

# 2540 – PLE design validation and playback

*Jin Li*

*Mats Göthe*

## Innovate2014

The IBM Technical Summit

June 1 – 5 | Orlando, Florida

**Innovate@SPEED**



#ibminnovate



© 2014 IBM Corporation

## Please note

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.



# Abstract

Design studio group session to validate PLE scenarios, key personas and UX storyboards.

We will deep dive into the 2014 release hills and design exploration. We will provide an overview of the PLE scenarios developed by the PLE delivery team.

Attendees will contribute by examining and validating the design scenarios, the scenario personas and the development practices.

Attendees will also be invited to work with the members of the Rational Design Factory team to explore parts of the scenario and contribute their user experiences and practices into the design work.



# Agenda

- IBM Design Thinking
- Release Hills
- Introduction to the PLE Scenario
- Scenario Deep-Dive
  - Explore design scenario's for 2015
  - Act 0: Create product variant
  - Act 1: Reproduce Defect
  - Act 2: Create Delivery Configuration
  - Act 3: Update Product Line
  - Act 4: Report on Release



# IBM Design Thinking



Hills focus your project on big problems and outcomes for users, not just a list of feature requests.



Sponsor Users help you design experiences for real target users, rather than imagined needs.



Playbacks align your team, stakeholders, and clients around the user value you will deliver, rather than project line items.



# IBM Design Thinking



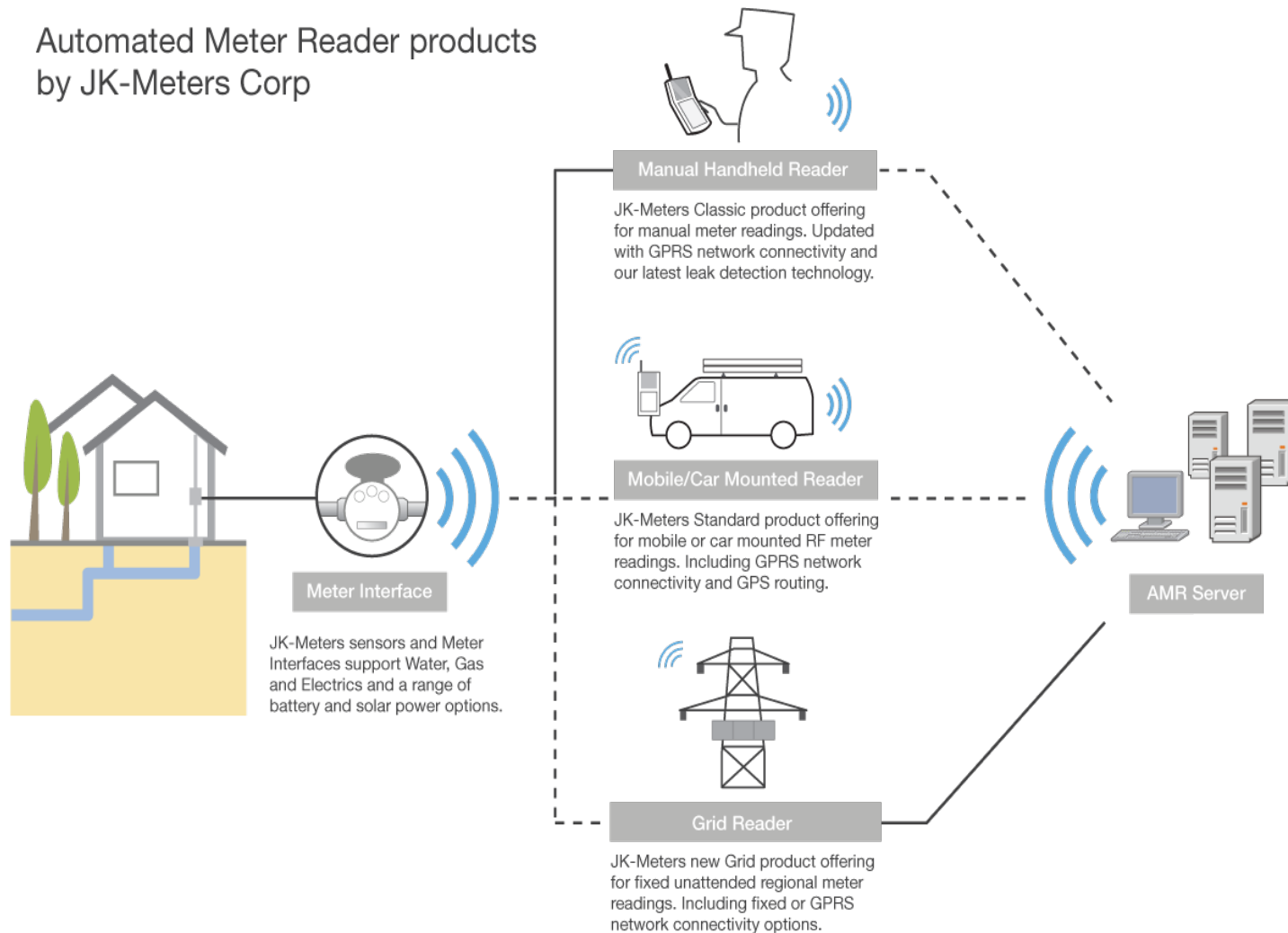
# Release Hills for PLE

Hill #1	<b>Work in configurations with artifacts and links</b> An engineer working in an environment with 1000s of configurations can see and use artefacts and their links that were delivered from any other configuration.
Hill #2	<b>Create and use product definitions</b> A configuration lead or product line manager can define a complex product as a set of hierarchical component configurations. This single source of truth enables engineers to work with the right artifacts and links in their tools. <ul style="list-style-type: none"><li>•A configuration lead or product line manager can define a new product variant and visualize its structure within 5 minutes.</li><li>•An engineer can find and select the right configuration within 30 seconds to populate his/her workspace</li></ul>
Hill #3	<b>Track and report on configurations of engineering artifacts</b> An engineer working in an environment of 1000s of configurations can create reports in the context of any configuration. <ul style="list-style-type: none"><li>•An engineer can generate a document with requirements, tests and design artifacts (and their links) associated with a configuration</li><li>•An engineer can run queries in the context of any one global configuration</li><li>•An engineer can generate a real-time or historical report or view dashboards with information associated with a configuration</li></ul>
Hill #4	<b>Technical Foundation</b> <ul style="list-style-type: none"><li>•Deliver a PLE solution with VVC, LQE and triple store performance and scalability. SSO and LQE Access Controls 2.0</li><li>•Improvements on install, upgrade and setup for PLE playbacks and demonstrations</li></ul>



