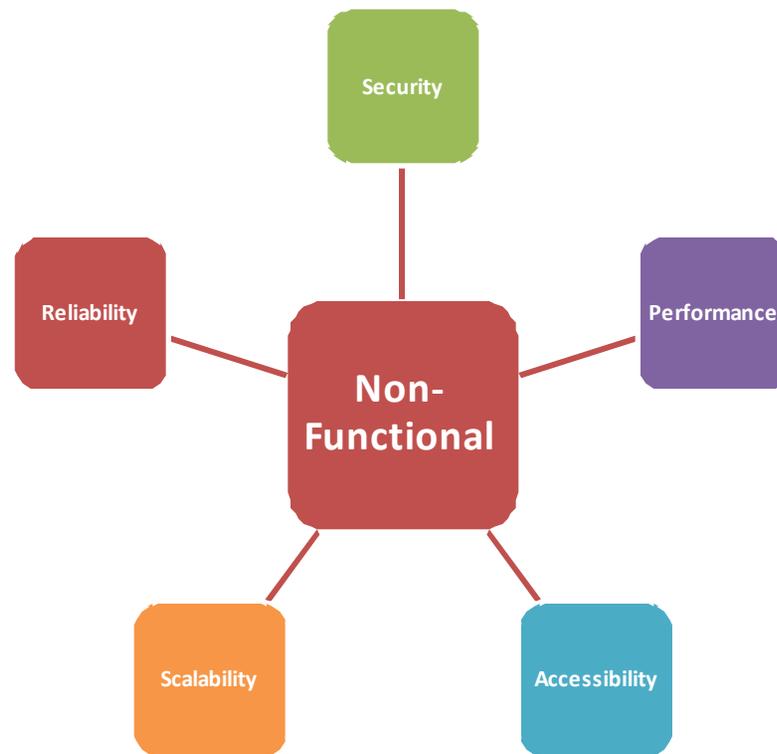


Tony Higgins



TopTeam *Analyst*™

Non-Functional Requirements



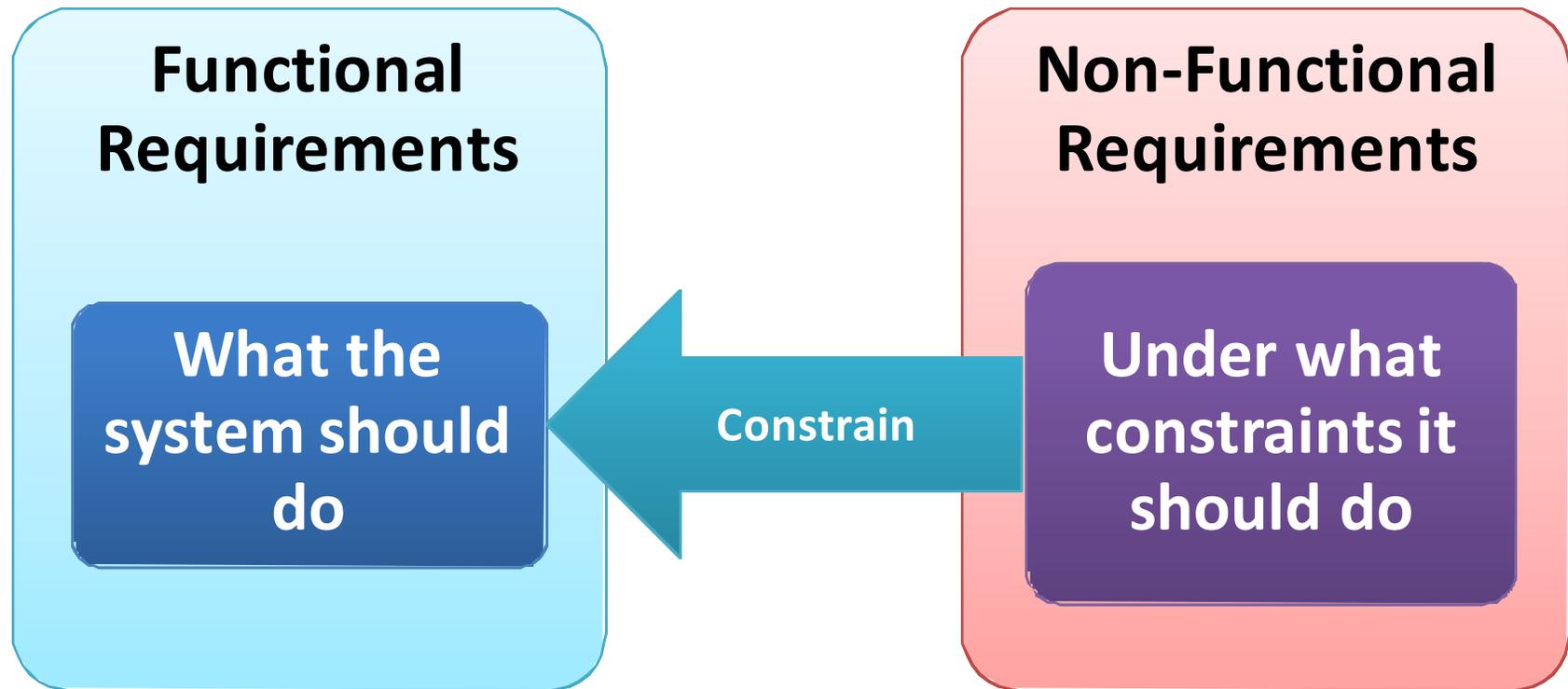
Requirements

Functional

Non-
Functional

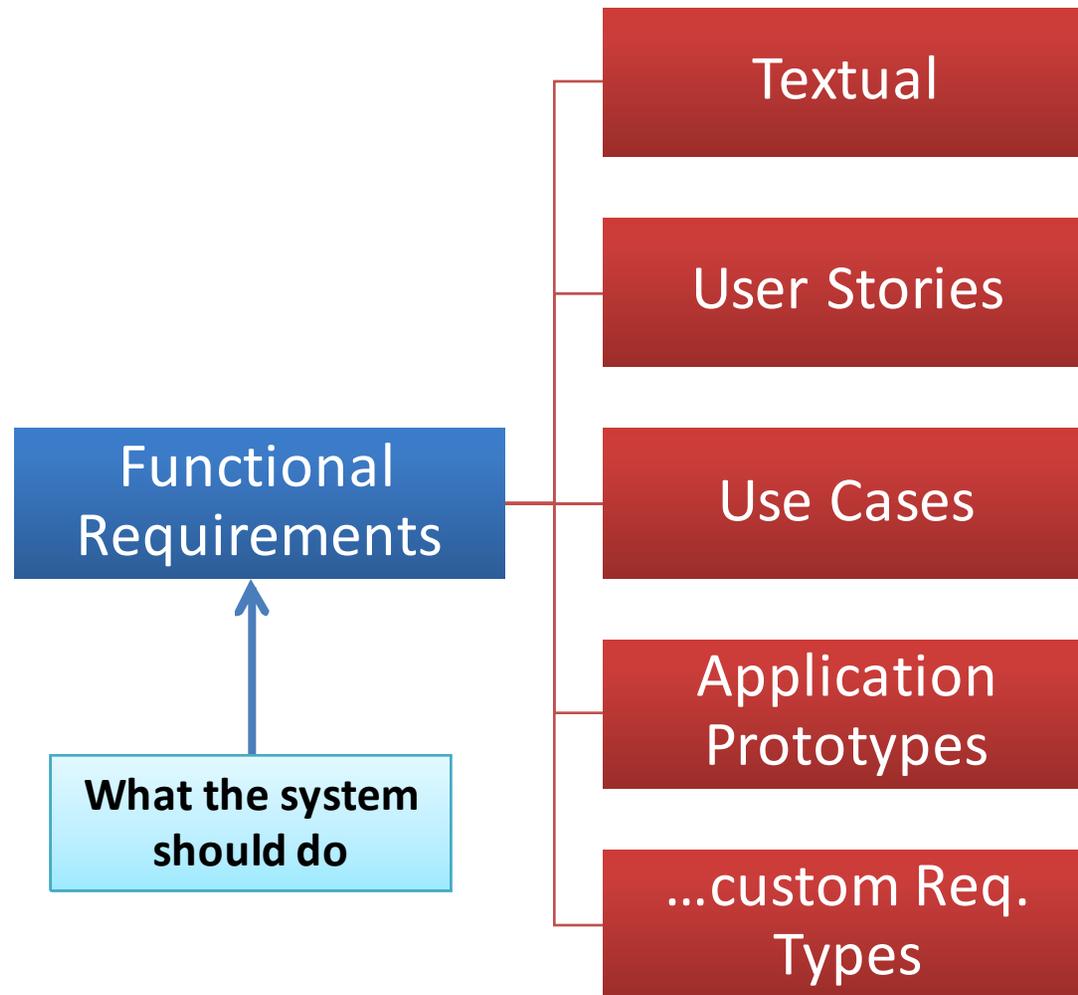
Business
Rules

Functional + Non-Functional = Complete Requirements



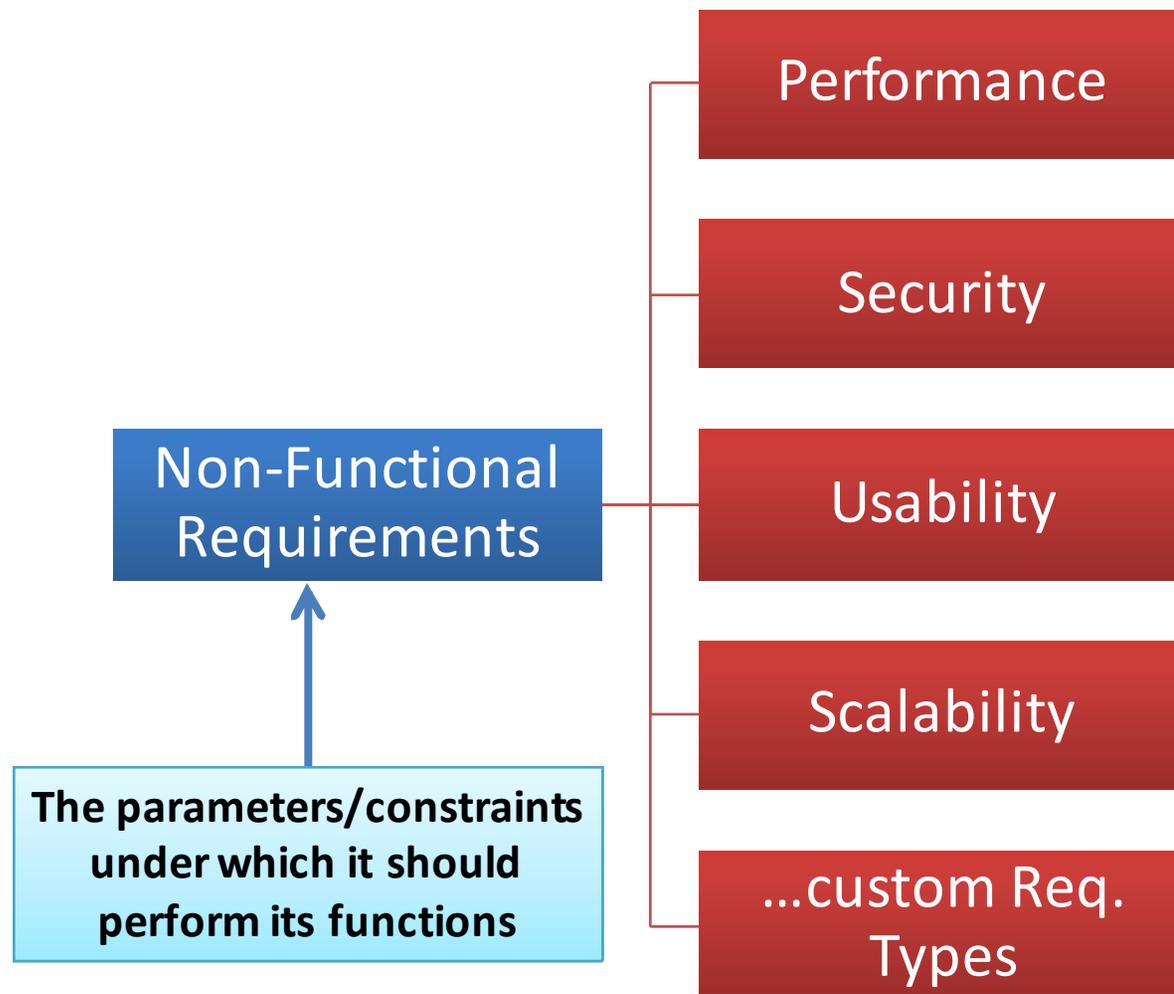
TopTeam Analyst

Functional Requirements Artifacts

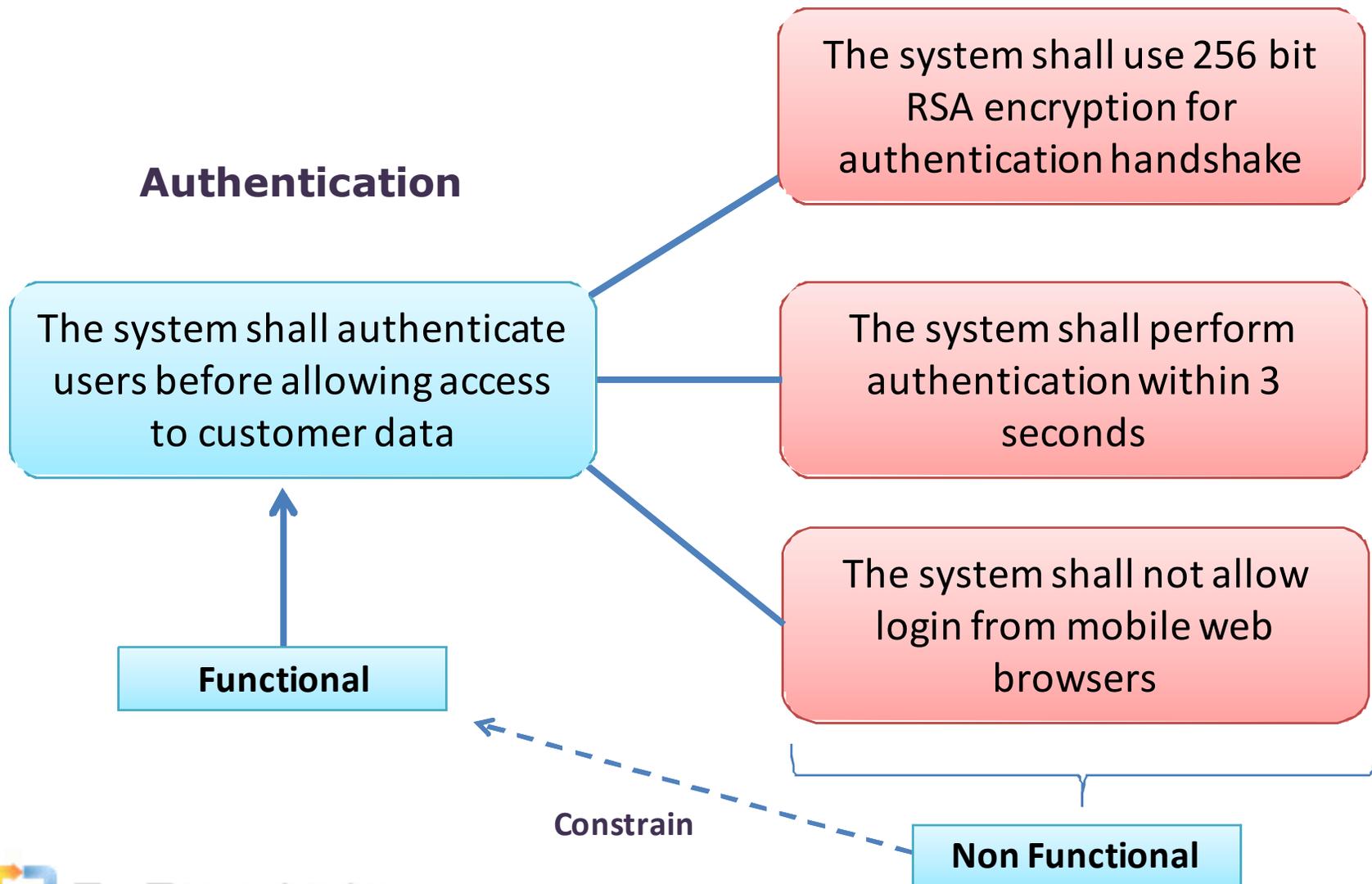


TopTeam Analyst

Non-Functional Requirements Artifacts



Requirements for a Business Application



Authoring Requirements in TopTeam Analyst with Word processor-like Editor

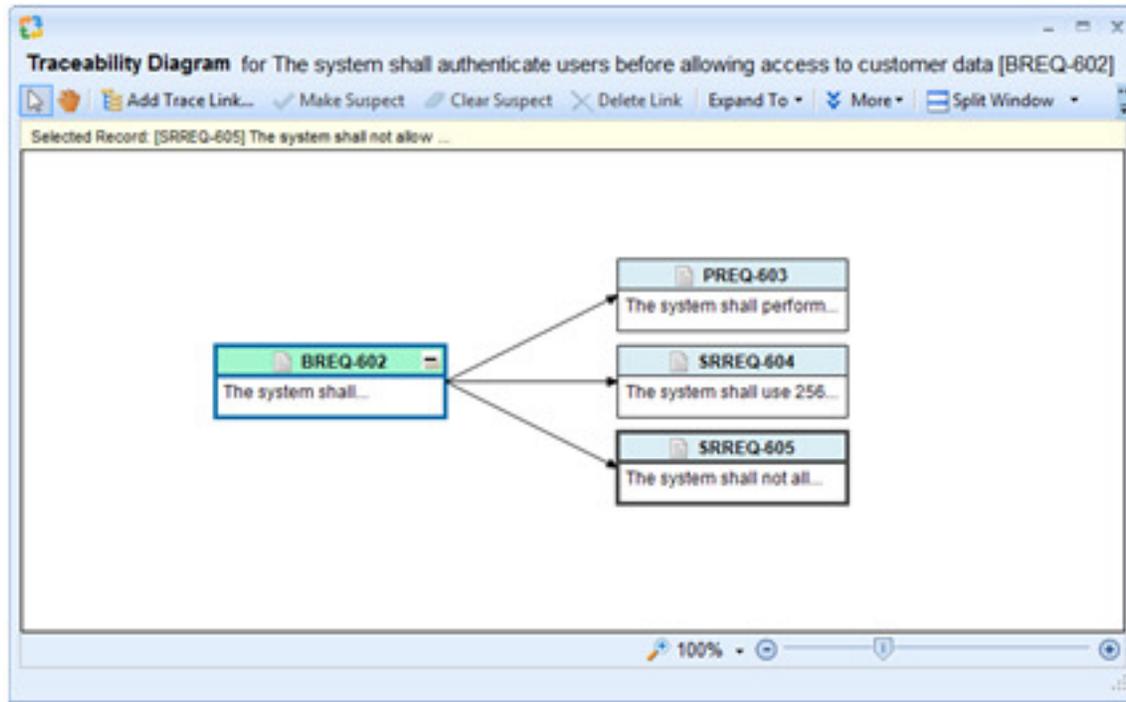
The screenshot displays the 'Requirements Document View' window in TopTeam Analyst. The window title is 'Requirements Document View [RDOC-2321] Business Requirements Doc (Strict Mode)'. The menu bar includes 'Open', 'New', 'Delete', 'Refresh', 'Filter', 'Map', 'More', 'Split Window', 'Export...', and 'Print'. The main content area shows a hierarchical list of requirements:

