Session -2650
SSE Solution validation and design playback

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Rational Design Factory – Systems and Software Engineering

Innovate2013
The IBM Technical Summit

Stay ahead.

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Design Studio

Design is happening here!

- Participate in hands on design and usability evaluations to shape the design of IBM products and solutions.
- Hear about practitioner tips from SMEs in the Rational Development organization.
- Learn how to monitor your CLM deployment

Location: Expo

Hours:

Sunday: 6:30 – 9:30

Monday: 12:00 – 2:00, 6:00 – 8:00

Tuesday: 12:00 – 2:00, 4:30 – 7:30

Wednesday: 12:00 – 4:00

See the conference agenda builder for session schedules: http://innovatesmartsite.com/

Design Studio schedule

Sunday 6/2	Monday 6/3	Tuesday 6/4	Wednesday 6/5
6:30 – 9:00 Amy, Cindy, Monica, Mike Trifecta!	12:00 – 2:00 Open Table sessions	12:00 – 1:00 Hari Vetsa: Monitoring Server Status	12:00 – 2:00 Amy Silberbauer: - MTM sample vision - GADO
	4:00 – 6:00 Jin, Mats: SSE Solution validation and design playback	1:00 – 2:00 Open table sessions	2:00 – 3:00 Frank Varone Golden Topologies
	6:00 - 8:00 Open table sessions	4:30 - 7:30 Open table sessions	3:00 - 4:00 Open table sessions

Open table sessions: Hands on design and usability evaluations focusing on:

- Quality management
- JazzHub
- developerWorks
- SSE solution
- Jazz Platform
- Market Place
- Requirements Management and Definition

Capture feedback and act on it
Facilitate client involvement and input.

Agenda

Hold a design studio like group session to validate SSE solution scenarios, key personas and UX storyboards.

We will deep dive into the areas of 2014 design exploration

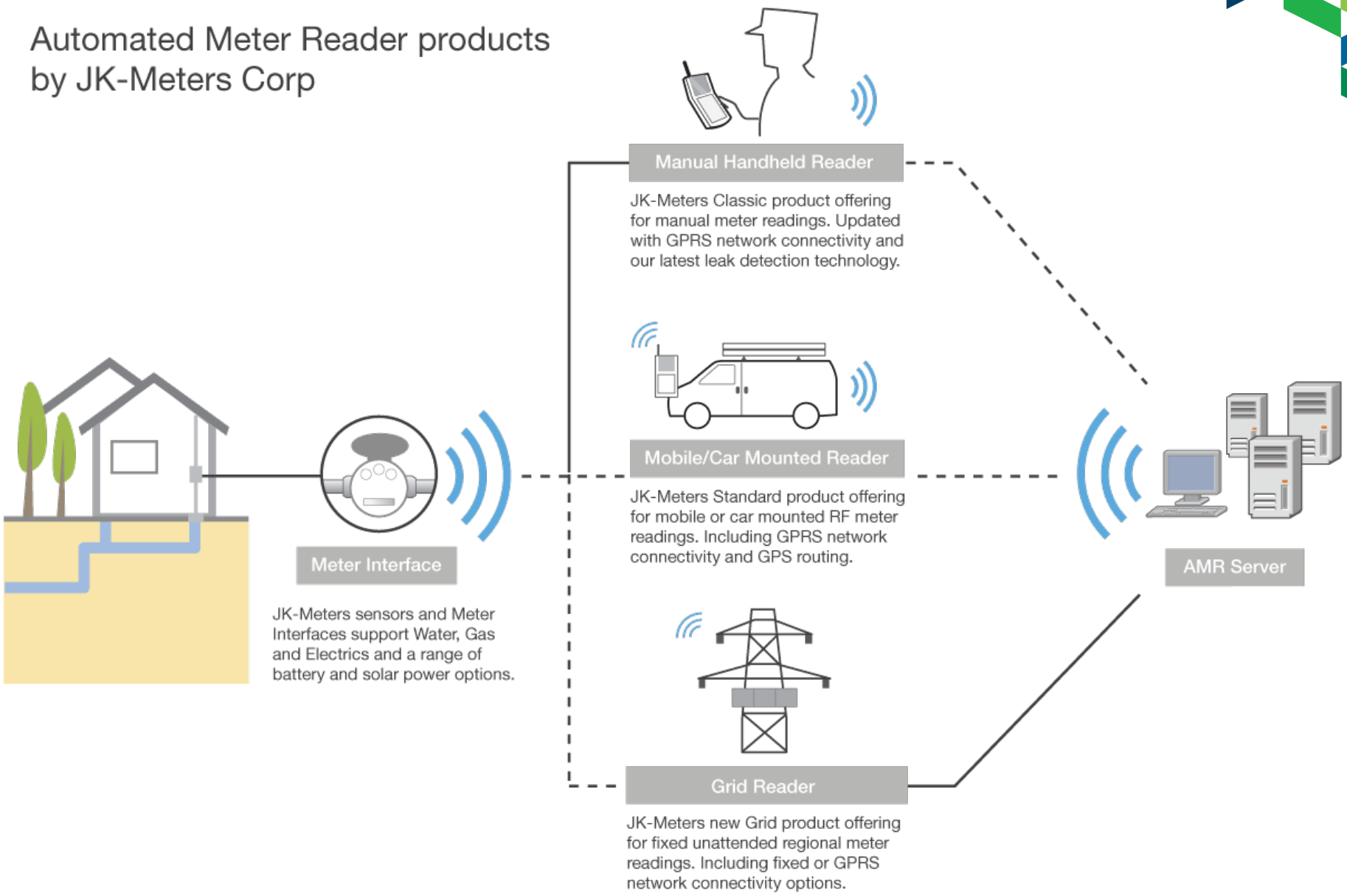
- SSE lifecycle scenarios developed by the Rational Design Factory
- Product line engineering
- Requirements lifecycle change
- Impact analysis

