



# IBM Rational DOORS – What's Now and Next?

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## What does it take to build smarter products?

Connect multiple products and services into a **“system of systems”** to deliver unique value



Leverage **systems engineering** to accelerate time to market, improve quality and reduce costs



Develop a core competency in **software delivery** to produce products that are differentiated



## Chevrolet Volt

*GM leverages Rational solution to develop innovative products*



### What's smart?

- Innovative electric drive system  
10 million lines of code; Nearly 100 microprocessors

### Smarter business outcomes

- Volt was delivered in <5 years  
Industry average is 10+ years

### How IBM helps GM develop smarter products

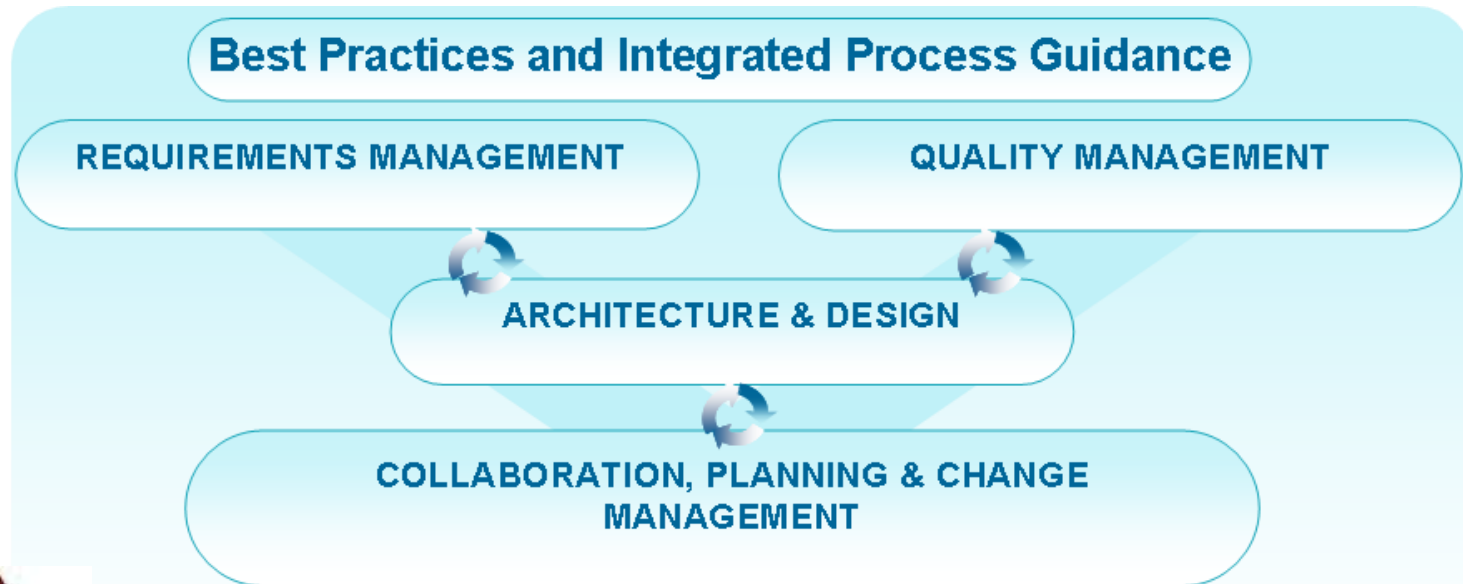
- Requirements management
- Model-driven development
- Team collaboration
- Engineering asset management
- Technical services
- Business transformation services



[http://w3.ibm.com/news/w3news/top\\_stories/2010/11/stgswg\\_GM\\_Volt.html](http://w3.ibm.com/news/w3news/top_stories/2010/11/stgswg_GM_Volt.html)