- 1. **Business Requirements [BREQ-2322]** ↳ 0 ↵ 0
 - 1.1. The system shall authenticate users before allowing access to customer data [BREQ-602] ↳ 3 ↵ 0
- 2. **Security Requirements [SRREQ-2324]** ↳ 0 ↵ 0
 - 2.1. The system shall use 256 bit RSA encryption for authentication handshake [SRREQ-604] ↳ 0 ↵ 1
 - 2.2. The system shall not allow login from mobile web browsers [SRREQ-605] ↳ 0 ↵ 1
- 3. **Performance Requirements [PREQ-2323]** ↳ 0 ↵ 0
 - 3.1. The system shall perform authentication within 3 seconds [PREQ-603] ↳ 0 ↵ 1

Annotations in the image include:

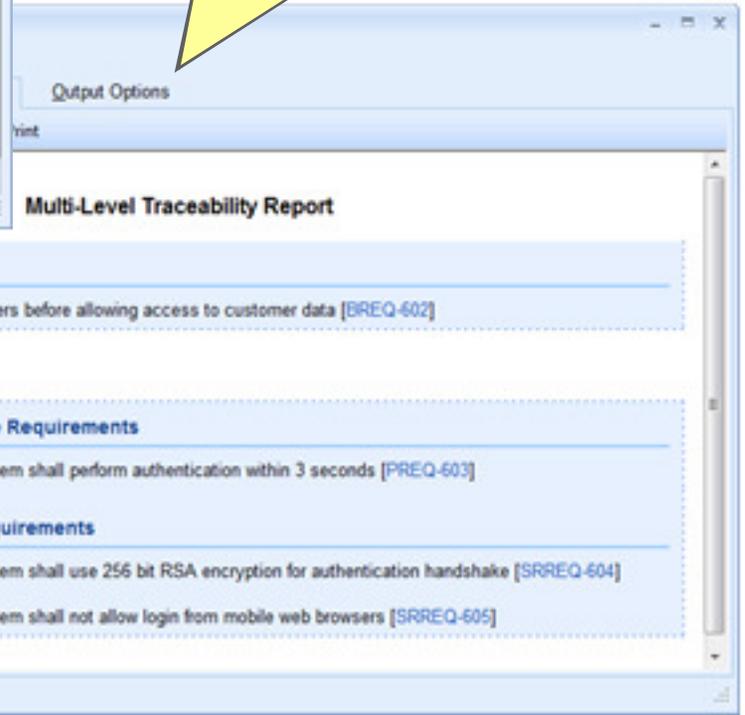
- A blue box labeled 'Non Functional' with a bracket pointing to requirements 2.1 and 2.2.
- A yellow callout box labeled 'Unique Requirements Identifiers and Trace Indicators' pointing to the requirement identifiers and trace indicators.

