



Session -2648

Global baseline and product variants management

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Rational Design Factory – Systems and Software Engineering

Innovate2013

The IBM Technical Summit





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Abstract

Technologies such as VVC and GC enables components reuse and development of multiple products or applications from a common architecture.

We will collect and validate the customer requirements, and explore the UX design for:

- (1) global baseline of lifecycle artifacts across domains (RM/DM/CCM/QM/RELM) as a single logical unit;
- (2) variant creation and management for both VVC (RELM/DNG/DM) and non-VVC (DOORS 9.x/RTC/CC/RQM?) based artifacts.

SSE Design Scenario Personas



Pete (Project Manager)

Manages assignment of work items to the team and tracking of project progress.



Tammy (Test Manager)

Tammy leads the test and validation effort. She defines the test plans and tracks the progress of the quality plan and stability of the product.



Pam (Product Line Manager)

Identifies new product opportunity, defines target segment, creates and manages product variants.



Tony (Systems Tester)

Performs automated and manual testing to validate hardware and system requirements.



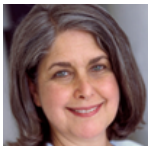
Charles (Chief Engineer)

Concentrate at high-level system and architecture issues and ensures architecture integrity in the system and makes all architectural design decisions.



Sal (Safety Engineer)

Analyzes potential failures within the system and determines actions that can mitigate the risk of failure to meet the safety certification requirements.



Susan (Systems Engineer)

Performs requirements analysis, modeling and simulation to manage complexity. She collaborates with lead engineers from various hardware and software disciplines to design the system to meet stakeholders' needs.



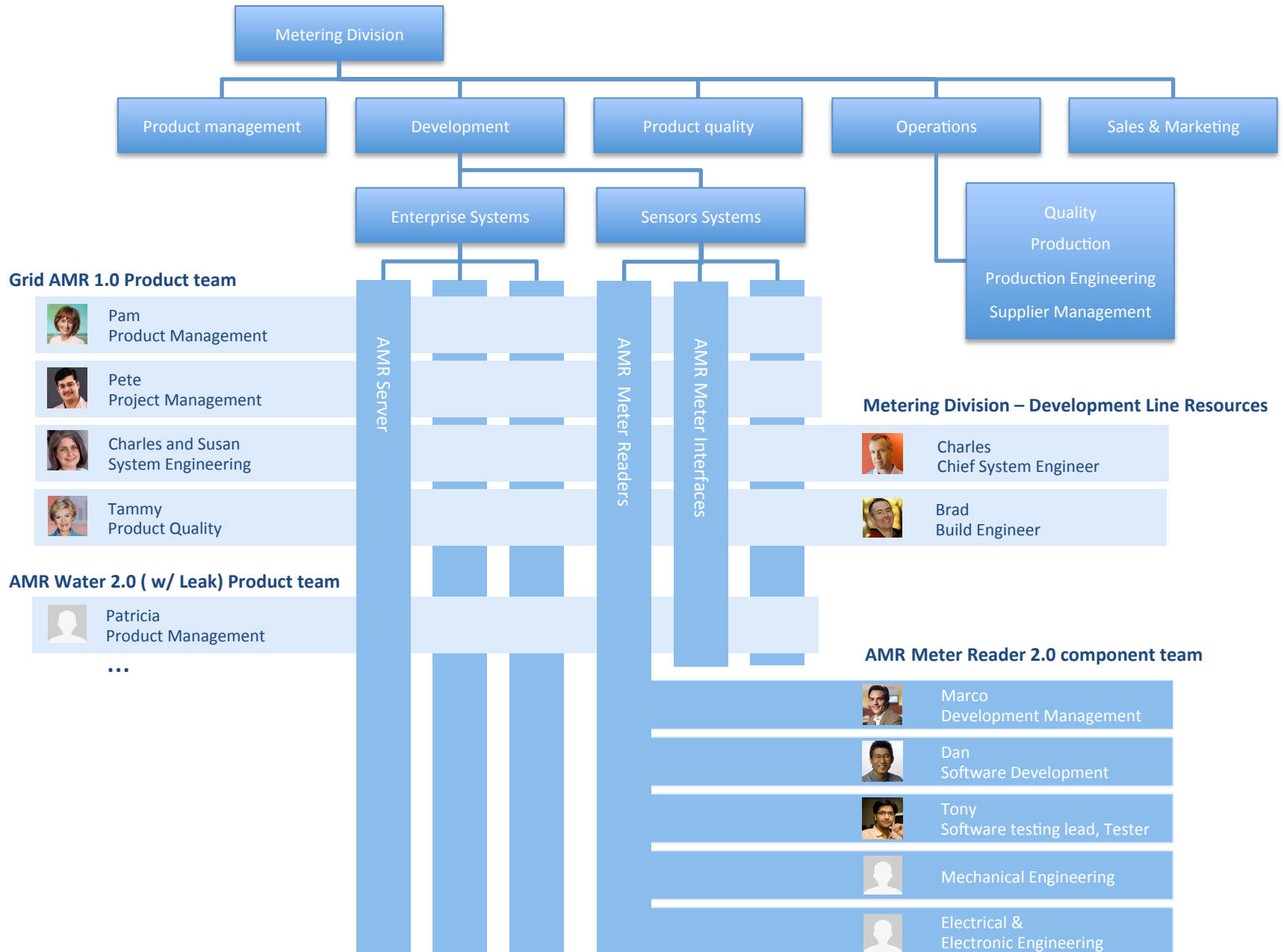
Allison (Tools Administrator)