# Unify Lifecycle Disciplines across Systems and Software Engineering

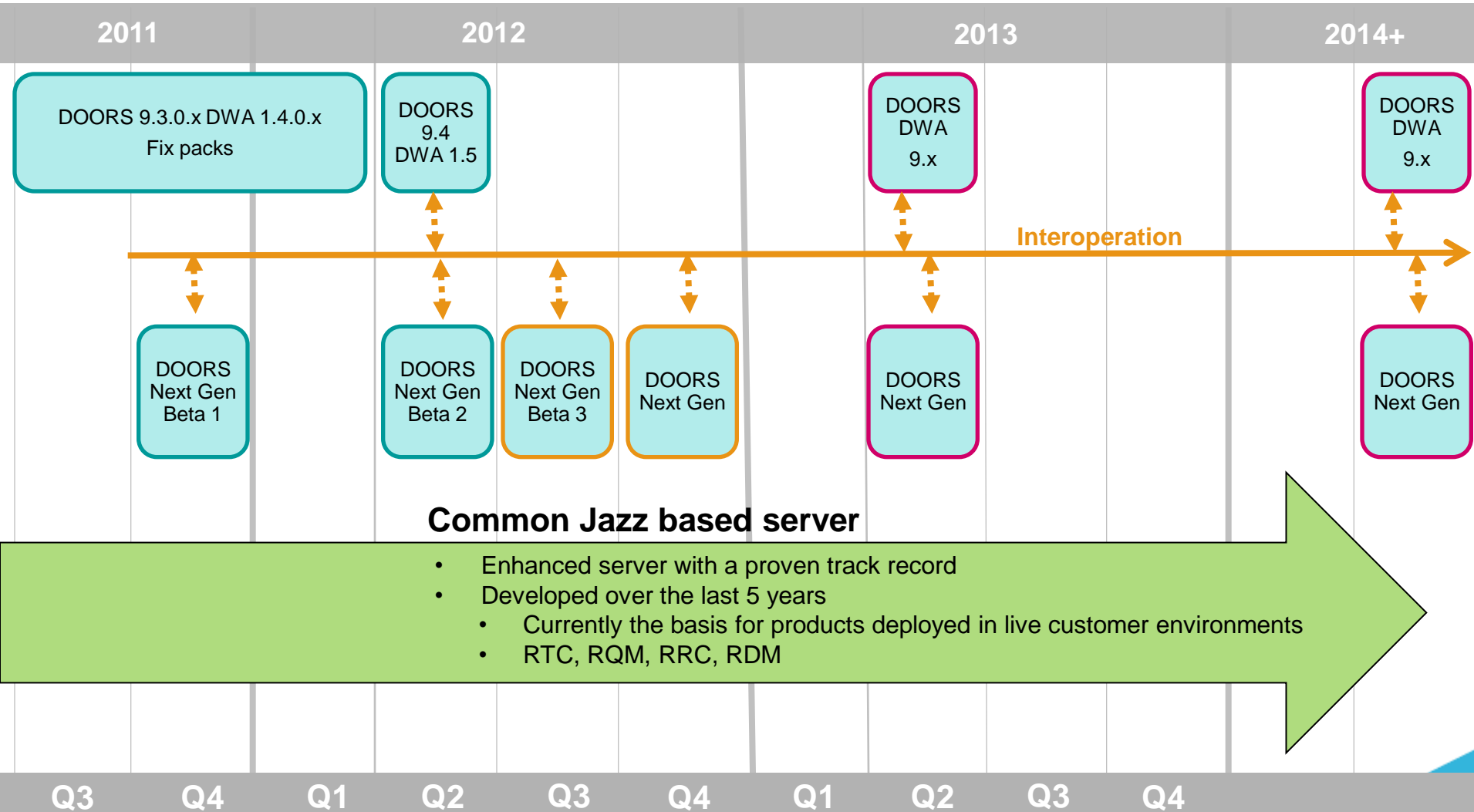
*Best Practices, Tools and Services on an open platform*



 *Open Services for Lifecycle Collaboration*



# DOORS Roadmap



## Common Jazz based server

- Enhanced server with a proven track record
- Developed over the last 5 years
  - Currently the basis for products deployed in live customer environments
  - RTC, RQM, RRC, RDM

Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4

STATUS: — Released — Planned — Conceptual



# Investing in current DOORS 9 deployments



2011

2012

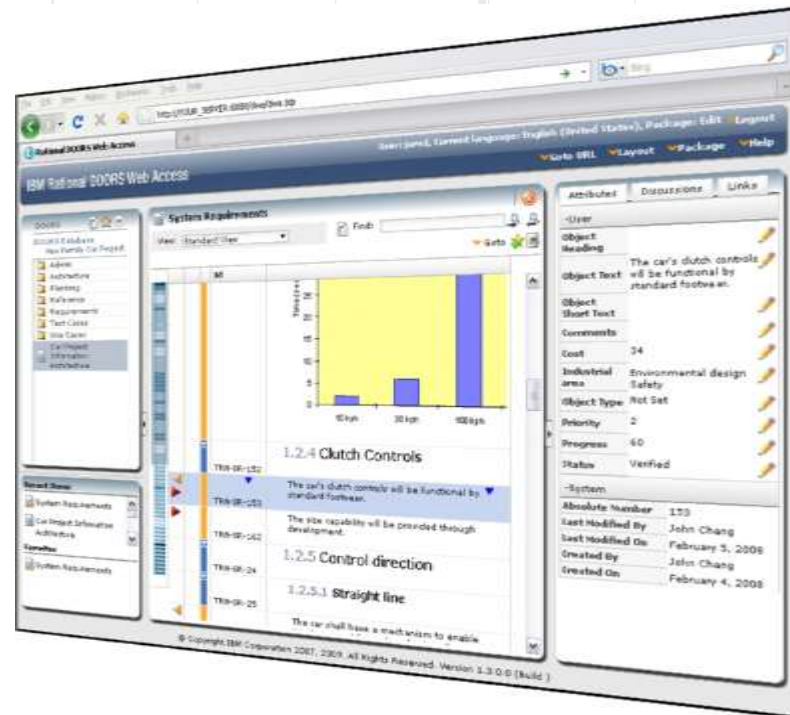
2013

2014

2015...

## IBM Rational DOORS 9.4 and DWA 1.5

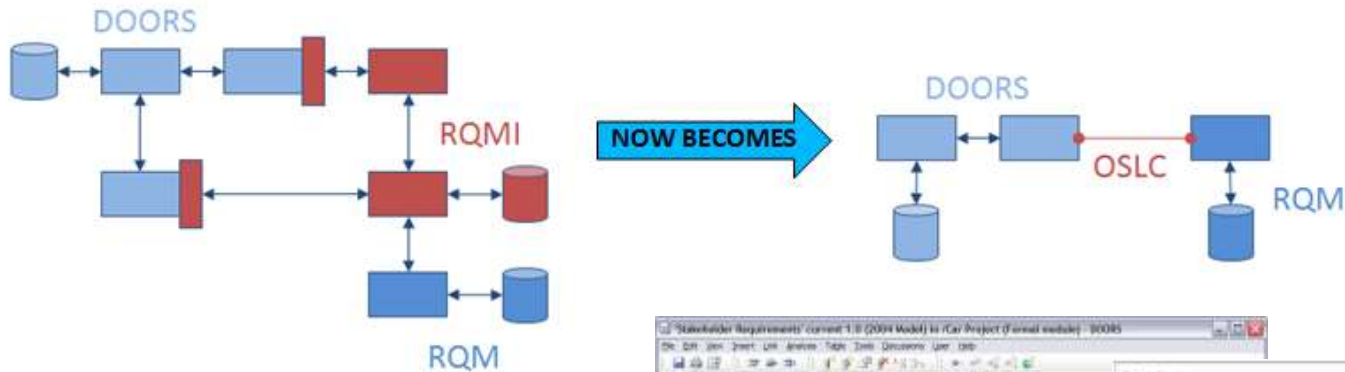
- DOORS – HP Quality Center (March 2012)
- Upgrade RIF to the latest version ReqIF
  - Data exchange between DOORS 9 and DOORS Next Generation
  - Improved support for your supply chain
- Security Enhancements
  - Move authentication / authorization from the client to the DOORS server
- Transition integrations from synchronization to linked lifecycle data
  - Improved visibility of lifecycle attributes and traceability
  - New integrations to RQM, Design Manager (beta)
  - Linking between different RM databases
  - Document generation
    - Run user defined templates without an RPE license
- Usability Improvements



