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Lab DSE-5063

Designing User Experience Concepts in Multi-Stream Configuration Management

February 2015



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Overview

In this lab you will explore the Configuration Management capabilities in the Systems and Software Engineering solution.

In this lab you will get hands on experience with

- IBM Rational DOORS Next Generation
- IBM Rational Quality Manager
- IBM Rational Configuration Management
- IBM Rational Team Concert

Over the course of this lab, you will explore the concepts and user experience in Configuration Management:

- Learn and deepen your understanding about Configuration Management concepts like Components, Streams, Baselines and Global Configurations
- Create streams and baselines for Requirements and Test components
- Create global configurations of Requirements and Test contributions
- Working with lifecycle artifacts and traceability links in context of a global configuration
- Create a global configuration baseline

You will also optionally explore advance topics in Configuration Management:

- Using hierarchical global configurations
- Using change sets

Lab Setup

This lab will use a Jazz server running various services for Configuration Management, Requirements Management, Quality Manager and Reporting within a VMware image. The Jazz server hosted on this image will be accessed through a web client to access needed applications and data, within the lab activities. Combining the server and the clients is not a normal configuration but is required to get all the resources needed for this lab into an easily portable image.

The VMWare image with the Jazz server should already been started by the lab staff. As a first step in this lab you may optionally validate that the Jazz server is running on your machine. You may also proceed directly to next main section in the lab.

Validating that the Jazz server is running

- 1. Log into the Windows server
 - a. Press Ctrl-Alt-Del
 - b. Log in as
 - i. User: Administrator
 - ii. Password: Rati0nal
- 2. Check if the Tomcat server is running
 - a. In the Windows Taskbar, look for a Java program icon and a Tomcat server process.



b. Click on the Java program icon to open the Tomcat server process.

🛃 Tomcat	_ 🗆 🗙
INFO: Patch service started Dec 12, 2014 4:21:28 AM com.ibm.team.osgi.patch.PatchConfigurator addHooks INFO: Looking for patch directory in "C:\IBM\JazzTeamServer\server\patch" Dec 12, 2014 4:21:28 AM com.ibm.team.osgi.patch.PatchConfigurator addHooks INFO: No.patches found	
SLF4J: Class path contains multiple SLF4J bindings. SLF4J: Found binding in (bundleresource://461.fwk1070022599/org/slf4j/impl/ cLoggerBinder.class]	Stati
SLF4J: Found binding in [bundleresource://461.fwk1070022599:1/org/slf4j/imp ticLoggerBinder.class] SLF41: Found binding in [bundleresource://461_fub1070022599:2/org/slf4j/imp]	L/Sta L/Sta
SLF4J: Found binding in [bundleresource://461.fwk1070022599:3/org/slf4j/imp. SLF4J: Found binding in [bundleresource://461.fwk1070022599:3/org/slf4j/imp.	l/Sta
ticloggerBinder.class] SLF4J: Found binding in [bundleresource://461.fwk1070022599:4/org/slf4j/imp. ticloggerBinder.class]	1/Sta
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanat Dec 12, 2014 4:22:00 AM org.anache.catalina.startun.HostConfig denlowWAR	ion.
INFO: Deployment of web application archive C:\IBM\JazzTeamServer\server\tor webapps\ccm.war has finished in 33,618 ms Dep 12 - 2014 4:22:060 AM over anachem sataling stawtum HostConfig deployHOP	ncat\
procession of the set of the set of the state of the state of the set of the	weba
	-

c. Confirm that the server is running.

If the Tomcat server process is running, proceed to next main section in the lab. If no Tomcat server process is running, proceed to the step below to 'Starting the server'

3. Starting the server

ONLY PERFORM THIS STEP IF THE JAZZ SERVER IS NOT STARTED

a. On the desktop, double click on the Start the Jazz Team Server icon



A command window titled **Tomcat** will open.
 In 3-5 minutes you'll see the output, as shown above, with the "Server startup in ..." message.

Note: Be patient. Starting the servers is an operation that a real user never does. Users normally run continuously on a dedicated server environment managed by an administration team.

If in doubt on the state of the server, check with the lab staff before proceeding.

c. Minimize the Tomcat server process window (DON'T click X!).

Introduction to Automated Meter Reader

This lab uses artifacts from the Automated Meter Reader sample data for reporting. The Automated Meter Reader sample uses a fictitious company JK Meters Corp, aspiring leaders of Smarter Flow Products for Utilities.

The Metering Division at JK Meters Corp has a range of Automated Meter Reader products in its product line. The most successful product is the Automated Meter Reader for Water Flow (see figure below). The product consists of meter interface units mounted on water pipes. The meter interface unit measures flow and delivers data to handheld or car mounted meter readers. The registered meter readings are uploaded from the handheld devices to the AMR server data management system manually. Uploading of data is performed continuously by the mobile meter readers using a mobile network connection, or manually when returning to the office at the end of the day when using the manual meter reader product. The Metering Division is currently investing in improved features in the product lines and new AMR products. An innovative new AMR Grid product reduces the operational cost of utility services by providing fixed grid meter readers that continuously reads a wireless grid of residential or industrial meter interface units and uploads data over a fixed network connection.



The Automated Meter Reader products are configured from reusable components. These component subsystems are developed and delivered by the Meter Reader, Meter Interface and AMR Sever platform teams. The platform teams deliver the component subsystems with feature variability for the product line. For example, the Meter Interface team delivers wired and wireless variants of the component for the Manual and Mobile products. The Meter Reader team delivers variant components for Manual, Mobile and Grid products.

AMR Manual	Meter Interface	Manual Handheld Reader	AMR Server
AMR Mobile Market variability for US, EU and UK	Meter Interface	Mobile/Car Mounted Reader	AMR Server
AMR Grid	Meter Interface	Grid Reader	AMR Server

The Automated Meter Reader products have been delivered to utility customers in US. JK Meters Corp is growing its market share by developing variants for other regional markets. The variants are configured with regional requirements on power voltage, dimensions on pipe mounting, regional units of flow and volume, language configuration for the handheld meter readers and regional city maps for GPS routing.

In this lab you will explore the components, lifecycle artifacts and their configurations used by the Automated Meter Reader product development for a new variant of the AMR Mobile product for the UK market.

Exploring Components

In this part of the lab you will explore *components*.

A *component* is a unit of organization consisting of a reusable set of artifacts such as requirements, tests, designs and source code. The Automated Meter Reader (AMR) teams are using components to organize the lifecycle artifacts under development. The teams have defined components both at the system / product level, and at each subsystem level. Separate components are used to manage requirements, tests, designs and source code at each level.



You will now use IBM® Rational Quality Manager and IBM Rational DOORS Next Generation applications to explore the 'AMR (RM)' requirements component with stakeholder and system requirements. You will also explore the 'AMR (QM)' component with stakeholder and system verification test plans.

Exploring Requirements in Rational DOORS NG

You will now explore some of the requirements components in the Automated Meter Reader (AMR) product.

Logging in to the Jazz applications

In this lab you will use a generic user 'rational'.

1. Click on the **Firefox** icon on the Windows taskbar.



- 2. Choose the **rm** bookmark to open the IBM Rational DOORS NG application Alternatively enter the URL **https://ssejtsserver:9443/rm/web**
- 3. Log in as User: rational with Password: rational

ogin - Jazz Team Server - Mozilla Firefox	<u>_ </u>
TEAM SERVER	r in Jazz requires a user ID and password:
	User ID: rational Password: Remember my User ID Log In
Licensed Material - Property of IBM Corp. @ Copyright IBI logo, Jazz, and Rational are trademarks of IBM Corporation Eclipse is a trademark of Eclipse Foundation, Inc. Java an trademarks of Oracle and/or its affiliates in the United Sta TENE	I Corp. and its licensors 2008, 2014, All Rights Reserved. IBM, the IBM n, in the United States, other countries and regions, or both. Built on id all Java-based trademarks and logos are trademarks or registered tes, other countries and regions, or both. Rational- software

Opening the AMR (RM) project area

You will now open and explore the requirements modules in the Automated Meter Reader (AMR) product.

1. In the All Projects list, click Show Modules in the 'AMR (RM)' section



2. The 'AMR (RM)' project area opens and displays a list of Stakeholder Requirements, System Requirements modules.

Click on the AMR System Requirements module to open it in an editor.