# Automated Meter Reader Scenario

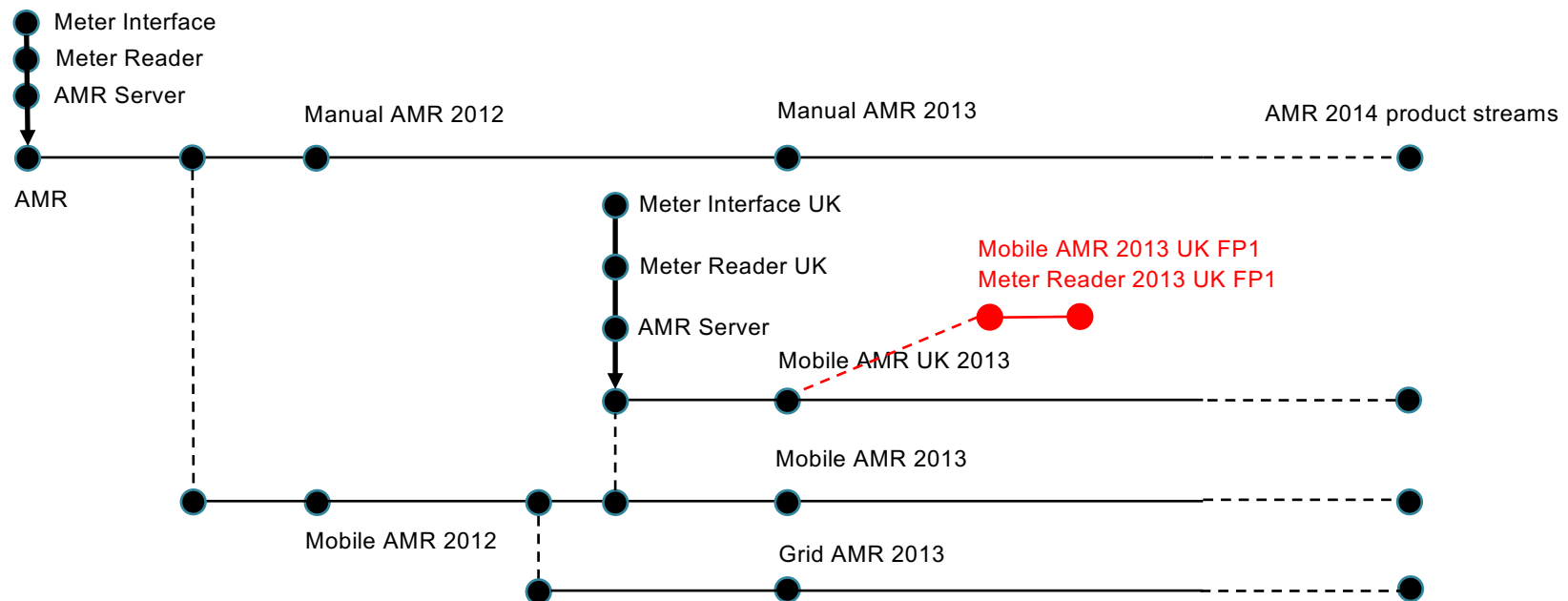
Automated Meter Reader products  
by JK-Meters Corp





# PLE Scenario Context

- JKE Meters delivering Automated Meter Readers
- Multi-stream PLE practice to manage an evolving product line
- **Scenario: Need to fix a product variant defect and deliver a fix pack**



# Scenario personas



## Charles – Configuration Lead | Product Line Engineer

- I configure and manage configurations for components and product variants
- I need to define and view products with their variants and dependencies as a set of hierarchical product definitions and reusable component configurations
- I am responsible for assembling global baselines



## Dan – (Embedded) Software Developer

- I develop features in reusable components
- I need to easily start working on a Change Request in context of a configuration
- I need to trace links and edit artifacts in context of my selected configuration



## Tony – Tester

- I verify features and changes to artifacts in context of a delivery configuration
- I need to reuse test artifacts across components and product variants
- I need to report on test results in context of a configuration

















## Pete – Project Manager

- I plan work and track the delivery of my product variant(s)
- I need to manage project milestones and work and link tasks to artifacts in context of my delivery configurations
- I need to report on project readiness metrics on my project dashboard



# PLE Scenario - Scenes and Acts

PLE Scenario Acts	Personas	Hill 1 Work in configurations with artifacts and links	Hill 2 Create and use product definitions
Act 1 - Reproduce a defect	 Pete	Triage and assign a defect	
	 Dan	Open and load workspaces	Open and load workspaces using RELM
	 Dan	Reproduce defect using engineering artifacts	
	 Pete	Plan fix and release	
Act 2 - Create delivery configuration	 Charles	Create delivery streams	Create delivery streams using RELM
	 Dan		Resolve defect
	 Tony		Validate defect resolution
	 Charles	Baseline delivery streams	Baseline delivery streams using RELM
Act 3 - Deliver and baseline changes to product line	 Charles		Analyze dependencies
	 Pete		Review and approve release
	 Charles		Replace baselines
Hill 3 Visibility into configurations of engineering artifacts	 Tammy	Create requirements / quality coverage query	
Act 4 - Report on release	 Pete	Track progress to release using Dashboards	
	 Charles	Generate release documentation	

The PLE scenario explores the activities taken by the AMR product line delivery team to progress towards delivery of a Mobile AMR 2013 UK FP1 release resolving a product variant defect



# Agenda

- IBM Design Thinking
- Release Hills
- Introduction to the PLE Scenario
- Scenario Deep-Dive
  - Explore design scenario's for 2015
  - Act 0: Create product variant
  - Act 1: Reproduce Defect
  - Act 2: Create Delivery Configuration
  - Act 3: Update Product Line
  - Act 4: Report on Release



# Triage and Assign the Defect



The CCB reviews this defect on the Mobile AMR 2013 UK product.

Pam, the product line manager, request that the defect should be fixed with high priority.

The defect is assigned to Dan, a developer in the Meter Reader team.