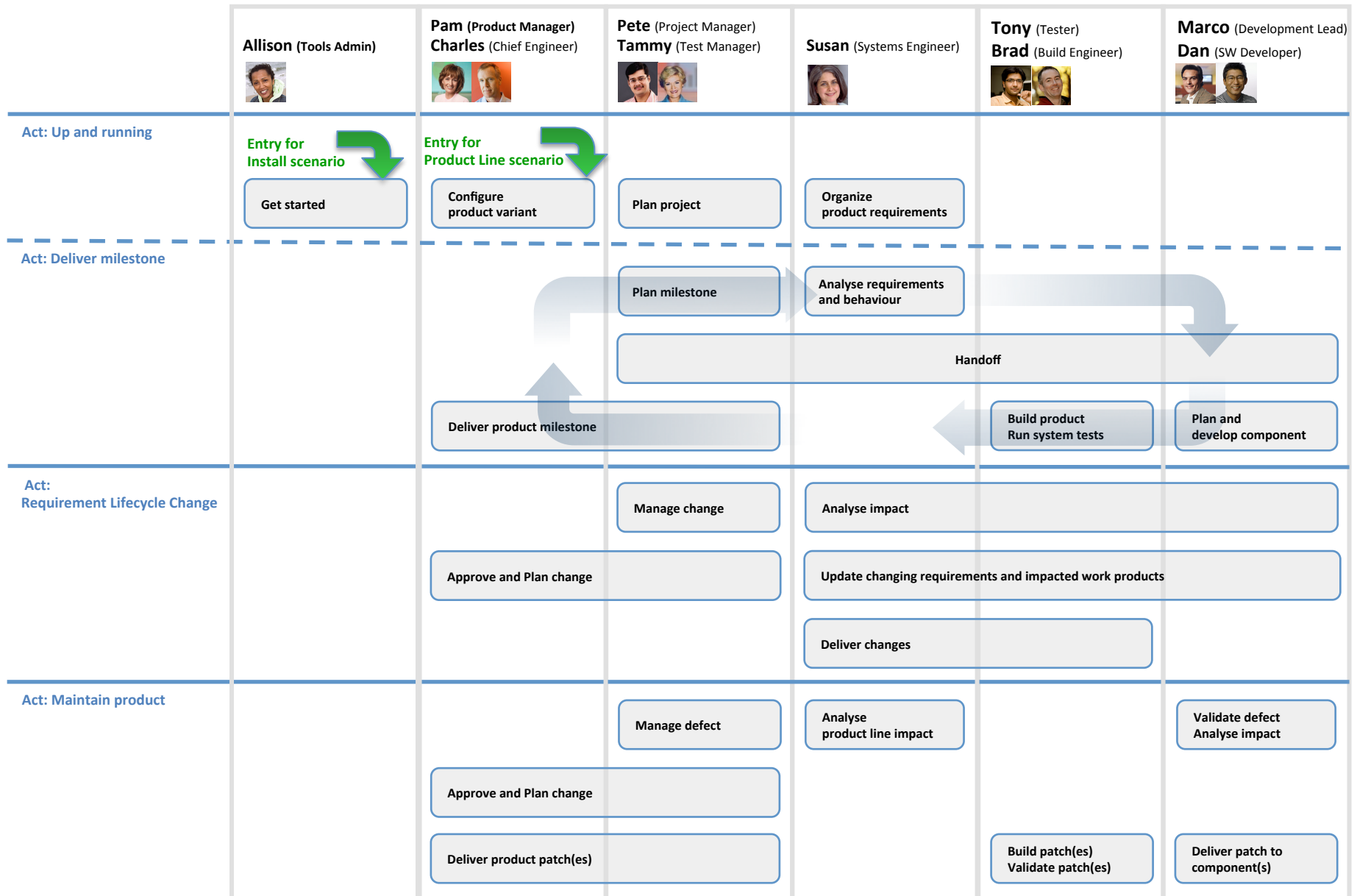
Installs, Configures and Maintains tools in production. Maintains project templates and create tool repositories using templates.