STATUS: — Released — Planned — Conceptual



# DOORS 9.4 integration to Rational Quality Manager 4.0

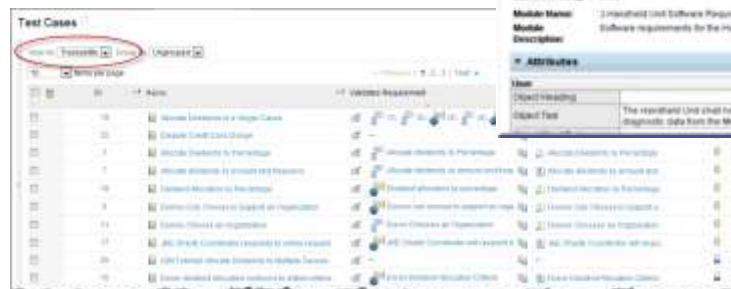
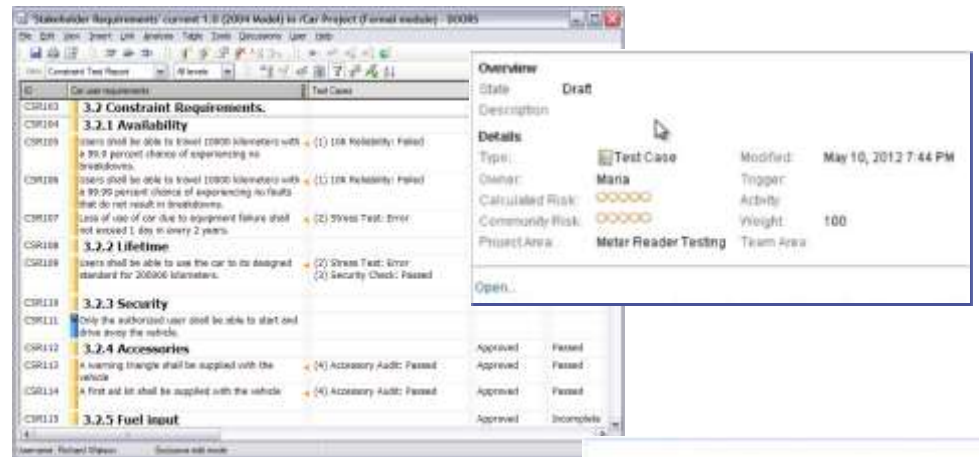


- DOORS user:

- Specifies requirements needing to be tested
- Monitors traceability to tests
- Follows test reviews down into RQM
- Evaluates test verdicts for release readiness

- RQM User:

- Automatically creates draft tests based on new requirements
- Reviews requirements information from within RQM
- Follows requirements audit trail back to DOORS





## Reporting Document Generation and Dashboards

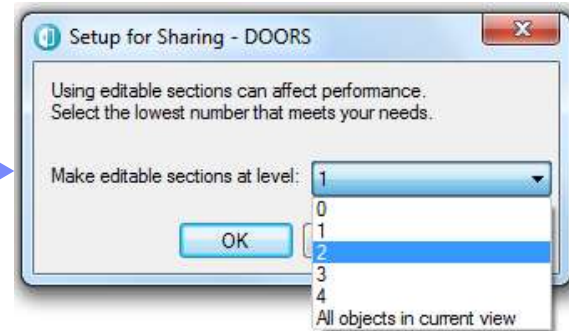
- Use RRDG / RPE custom templates, direct from DOORS without need for an RPE license
- A license is needed to create custom templates – but not to drive the reports

	DOORS 9.3	DOORS 9.x
Use Standard Templates	Built in	Built in
Use Custom Templates	License needed	Built in
Create Custom Templates	License needed	License needed

- DOORS to provide ETL for Data Warehousing (Insight) – Expected in H2 2012
  - Support for project dashboards
  - Insight to monitor and report on project trends