Firefox V								≤
Project: AMR (RM) - Requirements Managem	+							
Requirements Management (/rm)					One of	the <u>Client Access Licenses</u> expires i	n 41 days 🚓	-
AMR (RM)					🔞 AMR (RM) 🗡	Rational 🖓 👋 🛱 🗠	🕐 🗸	
Project Dashboard Artifacts ~ Collections ~	Modules ~ Reports					📷 🍢 Search Artifacts	٩	
Beneficial Modules						智 📽 🗘	R 🔗	
Create Module		ID	Name	Artifact Type	Modified By	Modified On		
► Views		1	👔 Stakeholder Template	Stakeholder Specification	Rational	Dec 8, 2014, 11:16:46 PM		
Filter by Tag		2	📔 Use Case Template	Use Case Module	Rational	Dec 8, 2014, 11:16:47 PM		
Filter by Folder		3	📄 Systems Template	System Specification	Rational	Dec 8, 2014, 11:16:47 PM		
E 🗁 AMR (RM)		413	AMR Stakeholder Requirements	Stakeholder Specification	Rational	Dec 8, 2014, 11:44:39 PM		
 i i i i i i i i i i i i i i i i i i i		503	AMR System Requirements	System Specification	Rational	Dec 8, 2014, 11:46:38 PM		
🗁 02 Reference		575	AMR Hazards_Risks	Hazard and Risk Register	Rational	Dec 8, 2014, 11:48:46 PM		
📧 🗁 Module Template								

3. The '503: AMR System Requirements' module opens and displays the system requirements for the AMR product. Browse the list and explore the requirements.

503: AMR Syst	em Requireme	ents - Requirem	
quirements Manag	ement (/rm)		One of the <u>Client Access Licenses</u> expires in 41 days
	AMR (R	M)	💀 AMR (RM) \vee Rational 🖓 👋 🌞 🌱 🔗 🗠
oject Dashboard	l Artifacts	✓ Collections ✓ Modules ✓ Reports ✓	📷 🔨 Search Artifacts 🔤 Q
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	∎ ▼ ID	Contents	0,
	504	1 General Description	▲
	505	-1.1 Environmental Considerations	
	506	The control computer shall be capable of operating in a nor	mal office environment.
	507	2 System Requirements	
	508	-2.1 Functional Requirements	
	509	-2.1.1 Handheld device	
	510	The handheld device shall provide for the means for the m	eter reader to manually enter a meter reading.
	511	The handheld device shall interfaces with the city's backoff	ìce software.
	512	The handheld device shall allow for programming of a defi reader moves through the route.	ned route, advancing to the next meter on the route as the meter
	513	The handheld device shall have the ability to search for acc Meters.	counts by Last Name, Service Address, Meter Number, and Unread
	514	The handheld device shall have a screen capable of display information shall include: total number of accounts in colle the address of each account. For completed (read) account	ring the number of accounts that have been read and unread. Display ction route, number of read accounts, number of unread accounts, ats the display information shall include: the date and time of the last
Showing 7	1 of 71 Artifac	cts	

Note: You can expand requirements contents column by collapsing the sidebar.

Hover over the splitter and click one of the icons. Clicking on '<' will collapse the left sidebar. Clicking on '< >' will collapse both the left and right sidebars.

503: AMR System Re	quireme
🗎 Create New Heading	
▼ Views	🖉 🖑
Search Views 🔍 🗐 🔻	
Downstream Coverage	
Requirement Traceability	
Test Coverage	
Upstream Coverage	

Exploring Tests in Rational Quality Manager

You will now explore some of the test components in the Automated Meter Reader (AMR) product.

- 1. Open a new tab in your browser and choose the **qm** to open the IBM Rational Quality Manager application. Alternatively enter the URL **https://ssejtsserver:9443/qm/web**
- 2. In the All Projects list, click the AMR (QM) link

Firefox Y	
503: AMR System Requirements - Requir × 🍥 Project Areas - Quality Management 🛛 × 🕂	
ity Management (/qm)	One of the <u>Client Access Licenses</u> expires in 41 days
🚘 🕤 All Projects	Rational 🕌 ~ 🛱 ~ 🤪 ~
All Projects (ssejtsserver)	👹 Manage All Projects
My Projects All Other Projects Archived Projects	
AMR (QM)	
Product and component test plans	
🗃 Explore Dashboard	
🚮 Manage Project	
Associations	
▶ Uses (3)	
Provides (1)	

3. The 'AMR (QM)' project area opens and displays the project dashboard. Choose the **Planning > Browse Test Plans** command in the toolbar.

Firefox V				
503: AMR System Requirements - Requir	. × 🗐 Project Dashboard: AM	IR (QM) Project Da ×	+	
Quality Management (/qm)			Januara I	One of the <u>Client Access Licenses</u> expires in 41 days
AMR (QM)			- 👫 AMR (QM) Initia	l Stream ~ Rational 🖓 ~ 🌞 ~ 🥥 ~
Project Dashboards 🗸 🛛 Requirements 🗸	Planning - Construction -	Lab Management 🗸	Builds 🗸 Execution 🗸 Reports 🗸 C	hange Requests 🗸
	Browse		Recently Viewed (1)	💼 🎽 Search QM Resources 🔍
All AMR (QM) Dashboards >	📋 Browse Test Plans	վերյ	2: AMR System Verification te	est plan Related Sites
AMR (QM) Project Da	Create			IBM Detional
	📋 Create Test Plan			IBM Rational Quality Momt
General - Execution	Import			
Welcome	📋 Import Test Plans			
		INU LASKS IUUIIU.		
With IBM Rational Q	uality Manager, you can	B My Taaka		
tests and manage te	est artifacts throughout	I A DAGA DE	51	

1-1-1

4. From the list of test plans, choose the '2: AMR System Verification' test plan. Browse the plan details.

AMR (QM)		One of	f the <u>Client Access Licenses</u> expires in 41
ct Dashboards v Requirements v Planning v	· Construction ~ Lab Management ~ Builds ~	Execution - Reports - Change Reques	sts 🗸 💼 🔭 Search QM Resources
est Plans ? View As: General Group By: Ung	rouped v	Type Filter Text	Related Sites IBM Rational IBM Rational Quality Mgmt
Number of Items Per Page: Show All ID Prior® Name ID Prior® Name IB 2 ID AMR Sy	State Owne Created By Iteration Marl Pro	v ^{or} Li ≘ m · ™ lim tre Releae Submarte Modified	57
1 AMR St	Overview State		
	Details Image: Test Plan Modified: Type: Tony Owner: Originator: Tony Owner: Calculated Risk: OOOOO Project Area: Community Risk: OOOOO Team Area:	Dec 8, 2014 11:52:18 PM Unassigned AMR (QM)	

5. Click on the **Test Cases** section and browse the test cases assigned to this plan.

Firefox X	
E02: AMD Sustem Dequirements	
Device Device Requirements - 1	Requir A ground wanagement A T
🔠 🗸 Project Dashboards 🗸 Requi	rements v Planning v Construction v Lab Management v Builds v Execution v Reports v Change Requests v
* 📴 * 2: AMR Syste	em Verification test plan
Sections -	State: V Draft Action: Chance State Test Case Execution (Record) Progress:
Summary	
Business Objectives	Total: 0/0 h Estimated: 0% Progress:0 Total: 0
Test Objectives	Priority: Unassigned Test Suite Execution (Record) Progress:
Formal Review	
Requirement Collection	Total: 0/0 h Estimated: 0% Progress:0 Total:0
Links	Description: < Click here to enter a description >
Development Plan Links	
Risk Assessment	Test Cases ?
Test Schedules	- <i>D</i> 3
Test Environments	Quality Task: Create
Quality Objectives	Lists the test cases associated with a given plan. You can add and remove associations to test documents and create and associate a
Entry Criteria	new test case. Removing a test case will remove the association to this test plan but not delete the test case.
Exit Criteria	
Test Suites	View As: General Scrup By: Ungrouped Type Filter Text
Test Cases	
Test Case Execution Records	Number of Items Per Page: 10 V H Previous 1, 2, 3, 4, 5, 6 Next H
Resources	B8 ID Suspert Prior® Name Str@ Owr@ Created By Functi@ Test Pha@ & Weir@ Modified Validates Requirement
Attachments	
Show All Sections	9 🔷 🗍 🗐 D.,, Un.,, Rational Una.,, Unassi,,, 100 Dec.,, The met
🔳 Manage Sections	
	Device 4 40 of 55 lives
Snapshots	Snowing 1-10 of 55 items E D., Un., Rational Una., Unassi, 100 Dec., The han.