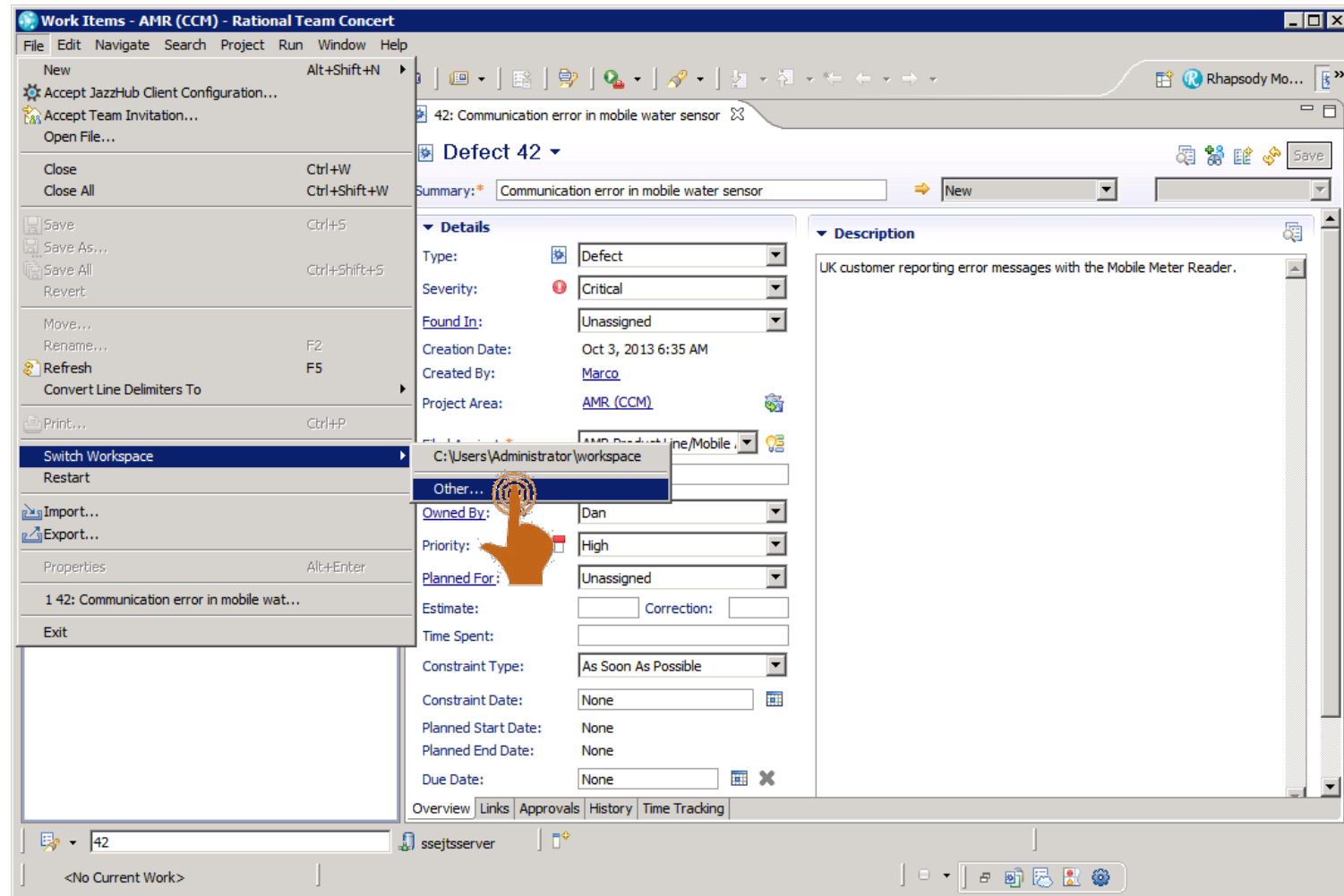
# Open and Load Workspaces



Dan is notified of the defect in the Eclipse client

He suspends the task he is working on and starts reproducing the defect

He creates a new workspace to load the 2013 Mobile AMR UK GA baseline

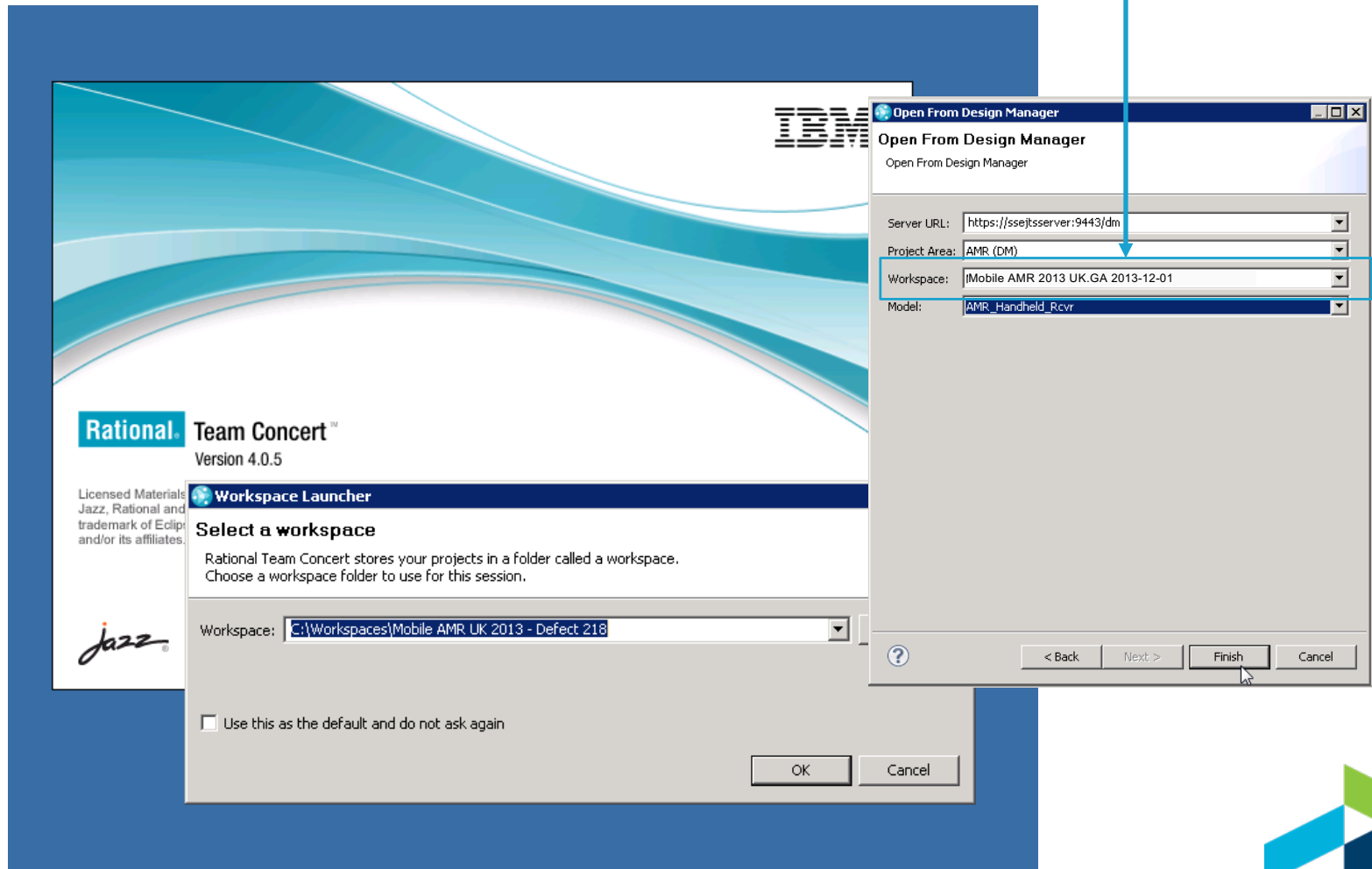


# Open and Load Workspaces

Meter Reader 2013 UK GA.2013-12-01 context



Dan launch  
Eclipse w/ the  
Rhapsody client,  
loads his  
workspace and  
select the GA  
baseline