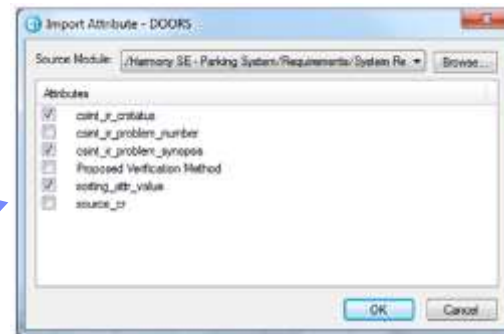
# DOORS 9.x - Other usability improvements

- Management of shareable edit mode improved
  - Stronger support to define and manage how multiple people can work on a module at the same time
  - Reset shared sections to a known state
  - Apply shared sections to all displayed objects in a view



- Views
  - Extending colour by attribute
    - The ability to control background colour of an attribute (we can already set the foreground colour)
  - Extend views to support 128 columns (extended from 32)
  - Ability to remove multiple views in a single action

- Microsoft Excel
  - Support for rich text exporting to Excel
- Usability
  - Import multiple attributes from a different module in a single action
  - Manage Users dialog now expandable in size



# Future releases of DOORS 9.x –candidate themes



2011

2012



2013

2014

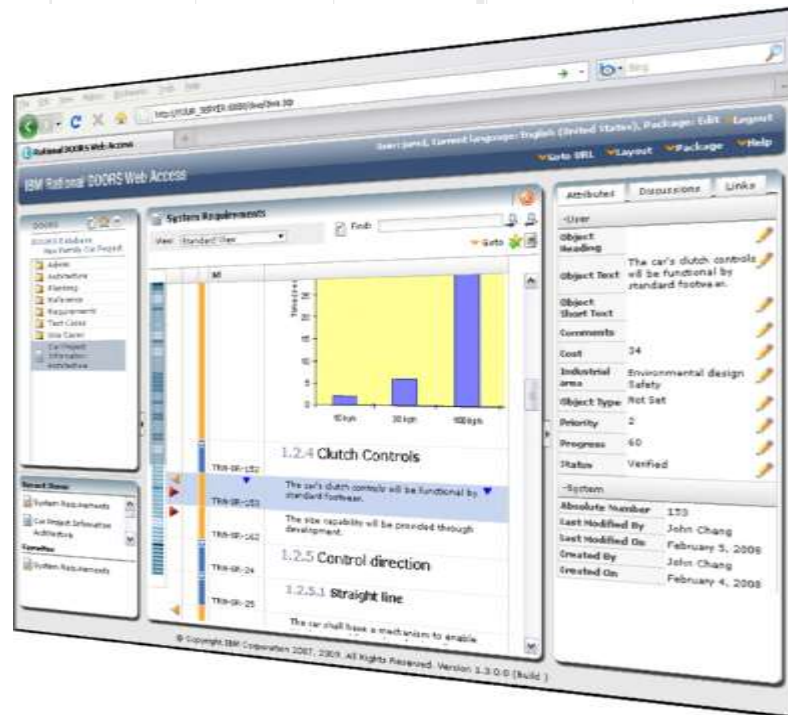
2015...

## DOORS

- Usability Enhancements
- Reporting over system engineering metrics
- Database-wide query
- Richer OSLC Integrations
- Additional Integrations