Exploring Streams and Baselines

In this part of the lab you will explore *streams and baselines* used by the Automated Meter Reader (AMR) team to manage variability of requirements and tests across product variants for the US and UK regional markets. In the previous part of this lab you explored components that is a unit of organization. Components group a set of reusable artifacts such as requirements, tests, designs and source code. We will now explore how configurations of components can be created and managed.

A *configuration* is a set of specific artifacts versions of a component. Hence, creating two configurations for AMR system requirements will greatly help in managing variability of artifacts across the US and UK markets. In two such configurations common requirements will have the same artifact version but specific requirement for the UK configuration will have a different version as compared to the US configuration.

A configuration that is modifiable and new artifact version can be saved is called a *stream*. As the artifacts in a component evolves several versions of an artifact will be saved in the stream. To be able to record, and later retrieve, the state of each artifact in a release it is a practice to save a *baseline* of a component. The states, or versions, of the artifacts in the baseline will be frozen, or immutable.

The AMR teams are using multiple streams to manage variability across the product line. Separate streams are used for the Manual, Mobile and Grid products. Streams are also used to manage variability across regional market US and UK products. The stream diagram below shows a conceptual view of the configuration dependencies.



In this part of the lab you will explore the domain streams at the system level used to manage requirements and tests. You will load the Mobile US stream and create a new Mobile UK stream from a release baseline of the Mobile US stream. You will use the IBM Rational DOORS Next Generation, IBM Rational Quality Manager and IBM Rational Configuration Management applications.



Create a new Requirements stream

You will now explore the streams and baselines for the Automated Meter Reader (AMR) system requirements.

- 1. Return to browser tab with Rational DOORS NG
- 2. Choose the **Search for more...** command from the Configuration Management menu. This menu is found as a drop-down on the banner.



3. In the **Select a Configuration** dialog, enter AMR Mobile US Locate and select the 'AMR.S (RM) Mobile 3.1 US.GA' configuration.

503: AMP System Requirements - Require X	B ou=	lity Management	× +	
uirements Management (/rm)	- Quu	inty Hanagement	Or	ne of the <u>Client Access Licenses</u> expires in 41 days
🔁 🕕 AMR (RM) 👔	Select a	a Configuration	Σ	👔 Rational 🚜 ~ 🋱 ~ 😧 '
ject Dashboard Artifacts V Collections	AMR M	obile US	٩	📸 Y Search Artifacts
503: AMR System Requirements		Name	Description	ito lags benned y
Create New Heading	E.	AMR.S (RM) Mobile 2.0 US.GA		Q
Views	i de la companya de	AMR.S (RM) Mobile 3.0 US.GA		IS 🔺
	1	AMR.S (RM) Mobile 3.1 US.GA		n a normal office environment.
	E.	AMR.S (RM) Mobile US	An automatically created baseline of 'AMR.S (RM) Mobile US' for stream 'AMR.S (RM) Mobile EU'.	
Downstream Coverage	8	AMR.S (RM) Mobile US		
Test Coverage				
Upstream Coverage				r the meter reader to manually
				backoffice software.
				of a defined route, advancing to oves through the route.
				n for accounts by Last Name, 's.
		⊮ Previous	1-5of5 Next ⊨	f displaying the number of information shall include: total read accounts, number of unread
Filter by Tag			OK Cancel	ated (read) accounts, the display
Filter by Attribute			OK Cancel	

Note: Selecting a configuration will load the application with the versions of the artifacts in that selected configuration. The name of the selected configuration is shown on the banner. An icon will indicate the type of configuration. As seen from the icon, the 'AMR.S (RM) Mobile 3.1 US.GA' is a baseline.

🛅 AMR.S (RM) Mobile 3.1 US.GA

4. From the Configuration Management menu, choose the Stream command.



5. In the **Create a Stream** dialog, enter the stream name AMR.S (RM) Mobile UK for the new AMR Mobile UK requirements.

Stream	n Details 2 3 4
Name: *	AMR.S (RM) Mobile UK
Description:	Enter a description to help you identify the item in a list.

- 6. Click Next and use the Current baseline option.
- 7. Continue by clicking **Next** and **Finish** to complete the dialog.

8. The new requirements stream for the AMR Mobile UK product is created and opened in the editor. The new stream name is shown in the banner.

03: AMR Syst	tem Requirements	- Requir × 🔄 Quality Management	× +			6.4		_				
irements Manag	jement (/rm)				One	of the	Client /	Access	s Licens	es expire	s in 41 d	ays
	AMR (RM)			🤹 AMR.5 (R	M) Mobile UK 🚿	~ R	ation	al 🎖	8 ~	1	~ (2
		Collections - Modules - Reports -					i (Sear	ch Art	ifacts		
MR (RM) > 01	1 Requirements >	Ø								No Tag	s Define	d
503	: AMR Syst	em Requirements 😨					1	t	徻	×	= ď	•
	ID (Contents										Q
	504	1 General Description										-
	505	-1.1 Environmental Consider	ations									_
	506	The control computer shall be capable of ope	rating in a nor	mal office environmer	t.							
	507	2 System Requirements										
	508	-2.1 Functional Requirements	6									
	509	-2.1.1 Handheld device										
	510	The handheld device shall provide for the m	eans for the n	neter reader to manua	lly enter a met	er rea	ding.					
	511	The handheld device shall interfaces with th	e city's backof	fice software.								
	512	The handheld device shall allow for program reader moves through the route.	ming of a def	ined route, advancing	to the next met	ter on	the r	oute	as th	ie mete	r	
	513	The handheld device shall have the ability to Meters.	search for ac	counts by Last Name,	Service Addres	s, Me	ter Nu	umbe	er, an	d Unrea	ad	
	514	The handheld device shall have a screen cap information shall include: total number of ac the address of each account. For completed	bable of displation of displation of displation of the second sec	ying the number of ac action route, number o nts_the display inform	counts that hav f read accounts ation shall inclu	e bee s, nun udet t	en rea nber o he da	d an of un te ar	d unn read nd tim	ead. D account	isplay ts, • last	
Showing 7	1 of 71 Artifacts											

New, updated or removed requirements are made only in the selected stream configuration. Hence, edits to requirements in the UK variant will not impact requirements on any other product configuration, for example the US variant.

Create a new Test stream

You will now explore the streams and baselines for the Automated Meter Reader (AMR) system tests.

- 1. Return to browser tab with Rational Quality Manager
- 2. From the Configuration Management menu, choose Search for a Configuration...



3. In the **Select Configuration** dialog, choose the 'AMR.S (QM) Mobile US' configuration and click **OK**.

elect Configuration	AMR.S	(QM) Mobil	e US	23	Kan (Daarad)
View As: Streams 💌	Type: Component: Description: None	Stream AMR (QM)		2	// ated On
AMR (QM) Initial Str				C	8, 2014
AMR.S (QM) Mobile<	1			c	: 15, 2
AMR.S (QM) Mobile			📇 AMR.S (Q	Dec	: 15, 2
Showing 1-3 of 3 items		1			
				OK	Cancel

Note: This opens the tests for the AMR Mobile US product variant. The name of the selected configuration is shown on the banner



4. From the configuration menu, choose the **Create Streams** command.

Firefox 🔻					
503: AMR System Requirements - Requir	. × 🔀 Project Dashboard: AMR	(QM) Project Da 3	< +		
Quality Management (/qm)				One of	the <u>Client Access Licenses</u> expires in 41 days
🐴 🕞 AMR (QM)		_	- + <mark> </mark> · AMR.5 ((QM) Mobile US 🗡	Rational 🚜 ~ 🋱 ~ 😧 ~
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5. In the **Create a Stream** dialog, enter AMR.S (QM) Mobile UK as a name for the new Test stream.