Updates on Design Scenarios for 2014

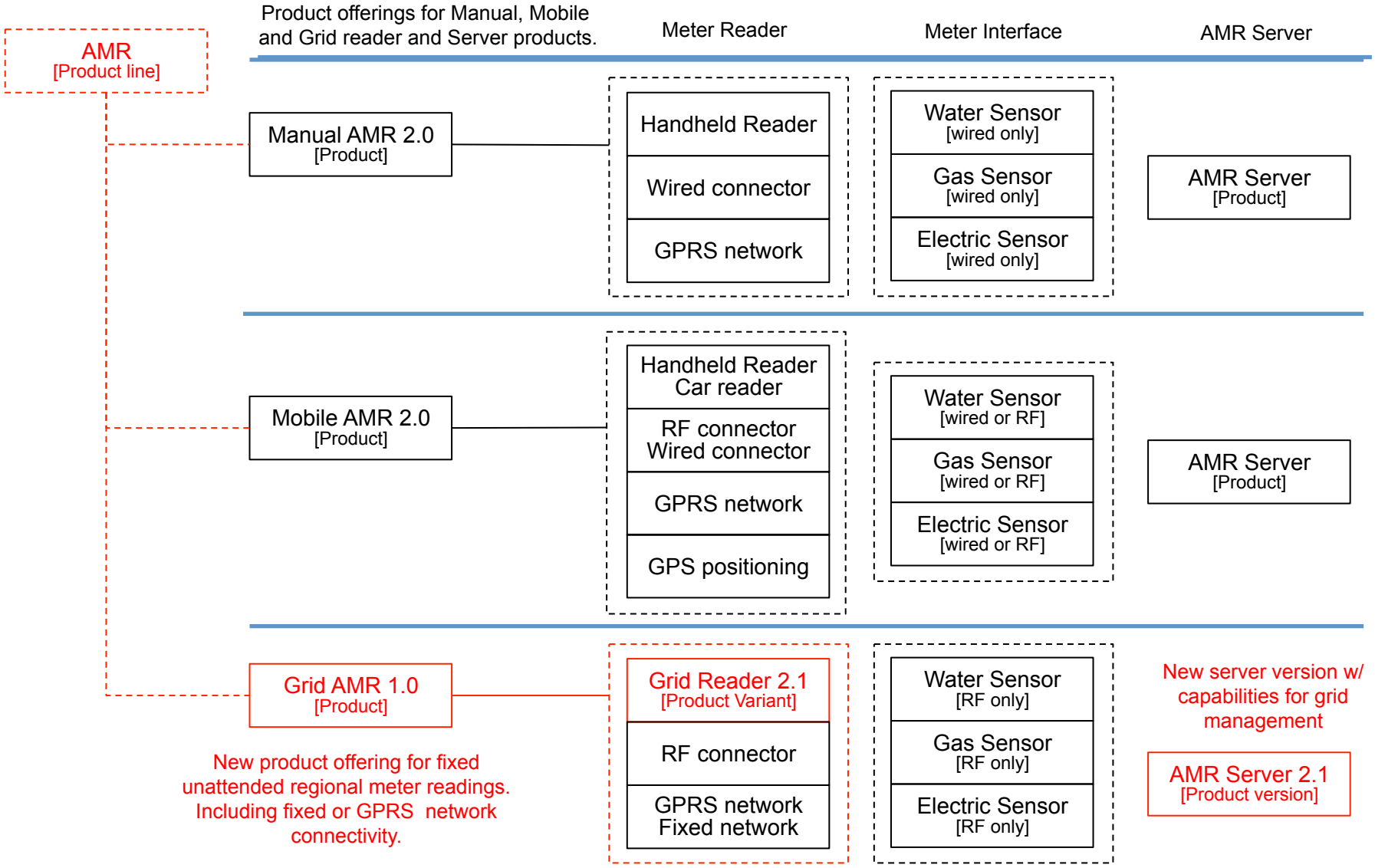
- Design area #1: Product line engineering
  - Provide an integrated and scalable systems lifecycle solution to engineering teams for improving organizational efficiency in managing (planning, developing and delivering) multiple co-existing product variants based on a common architecture.
  - *Design: creation of a new product variant through a product definition and configuration(s)*
  - *Design: management of lifecycle change in the context of a product variant (top down)*
  - *Design: management of defects in context of multiple product variants / configurations (bottom up)*

- Design area #2: Cross lifecycle workflows
  - Improve key engineering workflows that cross tool UIs and repositories
  - *Design: impact analysis and suspect capabilities in the context of a product variant*

Automated Meter Reader products by JK-Meters Corp



New product development for Grid Reader in AMR Product Line



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.

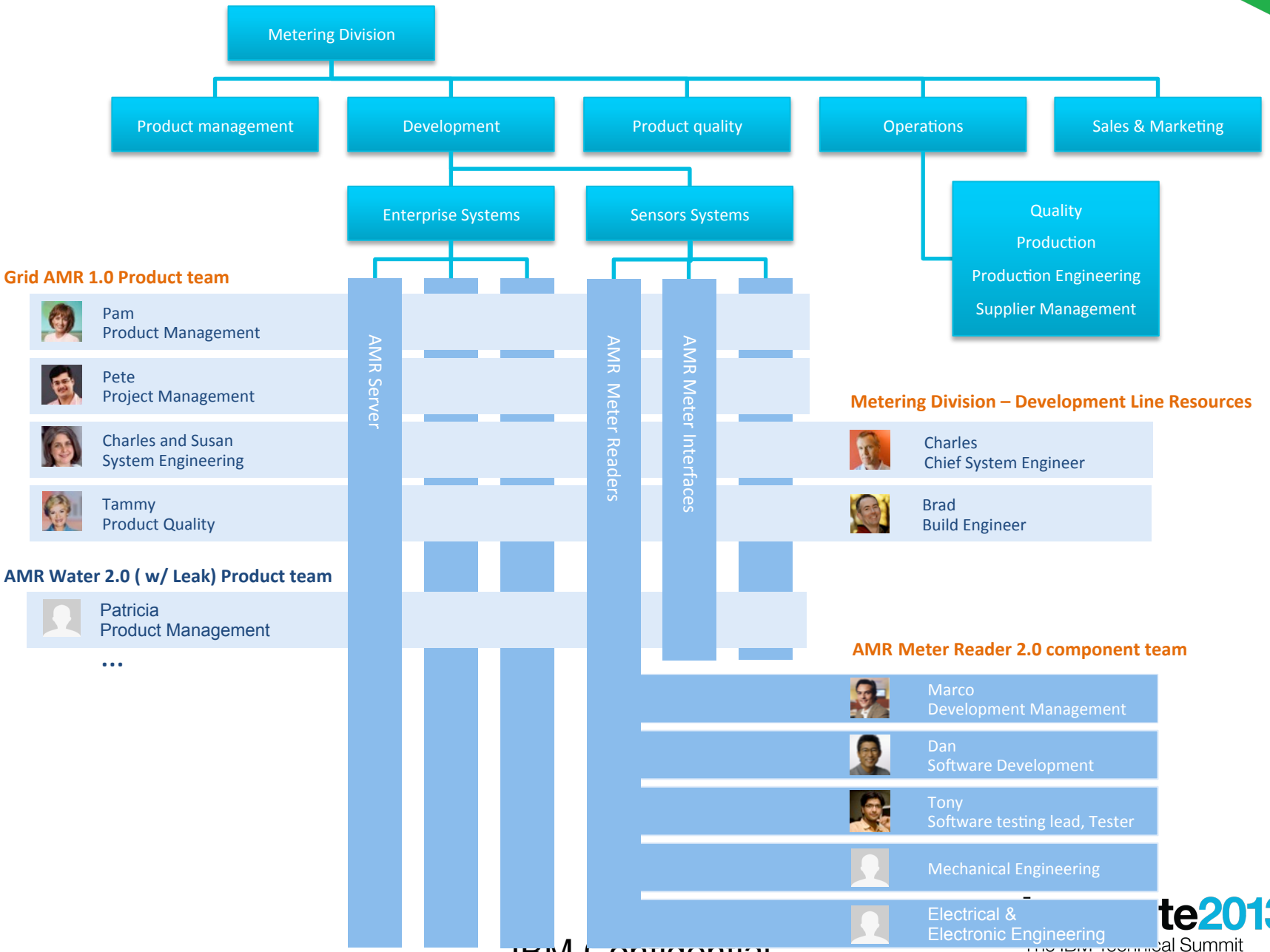
Allison (Tools Administrator)