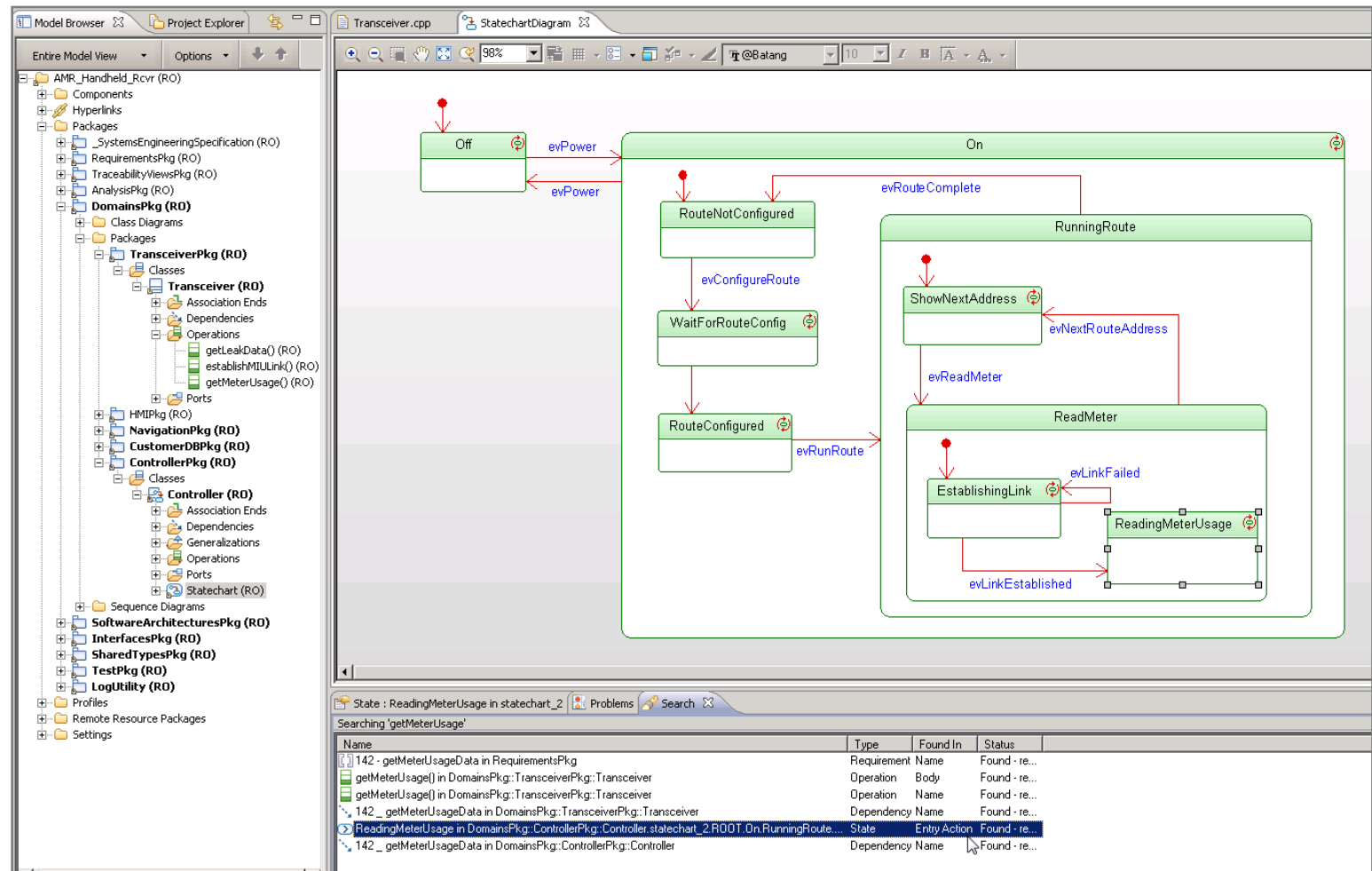
# Open and Load Workspaces



Dan suspects the `getMeterUsage()` is causing the reported error.

He finds the defect in `getMeterUsage()`

He updates the work item with a link to the model element.





# Plan Fix and Release



Pete plans the delivery of the fixpack.

He creates a release plan.

He creates a task for Charles (Configuration Lead) to create a delivery configuration for FP1

The screenshot shows the Jazz web interface in a Mozilla Firefox browser. The address bar displays the URL: <https://jazz.net/jazz/web/projects/AMR%20Foundation%20%28Change%20Management>. The page title is "Task 238 - Change and Configuration Management". The breadcrumb navigation shows "AMR (CCM)" with sub-tabs for "Project Dashboard", "Work Items", "Plans", "Source Control", and "Reports". The "Work Items" tab is active, showing a search bar and a "Save" button. The main content area is for "Task 238" with a summary: "Create a new delivery configuration for Meter Reader UK 2013 FP1". The task is categorized as "New". Below the summary, there are tabs for "Overview", "Links", "Approvals", "History", and "Time". The "Overview" tab is selected, showing details for the task. The details include: Type: Task, Severity: Critical, Creation Date: Jan 25, 2014 3:51:27 PM, Created By: Pete, File Against: Mobile AMR, Owned By: Charles, Priority: High, Planned for: Meter Reader 2013 UK, Time Spent: (empty), and Due Date: / /. A "Quick Information" sidebar on the right shows "Subscribers (3): Charles, Pam, Susan". The "Description" section contains a message to Charles: "@Charles, please create a new delivery configuration with local stream contributions to deliver the patch for Meter Reader UK 2013 in RELM." and a link: [https://ssejtsserver:9443/relm/web/projects/AMR%20%28RELM%29#action=ple.view\\_pathpath=item\\_11%23branch\\_2show=recents](https://ssejtsserver:9443/relm/web/projects/AMR%20%28RELM%29#action=ple.view_pathpath=item_11%23branch_2show=recents). The "Discussion" section is currently empty.