Create a Stream	
Creating a stream f	rom AMR.S (QM) Mobile US
1 Stream in	formation 2
Name*	AMR.S (QM) Mobile UK
Description:	
	< Back Next > Finish Cancel

- 6. Continue by clicking **Next** and **Finish** buttons to complete the dialog.
- 7. Repeat the steps to above to **Search for a Configuration...** and select the new 'AMR.S (QM) Mobile UK' stream.

We have now completed the steps to create new streams for requirements and tests in the new AMR Mobile UK product variant.

In the next section we will assemble the individual streams into a configuration that simplifies management of related streams.

Exploring Global Configurations

In the previous part of this lab you explored streams and baselines configurations for individual domain components as a way to organize artifact versions. In this part of the lab you will explore the *global configurations* used by the Automated Meter Reader (AMR) team to manage variability of requirements and tests across product variants for the US and UK markets.

The AMR teams are using global configurations to organize the components for the system level. This enables the system requirements, design models, tests and source code to be managed as a single global configuration. You will use the IBM Rational Configuration Management application to create an AMR Mobile UK global configuration that assembles the requirements and test streams for Mobile UK you created in the previous part.



The Automated Meter Reader (AMR) platform teams are using individual global configurations to develop and deliver the Meter Reader, Meter Interface and AMR Server subsystems. In this lab you may optionally explore the hierarchical AMR Mobile US configuration shown in the figure below.



Create a new global configuration

You will now create a new global configuration for an Automated Meter Reader (AMR) product for the UK market. You will also add requirements and test stream contributions to the global configuration.

- 1. Open a new tab in your browser and choose the **cm** bookmark to open the IBM Rational Configuration Management. Alternatively enter the URL **https://ssejtsserver:9443/vvc/web**
- 2. Choose the **Welcome to Global Configurations** command from the **Global Configuration** menu on the banner.



3. Choose the command to Create a global configuration

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Rational 🔠 ~ 🛱 ~ 🤪 ~
🐴 🔭 Global configurations 🔍 🔍
 What is a global configuration? A global configuration identifies a set of configurations from one or more contributing applications. Use a global configuration to group the versions of the relevant artifacts for a system. You can use the same configuration context across all the applications, even when each application stores its artifacts in otherwise unrelated configurations.

4. In the **Create a Global Configuration** dialog, enter the name AMR.S Mobile UK.

Creat	a alabal configure	tion		
Creat	a global conligura	luon		
Name: *	AMR.S Mobile UK			
Description:				
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			Einich	Concol

Add stream contributions

You will now add requirements and test stream contributions to the configuration.

1. Choose the command to Add a Contribution.



2. In the Add Contribution dialog, choose the Requirements Management option



 The dialog updates and provides searching and selection of requirements streams. Choose the stream you created in the earlier step, for example the 'AMR.S (RM) Mobile UK' stream. Click OK.

🔒 Add C	ontribution			٤
Select th To see th Manager	e application that co ne Design Managem ment. Applications ar	ntains the contribution. ent or Requirements Ma e added by creating a fr	anagement configurations iend relationship.	s, select Configuration
Require	ments Management	(ssejtsserver:9443/rm)		-
Project:	AMR (RM)			-
Туре:	Streams			-
Type to s	earch configuration			
Name		Description	Created By	Created On
AMR.S (RM) Mobile EU		Rational	Dec 15, 2014 4:07 AM
AMR.S (RM) Mobile UK		Rational	Jan 8, 2015 7:25 AM
AMR.S (RM) Mobile US		Rational	Dec 15, 2014 4:06 AM
AMR (RI	(N		wc_user	Dec 8, 2014 11:15 PM

4. The new 'AMR.S Mobile UK' configuration is updated with the added requirements stream.

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Contributions Description	n			Add a Contribution	Details	
Name	Component *	Description	Туре	Actions	Type:	Blobal Configuration
AMR.S (RM) Mobile UK	AMR (RM)		Stream	ية الأي الأ	Created by: Created on:	A rational Jan 8, 2015, 7:53:33 AM

5. Repeat the steps above to add the 'AMR.S (QM) Mobile UK' test stream contribution from the **RQM Configuration Service Provider** application option.



6. Completing the step above will add a second contribution to the product configuration.



You have now created a new global configuration that assembles the system requirements and system test streams into a single product configuration.

Explore the AMR Mobile US configuration

The 'AMR.S Mobile UK' configuration you have created is well suited for the introduction of configuration management in this lab. To explore a more complete and scalable global configuration you may, after you have completed the lab, deepen your understanding about global configurations by performing the sections in the Appendix. In the appendix section on Exploring the 'AMR.S Mobile US' configuration you will see how contributions at the AMR system level, as well as hierarchical contributions for Meter Reader, Meter Interface and AMR Server will be assembled into the global configuration. You will also explore into the SCM domain and see how IBM Rational Team Concert components and streams are linked to the 'AMR.S Mobile US' global configuration.

Working in a Configuration Context

In this part of the lab you will use the new AMR.S Mobile UK global configuration you created in the previous part as the context for exploring impact of a change request. You will also make making changes to requirements and test cases in context of the global configuration.

The Automated Meter Reader (AMR) team developing the UK variant has received a change request related to new stakeholder requirements for the Mobile UK product. The change request has been decomposed into tasks to analyze impact from this stakeholder requirements change. One of the changes is the market expectation for 4G mobile communications standard to be used by the Meter Reader subsystem in the Mobile UK product.

You will now use the traceability links established between the systems artifacts, as indicated in the figure below, and navigate in the context of the 'AMR.S Mobile UK' global configuration.



You will use IBM Rational Team Concert to locate 'Task 29'. Following a link in the task you will browse and edit requirement '511' in IBM Rational DOORS Next Generation. You will then browse and edit test case '53' in IBM Rational Quality Manager. See artifacts and link in figure above.

Exploring a Change Request

You will now explore one of the change requests in Rational Team Concert planned for the AMR Mobile UK product.

- 1. Open a new browser tab and choose the **ccm** bookmark to open the IBM Rational Team Concert application. Alternatively enter the URL **https://ssejtsserver:9443/ccm/web**
- 2. In the All Projects list, click the AMR (CCM) project area.

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Change management, plan management, source code management and product bu	ds for the AMR products
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Associations	
Provides (24)	

3. Enter 29 in the Quick Search field.



4. Click on the link **29: Analyze impact of the UK AMR Mobile Stakeholder requirements on the AMR Mobile System** to open the change request.

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Task 29: Analyze impact of	the UK AMR Mobi +			
ange and Configuration Manager	ment (/ccm)			One of the <u>Client Access Licenses</u> expires in 41 days
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Details				Quick Information
Type:	📋 Task 💌	Owned By:	Susan	Subscribers (1): P
Severity:	🕚 Major 👻	Priority:	Unassigned	▼ Parent (1): 26
Found In:	Unassigned 👻	Planned For:	🚝 AMR 4.0 - M1	 Requirement (1):
Creation Date:	Oct 9, 2013, 2:06:00 AM	Estimate:	Correction:	1
Created By:	Pam	Time Spent:		
Project Area:	AMR (CCM)	Constraint Type:	As Soon As Possible	•
Team Area:	AMR (CCM)	Constraint Date:	None	
Filed Against:	Category 1 👻 🖓	Planned Start Date:	None	
Tags:		Planned End Date:	None	
		Due Date:	None	
				_

Note: This change request is assigned to user 'Susan' the System Engineer and is planned for the current 'AMR 4.0 - M1' iteration.

5. Click on the Links tab to view links to impacted artifacts.

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Summary: Analyze impact of the UK AMR Mobile Stakeholder requirements on the AMR Mobile System	⇒ New 💌
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E Add Related -	
▼ 🔓 Parent	
器 26: Develop requirements for the UK AMR Mobile product	
Requirement	
511: The handheld device shall interfaces with the city's backoffice software.	

Note: The change request is linked to requirement '511' that is impacted by this change request.