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

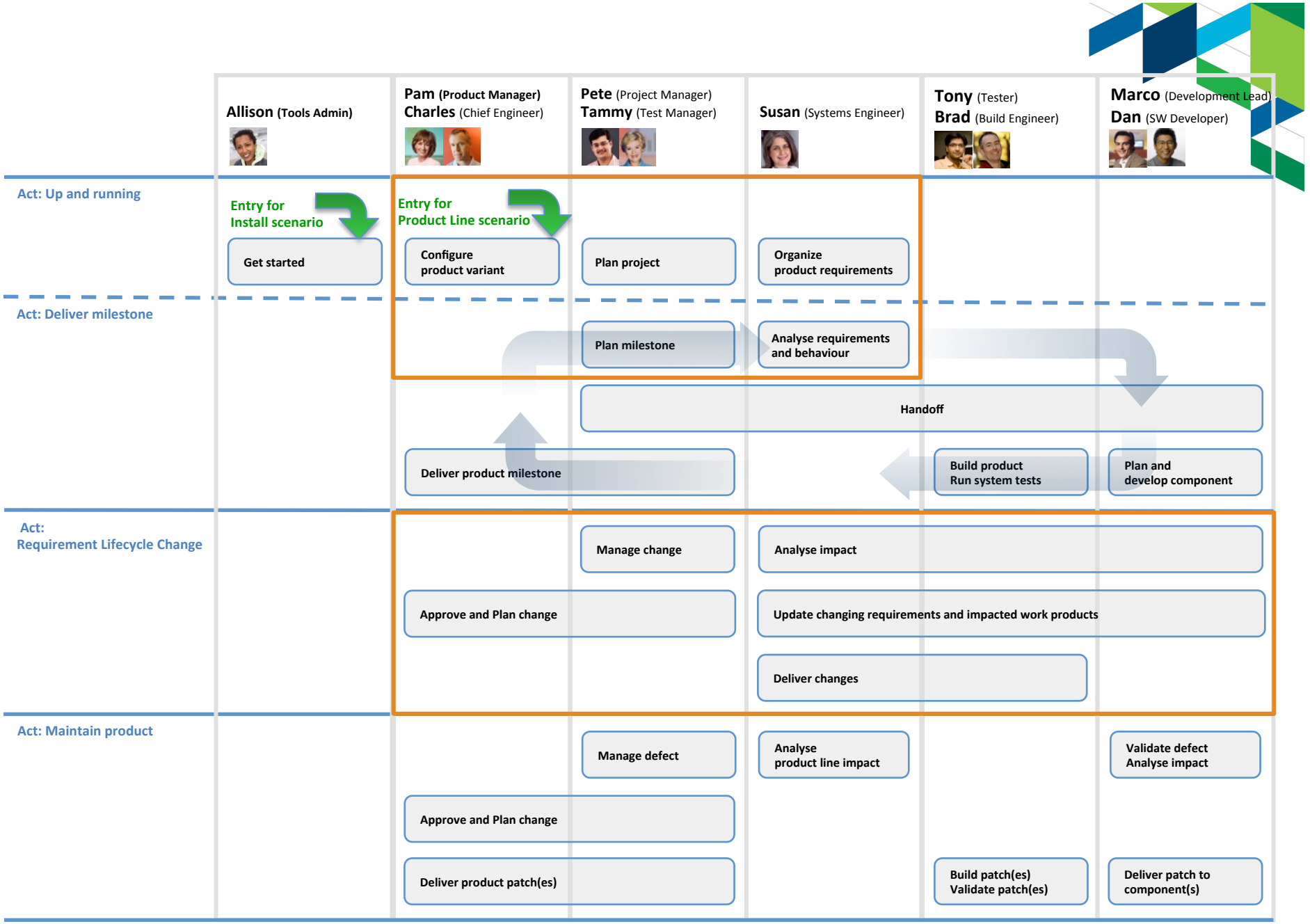
JK Meters – GRID AMR Organization and scenario personas



Meter Reader 2.1

GRID AMR 1.0

GRID AMR – System / Product variant	Meter Reader – Subsystem / Reusable component
RM: System requirements • AMR Stakeholder Requirements • AMR System Requirements • AMR Requirements for Reuse • AMR Hazards and Risks	**RM: Meter Reader** • Meter Reader Subsystem Requirements • Meter Reader Software Requirements • Meter Reader Hardware Requirements
DM: System Model • AMR System Model	**DM: Subsystem Models** • Meter Reader Subsystem model
QM: Test plans • AMR Test Plan	**QM: Child Test Plans** • Meter Reader Hardware test plan • Meter Reader Software test plan
CCM: Product plan • GRID AMR Team area • Timeline • Product milestones and release	**CCM: Component plan and code** • Meter Reader Team area • Timeline (optional) • Component milestones and releases • Meter reader SCM components and streams
	Meter Interface – Subsystem / Reusable component
	AMR Server – Subsystem / Reusable component

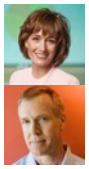


PLE Terminology Used

- Terminology used in PLE for todays discussion
  - Product
  - Variant
  - Component
  - Configuration
  - Baseline
  - Version

User Stories in a story map for PLE

Get started



Configure product variant

Analyse requirements and behaviour

As a tools admin, I need to:

- Install / Upgrade SSE with PLE capabilities
- Configure PLE capabilities

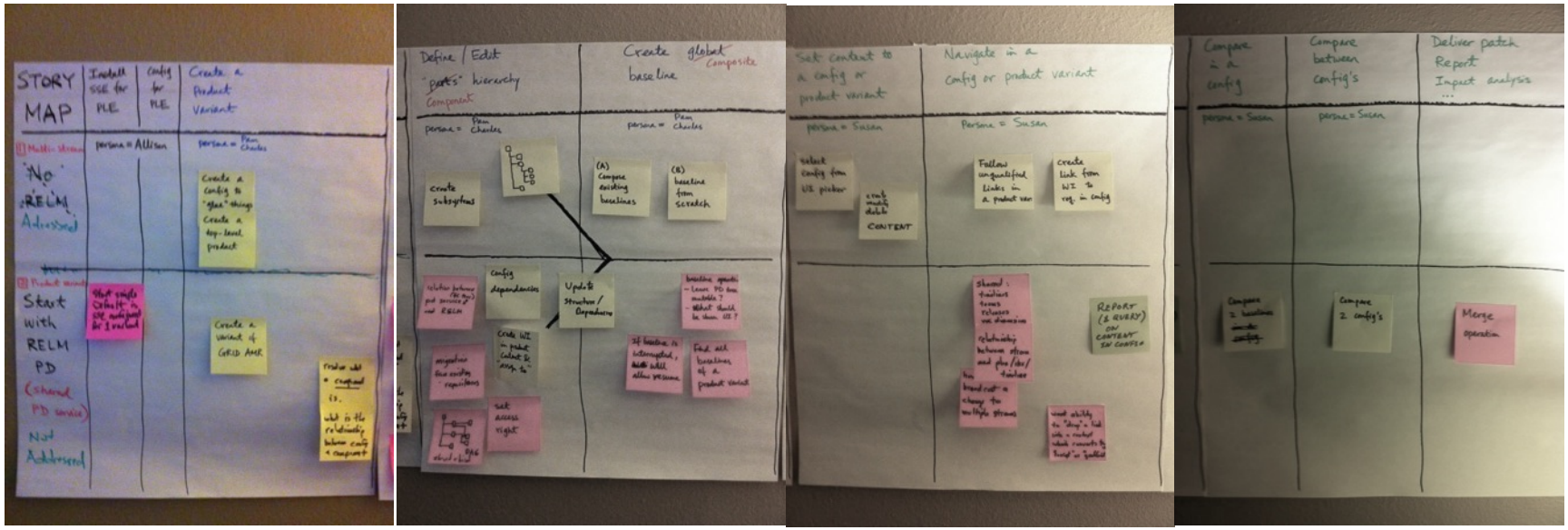
As a product manager or chief engineer, I need to

- Create a product variant
- Define a component hierarchy
- Create a baseline

As a systems engineer, I need to

- Select a product variant to work in
- Create (OSLC) links among lifecycle artifacts in context of a product variant
- Navigate in a product variant