# Request new delivery configuration

Collaboration in context of Plans, Tasks and Configurations



Charles is assigned a task to create a delivery configuration for a Meter Reader FP1

He may follow links to product configurations

Task 238 - Change and Configuration Management - Mozilla FireFox

https://jazz.net/jazz/web/projects/AMR%20Foundation%20%28Change%20Management

AMR (CCM) Charles v l v l v

Project Dashboard Work Items Plans Source Control Reports Search Work Items

Work Items >

Task 238 Save

Summary: Create a new delivery configuration for Meter Reader UK 2013 FP1 New

Overview Links Approvals History Time

Details

Type:	Task	Owned By:	Charles
Severity:	Critical	Priority:	High
Creation Date:	Jan 25, 2014 3:51:27 PM	Planned for:	Meter Reader 2013 UK
Created By:	Pete	Time Spent:	
File Against:	Mobile AMR	Due Date:	/ /

Quick Information

Subscribers (3): Charles, Pam, Susan

Description

@Charles, please create a new delivery configuration with local stream contributions to deliver the patch for Meter Reader UK 2013 in RELM.

[https://ssejtserver:9443/reim/web/projects/AMR%20%28RELM%29?action=ple.view\\_pathpath=item\\_11%23branch\\_2show=recent](https://ssejtserver:9443/reim/web/projects/AMR%20%28RELM%29?action=ple.view_pathpath=item_11%23branch_2show=recent)

Discussion

# Product configurations

## Organization of product configurations w/ lifecycle components

Product and product variant definitions

Baseline of product definition

Design, Quality and Requirement contributions

SCM stream and component contributions

Engineering Lifecycle Manager (/realm) One of the Client Access Licenses expires in 16 days

AMR (RELM) Rational

Welcome Products Views Queries Analysis Reports

Products > Browse Products

Favorite Product Configurations

Meter Reader (Market=EU/UK, Product=Mobile, Release=2013, Submarket=UK)

Meter Reader (Market=EU/UK, Product=Mobile, Release=2013, Submarket=US) - Meter Reader 2013 US.GA

Meter Reader (DM) - 3

Meter Reader (QM) - 3

7: Mobile Meter Reader: Software test plan

8: Mobile Meter Reader: Hardware test plan

Meter Reader (RM) - 3

Meter Reader (SCM) - 1

Meter Reader 2013 UK.GA - 4

Variability Parameters - 1

Expansions - 1

CarKit - 2

Cellular Unit - 2

GPS Unit - 2

LAN Unit - 1

RF Unit - 2

Meter Reader - RF Unit: Meter Reader 2013 UK.GA - 3

RF Unit 2.4GHz - 2

RF Unit 433-868MHz - 2

Serial Unit - 2

Reader - 1

SW - 1

Properties

Click Edit to add properties.

Dimensions

Scope	Dimension	Value
Shared	Market	NA
Shared	Product	Mobile
Shared	Release	2013
Shared	Submarket	US

Dimensions of variability

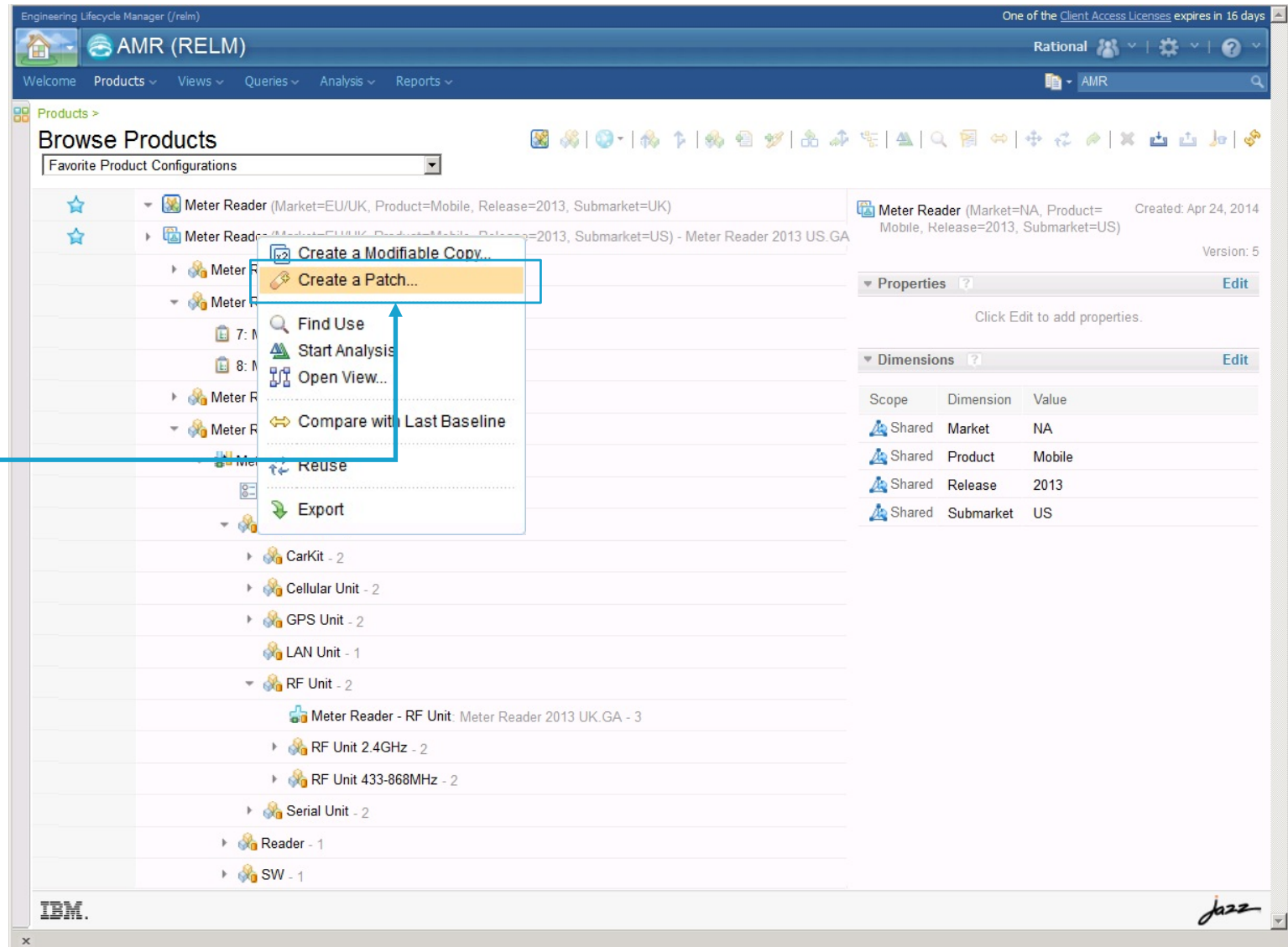
# Create product configuration stream from baseline

Branch action on product configurations (global configurations)



Charles creates a patch from the Meter Reader 2013 UK GA baseline

This command creates a product configuration stream without changing the versions of contributions