Trace links between Functional and Non-Functional Requirements

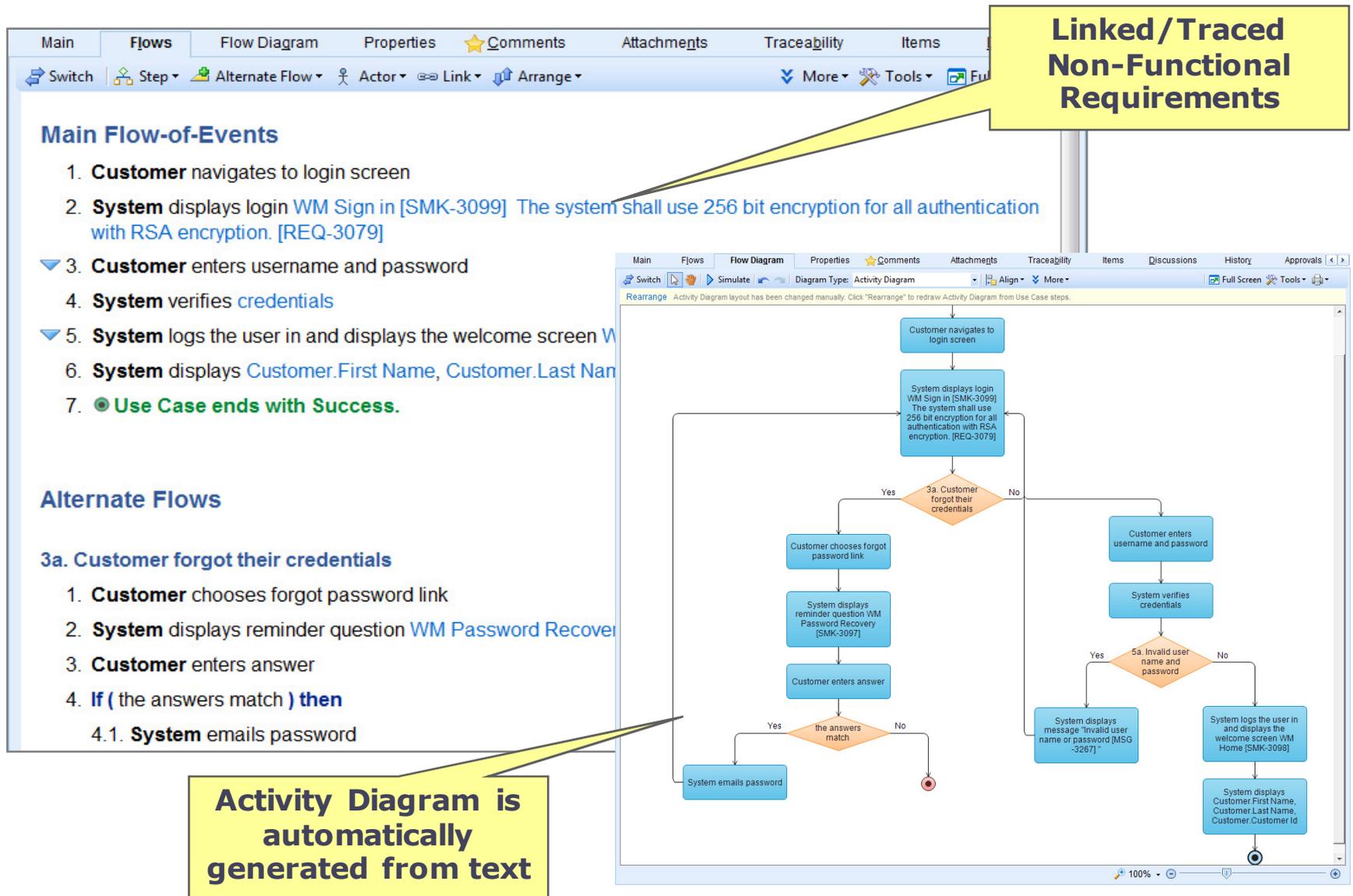


Trace Report

Graphical Trace Editor



Non-Functional Requirements can be linked with (traced to) Use Case Scenarios



Requirements for a Device/System



Noise Cancelling Headphone

The device shall reduce background noise by 24 decibels

The device battery shall last 12 hours of continuous use

The device shall be powered by ordinarily available AAA batteries

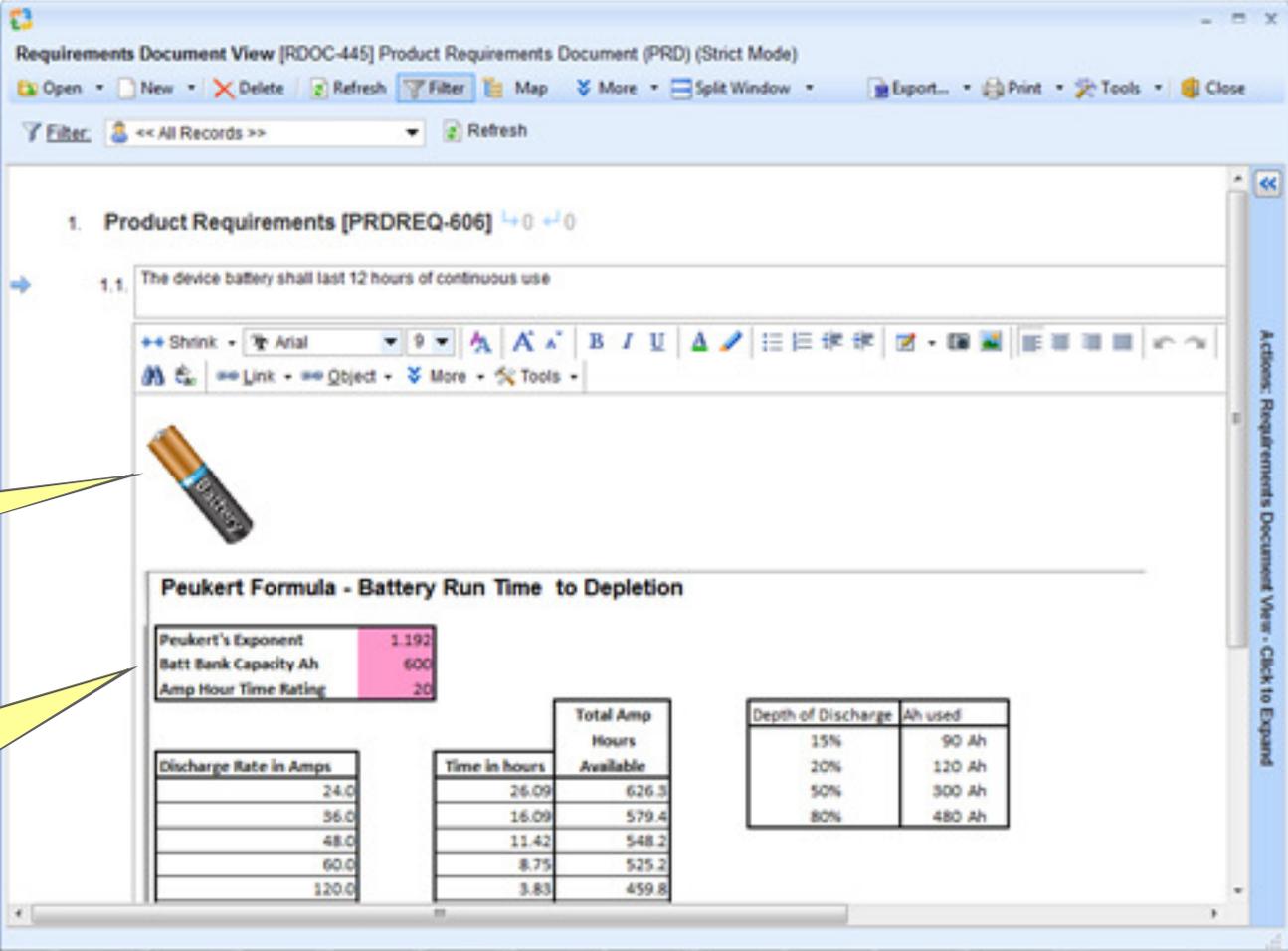
The device shall weigh less than 10 oz/284 grams

Functional

Non Functional

Constrain

Microsoft Word-like Full-Rich-Text editor for Requirements



Embed images, tables, bullets, etc.

Embed Excel Spreadsheet / Visio Diagrams etc. (OLE Embedding)

Requirements Versioning, Baselines and “diff” comparison

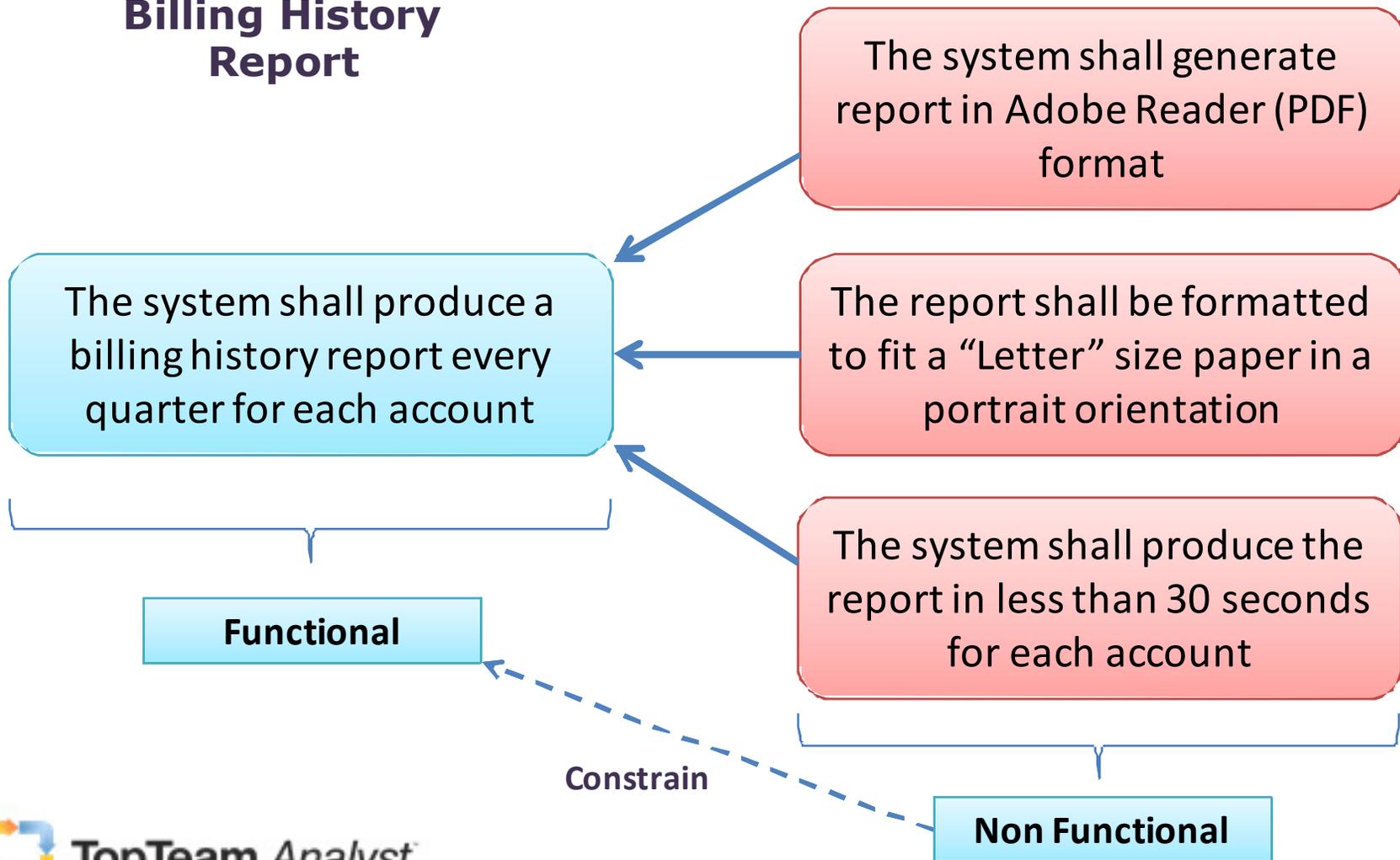
View Precise differences between versions