- Hover over the Implements Requirement > 511 link.
 Note: A rich hover preview will open and show the details of requirement '511'.
- Scroll down to the end of the rich hover dialog to locate the In Modules section. Click on the link System Specification: 511 to open the linked requirement '511' in the 'AMR System Requirements' module.

refox 🔻	
ask 29: Analyze impact of the UK AMR Mobi	
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Task 29 3 Summary: Analyze impact of the UK AMR Mobile St	Lakeholder requirements on the AMR Mobile System → New
Overview Links Approvals Histo	y I 511: The handheld device shall interfaces with the city's backoffice ≋ software.
Attachments Drop files to add them or click here to browse.	Accepted: Clarity: cmint_applied_RCR_numbers: Description: Need: Priority: Questions: Requirement Type: Schedule: Source: Stability: Status: Team Ownership: AMR (RM) Test Status: Verifiability: Verification Method: Verifiability:
Links	When used in AMR System Requirements:
E Add Related ▼ Parent R 26: Develop requirements for the UK AMR Mo	Links Satisfies (1): 431: The handheld device shall allow for upload of all Validated By (1): 53: The information collected on handheld computers during meter rounds, so handheld device shall that data can be compiled. Data shall be retrievable to business office computers in a manner that will interface with the existing billin bil
 ▼ ■ Implements Requirement ≦ 511: The handheld device shall interfaces with the state of the st	In Modules

8. The AMR System Requirements module opens and the linked requirement is highlighted.

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	E	506	The control computer shall be capable of operat	ing in a normal office environment.	
Downstream Coverage Requirement Traceability	Γ	507	·2 System Requirements		
Test Coverage	Γ	508	-2.1 Functional Requirements		
Upstream Coverage	Г	509	-2.1.1 Handheld device		
	Γ	510	The handheld device shall provide for the mear manually enter a meter reading.	ns for the meter reader to	
	I.	7 - 511	The handheld device shall interfaces with the c	ity's backoffice software.	
	E	512	The handheld device shall allow for programmi to the next meter on the route as the meter rea	ing of a defined route, advancing ader moves through the route.	
	Γ	513	The handheld device shall have the ability to se Service Address, Meter Number, and Unread M	arch for accounts by Last Name, leters.	
Filter by Tag		514	The handheld device shall have a screen capab accounts that have been read and unread. Dis	le of displaying the number of play information shall include: total	- -
Filter by Attribute	A St	iowing 71 of 71 Ar	acts 1 selected (Clear All Selected)		

Note: You have now located one of the system requirement impacted by the change request.

9. Expand the right sidebar by clicking on the < button on the splitter.



Note: The traceability link to the test case in section **Validated By** is broken. A **404 Not Found** error is shown.

Versioned artifacts do not store version information with concept links. A global configuration context is required to resolve the actual test case artifact version. In the next section you will select the 'AMR.S Mobile UK' global configuration to resolve concept links.

Selecting a configuration context

You will now open the context to the 'AMR.S Mobile UK' configuration.

1. Currently the default configuration 'AMR (RM)' is selected.



2. From the configuration management menu on the banner, choose the **Select Global Configuration Context** command.

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		512	The handheld device shall allow for programming of moves through the route.	Global	Configurations	···· [upload of all information collected on handheld computers during meter
		513	The handheld device shall have the ability to search	9 2	Select Global Configuration Context	t(h	Data shall be retrievable to business
		514	The handheld device shall have a screen capable of information shall include: total number of accounts in address of each account. For completed (read) account summary of usage data, and the id of handheld reac	Manag	e Change Sets Create Change Set		interface with the existing billin (AM Stakeholder Requirements)
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3. In the Select a Global Configuration Context dialog, and type AMR.S Mobile UK. Select the AMR.S Mobile UK configuration. Click OK.

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	514	The l inform the a			Previous	1 - 1 of 1 Next ⊨	ок	Cancel	e been read and unread. Display , number of unread accounts, de: the date and time of the last
Showin	g 71 of 71 Artifa	ts					- City	00001	

Note: The 'AMR.S Mobile UK' configuration is loaded and the name is shown in the banner.

Working with artifacts and links in a global configuration context

Editing requirements artifacts in a configuration context

You will now edit requirements in the 'AMR.S Mobile UK' configuration context.

- Select requirement 511. Click the pen icon () to edit the requirement text.
 The handheld device shall interfaces with the city's backoffice software.
 The handheld device shall allow for programming of a defined route, advancing to the next meter on the route as the meter reader moves through the route.
- 2. Add the requirement text using a 4G mobile connection to the requirement in the exit box.

Press CTRL-S to save the change.

	0
509	- 2 Type Edit Style Color Alignment List/Table Insert -™ ⊠
510	T ≡ 🖳 System Requirement - ¢ : →: r to manually enter a meter reading.
511	The handheld device shall interfaces with the city's backoffice software using a 4G mobile connection.
540	₩L. L. JL.II J

3. Optionally, make additional changes to requirements in the 'AMR System Requirements' module.

You have now made changes to system requirements for the AMR Mobile UK product. These changes are shared other users of the 'AMR.S (RM) Mobile UK' stream. IBM Rational DOORS NG provide capabilities to keep changes to requirements isolated in a *change set* until such changes are published by delivering the change set to the shared stream.

To explore how to use change sets you may, after you have completed the lab, deepen your understanding by performing the sections in the Appendix. In the appendix section on Using Change Sets you will see how to create a change set, edit requirements artifacts in a context set, and deliver the change set to a shared stream.

Navigating links in a configuration context

You will now navigate traceability links and edit test artifacts in the AMR Mobile UK global configuration.

You will first view a traceability view of system requirements and the test cases that are validating each requirement.

1. Click on the > splitter button to expand the sidebar.



2. In the Views section, click on the Test Coverage view.

Firefox 🔨		
3 503: AMR System Requirements - Requirem +		
Requirements Management (/rm)		One of the <u>Client Access Licenses</u> expires in 40 days 🔅
🟠 🔄 AMR (RM)		🛔 AMR.S Mobile UK \vee Rational 🖓 🍸 🎇 🐣 🚱 🐣
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Search Views 🔍 🗐 🔻 📸		⁵⁰⁷ ·2 System Requirements
		508 •2.1 Functional Requirements
Downstream Coverage		509 •2.1.1 Handheld device
Requirement Traceability		510 The handheld device shall provide for the means for the meter reader to manually enter a
Ups am Coverage		511 The handheld device shall interfaces with the city's backoffice software using a 4G mobile
Test Coverage (Shared) - Test Coverage		512 The handheld device shall allow for programming of a defined route, advancing to the nex

3. A requirements and test traceability view opens. Each requirement is viewed with the linked test cases shown in the **Validated By** column.

Note: Optionally, Click on the < splitter button to collapse the sidebar.

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			506	The control computer shall be capable of operating in a normal office environment.	23: The control computer environment.	Iter shall be capable of operating in a normal office	
			510	The handheld device shall provide for the means for the meter reader to manually enter a meter reading.	11: The handheld devi manually enter a meter	ice shall provide for the means for the meter reader to er reading.	
		<i>//</i> -	511	The handheld device shall interfaces with the city's backoffice software using a 4G mobile connection.	😫 53: The handheld devi	ice shall interfaces with the city's backoffice software.	
			512	The handheld device shall allow for programming of a defined route, advancing to the next meter on the route as the meter reader moves through the route.	22: The handheld devi advancing to the next r route.	ice shall allow for programming of a defined route, meter on the route as the meter reader moves through the	
			513	The handheld device shall have the ability to search for accounts by Last Name, Service Address, Meter Number, and Unread Meters.	2: The handheld devic Name, Service Addres	e shall have the ability to search for accounts by Last ss, Meter Number, and Unread Meters.	
			514	The handheld device shall have a screen capable of displaying the number of accounts that have been read and unread. Display information shall include: total number of accounts in collection route, number of read accounts, number of	48: The handheld devi accounts that have be number of accounts in unread accounts,	ice shall have a screen capable of displaying the number of en read and unread. Display information shall include: total n collection route, number of read accounts, number of	
	Showi	ng 55 of	71 Artifacts	1 selected (Clear All Selected)			
	IBM.					Jazz-	-

- 4. Click on the link to test case **53: The handheld device shall interfaces with the city's backoffice software** linked to requirement 511.
- 5. The Rational Quality Manager application opens and loads test case 53 in context of the 'AMR.S Mobile UK' global configuration.