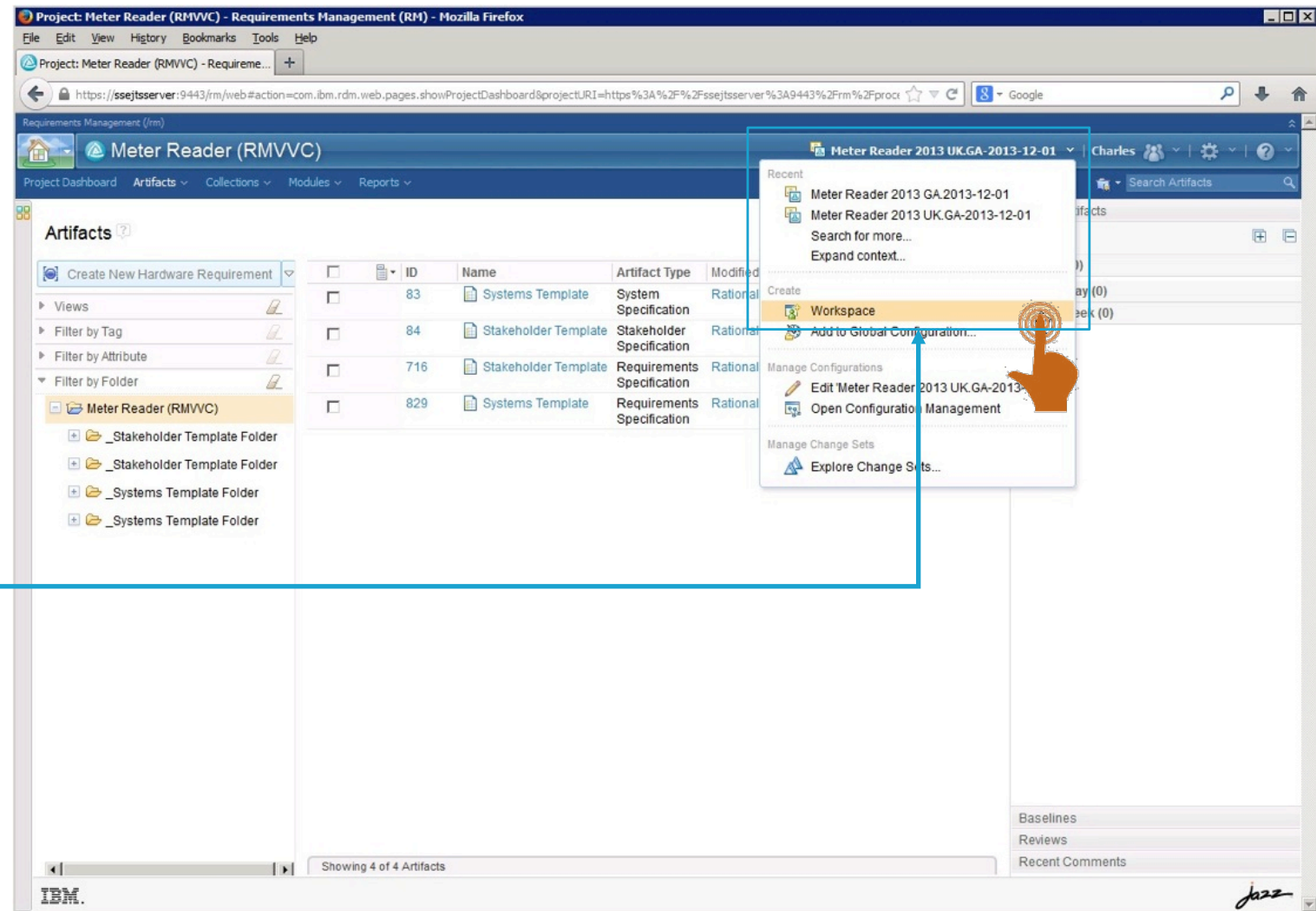


# Create engineering artifact stream from baseline

Branch action on engineering artifact components (local configurations)



Charles creates streams for the engineering artifact contributions to the FP1 configuration





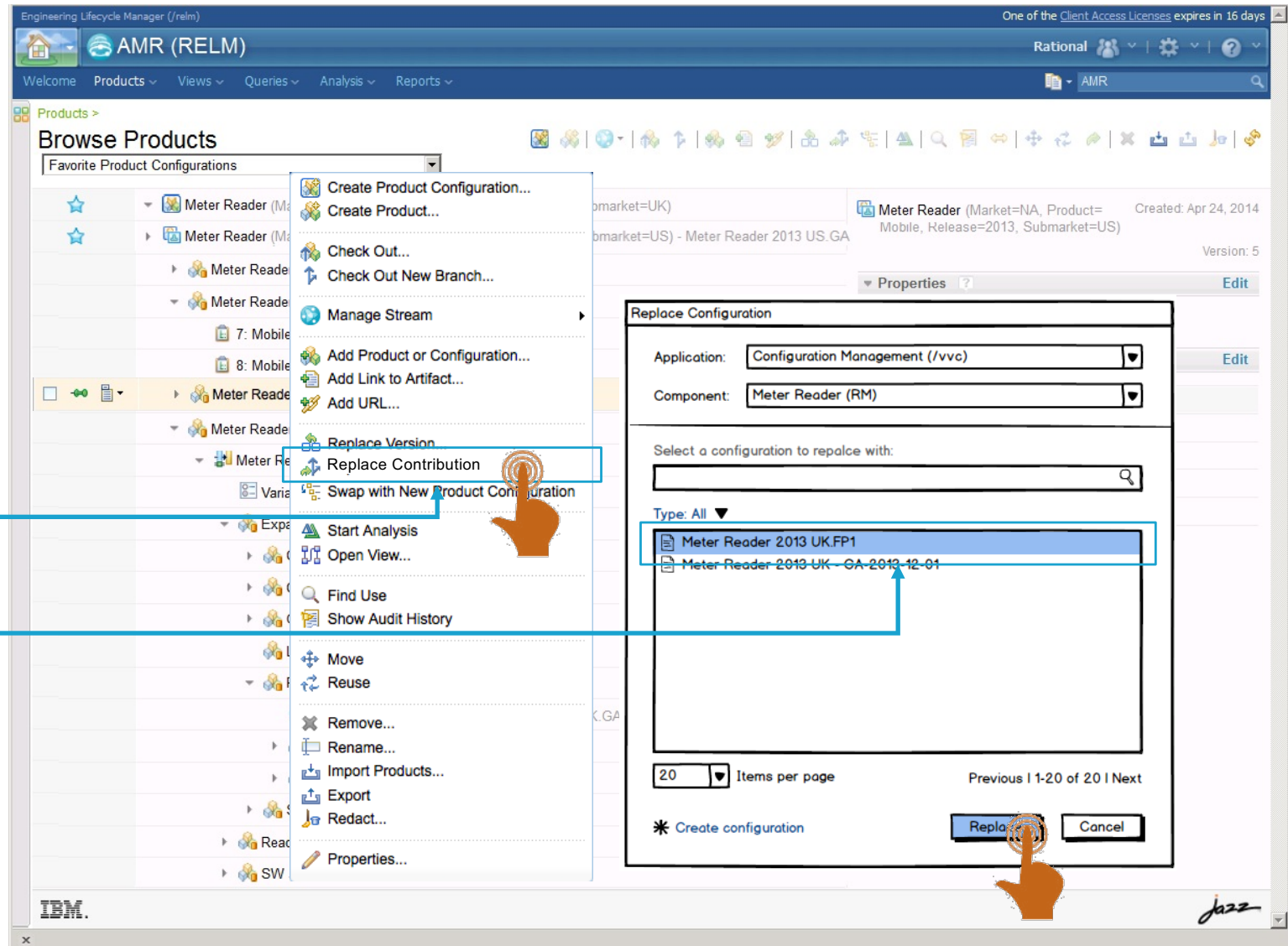
# Replace baseline with stream contribution