Scenario Personas on Jazz.net

https://jazz.net/rm/resources/_wfF_QBd4EeKAK8OVgd5Q4Q

JK Meters – Organization and scenario personas







PLE User Stories

- As a **Product (Line) Manager** I need to
 - Create a product / application variant
 - Visualize and manage multiple variants
 - Manage component baselines as part of a product variant
 - Create and set up a configuration based on existing artifacts
- As a **Chief Engineer** I need to
 - Create a baseline for my variant (across all domains)
 - Find all baselines of a component for replacement in my variant
 - Set access rights to assets and operations on my variants and baselines
 - Compare two product baselines or variants
 - Create a report for my product
- As a **Software Engineer** I need to
 - Navigate among the artifacts in the variant under development
 - Perform impact analysis for my variants
- As a **Build Engineer** I need to
 - Build the software for a product variant

Deep Dive – UX Design for PLE

The screenshot shows a web browser window titled "Global Configuration Management" with the URL "https://localhost:9443/jazz/ac/web". The application header includes a home icon, the title "Global Configuration Management", and a user profile for "Jin Li". Below the header, there is a search bar containing "AMR 2013" and "Save" and "Cancel" buttons. A navigation bar contains links for "Overview", "Configurations", "Dependencies", "Dimensions", "Snapshots", "Workspaces", "Change sets", and "Artifacts". A "+ Add configuration..." link is also present. The main content area features a table with three columns: "Configuration Name", "Contributor", and "Description".

Configuration Name	Contributor	Description
AMR server 1.0	VVC	AMR server 1.0 requirements in DOORS NG / models in Rhapsody DM
AMR server 2013 source code 0.5	File-based SCM (Git/RTC/CC)	AMR server source code 0.5 in RTC
Handheld reader 1.0	VVC	AMR handheld reader 1.0 requirements in DOORS NG / models in Rhapsody DM
Handheld reader 2013 source code 0.5	File-based SCM (Git/RTC/CC)	AMR handheld reader source code 0.5 in RTC
AMR product definition 0.9	VVC	AMR product definition 0.9 in RELM

Deep Dive – UX Design for PLE

How do we show multiple product variants if the GC is shown here?