Field	Comparison of version 1.03 with 1.05																															
Title	The device battery shall last 12-14 hours of continuous use																															
Id	[PRDREQ-607]																															
Upd by	Steve Project Mgr																															
Description	 <p>AAA Battery</p> <p>Peukert Formula - Battery Run Time to Depletion</p> <table border="1"> <tr> <td>Peukert's Exponent</td> <td>1.192</td> </tr> <tr> <td>Batt Bank Capacity Ah</td> <td>600</td> </tr> <tr> <td>Amp Hour Time Rating</td> <td>20</td> </tr> </table> <table border="1"> <thead> <tr> <th>Discharge Rate in Amps</th> <th>Time in hours</th> <th>Total Amp Hours Available</th> </tr> </thead> <tbody> <tr> <td>24.0</td> <td>26.09</td> <td>626.3</td> </tr> <tr> <td>36.0</td> <td>16.09</td> <td>579.4</td> </tr> <tr> <td>48.0</td> <td>11.42</td> <td>548.2</td> </tr> <tr> <td>60.0</td> <td>8.75</td> <td>525.2</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Depth of Discharge</th> <th>Ah used</th> </tr> </thead> <tbody> <tr> <td>15%</td> <td>90 Ah</td> </tr> <tr> <td>20%</td> <td>120 Ah</td> </tr> <tr> <td>50%</td> <td>300 Ah</td> </tr> <tr> <td>80%</td> <td>480 Ah</td> </tr> </tbody> </table>	Peukert's Exponent	1.192	Batt Bank Capacity Ah	600	Amp Hour Time Rating	20	Discharge Rate in Amps	Time in hours	Total Amp Hours Available	24.0	26.09	626.3	36.0	16.09	579.4	48.0	11.42	548.2	60.0	8.75	525.2	Depth of Discharge	Ah used	15%	90 Ah	20%	120 Ah	50%	300 Ah	80%	480 Ah
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50%	300 Ah																															
80%	480 Ah																															

Inserted Text

Requirements for a Business Application

Billing History Report



Non-Functional Requirement Types also called “ilities”

Availability

Extensibility

Interoperability

Maintainability

Portability

Scalability

Supportability

Accessibility

Adapt TopTeam Analyst by configuring Non-Functional Requirements types that you need

Administration

Administration > Configure System Record Types

Configure System Record Types

- Create Record Type using Wizard**
Use this wizard to define a new Record Type with all available options.
- Edit Record Types**
Edit Record Type properties such as Name, Prefix, Icon, etc.
- Configure Record Type Traceability Rules**
Configure the system rules that enforce how the different Record Types can be associated other.
- Customize Record Type Fields**
Add custom fields to Record Types. You can also modify the Caption, Allowed Values, Help the existing fields.
- Configure Record Type Versioning Rules**
Configure rules to specify when the application should create a new version of the record.

Requirement Type Configuration

Create Non-Functional Requirement Types as per your needs

Administration

Administration > Configure System Record Types > Edit Record Types

Edit Record Types

Create and Edit Record Type

New Record Type | Save | Cancel | Delete Record Type | Related Tasks

Name (Plural) Accessibility Requirements
Enter a name for the Record type as it should appear in all interfaces in TopTeam.

Name (Singular) Accessibility Requirement
Enter the singular form of the name for this Record Type.

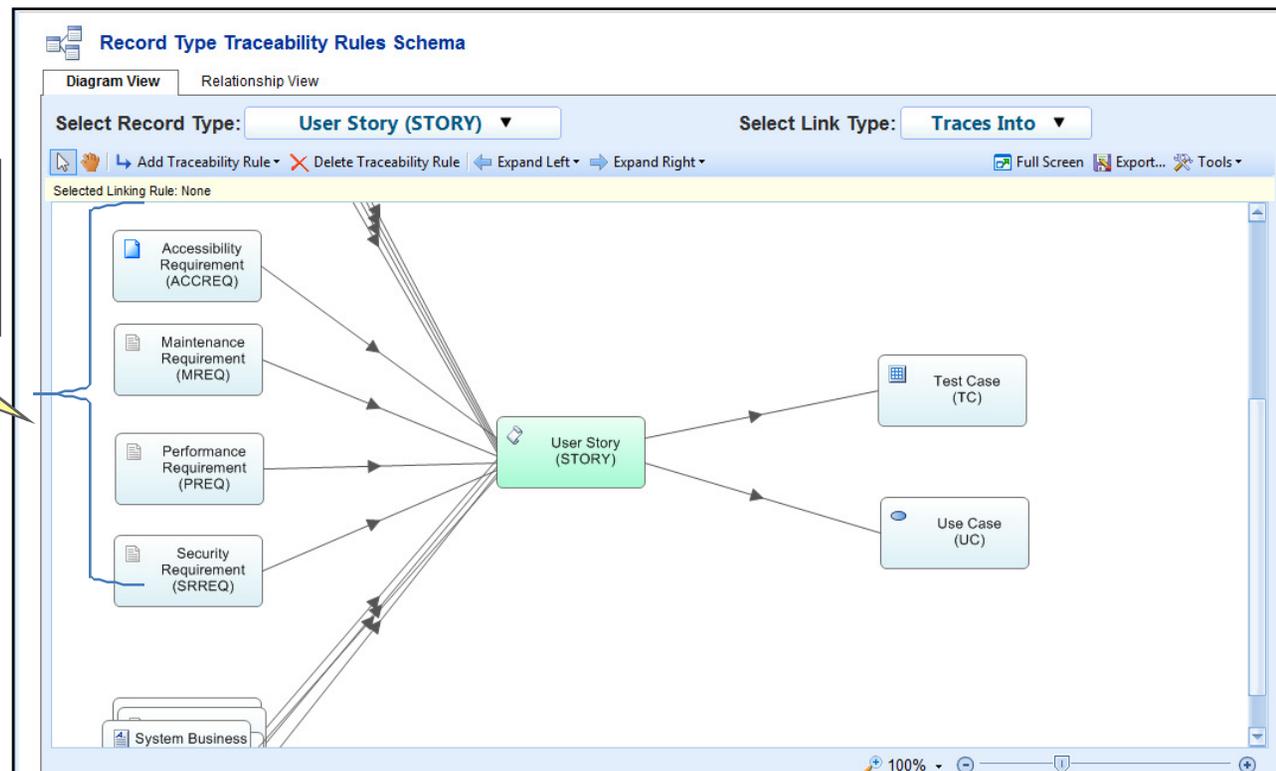
Initial Status Draft
Whenever a record of this type is created, it will be initialized with the Status specified here.

Prefix for Identifier ACCREQ
Specify a unique prefix for the identifier. e.g. UC-101, ISS-115, etc. Maximum permitted size is six characters.

Image
Select an image for the Record Type. This image will appear in the browsers etc.

Non-Function Requirements vs User Stories Trace Configuration

Define Trace
Schema/Rules



Link Non-Functional Requirements with User Stories

The image displays two overlapping windows from the TopTeam Analyst software. The top window shows a 'User Story Login to System [STORY-421]' with fields for Name, Type, State, Priority, and Owner. The bottom window shows the 'Traceability' view for the same user story, listing linked non-functional requirements.

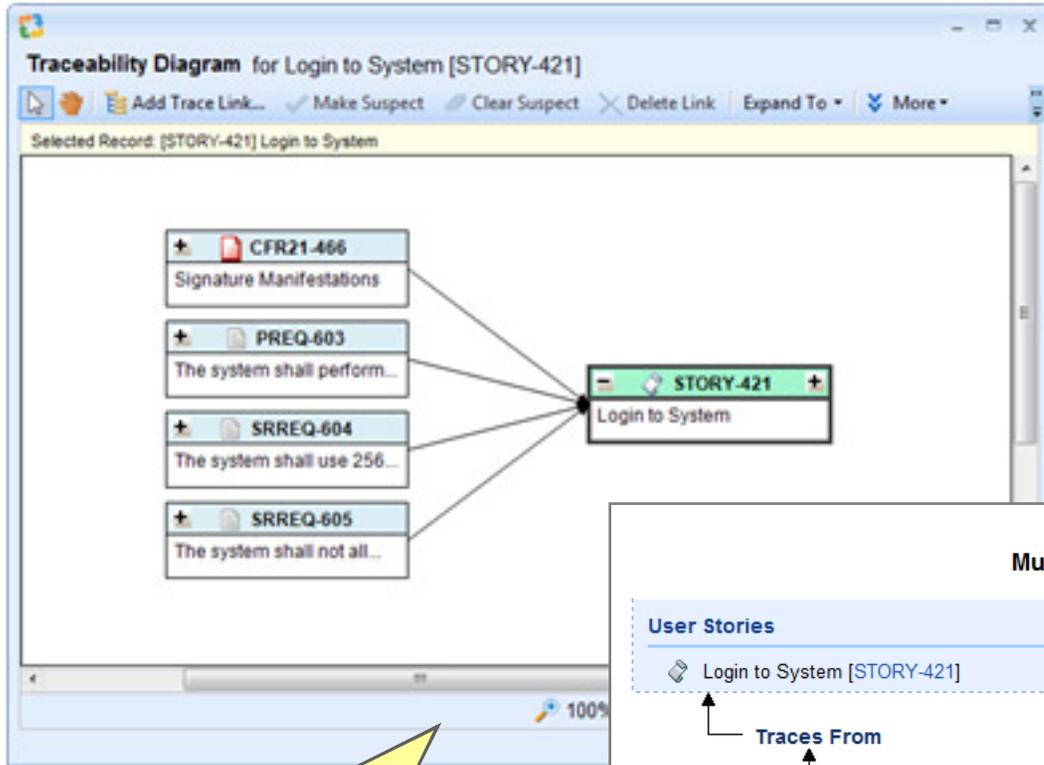
User Story

Linked/Traced Non-Functional Requirements

: Traces From	
Name	ID
Signature Manifestations	CFR21-466
The system shall perform authentication within 3 seconds	PREQ-603
The system shall not allow login from mobile web browsers	SRREQ-6...
The system shall use 256 bit RSA encryption for authentication handshake	SRREQ-6...