User Stories in a story map for PLE

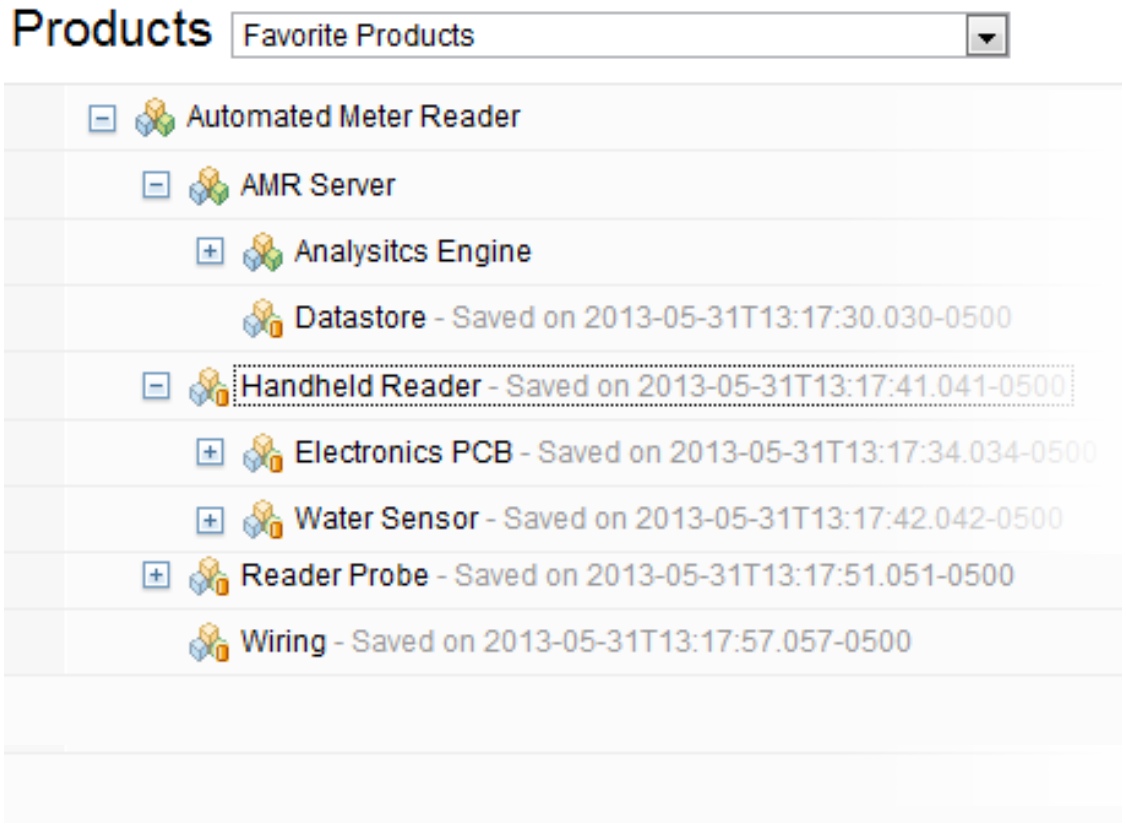


Playback of Product Line Engineering Design Studio, May 2013

Pam creates a product variant

Pam creates the product structure using a product tree.

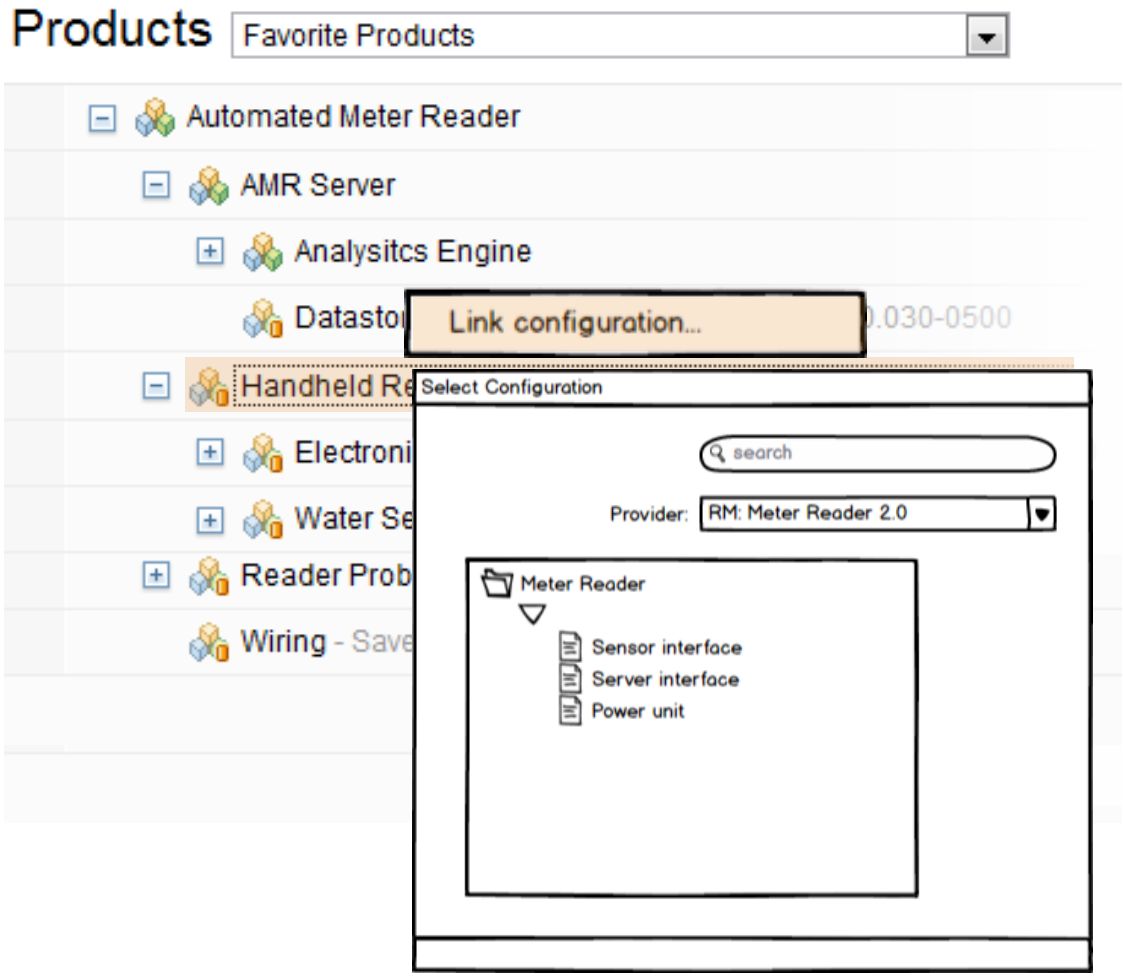
- She creates the GRID AMR product variant
- She adds nodes to the product tree and selects an optional configuration for each node.
- She defines additional nodes in the tree and provides components details.



Charles defines the component hierarchy

Charles associates configurations with the nodes in the product definition tree.