Update action on product configuration to replace component variant



Charles returns to the product configuration and chooses the 'Replace' command

He then picks the new streams created in QM, RM, etc.



# Navigate artifacts and links in configuration

Artifacts and links shown in selected configuration context

Meter Reader 2013 UK FP1 context



Dan edits artifacts and links in the context of the delivery configuration

He fixes the getMeterUsage() operation in RDM

He follows the link to the impacted requirement in the context of the delivery configuration

# Validate Defect Resolution

Meter Reader 2013 UK FP1 context



Tony validates the defect fix.

He searches for updated requirements and marks impacted test cases as suspect

He updates the test cases and runs the test plan

Quality Management (QM)

Meter Reader (QM)

Meter Reader 2013 UK.FP1

Project Dashboards ▾ Requirements ▾ Planning ▾ Construction ▾ Lab Management ▾ Builds ▾ Execution ▾ Reports ▾ Change Requests ▾

Search QM Resources

Test Plans >

1: Handheld Receiver: Software test plan

Sections

State: Draft Action: Change State

Test Case Execution (Record) Progress: Total: 0/0 h Estimated: 0% Progress: 375 Total: 375

Originator: Mike Owner: Mike

Priority: High

Test Suite Execution (Record) Progress:

Reconcile Requirements

Pending Actions

Reconcile Updated Items

Requirements changed since the last reconciliation

The following requirements have changed so the Test Cases associated with them may be suspected. Mark Test Cases as suspect by selecting requirements and clicking the Mark As Suspect icon, create Quality Task if there are follow up actions needed. Mark Test Cases as not suspect (clear suspicion), by selecting requirements and clicking the Clear Suspicion icon. Defer making a decision by selecting requirements and clicking the Ignore icon.

Type Filter Text

Show All Items per page Previous 1 - 1 of 1 Next

Summary	Status	Linked Test Cases	Action
HHU-SW-163: The Han...	Modified	HHU-SW-163: display ...	Mark Suspect

Previous 1 - 1 of 1 Next

Create a new Quality Task

Finish

Cancel Save

Tracked by Quality...

Related Sites

IBM Rational

IBM Rational Quality Mgmt

Tests Development Plans

Meter Reader UK 2013 - FP1

Release Plan - Mobile AMR

13.FP1

Validates Requirement Sets

Handheld Unit Software

Requirements: Test view

IBM.

Jazz





# Baseline engineering artifact stream

Baseline actions on component stream (local configurations)

Meter Reader 2013 UK FP1 context



Dan creates a baseline of the Meter Reader 2013 UK FP1 requirements

He enters a tag for the baseline

Tony baselines the test configuration

# Assemble baselines using tags

Assisted action on product configuration stream (global configurations)



Charles expands the Meter Reader FP1 product configuration

He selects the product configuration and assembles baselines for all streams in the configuration

Engineering Lifecycle Manager (/relm)

AMR (RELM)

One of the Client Access Licenses expires in 16 days

Rational

Welcome Products Views Queries Analysis Reports

Products >

Browse Products

Favorite Product Configurations

Meter Reader (Market=EU/UK, Product=Mobile, Release=2013, Submarket=US)

Meter Reader (DM) - 3

Meter Reader (QM) - 3

7: Mobile Meter Reader: Software test plan

8: Mobile Meter Reader: Hardware test plan

Assemble Baseline

Assemble baseline for: Meter Reader 2013 UK FP1

Tags: amr2013fp1

Assemble Cancel

CarKit - 2

Cellular Unit - 2

GPS Unit - 2

LAN Unit - 1

RF Unit - 2

Meter Reader - RF Unit: Meter Reader 2013 UK.GA - 3

RF Unit 2.4GHz - 2

RF Unit 433-868MHz - 2

Serial Unit - 2

Reader - 1

SW - 1

Meter Reader (Market=NA, Product=Mobile, Release=2013, Submarket=US) - Meter Reader 2013 US.GA 201

Properties

Click Edit to add properties.

Dimensions

Scope	Dimension	Value
Shared	Market	NA
Shared	Product	Mobile
Shared	Release	2013
Shared	Submarket	US

IBM

Jazz

# Find Use of Component



Dan has identified that the defect is in the 2013 UK variant of the RF-Unit (SCM)

Charles opens the Meter Reader.

He selects the RF Unit in the UK variant.

He runs the Find Use command

The screenshot shows the Engineering Lifecycle Manager (ELM) interface. The top navigation bar includes 'Welcome', 'Products', 'Views', 'Queries', 'Analysis', 'Reports', and 'Upgrade Status'. The main area is titled 'Browse Products' and displays a tree view of product configurations. The selected component is 'Meter Reader - RF Unit 2.4GHz: Meter Reader 2013 UK.GA - 2'. A context menu is open over this component, with the 'Find Use' option highlighted. The menu also includes 'Manage Stream', 'Start Analysis', 'Open View...', 'Show Audit History', 'Reuse', 'Export', 'Redact...', and 'Properties...'. The right-hand pane shows details for the selected component, including 'Connected Component', 'Baseline', 'Rational Team Concert Server', and 'Original Stream ID'. The bottom of the interface features the IBM logo and the Jazz logo.