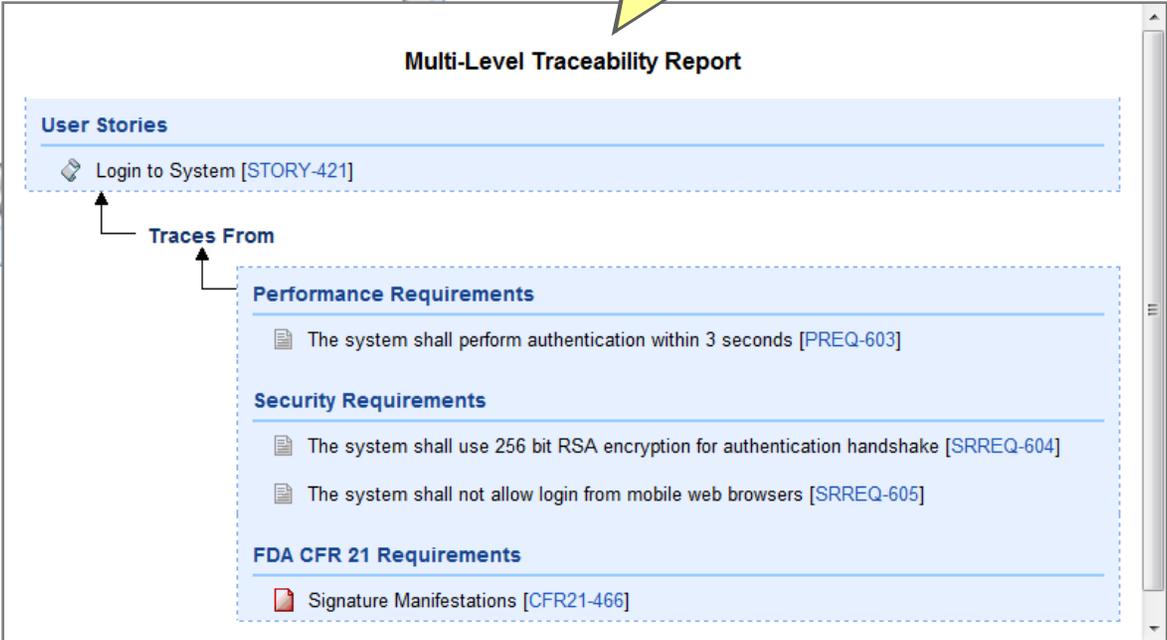
: Traces Into	
Name	ID
Login to System	UC-436

Trace links between User Story and Non-Functional Requirements

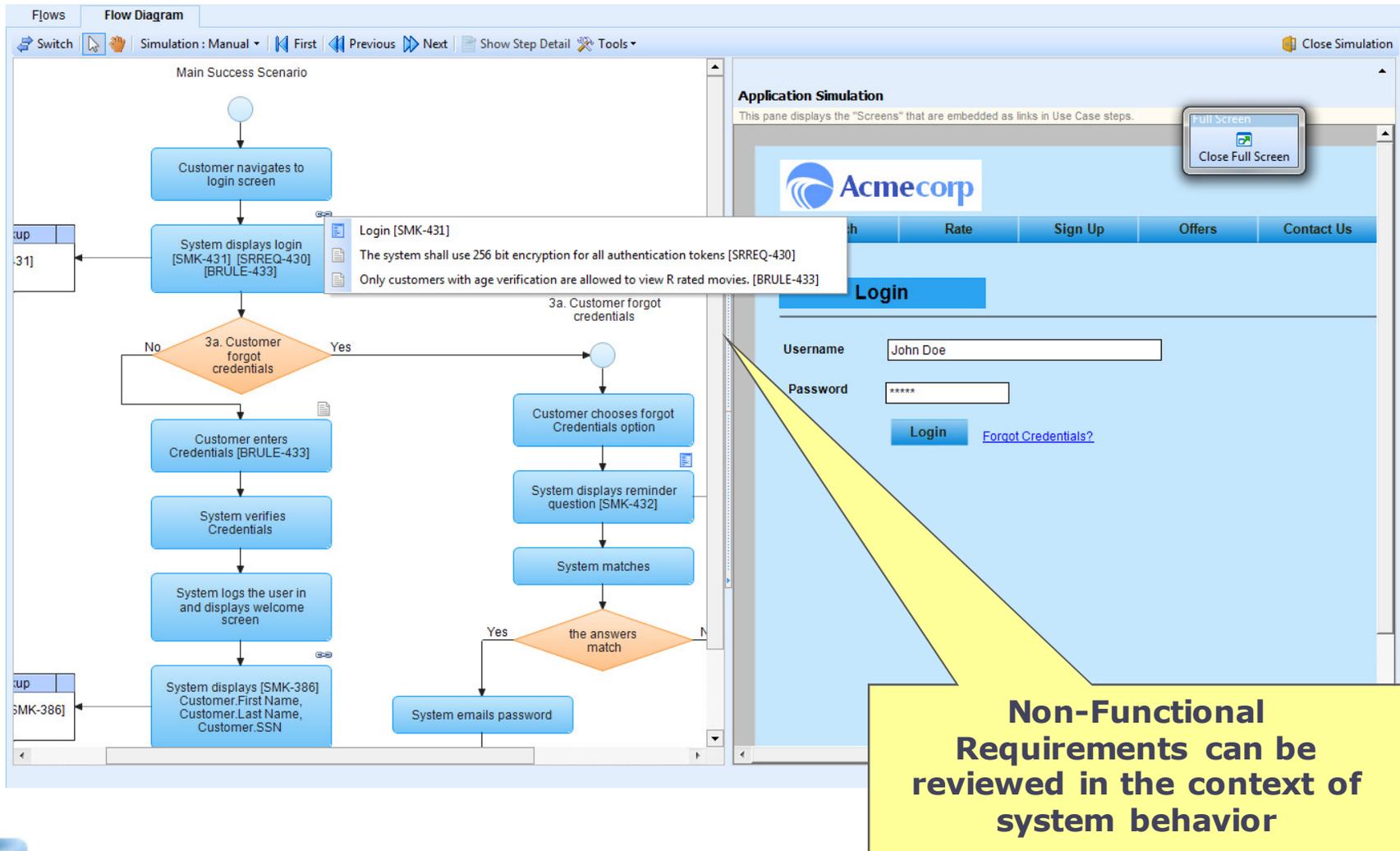


Trace Report

Graphical Trace Editor



Conduct Visual Application Walkthroughs with stakeholders



Author and Manage Test Coverage for Non-Functional Requirements

The screenshot displays the TopTeam Analyst interface. The left pane shows a Requirements Document View for 'Business Requirements Doc (Strict Mode)'. The right pane shows a 'Traced Test Cases' table for 'The system s... [SRREQ-605]'. A yellow callout box labeled 'Test Cases' points to the table.

Id	Title	State	Test T
TC-611	Login from Android Mobile Browser	Draft	Manual
TC-609	Login from Firefox Desktop Browser	Draft	Manual
TC-610	Login from Safari Desktop Browser	Draft	Manual

Users Conduct Online Reviews & Approvals of Requirements via their Web Browsers

The screenshot displays the TopTeam Analyst web interface for a 'Video Rental System' project. The main content area shows a requirements review for 'Acme Login [SMK-3545]'. The interface includes a 'Document Map' on the left, a 'Vision' section, and a 'Screens' section. The 'Acme Login' requirement is highlighted in green and is currently in an 'Approved' state. A diagram of the requirement shows a browser window with the URL 'http://www.acmerentals.com/' and a login form titled 'Acme Login' with the text 'Login to System'. A comment history on the right shows three comments: 'Need to have CAPTCHA for login.' (9/2/2011 at 7:59 AM), 'Login section should be available points to the system.' (11/2/2011 at 12:23 AM), and 'New comment' (12/1/2011 at 8:24 AM). A yellow callout box points to the comment history.



TopTeam *Analyst*[™]

- A **No-Compromise, end-to-end** Solution for **Visual** Requirements Definition and Requirements Management
- **Mature** - launched **2005**, now in **seventh** major release
- Used by more than **500 organizations in 55 countries**



TopTeam *Analyst*™ integrations



Quality Center



Rally



Team System (TFS)



JIRA



Microsoft Word



Microsoft Excel



TopTeam Open API
(Integrate anything)



TopTeam Analyst™

Learn more or try it yourself

TopTeamAnalyst.com

For more information

info@TechnoSolutions.com

"I am enjoying using TopTeam. It allows me more creative time, instead of document formatting time, so my analysis is better and more detailed."

Carl Knowlan
Senior Analyst & Product Manager
Houston, Texas



LOCKHEED MARTIN



Manulife Financial

SIEMENS



Standard Bank

NORTHROP GRUMMAN

CSX
TRANSPORTATION

Wyeth



IIBA Vendor Showcase Non-Functional Requirements

December 12, 2013

Tony Higgins – VP Product Marketing

Blueprint develops requirements definition and management (RDM) software purpose-built to solve the many errors and inefficiencies encountered in RDM today.

Using Blueprint results in better requirements and reduced rework, leading to successful projects and better applications.