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Requirement Links				
Risk Assessment	Summary (?			511: The handheld device shall interfaces with the city's backoffice
Post-Condition				software using a 4G mobile
Expected Results			Quality Task: Creat	te connection.
Test Scripts	Use the theme, o	ategory and function feature	es to group your test cases along related items or	
Test Case Execution Records	logical groupings units of work.	s. Weight is a measure of e	xecution effort and can be based on tester hours or	
Attachments	Categories			
Execution Variables	Function:	Unassigned		
Show All Sections	Test Phase:	Unassigned		
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_	. Weight *	100	Points	

6. Edit the test case title to match the new system requirement on 4G mobile communications. Click **Save**.

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roject Dashboards 🗸 Requirements 🗸 Planning 🗸 Construction 🖬 * Lab Management 🗸 Builds 🗸 Execution 🖬 * Reports 🗸 Change Re	equests ~ 🏟 * Search QM Resources 🔍
Test Cases >	Parent Test Plan(s)
(1) Contains Unsaved Changes	AMR System Verification test
* 3: The handheld device shall	e Related Test Suite(s)
Interfaces with the city's	Related Sites
mobile connection.	IBM Rational IBM Rational Quality Mgmt
Sections 🕂 State: 🖌 Draft Action: Change State	Related Test Scripts
Summary Originator: Rational Owner: Unassigned	Validates Requirements

You have now made changes to system requirements and system test cases for the AMR Mobile UK product.

You will now create baselines of these stream changes and assemble a global base of the requirements and test baselines.

Exploring Baselines

In this part of the lab you will explore how to create *baselines* of the streams you used in this lab. You will first use the IBM® Rational DOORS® Next Generation and IBM® Rational® Quality Manager applications to create baselines of the 'AMR.S (RM) Mobile UK' and 'AMR.S (QM) Mobile UK' streams. You will then proceed and create a new 'AMR.S Mobile 4.0M1 UK' global configuration, update the stream contributions with baselines contributions and finalize the global baseline. The figure below shows the new global baseline and the replaced contribution baselines.



Creating a Requirements baseline

You will now create a baseline for the 'AMR (RM) Mobile UK' stream.

- 1. Return to the tab with the Rational DOORS NG application, the 'AMR (RM)' project and the 'AMR.S Mobile UK' configuration.
- 2. Choose the Create Baseline command from the configuration management menu.

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	504	•1 General Description	Casada		<u> </u>
	505	-1.1 Environmental Consideration		Stream	
	506	The control computer shall be capable of operating	r in the second	Baseline	
	507	-2 System Requirements	Manage	e Configurations	
	508	-2.1 Functional Requirements	Reg	Open Configuration Management	
	509	-2.1.1 Handheld device	Global	Configurations	
	510	The handheld device shall provide for the means	Ð	Select Global Configuration Context	r reading.
	511	The handheld device shall interfaces with the city	**	Add to Global Configuration	ction.
	512	The handheld device shall allow for programming reader moves through the route.	Manage	e Change Sets Create Change Set	er on the route as the meter
	513	The handheld device shall have the ability to sear Meters.	A	Explore Change Sets	», Meter Number, and Unread
	514	The handheld device shall have a screen canable	of disn	laving the number of accounts that hav	e heen read and unread Disnlav

3. In the Create a Baseline dialog, enter the name AMR.S (RM) Mobile 4.0M1 UK. Click **Next>**, choose the **Current stream** option, and click **Next>** and **Finish** to complete the dialog

e a Baseline A	MR (RM)
Baseli	ne Details 2 3 4
Name: *	AMR.S (RM) Mobile 4.0M1 UK
Descriptions	
Description:	Enter a description to help you identify the item in a list.
Description:	Enter a description to help you identify the item in a list.
Description:	Enter a description to help you identify the item in a list.
Description:	Enter a description to help you identify the item in a list. <back< td=""> </back<>
Description:	Enter a description to help you identify the item in a list. <back< td=""> Next > Finish Cancel</back<>

You have now created a baseline of the requirement changes you made in the 'ARM (RM) Mobile UK' stream.

Creating a Test baseline

You will now create a baseline for the 'ARM (QM) Mobile UK' stream.

- 4. Return to the tab with the Rational Quality Manager application, the 'AMR (QM)' project and the 'AMR.S Mobile UK' configuration.
- 5. Choose the **Create Baseline** command from the configuration management menu.

AMR (QM)		🛔 AMR.S Mobile UK 🗡	Rational 🕌 ~ 🌞 ~ 😧 ~
Project Dashboards > Requirements > Test Cases > \$\$ 53: The handhe interfaces w	Manage Configurations /* YAMR.S (QM) Mobile UK' Properties Create Baseline Create Stream Compare Configuration Open Configuration Management	Recently Viewed (0) Search for a Configuration Select Global Configuration Context	sts V i V Search QM Resources Q Parent Test Plan(s) AMR System Verification test Related Test Suite(s)
backoffice s mobile conn	ection.		Related Sites

6. In the **Create Baseline** dialog, enter the name AMR.S (QM) 4.0M1 Mobile UK. Click **OK** and **Close** to complete the dialog.

Create Baseline Al	MR.S (QM) Mobile US	×
Name*	AMR.S (QM) Mobile 4.0M1 UK]
Description:		
	ОК	Cancel

You have now created a baseline of the changes you made to the test cases in the 'ARM (QM) Mobile UK' stream.

Creating a Configuration baseline

You will now create a baseline for the AMR Mobile UK product configuration.

- 1. Open the Rational Configuration Management application by clicking on the cm bookmark, or alternatively enter the URL <u>https://ssejtsserver:9443/vvc/web</u>
- 2. Choose the **Global Configurations** > **Welcome to Global Configurations** menu command.
- 3. In the Quick Search, type AMR.S Mobile UK and click on the link to open the configuration in the editor.

Firefox Y		<u>- 0 ×</u>
Welcome - Global Configurations +		
Configuration Management (/vvc)	0	ne of the <u>Client Access Licenses</u> expires in 40 days
👔 Configuration Management - Global Configurations		Rational 🕌 ~ 🌞 ~ 😧 ~
Configurations 🗸 Global Configurations 🗸	Quick Search	AMR.S Mobile UK
	You are searching 'Global streams'.	
Welcome to Global Configurations	Found 1 results for 'AMR.S Mobile UK'	. I Previous 1 - 1 of 1 Next №
-	AMR.S Mobile UK	
Search for a global configuration	what is a global configu	arauori :

4. Create a copy of the 'AMR.S Mobile UK' stream by clicking on the Copy icon in the tools section.

👔 🗐 Configuration Management - Global Configurations	Rational 🖓 ~ 🛱 ~ 🥥 ~
Configurations V Global Configurations V	🐴 🔭 Global configurations 🔍
Global Configuration: AMR.S Mobile UK	🔗 🕶 🦑 🔙 Save) Create a copy of this stream

5. Click on the title of the new configuration to edit the name.

👔 🗑 Configuration Management - Global Configurations	Rational 🦓 👋 🛱 🔺	? ~
Configurations V Global Configurations V	🕂 🕈 Global configurations	٩
Global Configuration: Duplicate of 'AMR.S Mobile UK'	A 4 4	Save
Contributions Description		

6. Replace the name by typing AMR.S Mobile UK 2015 in the title text box. Click **Save**.

👔 🗑 Configuration Management - Global Configurations	Rational 🖓 ~ 🗱 ~ 🥑 ~
Configurations v Global Configurations v	🛃 * amr 🔍
Bolobal Configuration: AMR.S Mobile 4.0M1 UK	
Contributions Description	😤 🕺 💸 📙 Save

- 7. On the 'AMR.S (RM) Mobile UK' contribution row, click the Replace icon.
- 8. Choose the **Requirements Management** option.

In the **Replace Contribution** dialog, choose the **Baselines** and type optionally 4.0 in the search field. Select the 'AMR.S (RM) Mobile UK' requirement baseline you created on one of the previous steps. Click **OK**.

🔒 Replac	B Replace Contribution								
Select th	e application that conta	ains the contribution.							
To see th Manager	To see the Design Management or Requirements Management configurations, select Configuration Management. Applications are added by creating a friend relationship.								
Require	ments Management (s	ssejtsserver:9443/rm)		*					
Project:	AMR (RM)			-					
Туре:	Baselines			•					
4.0									
Name	Name Description Created By Created On								
AMR.S (AMR.S (RM) Mobile 4.0M1 UK Rational Jan 14, 2015 3:18 AM								

9. Repeat the steps above and replace the 'AMR.S (QM) Mobile UK' stream contribution with the 'AMR.S (QM) Mobile 4.0M1 UK' baseline. Click **OK**.