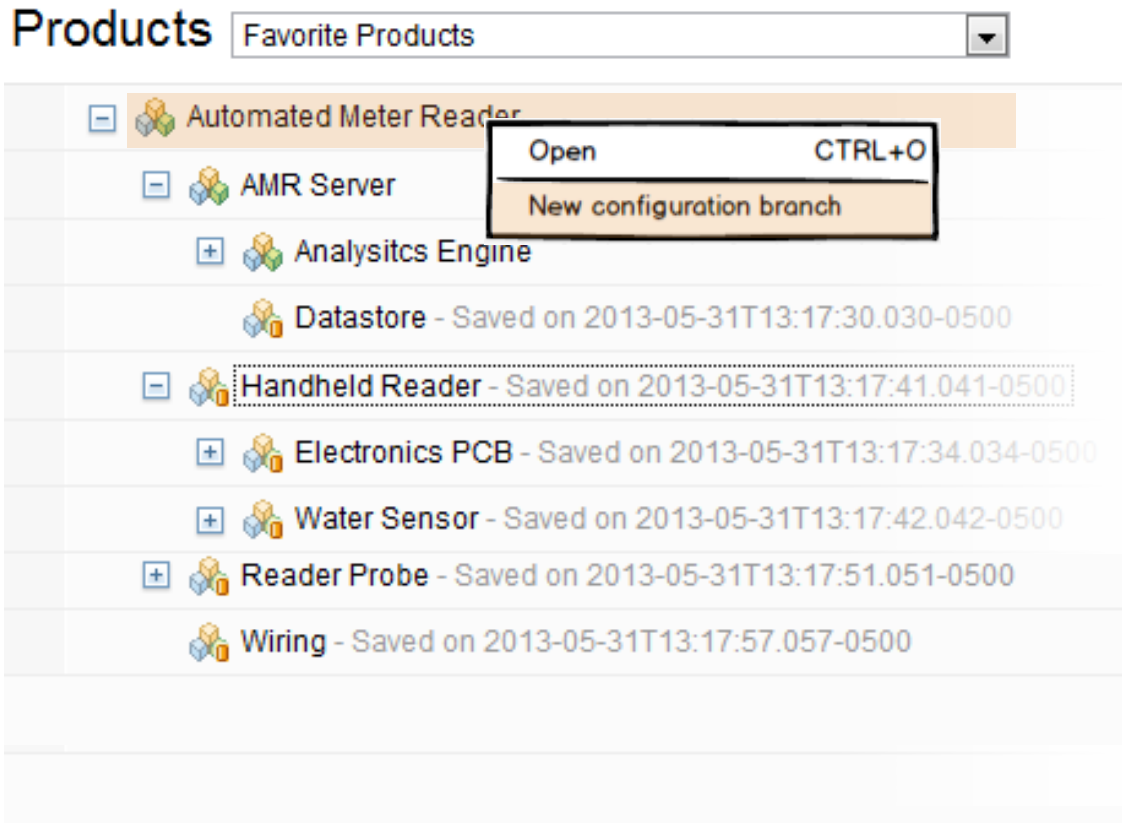
- He selects a node and chooses the command to **Link configuration …**
- A configuration picker opens
- He searches for a “Meter” and selects the Meter Reader 2.0 configuration.
- He selects a configuration *provider*, browses the component structure and selects the component Meter Interface 2.0 configuration.
- He proceeds and associates all nodes with configurations.



Charles creates a new product variant

Charles wants to create a new variant of the AMR product. He will name this the GRID AMR

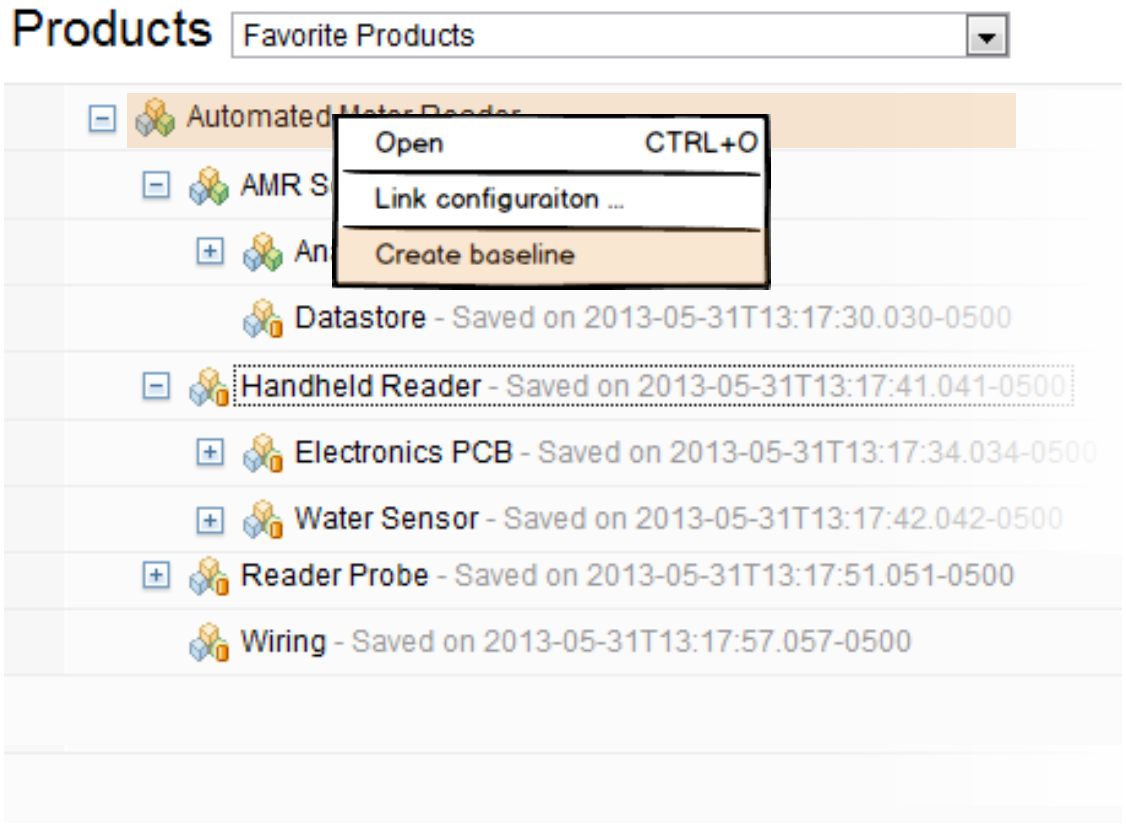
- He opens the AMR Product Tree
- He creates a copy and names it GRID AMR
- He adds, removes, edits configurations and versions.
- He links configurations.
- He saves the Product Tree
- He creates an initial baseline for the product variant.



Charles creates a baseline – top down

Charles creates a new baseline for the product variant.