# Find Use of Component



Charles identifies product variants including the defect in Meter Reader

He confirms that only the UK variant is impacted by the defect in the UK variant of the RF-Unit

The screenshot shows the AMR (RELM) software interface. The title bar indicates 'AMR (RELM)' and 'Rational'. The main menu includes 'Welcome', 'Products', 'Views', 'Queries', 'Analysis', 'Reports', and 'Upgrade Status'. The breadcrumb trail is 'Products > Recently Viewed Product Configurations >'. The search results are titled 'Find Use - Meter Reader - RF Unit 2.4GHz'. Below the title, it states: 'Meter Reader - RF Unit 2.4GHz: Meter Reader 2013 UK.GA - 2 is used in the following locations:'. A search bar on the right says 'Type to filter results'. The results are displayed in a horizontal flow diagram with orange boxes and arrows. The boxes contain the following text:

- Meter Reader.SS (Geography=UK, Product=Mobile, Release=2013)
- Meter Reader.SS (SCM) (Geography=UK, Product=Mobile, Release=2013) - 4
- Meter Reader - Mobile UK (Geography=UK, Product=Mobile) - 5
- Expansions 1
- RF Unit 1
- RF Unit 2.4GHz 1
- Meter Reader - RF Unit 2.4GHz : Meter Reader 2013 UK.GA - 2

Blue boxes highlight the first, second, and sixth items in the flow. Blue arrows point from the text on the left to these highlighted items. A 'Show in product tree' button is visible below the flow diagram.



# Update Mobile AMR Product Baseline



Charles selects the Meter Reader 2013 UK GA baseline contribution

He chooses replace and picks the FP1 baseline

**Replace**

Select a version of "Meter Reader" (Market=EU/UK, Product=Mobile, Release=2013, Submarket=UK) to use under "Mobile AMR".

Replaces this product configuration with one of its copies or baselines.

Replacing:

- Mobile AMR (Market=EU/UK, Product=Mobile, Release=2013, Submarket=UK)

With:

- Meter Reader - Mobile AMR 2013 UK.FP1 2014-01-20

Product Configuration	Version	Creation Date	Creator
Meter Reader - Mobile AMR 2013 UK.FP1	2	Apr 23, 2014, 4:41:34 AM	none
Meter Reader	1	Apr 23, 2014, 4:39:13 AM	none

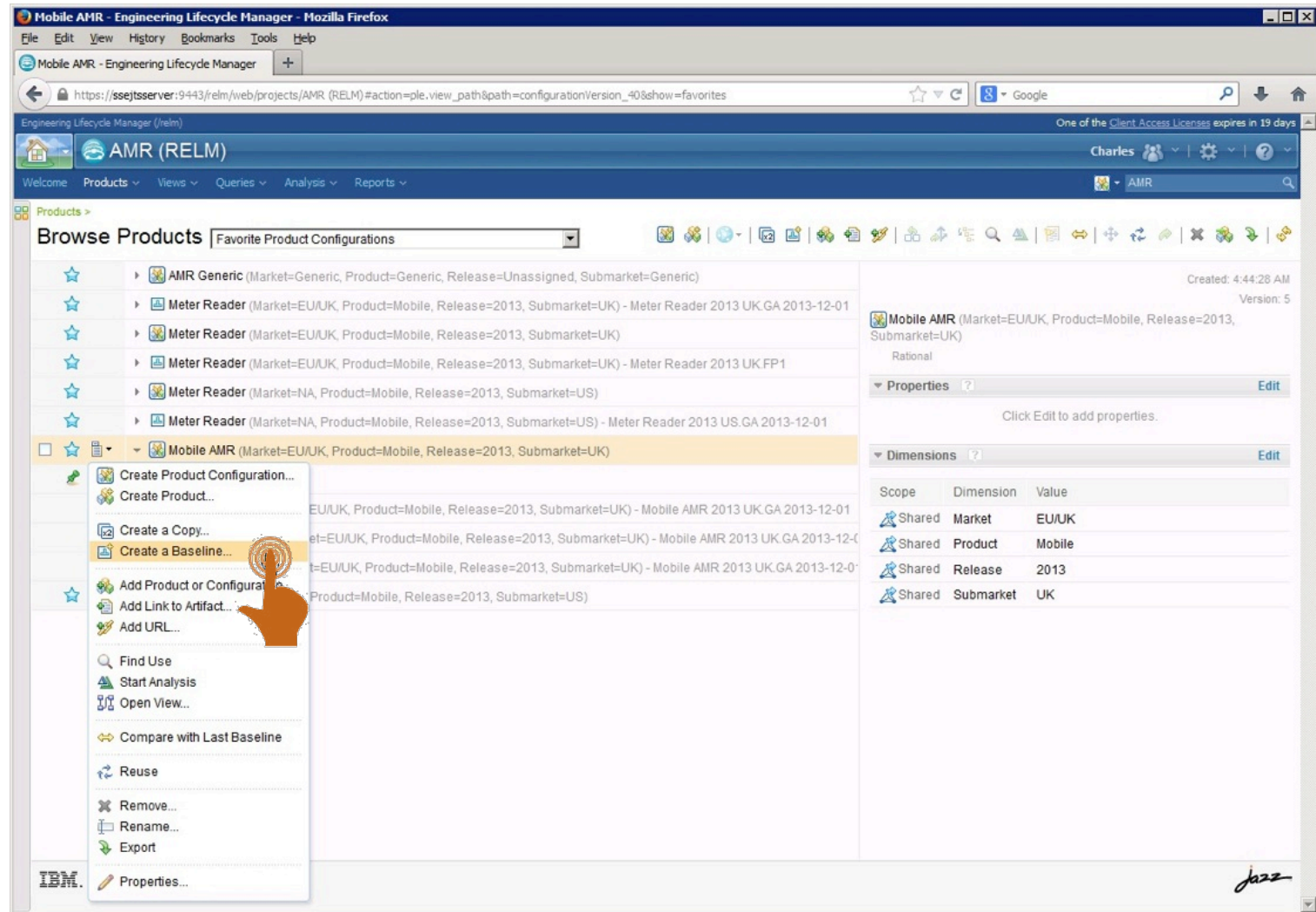
Replace Cancel



# Update Mobile AMR Product Baseline



Charles creates a baseline of the Mobile AMR 2013 UK FP1 product



# Acknowledgements and Disclaimers

**Availability.** References in this presentation to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates.

The workshops, sessions and materials have been prepared by IBM or the session speakers and reflect their own views. They are provided for informational purposes only, and are neither intended to, nor shall have the effect of being, legal or other guidance or advice to any participant. While efforts were made to verify the completeness and accuracy of the information contained in this presentation, it is provided AS-IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, this presentation or any other materials. Nothing contained in this presentation is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software.

All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer. Nothing contained in these materials is intended to, nor shall have the effect of, stating or implying that any activities undertaken by you will result in any specific sales, revenue growth or other results.

© **Copyright IBM Corporation 2014. All rights reserved.**

- ***U.S. Government Users Restricted Rights - Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.***

IBM, the IBM logo, ibm.com, and are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml)

Other company, product, or service names may be trademarks or service marks of others.



# Thank You!

## Your Feedback is Important!

Access the Innovate agenda tool to complete your session surveys from your smartphone, laptop or conference kiosk.