AMR 2013

This is the overall container for all the relevant artifact. AMR 2013 is the name of the Global Configuration.

Each domain tool has a LC, which contains artifacts it needs in that configuration.

These are standard OSLC links between artifacts for navigation. Since the top-level container is AMR 2013 GC, each domain tool would know what GC and context to set when users navigate among the relevant artifacts.

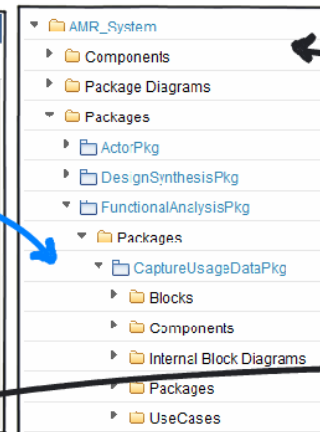
- Automated meter reader system 2013
 - AMR server
 - Handheld reader
 - Gas sensor
 - Electro component
 - Threshold assembly
 - Reader probe
 - Electronics PCB
 - Embedded chip
 - Controller logic
 - Wiring
 - Automated meter reader system 2012
 - Automated meter reader system 2011

Automated Meter Reader Sys..

1 Requirements View

ID	Requirement	Requirement Type
AMR-SR-47	System requirements for the AMR system	N/A
AMR-SR-54	3.1.2 Meter Interface Unit	
AMR-SR-54	The meter interface unit shall operate using walk-by, mobile (vehicle-based), and mesh network collection platforms.	Functional
AMR-SR-49	The meter interface unit shall support all data collection functions (data reading, time-triggered operation, and management) of the AMR system.	Functional
AMR-SR-55	The meter interface unit shall employ two-way communications down to the endpoint making it possible for operators to 'push' interval data requests, firmware updates, new capabilities and updated monitoring schedules via the network.	Functional
AMR-SR-50	The meter interface unit shall be compatible with the existing meter models in use for the area covered by this project.	Functional
AMR-SR-52	The meter interface unit shall be powered by a replaceable long lasting battery (lithium or other).	Non-Functional
AMR-SR-56	The meter interface unit shall capture usage data hourly and store this consumption data for up to 385 days. This hourly consumption data is considered usage profile data.	Functional
AMR-SR-65	Meter usage data and leak status data shall be retrievable on demand from any meter	Functional
AMR-SR-57	When these t	Functional
AMR-SR-68	The m	Functional

In the product hierarchy, we have simple URI links to test cases in RQM

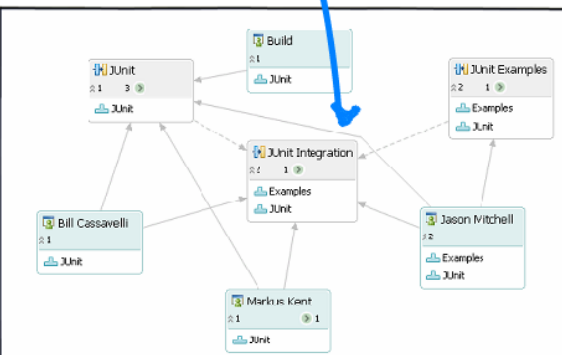


Test Cases

View As: General Group By: Ungrouped

10 items per page

ID	Suspect	Priority	Name
1			05:Retrieve data from handheld
14			43:Enter meter relocation information into handheld
15			80:Show indication of a leak on handheld
16			82:View link information on handheld
2			39:Manually enter meter reading into handheld





PLE and Variant Management

- How many product lines (or product families) do you have?
 - How many product variants are there in a product line?
 - Are they developed in parallel or in sequence?
- How are product variant plans established?
- How are product / component variants configured?
- How are variant requirements managed?
- How are variant models managed?
- How are variant tests managed?
- How are system models updated from new variant requirements?

Global configurations

- What lifecycle artifacts are included in a configuration?
- How is a configuration managed?
- How are baselines taken?
- What are the frequently performed tasks with a global configuration?

Questions

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