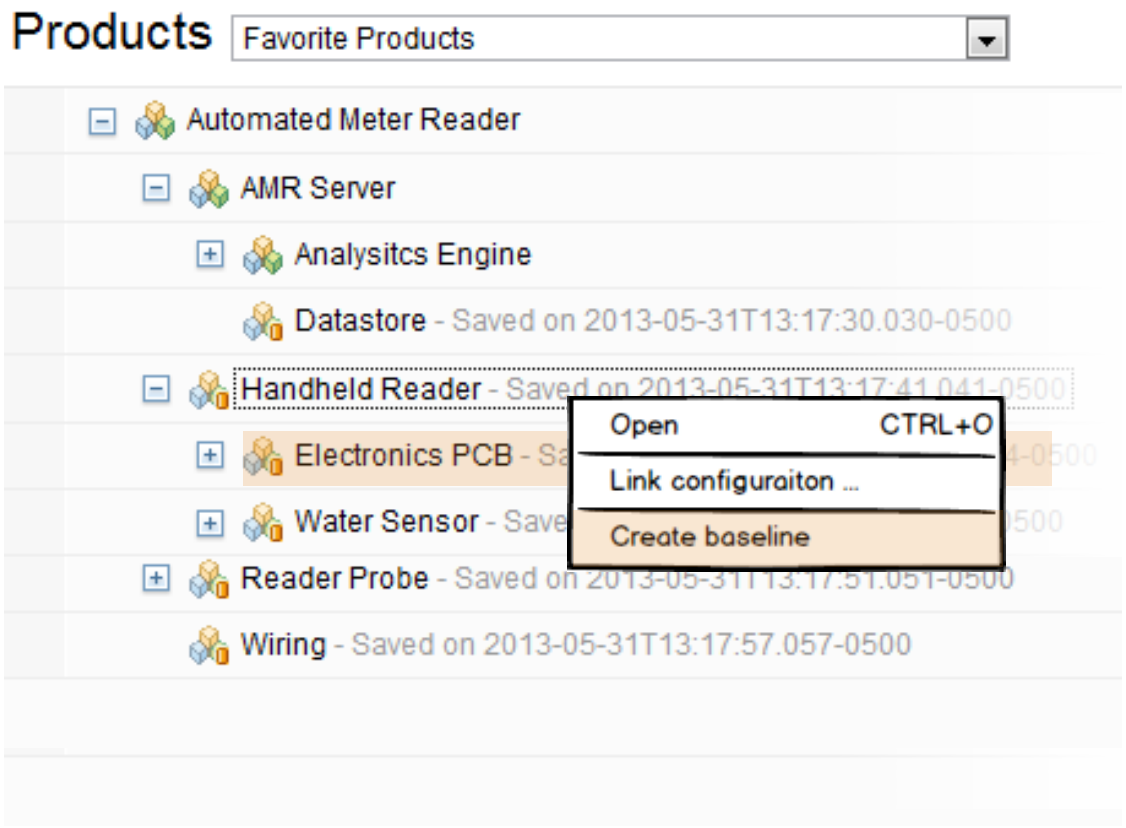
- He selects the top node and chooses the **Create baseline…** command.
- The command will associate nodes with configurations that has a baseline or a baseline is created.
- The action to create a baseline is delegated to each domain tool



Charles assembles a baseline - bottom-up

Charles associates nodes in the product definition tree with component baselines. This process can last a number of months on a large project, since teams are ready at different times.

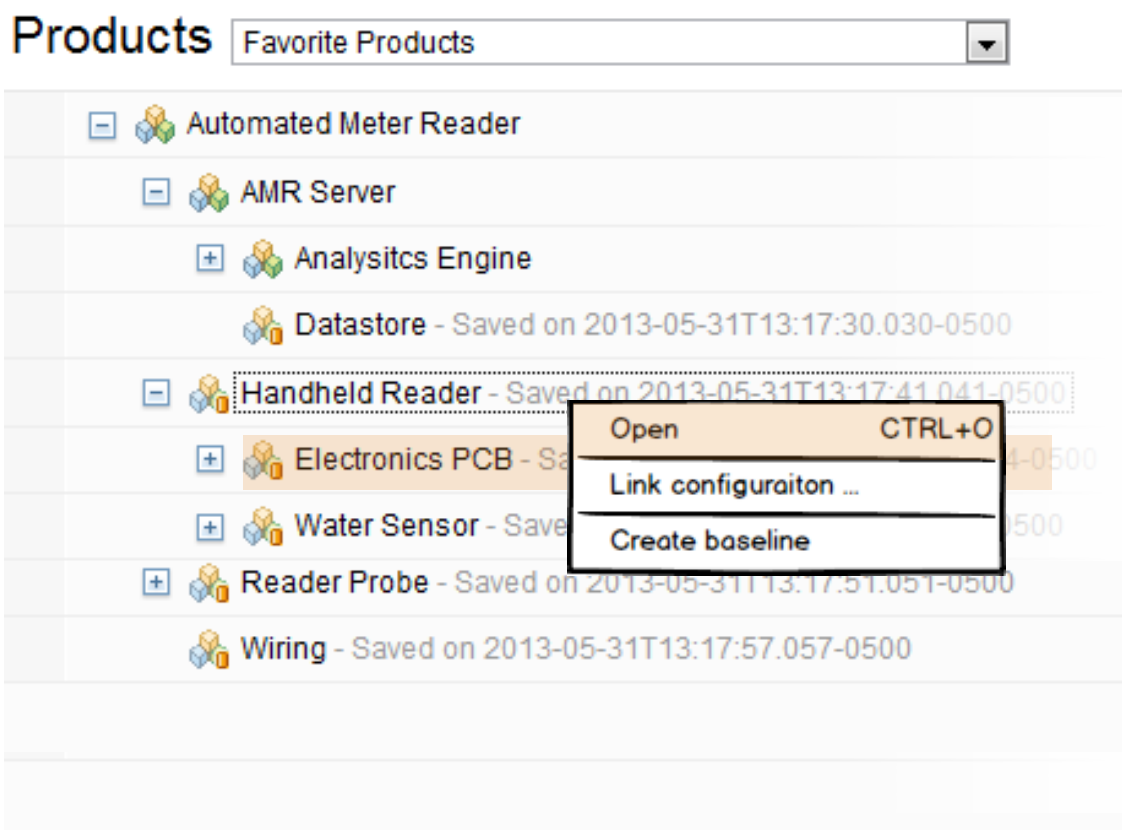
This process will require collaboration and subcomponent teams need a way of indicating that the current component baseline reflects “we are done”.



Susan selects a product variant to work in

Susan has several options for selecting product variant

- She goes to the product definition tree, selects configuration, performs a gesture to open the domain tool in the right configuration.
- She goes to the domain tool, selects the project and then selects the configuration.
- She selects the Home-button and selects from the product definition tree
- She goes to the dashboard and selects a configuration from a product definition tree viewlet
- She opens a work item and follows a link to an artifact in the right configuration.