Blueprint Requirements Definition & Management Platform

Author

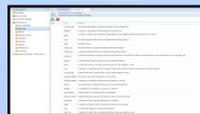
Business Process Diagram


Textual Requirement


Use Case Diagrams


Use Cases


Generic Diagram


Glossaries


Storyboards


User Interface Mockups


Actors


Domain Diagram

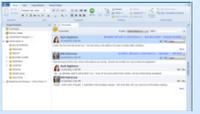

Validate

Simulation


Online Review/Approve


Document Generation


Collaborate

Inline Discussions


Notifications


Requirements Sharing


Personal Activity Center


Manage

Traceability

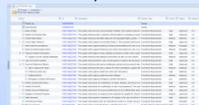

Version/Baseline


Reuse


Visual Differencing


Monitor

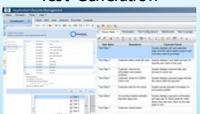
Coverage


Cost / Status


Progress


Consolidated Dashboard


Integrate

Test Generation


Excel, Visio Import/Export


Word Conversion


ALM Integrations







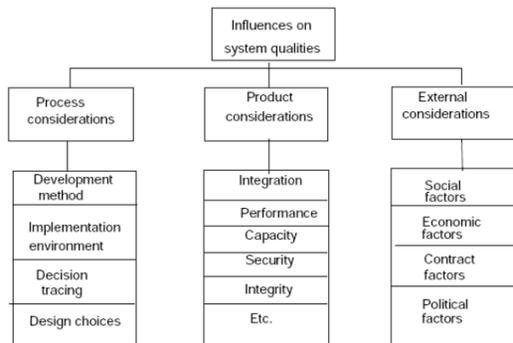

Types



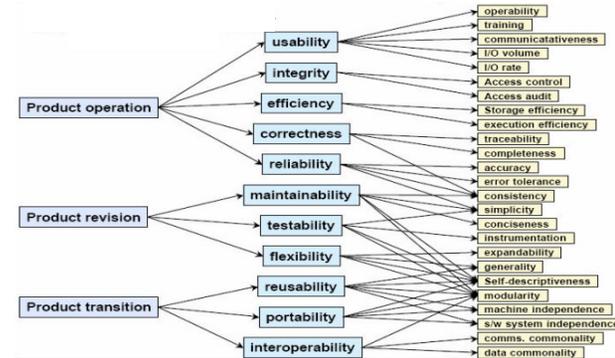
Absorbability	Confidentiality	Guidance	Planning Cost	Space Boundedness
Access Control	Configurability	Human Engineering	Planning Time	Space Performance
Accessibility	Connectivity	Impact Analyzability	Plasticity	Specificity
Accountability	Consistency	Implementability	Portability	Stability
Accuracy	Controllability	Independence	Precision	Standardizability
Adaptability	Coordination Cost	Informativeness	Predictability	Storability
Additivity	Coordination Time	Inspection Cost	Process Management Time	Structuredness
Adjustability	Correctness	Inspection Time	Productivity	Subjectivity
Affordability	Coupling	Installability	Project Stability	Supportability
Agility	Customer Evaluation Time	Integrity	Project Tracking Cost	Surety
Appealability	Customer Loyalty	Interchangeability	Promptness	Survivability
Attractiveness	Customizability	Internal Consistency	Prototyping Cost	Susceptibility
Auditability	Data Space Performance	Interoperability	Prototyping Time	Sustainability
Augmentability	Decomposability	Intuitiveness	Quality	Tankness
Authenticity	Degradation of Service	Iterativeness	Quantitativeness	Testability
Autonomy	Deliverability	Learnability	Readability	Testing Time
Availability	Dependability	Legibility	Readiness	Throughput
Buffer Space Performance	Development Cost	Leveragability	Reconfigurability	Timeliness
Capability	Development Time	Likeability	Recoverability	Toleranceness
Capacity	Disposability	Main Memory Performance	Recovery	Traceability
Changeability	Distributivity	Maintainability	Recyclability	Trainability
Clarity	Diversity	Maintenance Cost	Reengineering Cost	Transferability
Cleanability	Domain Analysis Cost	Maintenance Time	Reliability	Transitionability
Cleanliness	Domain Analysis Time	Manageability	Repeatability	Transparency
Code Space Performance	Duplicatability	Maneuverability	Replaceability	Understandability
Cohesiveness	Ease of use	Maturity	Replicability	Uniform Performance
Commonality	Efficiency	Mean Performance	Response Time	Uniformity
Communication Cost	Elasticity	Measurability	Responsiveness	Unparochialness
Communication Time	Enhanceability	Migratability	Retirement Cost	Usability
Communicativeness	Evolvability	Mobility	Reusability	User-friendliness
Comparability	Execution Cost	Modifiability	Risk Analysis Cost	Validity
Compatibility	Expandability	Modularity	Risk Analysis Time	Variability
Completeness	Expendability	Multiness	Robustness	Verifiability
Component Integration	Extendibility	Naturalness	Safety	Versatility
Cost	Extensibility	Nomadicity	Scalability	Versionability
Component Integration	External Consistency	Observability	Security	Visibility
Time	Fault-Tolerance	Off-Peak-Period Performance	Self-containedness	Volatility
Composability	Feasibility	Off-Peak-Period Performance	Self-descriptiveness	Wrappability
Comprehensibility	Flexibility	Operability	Sensitivity	Workability
Computability	Foolproof-ability	Operating Cost	Similarity	Zero-defectness
Conceptuality	Formality	Peak Period Performance	Simplicity	
Conciseness	Generality	Performability	Software Cost	

The Quest for Software Requirements, Roxanne Miller

Classification Schemes / Taxonomy



Sommerville, 1992



Van Vliet, 2000

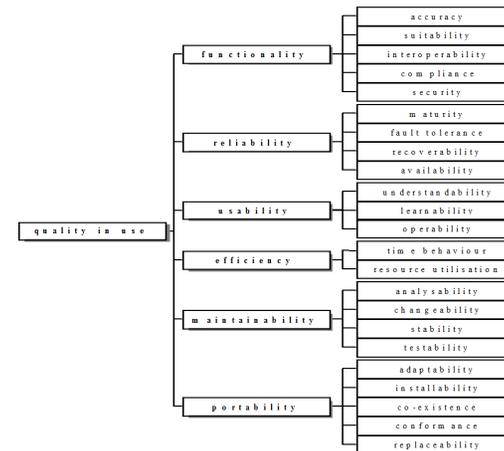
The FURPS+ System for Classifying Requirements

- Functionality
- Usability
- Reliability
- Performance
- Supportability

The "+" in FURPS+ also helps us to remember concerns such as:

- Design requirements
- Implementation requirements
- Interface requirements
- Physical requirements

Unified Process



ISO 9126

Classification Schemes / Taxonomy



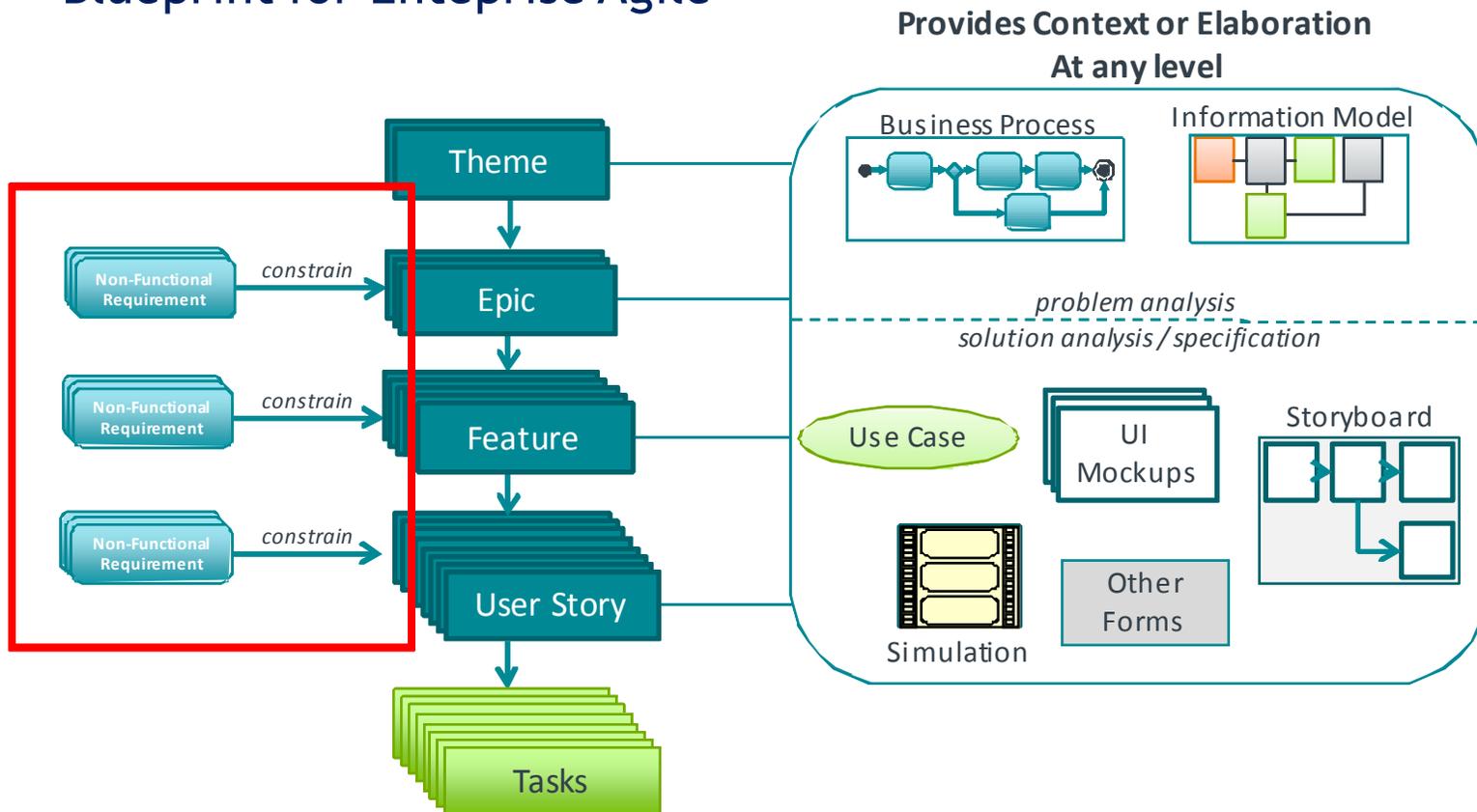
	McCall 1980	Keller 1990	Deutsch 1988	ISO/IEC 9126; 1991	Sommerville 1992	Gilb 2005	Miller 2009
Availability						X	X
Correctness	X	X	X				
Efficiency	X	X	X	X	X	X	X
Expandability		X	X				X
Flexibility	X	X	X			X	X
Integrity	X	X	X			X	X
Interoperability	X	X	X	X	X		X
Maintainability	X	X	X	X		X	X
Portability	X	X	X	X	X		X
Reliability	X	X	X	X	X	X	X
Reusability	X	X	X				X
Safety			X		X		
Security				X			X
Survivability		X	X				X
Testability	X			X			
Usability	X	X	X	X	X	X	X
Verifiability		X	X				X

The Quest for Software Requirements, Roxanne Miller

Requirements Taxonomy



Blueprint for Enterprise Agile



Define Whatever Types you Need



Project Administration

Project Administration

Home Project Details Project Settings Manage Access Office Integration ALM Integration

New More Actions Delete Close Project Administration

Vendor Showcase ... Artifact Types

Drag a column header and drop it here to group by that column

Prefix	Name	Base Type
BFL	Baseline & Review Folder	BaselineFolder
BP-DG	Business Process Diagram	BusinessProcess
BSLN	Baseline	ArtifactBaseline
BUS-RL	Business Rule	TextualRequirement
BUS-RQ	Business Requirement	TextualRequirement
CMP	Compatability	TextualRequirement
DATA-DEF	Data Definitions	TextualRequirement
DOC	Document	Document
DOM-DG	Domain Diagram	DomainDiagram
ERR-MSG	Error Messages	TextualRequirement
FUNC-RQ	Functional Requirement	TextualRequirement
GEN-DG	Generic Diagram	GenericDiagram
GL	Glossary	Glossary
INFO	Information	TextualRequirement
MNT	Maintainability	TextualRequirement
OP	Operability	TextualRequirement
PF	Folder	PrimitiveFolder
PRF	Performance	TextualRequirement
QS-RQ	Quality of Service Requirement	TextualRequirement
RL	Reliability	TextualRequirement
RQ	Textual Requirement	TextualRequirement
RVP	Review	ArtifactReviewPackage
SB	Storyboard	Storyboard
SCRN	Screen	UIMockup
SCRN-DEF	Screen Definitions	TextualRequirement
SEC	Security	TextualRequirement
TFR	Transferability	TextualRequirement

Artifact Type Details

Name: Performance Icon

Prefix: PRF Change

Group Label: Non-Functional

TextualRequirement

Description: This type of requirement specifies requirements performance levels of the application given available resources.