🔒 Replace C	🐣 Replace Contribution 🛛 🛛 🕅							
Select the application that contains the contribution.								
To see the D Management	To see the Design Management or Requirements Management configurations, select Configuration Management. Applications are added by creating a friend relationship.							
RQM Config	urations Service Provider	(ssejtsserver:9443/qr	n)		-			
Project Area:	AMR (QM)				-			
Туре:	Baselines				•			
4.0								
Name	Name Description Created From Created On							
AMR.S (C	🖾 AMR.S (QM) Mobile 4.0M1 UK 4 minutes a							
1 item(s) select Showing 1-1 o	1 item(s) selected 1 Showing 1-1 of 1 items							

Note: The configuration is now updated with requirements and test baselines.

10. Click the **Convert into a Global Baseline** icon.



11. The 'AMR.S Mobile 4.0M1 UK' configuration is converted to an immutable baseline, locked to additional changes

	uration Management - Global Configurations			Rat	ional 🚜 ~ 🋱 ~ 🥑 ~
🧯 🔏 Global C	Configuration: AMR.S Mobile 4.0M1 UK	<			😤 🚸 🔒 Save
Contributions	Description			Details	
Name	Component *	Description	Туре	Туре:	Blobal Configuration
AMR.S (QM) Mobile 4.0M1 UK	https://ssejtsserver:9443/qm/oslc_config/resources /com.ibm.team.wc.Component/_0ITXsH9ZEeSjf4FGOLeMRg		Baseline	Created by: Created on:	🖁 rational Jan 14, 2015, 3:13:05 AM
AMR.S (RM) Mobile 4.0M1 UK	AMR (RM)		Baseline		

Summary of this Lab

You have in this lab explored the concepts of multi-stream configuration management by

- Exploring requirements and test components
- Creating new streams for requirements and test artifacts for a UK configuration
- Created a global configuration to be used as a configuration context for managing changing artifacts for a UK configuration
- Used the global configuration context to navigate and edit artifacts and links
- Created baselines of requirements and test streams
- Create a global configuration baseline

Visit IBM.com for more information on the Configuration Management capabilities in the Systems and Software Engineering solution.

Appendix: Advanced Configuration Management

Exploring the AMR Mobile US configuration

You may optionally explore the 'AMR.S Mobile US' global configuration and browse its hierarchical contributions from IBM Rational DOORS Next Generation, IBM Rational Quality Manager, IBM Rational Rhapsody Design Manager and IBM Rational Team Concert applications.

- 1. Open a new tab in your browser and choose the **cm** bookmark to open the IBM Rational Configuration Management. Alternatively enter the URL **https://ssejtsserver:9443/vvc/web**
- 2. Choose the **Welcome to Global Configurations** command from the **Global Configuration** menu on the banner.

One of the <u>Client Access Licenses</u> expires in 37 days 📥
Rational 🔠 👋 🛱 👋 🥥 👻
📑 🔹 Global configurations 🔍

3. In the Quick Search field and type AMR.S Mobile US.



4. Click on the 'AMR.S Mobile US' global contribution.

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Configurations ~ Glob	al Configurations ~					4	Clobal configurations
🔒 Globa	I Configuration: AMR.S Mobile	US					😤 🕺 💸 🔡 Save
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Name	Component 🔻	Description	Туре	Actions	6	Туре:	Blobal Configuration
AMR.S (QM) Mobile US	https://sseitsserver:9443/qm/oslc_config/resources /com.ibm.team.wc.Component /_0ITXsH9ZEeSjf4FGOLeMRg		Stream	цф.	×	Created by: Created on:	🛔 rational Dec 9, 2014, 12:18:05 AM
AMR.S (RM) Mobile US	AMR (RM)		Stream	\$ ⁶	×		
AMR.S (SCM) Mobile US	AMR.S (SCM) Mobile US		Stream	\$	×		
Meter Interface Mobile US	Default component for Meter Interface Mobile US	Meter Interface stream	Stream	4 ^{den}	×		
Meter Reader Mobile US	Default component for Meter Reader Mobile US	Meter Reader stream	Stream	¢ ^{\$}	×		
AMR.S (DM) Mobile US	AMR (DM)		Stream	¢*	×		
AMR Server US	Default component for AMR Server US	AMR Server stream	Stream	ф ^ф	×		-

Note: The global configuration opens and shows the contributions from Requirements Management, Quality Management, Design Management, Source Code Management and Configuration Management domains.

- 5. Explore the system level contributions.
- 6. Click on the 'Meter Reader Mobile US' global configuration contribution.

ifigurations v Glob	figuration Management - Global Con al Configurations ~	figurations	_	_	_	Rat	tional 🐰 ~ 🌞 ~ 🕜 ~
🔒 Globa	I Configuration: Meter Reade	er Mobile US					🔒 🕺 💸 🔡 Save
Contributio	ns Description		20 A	dd a Co	ntribution	Details	
Name	Component -	Description	Туре	Action	ıs	Туре:	Slobal Configuration
Meter Reader (QM) Mobile US	https://sseitsserver:9443/qm/oslc_config/resources /com.ibm.team.vc.Component /_5rjf0n9ZEeSjf4FGOLeMRg	Meter Reader (QM) Mobile US description	Stream	ages.	×	Created by: Created on:	A rational Dec 9, 2014, 12:27:02 AM
Meter Reader (SCM) Mobile US	Meter Reader (SCM) Mobile US		Stream	\$ ^{\$}	×		
Meter Reader (DM) Mobile US	Meter Reader (DM)		Stream	\$	×		
Meter Reader (RM) Mobile US	Meter Reader (RM)		Stream	y ^a	×		

Note: The global configuration for the Meter Reader subsystem opens and shows is hierarchical contributions.

7. Click on the 'Meter Reader (SCM) Mobile UK' contribution.

2	AMR (CCM)	Rational 👪 ~ 🇱 ~ 🙆 ~
Pro	ject Dashboards v Work Items v Plans v Source Control v Builds v Reports v	😑 🔹 Search Work Items 🔍
88	Source Control > 100 Streams >	
	Meter Reader (SCM) Mobile US 🖗	
	Overview Snapshots	
	Owned By: AMR (CCM) Visibility: AMR (CCM) Description: <none></none>	
	Components	
	스 Meter Reader - Battery (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	A Meter Reader - CarKit (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	A Meter Reader - CDMA (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	A Meter Reader - CelluarUnit (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	🐣 Meter Reader - GPS Unit (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	🕰 Meter Reader - GSM (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	🐣 Meter Reader - Handheld Charger EU 240V (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	🐣 Meter Reader - Handheld Charger EU 240V 3 pin (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	🐣 Meter Reader - Handheld Charger US 110V 2 pin (12: Meter Reader (SCM) Mobile 3.0 US.GA)	
	A Meter Reader - Handheld Unit (12: Meter Reader (SCM) Mobile 3:0 US GA)	

Note: The Rational Team Concert application is opened and displays the SCM components in the 'Meter Reader (SCM) Mobile US' stream.

Using Change Sets

You may optionally explore the use of Change Sets to manage changes in a stream.

Create a Change Set

You will now create and use a Change Set to manage the changes to impacted requirements.

- 1. Return to the tab with the Rational DOORS NG application, the 'AMR (RM)' project and the 'AMR.S Mobile UK' configuration. Open the 'AMR System Requirements' module
- 2. From the configuration management menu, choose the Create Change Set command

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/IR (RM) > 01 Re	quirements >	Ø	Å	AMR.S Mobile US	No Tags Defined		
503: AMR System Requirements 💿				AMR.S Mobile 3.1 US.GA	🗊 🛱 🖓 🖓 🕾 • ≡ 💣 •		
	ID	Contents	8	AMR.S (RM) Mobile UK	C		
	504	-1 General Description	8	Search for more	-		
	505	-1.1 Environmental Consideration	Create		-		
	506	The control computer shall be capable of operating		Stream			
	507	-2 System Requirements		Baseline			
	508	-2.1 Functional Requirements	Manage	Manage	Manag	e Configurations Edit 'AMR.S (RM) Mobile UK'	
	509	-2.1.1 Handheld device	28	Open Configuration Management			
	510	The handheld device shall provide for the means	Global	Configurations	r reading.		
v 🧷	511	The handheld device shall interfaces with the city	y 🔒	Select Global Configuration Context			
	512	The handheld device shall allow for programming reader moves through the route.	Manage	e Change Sets	er on the route as the meter		
	513	The handheld device shall have the ability to sear Meters.	<u>A</u>	Create Change Set	s, Meter Number, and Unread		
	514	The handheld device shall have a screen capable information shall include: total number of accoun the address of each account. For completed (rea	ts in col	llection route, number of read account:	been read and unread. Display s, number of unread accounts, ude: the date and time of the last		

3. In the **Create a Change Set** dialog, enter the comment Update system requirements for AMR Mobile UK product. Click **Create**.