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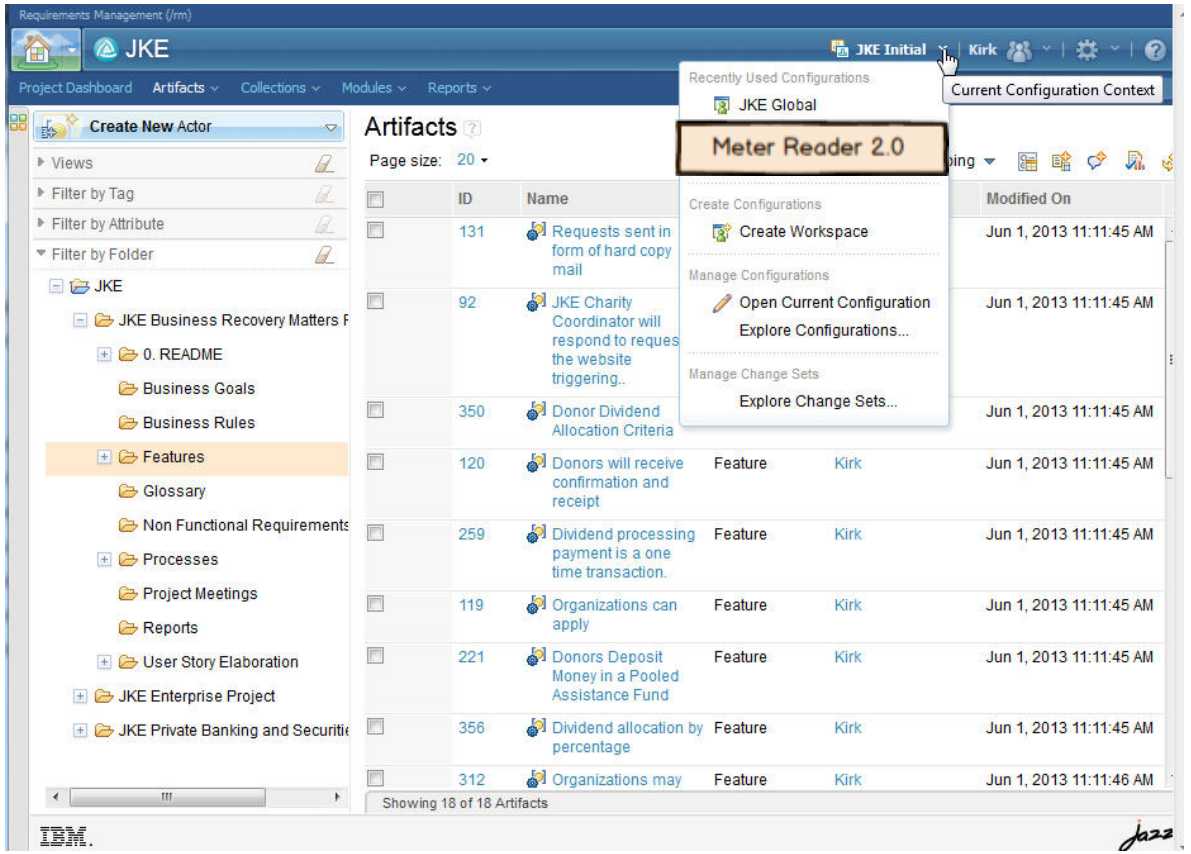
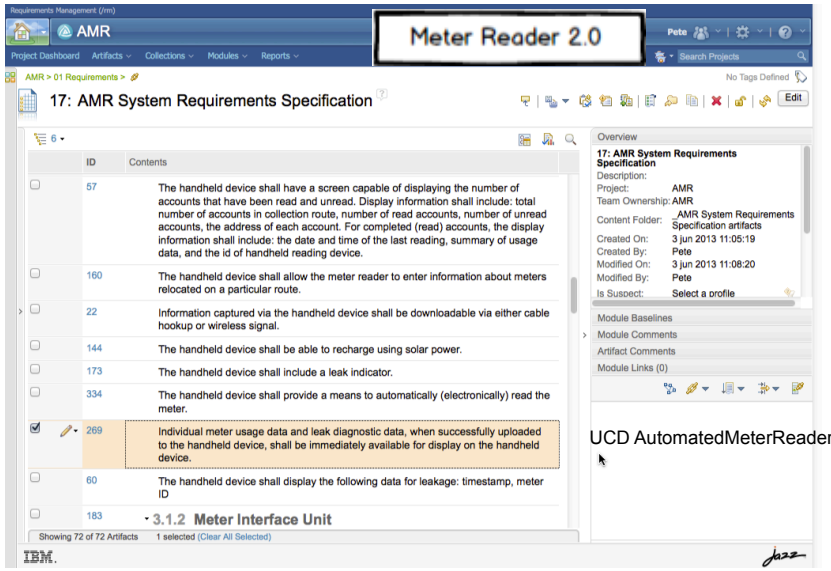
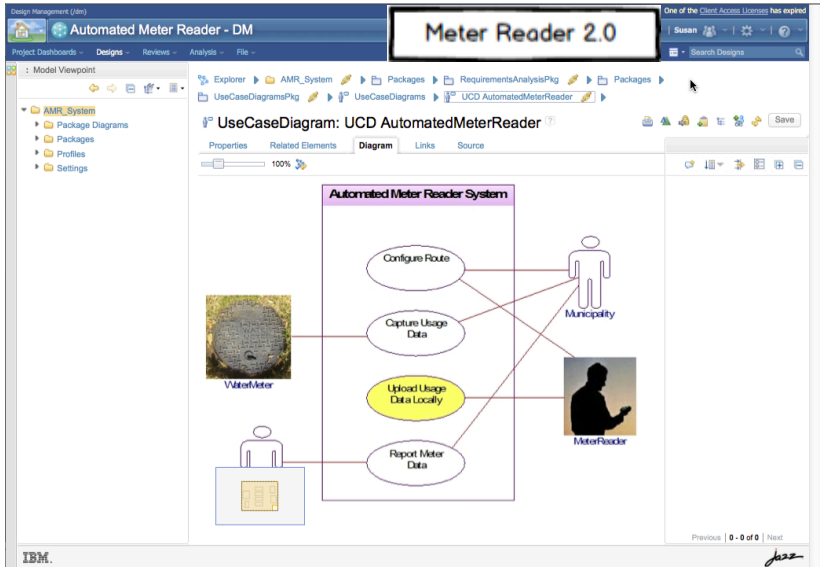


Susan navigates in a product variant

Susan browses requirements and follows a link to a model element.

- She selects a node in the product definition tree and browse the associated configuration.
- She opens a requirement
- She follows a link to an associated model diagram which is opened in the right model configuration

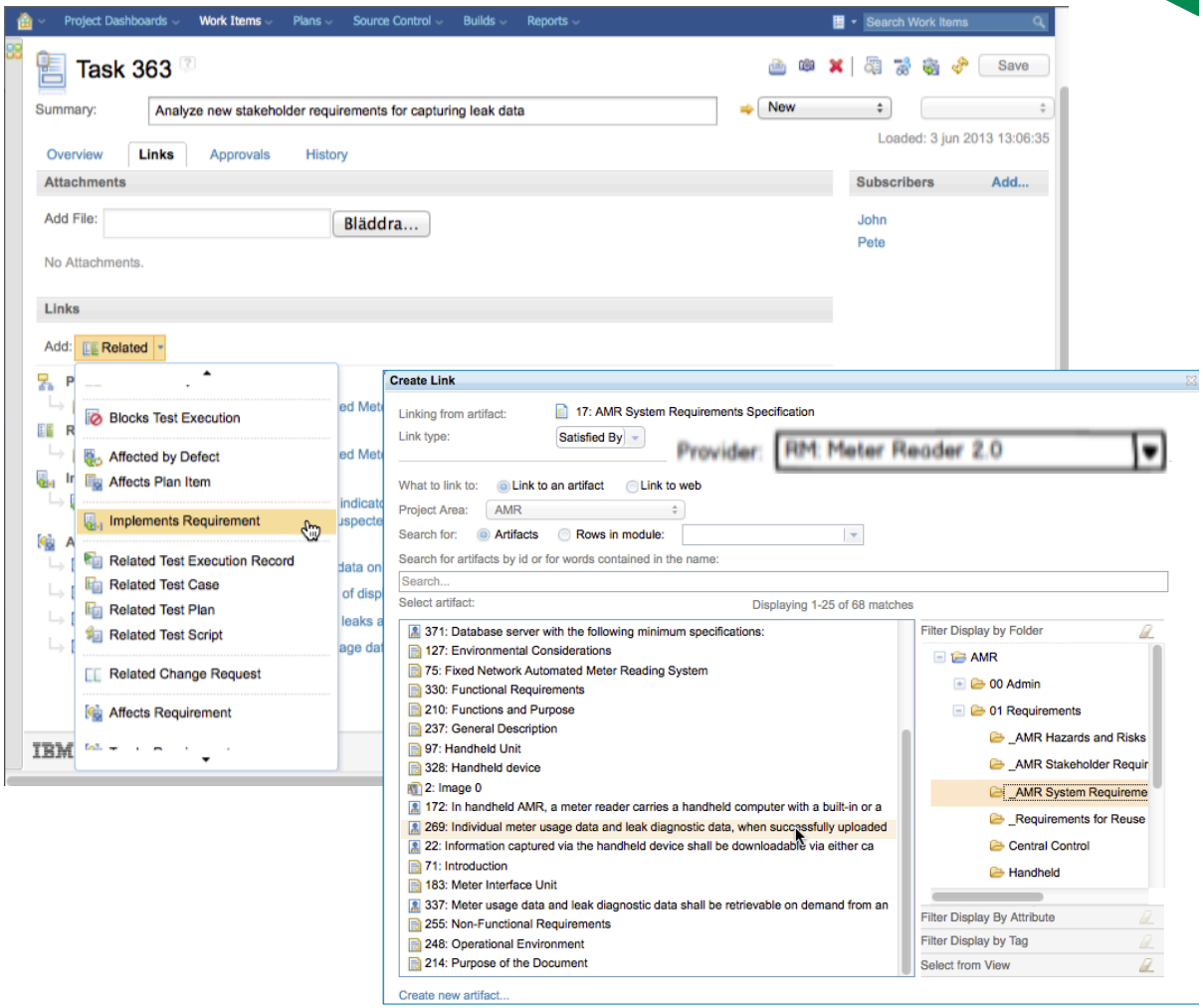




Susan creates OSLC links in context of a configuration

Susan creates a link in a Work Item to a requirement in a configuration.