Artifact Properties Manage Properties

Group	Name	Width	Height
General			
Details			

Add Property
Remove Property
Edit Property

Advanced Save Cancel

Define Whatever Properties you Need



Project Administration

Project Administration

Home Project Details Project Settings Manage Access Office Integration ALM Integration New More Actions Close Project Administration

Vendor Showcase ... Properties x

Drag a column header and drop it here to group by that column

Name	Property Type
Data Object Type	Choice
Effort	Number
Field Type	Text
Iteration	Choice
Priority	Choice
Release	Choice
Requested By	Text
Risk	Choice
Stack Rank	Text
Status	Choice
Story Points	Choice
Validation Rule	Text

Properties Details

Name: Risk

Type: Choice

Settings

Required

Allow Custom Value

Allow Multiple Choices

Set Valid Values

Applies To Artifact Types

Manage Artifact Types

- Folder
- Glossary
- Textual Requirement
- Business Process Diagram
- Actor
- Use Case
- Screen
- Generic Diagram
- Document
- Storyboard
- Domain Diagram

Save Cancel

... and Share Them !



Project Administration

Project Administration

Home Project Details Project Settings Manage Access Office Integration ALM Integration New More Actions Close Project Administration

Vendor Showcase ... Properties x

Drag a column header and drop it here to group by that column

Name	Property Type
Data Object Type	Choice
Effort	Number
Field Type	Text
Iteration	Choice
Priority	Choice
Release	Choice
Requested By	Text
Risk	Choice
Stack Rank	Text
Status	Choice
Story Points	Choice
Validation Rule	Text

Properties Details

Name: Risk

Type: Choice

Settings

Required

Allow Custom Value

Allow Multiple Choices

Set Valid Values

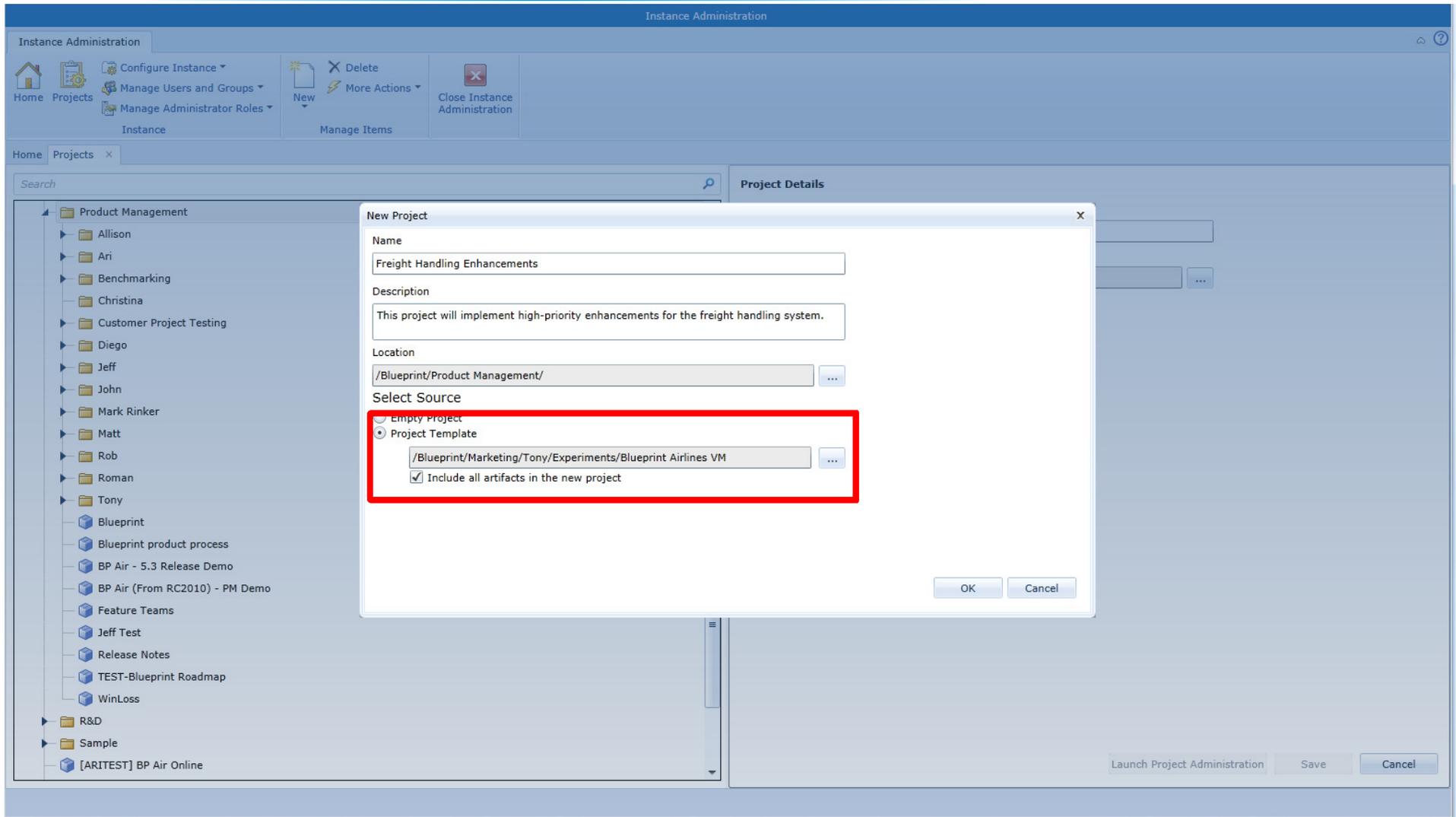
Applies To Artifact Types

Manage Artifact Types

- Folder
- Glossary
- Textual Requirement
- Business Process Diagram
- Actor
- Use Case
- Screen
- Generic Diagram
- Document
- Storyboard
- Domain Diagram

Save Cancel

Project Template – Standard. Consistent.



The screenshot shows the 'Instance Administration' web interface. A 'New Project' dialog box is open, allowing the user to create a new project. The dialog contains the following fields and options:

- Name:** Freight Handling Enhancements
- Description:** This project will implement high-priority enhancements for the freight handling system.
- Location:** /Blueprint/Product Management/
- Select Source:**
 - Empty Project
 - Project Template
 - Path: /Blueprint/Marketing/Tony/Experiments/Blueprint Airlines VM
 - Include all artifacts in the new project

The dialog also features 'OK' and 'Cancel' buttons at the bottom right.

Consolidated View



Blueprint Welcome Default Instance Admin | Logout

Home View Import/Export

Clipboard: Paste, Copy, Cut

Font: Arial, 2, Bold, Italic, Underline, Text Color, Background Color, Font Color

Paragraph: Bulleted List, Numbered List, Indent, Outdent

Tables: Table

Artifacts: New, Save, Publish, Print, Follow, Delete, Refresh, Indent, Outdent, Go To, Discard All, Bulk Update, Version Compare, Add To, Steal Lock

Relationships: Manage Traces, Add Inline Trace, Open Traceability Explorer

PRF10037: Round...

PR9403: Vendor Showcase - Non Functional

Name	ID	Artifact Type	Indicators	Field Type	Priority	Release	Risk	Status	Effort	Iteration
README	INFO9472	Information								Backlog
Business	PF9404	Folder								
Application	PF9405	Folder								
Main Application	PF9484	Folder								
Reserve Flight	PF9485	Folder								
Non-Functional Requirements	PF10025	Folder								
X4201-23 subsection 5	CMP10030	Compatability			Medium	3.0	2 - Med	Rejected		Backlog
NIS4 Interface - signalling protocol	CMP10029	Compatability			High	4.0	3 - Low	Approved		6
NIS4 Interface - data exchange	CMP10028	Compatability			High	3.0	1 - High	Approved		Backlog
NIS4 Interface - control infrastructure	CMP10031	Compatability			High	2.0	2 - Med	Approved		3
Use of standard architecture patterns	MNT10034	Maintainability			Low	1.0	3 - Low	In-Review		2
Maintainable by Lowel-Faburn staff	MNT10033	Maintainability			Medium	3.0	3 - Low	Approved		Backlog
Operable by customer support personnel	OP10032	Operability			Low	3.0	2 - Med	In-Review		3
Operable by partner contractors	OP10038	Operability			Medium	2.0	2 - Med	Rejected		Backlog
Adhere to X49-12 Operability standard	OP10039	Operability			Low	1.0	1 - High	Rejected		6
Transactions complete within two minutes	PRF10026	Performance			High	3.0	1 - High	In-Review		Backlog
Discrete action response less than 2 seconds	PRF10035	Performance			High	2.0	2 - Med	In-Review		6
System synchronization within 500ms	PRF10027	Performance			Medium	4.0	3 - Low	Approved		2
Message transfer less than 4 seconds	PRF10036	Performance			Low	2.0	2 - Med	In-Review		Backlog
Available 24-7-365 will .999 reliability	RL10055	Reliability			High	3.0	3 - Low	Approved		1
Access privileges	SEC10054	Security			High	3.0	2 - Med	Approved		2
Round-trip purchase acknowledge within 20 second	PRF10037	Performance			Low	3.0	2 - Med	In-Review		3
Available 24-7-365 will .999 reliability	RL10041	Reliability			High	4.0	1 - High	Rejected		Backlog

Explorer | Utility Panel

Successfully published 1 artifact.

100%

Relationships with Traceability View



Blueprint

Welcome Default Instance Admin | Logout

Traceability Explorer

Home View Import/Export Traceability Explorer

Trace Direction Relationship Type Suspect Relationship Filters Artifact Type Sub-Artifact Type Show Sub-Artifacts Row Filters Column Filters Generate Matrix Export Matrix

PR9403: Vendor S... Traceability Explor...