Note: The selected configuration changes to the new change set.

🖄 Update system requirements for AMR Mobile UK product 🔿

4. Operations on change sets can be performed from the configuration management menu, or from the configuration management application.

Choose the **Explore Change Set** command from the configuration management menu. Hint: Open the change set in a new browser tab.



5. The 'AMR.S (RM) Mobile UK' configuration is displayed.

Click on the Link to a work item command icon on the new change set row.

🗐 Stream Editor - Configuration Management ×	Stream Editor - (Configuration Management $ imes$	+			
Configuration Management (/vvc)				One of the	e <u>Client Acce</u>	ss Licenses expires in 40 days
👔 📄 Configuration Manage	ement			Rational 🕌 ~ 🛱 ~ 😰 ~		
Configurations -> Global Configurations ->				Ę	🖁 🍷 Configu	urations Q
⁸⁸ Stream: AMR.S (RM	A) Mobil	e UK		\$	▲ f ⁼	📸 👔 🧇 🔚 Save
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				Details		
ltems per page: 15 👻	I Previous	1-1 of1 Next ▶	🖄 🏭 🛦 🧇	Type:		🔞 Stream
Actions	Name	Created by	Change Management links	Configuration	Space:	🕀 AMR (RM)
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				Created on:		Jan 9, 2015, 6:33:45 Al
				Dimensions		
				Dimensions	1	
				Name	Value	
https://ssejtsserver:9443/vvc/web?#				Purpose	AMR.S (F	RM) Mobile UK

6. In the **Link to a Change Request** dialog, choose the 'AMR (CCM)' project. Click the **Browse** button to look up the change request.

Link to a C	Change Request	X
Project:	AMR (CCM) (ssejtsserver:9443)	•
	Choose existing Create new	
Type:	Select Change Request	▼
Link To:	Select an item	Browse
	OK	Cancel

7. In the **Select Change Set** dialog, type 29 in the search box and select the change request.

Select Change Request
Project Area: AMR (CCM)
Search by Keyword or Work Item Number ○ Search by Query
Type: (Show All)
Work Item Number or Words Contained in the Text. Use quotes for a phrase search:
29
Matching Work Items: 1 result(s)
29: Analyze impact of the UK AMR Mobile Stakeholder requirements on the AMR Mobile Sys
OK Cancel

Note: By searching for work item with id 29 you will locate the change request related to the impact of the new 4G mobile communication requirement for the AMR Mobile UK product.

Click **OK** to close the **Select Change Set** dialog. Click **OK** to close the **Link to a Change Request** dialog.

	Change sets	Dependencies	Streams B	laselines	Description	
I	tems per page: 1	5 💌	I Previous	1 - 1 of 1	Next ⊧	🖄 🏭 🔺 🖑
	Ac	tions	Name	Created I	у	Change Management links
			A Update system requirements for AMR Mobile UK product	s 🖁 ratior	al	₿29

Note: The 'AMR.S (RM) Mobile UK' stream is updated and shows the change set with the linked change request.

Editing artifacts in a Change Set

You will now edit requirements in the change set.

- 1. Return to browser tab with Rational DOORS NG, the 'AMR (RM)' project and the 'AMR System Requirements'.
- 2. Select requirement 511. Click the pen icon (¹) to edit the requirement text.



3. Add the requirement text using a 4G mobile connection to the requirement in the exit box.

Press CTRL-S to save the change.

509	-2 Type Edit Style Color Alignment List/Table Insert -™ ⊠
510	T
511	The handheld device shall interfaces with the city's backoffice software using a 4G mobile connection.
540	

4. Optionally, make additional changes to requirements in the 'AMR System Requirements' module.

You have now made changes to system requirements for the AMR Mobile UK product. These changes are private to the change set and have not been shared with other users of the AMR (RM) project.

In the next section you will complete (lock) and share the changes with other users.

Delivering changes in a Change Set

You will now complete the Change Set and deliver the changes to the 'AMR.S (RM) Mobile UK' stream.

- 1. Return to the tab with the Configuration Management application, or choose the Explore Change Sets command from the configuration management menu.
- 2. On the change set row, choose the **Deliver change set** command by clicking on the deliver

icon. Confirm by clicking the **Deliver Change Set** button (

Actions	Name	Created by	Change Management links
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3. The Deliver change set guide opens in the browser.

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)3: AMR System Requirements - Requir 🛛 🔣 Deliver Change Sets	× +
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1	🔓 rational Log Out
1022	
DELIVER CHANGE SETS	< Back Next > Finish Cancel
DEENVER CHANGE SETS	
Configuration Management	
(1) There are no changes to compare. To continue, click Next.	show more 데 Previous 1 - 1 of 1 Next 비 없
	♥ T Y ∑ \$\$
Base: Common	Result: AMR.S (RM) Mobile UK 🕞 強

4. Click the **Next>** button until the guide display the requirement compare view.

Firefox T	
📵 503: AMR System Requirements - Requir 🛛 📈 Deliver Change Se	ts × +
🚱 ccm 📵 rm 🍺 qm 🧐 dm 🗐 cm 🜗 dwa 💿 relm 💿 lqe	💋 rs 💋 jts admin
	▲
Ja22	읍 rational Log Out
DELIVER CHANGE SETS	<back next=""> Finish Cancel</back>
A New A Modified Removed 511: The handheld device shall interfaces with the city's backoffice software using a 4G mobile connection.	Changes to this artifact in "Update system requirements for AMR Mobile UK product" will be delivered to "AMR.S (RM) Mobile UK". Changes from AMR.S (RM) Mobile UK to Update system requirements for AMR Mobile UK product. It The handheld device shall interfaces with the city's backoffice software. The handheld device shall interfaces with the city's backoffice software using a 4G mobile connection. Primary Text: The handheld device shall interfaces with the city's backoffice software using a 4G mobile connection.

Note: The changes to the requirements made are shown.

- 5. Click **Next>** and complete delivery by clicking the **Finish** button.
- 6. Return to browser tab with IBM Rational DOORS NG, the 'AMR (RM)' project and the 'AMR System Requirements'.

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AMR (RM) > 01 R	Requirements >	Ø	No Tags Defined 🦻
503: A	AMR Sys	tem Requirements 💿	🗊 🐯 🖓 🐨 🖆 🐝 ד 🖬 💰 💰
	▼ ID	Contents	Q
	504	•1 General Description	
	505	-1.1 Environmental Consideration	ons —
	506	The control computer shall be capable of operating	g in a normal office environment.
	507	2 System Requirements	
	508	-2.1 Functional Requirements	
	509	-2.1.1 Handheld device	
	510	The handheld device shall provide for the means	for the meter reader to manually enter a meter reading.
v 🧷	· ▼ 511	The handheld device shall interfaces with the city	's backoffice software using a 4G mobile connection.
	512	The handheld device shall allow for programming reader moves through the route.	of a defined route, advancing to the next meter on the route as the meter
	513	The handheld device shall have the ability to sear Meters.	ch for accounts by Last Name, Service Address, Meter Number, and Unread
	514	The handheld device shall have a screen capable information shall include: total number of account the address of each account. For completed (rea	of displaying the number of accounts that have been read and unread. Display ts in collection route, number of read accounts, number of unread accounts, (d) accounts, the display information shall include: the date and time of the last
Showing 71	of 71 Artifacts	1 selected (Clear All Selected)	
IBM.			dazz

Note: The changes you made in the change set in the change set have been delivered to the 'AMR.S Mobile UK' global configuration.