- If RTC has a configuration context information, the OSLC picker will default to it. Susan can override the context in the picker and choose another configuration.
- In the case where RTC does not have a current context, Susan has to select a configuration.



PLE and Variant Management

- How many product lines (or product families) do you have?
- How many product variants are there in a product line?
- How many configurable parts are there in a product variant?
- Are they developed in parallel or in sequence?
- How are product variant plans established?

User Stories in a story map for Requirements change

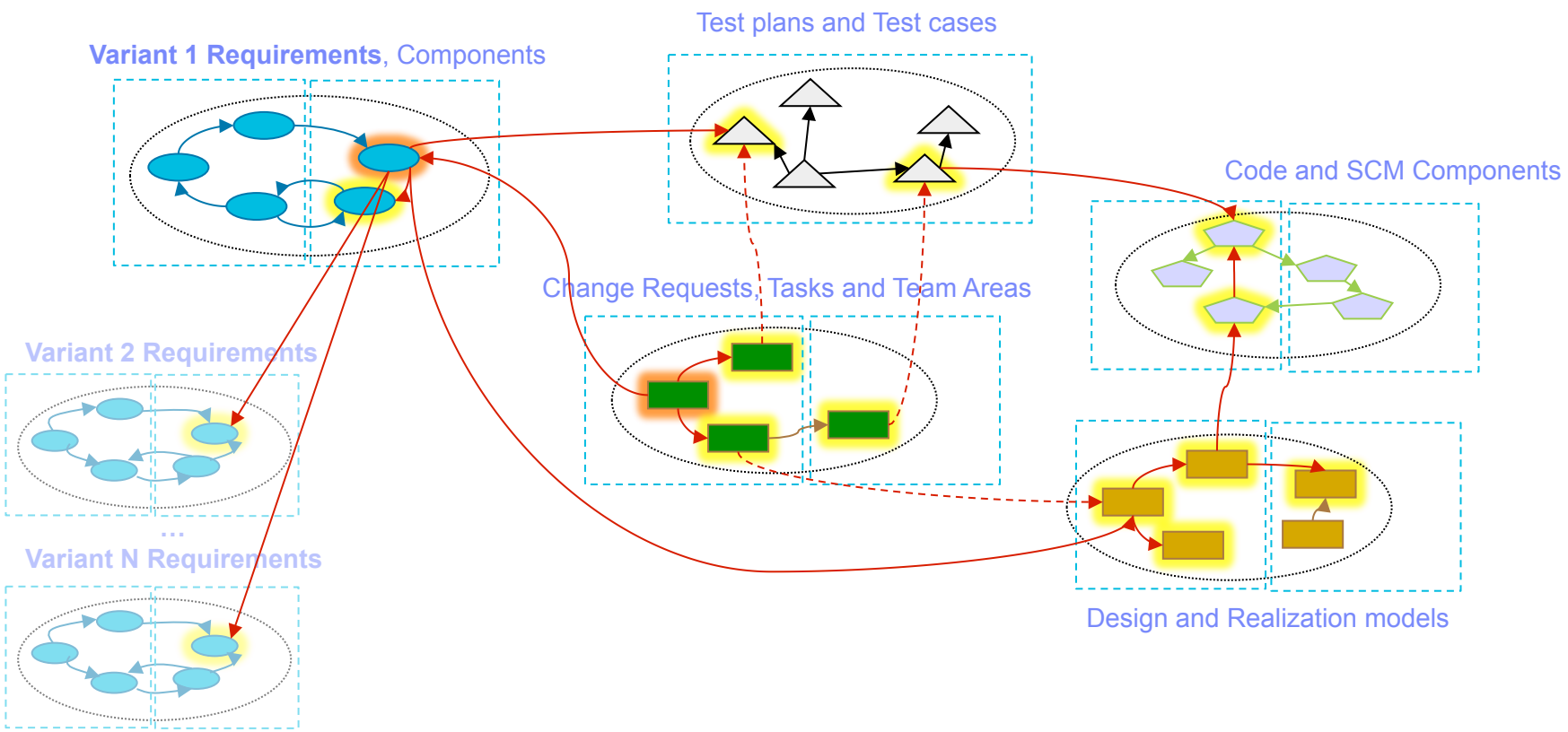
As a product manager I need to:
- Create change request

As a systems engineer, I need to
- Perform impact analysis

As a project manager, I need to
- Review and approve change proposal
- Create implementation task(s)

As a system, test and software engineer, I need to
- Update downstream artifacts
- Deliver changes

Dimensions of Requirements Lifecycle Management



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Requirements lifecycle change

- Should change be isolated for approval, then published?
- Lifespan of a RCR?
  - Only cover change analysis and approval states?
  - Also cover states of realization, test and delivery?
  - Include traceability to tasks and configuration for realization?
- Process enforcement, or flexibility, on RCR?

Intent of Impact Analysis

- The intent of Impact analysis is
  - about producing cost assessment
  - about producing risk assessment
  - about producing work estimation
  - part of a trade off study

- Traceability & Impact analysis is a
  - light, on-the-fly task. There is no formal impact analysis process.
  - formal step in the process, grounded by change requests, approval cycle, a CCB checkpoint, etc.

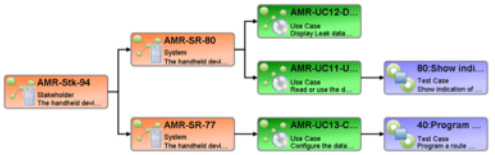
Output of Impact Analysis

- From impact analysis results, we'd like to
  - Share the analysis with another team member
  - Save the analysis results for future reference
  - Add task for in-depth impact analysis of specific assets
  - Add tasks to track updates to impacted work products
  - Create test execution records on impacted test cases
  - Report or Document the impacted assets

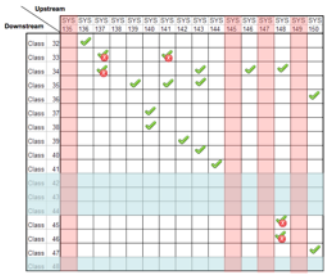
- The output of Impact Analysis is a
  - Document
  - A Change request
  - A presentation describing recommendations
  - Other ?

Impact Analysis tool should look like…

- Traceability & Impact analysis is best viewed and managed as a diagram, like this:



- Traceability & Impact Analysis is best viewed and managed in a table or matrix, like this:



- Impact analysis is generally done at the individual data item level (requirement, test case) and not on large containers (Requirement modules, Test Plans).

Conclusions

- If there's something for SSE solution we haven't covered today, what would that topic item in your mind?

- If you have to choose one thing from the list we have covered, what would that must-have item?

Questions

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