Traceability Explorer

	PF10025	CMP10030	CMP10029	CMP10028	CMP10031	MNT10034	MNT10033	OP10032	OP10038	OP10039	PRF10026	PRF10035	PRF10027	PRF10036	PRF10037	RL10041	SEC10046	SEC10042	SEC10044	SEC10043	SEC10049	SEC10040	TFR10047	TFR10045	TFR10048
PF9450 Business Process																									
BP-DG9433 Traveler Booking																									
BPSH9617 Lane (Traveler)																									
BPSH9618 Start Event																									
BPSH9619 Gateway (Comparison Shop?)																									
BPSH9620 Task (BP-DG217285: Comparison Shop)																									
BPSH9621 Gateway (BP Air Selected?)																									
BPSH9622 Task (Book a Flight)																									
BPSH9623 Gateway (Car?)																									
BPSH9624 Task (Book a Car)																									
BPSH9625 Gateway (Hotel?)																									
BPSH9626 Task (Book a Hotel)																									
BPSH9627 Task (Receive Receipt, Itinerary, and...)																									
BPSH9628 End Event																									
BPSH9629 Lane (BP Airways)																									
BPSH9630 Task (Process Flight Order)																									
BPSH9631 Task (Receive Car Order)																									

Explorer

Utility Panel

100%

Fine-Grained Traceability



Blueprint

Welcome Default Instance Admin | Logout

Editor Tools

Use Cases

Home View Import/Export

Add Step Set Actor Set UI Mockup UI Mockup Settings Remove UI Mockup Include Use Case

Move Step Up Delete Step(s) Move Step Down Merge Steps

Add Alternate Flow Start/Return Steps Set Merge Steps

Move Flow Up Move Flow Down

Change External Use Case

Simulate Save to Image

Step Flow

PF9485: Reserve F... * UC9415: Book a... x

Vendor Showcase - Non Functional > Application > Reserve Flight > UC9415: * Book a Flight

Utility Panel

SubArtifact ST9516: Step 3

Add Trace Relationships

ID	Title
TFR10048	Installed in staging environment

Trace

Main Flow

Pre Condition: Customer navigates to BP Air Online

1. System displays Quick Pick area and allows user to choose round trip or one way
2. **Customer** uses Quick Pick area and selects round trip
3. System inquires for valid round trip destinations from **Airport Database**
4. **Airport Database** provides list of valid round trip destinations
5. System populates list of airports in drop-down and makes available for selection
6. **Customer** enters complete departure and arrival info, and submits
7. System updates return day based on business rule
8. **Customer** chooses flights ... **Include UC9469: Select Flight**
9. System displays itinerary and pricing, and prompts for confirmation
10. **Customer** confirms itinerary and pricing ... **Include UC9470: Confirm Itinerary and Pricing**
11. System displays payment options page
12. **Customer** remits payment ... **Include UC9471: Enter Passenger Payment Info**
13. System displays thank you page.

Post Condition:

Alternate Flows

- ▼ 2a. **Customer** uses Quick Pick area and selects one way
 - 2a1. System does not allow customer to enter return date by graying it out from the screen. [Return to Step 8](#)
- ▼ 6a. **Customer** enters incomplete departure and arrival info, and submits
 - 6a1. **UC9473: Handle Incorrect Information** [Return to Step 6](#)

Customer navigates to BP Air Online

1: System displays Quick Pick area and allows user to choose

2: Customer uses Quick Pick area and selects round trip

2a: Customer uses Quick Pick area and selects one way

2a1: System does not allow customer to enter return date by

3: System inquires for valid round trip destinations from

4: Airport Database provides list of valid round trip destinations

5: System populates list of airports in drop-down and makes

100%

Available in Simulations ...



UC9415: Book a Flight

Step 1. System displays Quick Pick area and allows user to choose round trip or one way

UI Mockup 9427: Book a Flight

ID	Title
MNT10034	Use of standard architecture patterns
OP10038	Operable by partner contractors

And in Reviews ...



Blueprint Welcome Nancy Davidson Close

Home View

Clipboard: Paste, Cut, Copy

Font: Arial, 2, Bold, Italic, Underline, Text Color, Background Color, Text Color, Background Color

Paragraph: Bulleted List, Numbered List, Indent Left, Indent Right, Decrease Indent, Increase Indent

Tables: Table

Follow, Refresh, Approved, Pending Approval, Disapproved, New Comment, Mark Review Complete, Simulate, Go To

Contents

	ID	Description	View State	Approval
Application	PF9405		Not Requested	Approval Not Requested
Main Application	PF9484		Not Requested	Approval Not Requested
Reserve Flight	PF9485		Not Requested	Approval Not Requested
Register for Reward Program	PF9486		Not Requested	Approval Not Requested
Create account	PF9489		Not Requested	Approval Not Requested
Reserve Car	PF9487		Not Requested	Approval Not Requested
Reserve Hotel	PF9490		Not Requested	Approval Not Requested
Maintain Online Account Information	PF9488		Not Requested	Approval Not Requested
Payments	PF9497		Not Requested	Approval Not Requested
Quality of Service Requirements	PF9420		Not Requested	Approval Not Requested
Non-Functional Requirements	PF10025		Not Requested	Approval Not Requested
X4201-23 subsection 5	CMP10030		Not Viewed	Pending Approval
NIS4 Interface - signalling protocol	CMP10029		Viewed	Approved
NIS4 Interface - data exchange	CMP10028		Viewed	Approved
NIS4 Interface - control infrastructure	CMP10031		Viewed	Approved
Use of standard architecture patterns	MNT10034		Viewed	Approved
Maintainable by Lowel-Faburn staff	MNT10033		Viewed	Approved
Operable by customer support personnel	OP10032		Not Viewed	Pending Approval
Operable by partner contractors	OP10038		Not Viewed	Pending Approval
Adhere to X49-12 Operability standard	OP10039		Not Viewed	Pending Approval
Transactions complete within two minutes	PRF10026		Not Viewed	Pending Approval
Discrete action response less than 2 seconds	PRF10035		Not Viewed	Pending Approval
System synchronization within 500ms	PRF10027		Not Viewed	Pending Approval
Message transfer less than 4 seconds	PRF10036		Not Viewed	Pending Approval
Round-trip purchase acknowledge within 20 seconds	PRF10037		Not Viewed	Pending Approval

Utility Panel

OP10032: Operable by customer support...

Properties

Name	Operable by customer...
Id	OP10032
Type	

Author History

Created By	Default Instance Admin
Last Edited By	Default Instance Admin
Created On	09/12/2013 5:19 PM
Last Edited On	09/12/2013 5:19 PM

Details

Description

10%

Output in generated tests ...



	A	B	D	E	F
8					
9		Test Generation Results:			
10					
11		# of Tests: 3			
12		# of Execution Paths: 1			
13		Pre-Condition (for all tests): Customer navigates to BP Air Online			
14		Post-Condition (for all tests):			
15					
16		Execution path: UC9415			
17		# of Tests: 3			
18					
19		Test 1			
20	STEP #	INPUT	EXPECTED RESULT	REFERENCES	
21	1		System displays Quick Pick area and allows user to choose round trip or one way	-> MNT10034: Use of standard architecture patterns	
22	2	Customer uses Quick Pick area and selects round trip	System inquires for valid round trip destinations from Airport Database	-> ACTOR9445: Airport Database	
23	3	Airport Database provides list of valid round trip destinations	System populates list of airports in drop-down and makes available for selection	-> TFR10045: Installed in secure environment	
24	4	Customer enters complete departure and arrival info, and submits	System updates return day based on business rule	-> BUS-RL9446: Default Return Date	
25	5	Customer chooses flights ... Include UC9469: Select Flight	System displays itinerary and pricing, and prompts for confirmation	-> PRF10026: Transactions complete within two	
26	6	Customer confirms itinerary and pricing ... Include UC9470: Confirm Itinerary and Pricing	System displays payment options page	-> SEC10046: Two factor authentication	
27	7	Customer remits payment ... Include UC9471: Enter Passenger Payment Info	System displays thank you page.		
28					
29		Test 2			
30	STEP #	INPUT	EXPECTED RESULT	REFERENCES	
31	1		System displays Quick Pick area and allows user to choose round trip or one way	-> MNT10034: Use of standard architecture patterns	
32	2	Customer uses Quick Pick area and selects round trip	System inquires for valid round trip destinations from Airport Database	-> ACTOR9445: Airport Database	
33	3	Airport Database provides list of valid round trip destinations	System populates list of airports in drop-down and makes available for selection	-> TFR10045: Installed in secure environment	
34	4	Customer enters incomplete departure and arrival info, and submits			
35	5	UC9473: Handle Incorrect Information			
36	6	Customer enters complete departure and arrival info, and submits	System updates return day based on business rule	-> BUS-RL9446: Default Return Date	
37	7	Customer chooses flights ... Include UC9469: Select Flight	System displays itinerary and pricing, and prompts for confirmation	-> PRF10026: Transactions complete within two	
38	8	Customer confirms itinerary and pricing ... Include UC9470: Confirm Itinerary and Pricing	System displays payment options page	-> SEC10046: Two factor authentication	
39	9	Customer remits payment ... Include UC9471: Enter Passenger Payment Info	System displays thank you page.		
40					
41		Test 3			
42	STEP #	INPUT	EXPECTED RESULT	REFERENCES	
43	1		System displays Quick Pick area and allows user to choose round trip or one way	-> MNT10034: Use of standard architecture patterns	
44	2	Customer uses Quick Pick area and selects one way	System does not allow customer to enter return date by graying it out from the screen.		
45	3	Customer chooses flights ... Include UC9469: Select Flight	System displays itinerary and pricing, and prompts for confirmation	-> PRF10026: Transactions complete within two	
46	4	Customer confirms itinerary and pricing ... Include UC9470: Confirm Itinerary and Pricing	System displays payment options page	-> SEC10046: Two factor authentication	
47	5	Customer remits payment ... Include UC9471: Enter Passenger Payment Info	System displays thank you page.		
48					

Output in Generated Documents ...



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Exchanged with other products (e.g. HP-QC)



The screenshot displays the HP Quality Center 10.00 web application interface. The browser title is "HP Quality Center 10.00 - Microsoft Internet Explorer" and the address bar shows "http://localhost:8080/qcbin/start_b.htm". The application header includes "Quality Center" and "Domain: DEFAULT, Project: BPAir, User: qc_admin".

The main interface is divided into several sections:

- Left Navigation Panel:** Contains icons and labels for Management, Requirements, Test Plan, Test Resources, Test Lab, Defects, and Dashboard.
- Requirements List:** A tree view showing a hierarchy of requirements. The selected requirement is "SC1: Book a Flight". Other visible requirements include "SC2: Plan Trip", "SC4: Main Page", "SC17: Flight Select", "SC13: Browser", "SC14: Address Bar", "SC10: Database In", "SC11: Database Out", "SC5: Payment and Passenger Info Page", "SC6: Login", "SC7: Error", "SC8: Confirm Itinerary Page", "SC9: Spanish Main Page", "SC12: Thank you", "SC18: Online Checkin Main Page", "SC19: Optional Purchases Page", "SC20: Seat Map", and "SC21: Seat Selection Option".
- Right Panel (Impact Analysis):** Shows the "Impact Analysis" tab for the selected requirement. It includes a legend for relationships (Child, Parent, Trace To, Trace From, Recursive Relationship) and two sections:
 - Trace From (Requirements that affect <SC1: Book a Flight>):** Lists "SC1: Book a Flight" with sub-items "UI Mockups" and "BP Air", which further points to "Requirements".
 - Trace To (Requirements affected by <SC1: Book a Flight>):** Lists "SC1: Book a Flight" with sub-items "UR16: Book a Flight", "FR43: Book a New Flight", "UC6: Book Flight", and "DA2: Airports".

A decorative graphic consisting of several overlapping, semi-transparent blue circular bands of varying shades (light blue, medium blue, and dark blue) arranged in a circular pattern around the central text.

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