## DOORS Web Access

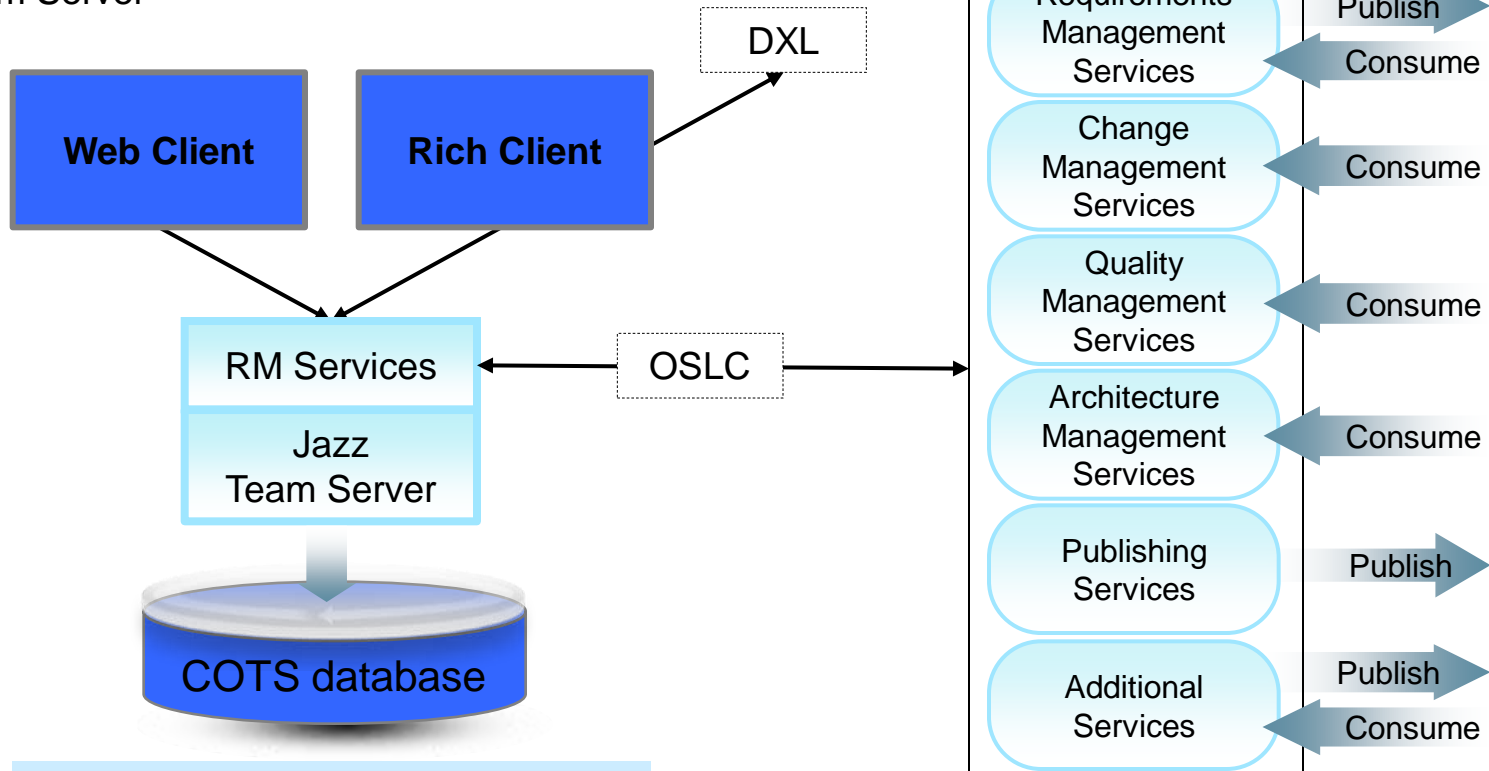
- Persistent user preferences
- Document generation



# DOORS Next Generation

## DOORS Next Generation - Architectural Overview

- Requirements visibility and traceability across the lifecycle
- Open integration architecture built on the Jazz Team Server
- Integrations using Open Services for Lifecycle Collaboration (OSLC)



- JEE application server (Tomcat, WebSphere)
- Relational database (DB2, Oracle, MS SQL)
- Optional LDAP-enabled directory server
- Optional clustering via WebSphere
- Browser support (Internet Explorer, Firefox)

# IBM Rational DOORS Next Generation

*DOORS concepts improved and much more....*

## Definition

NEW!

- Rich-text documents
- Diagrams: Process, Use Case
- Storyboards, UI sketching & flow
- Project glossaries
- Templates

## Visibility

NEW!

- Customizable dashboards
- Analysis views
- Collections
- Milestone tracking & status

## Collaboration

NEW!

- Review & Approval
- Discussions
- Email Notification



## Management

Improved!

- Structure, Attributes/Types
- Traceability, Filtering, Tags
- Baselines, Change History
- Reuse (reqs & types)
- Reporting Metrics & Doc.

## Lifecycle

NEW!

- Central requirements, test, & development repository
- Common administration and role-based user licensing
- Warehouse reporting

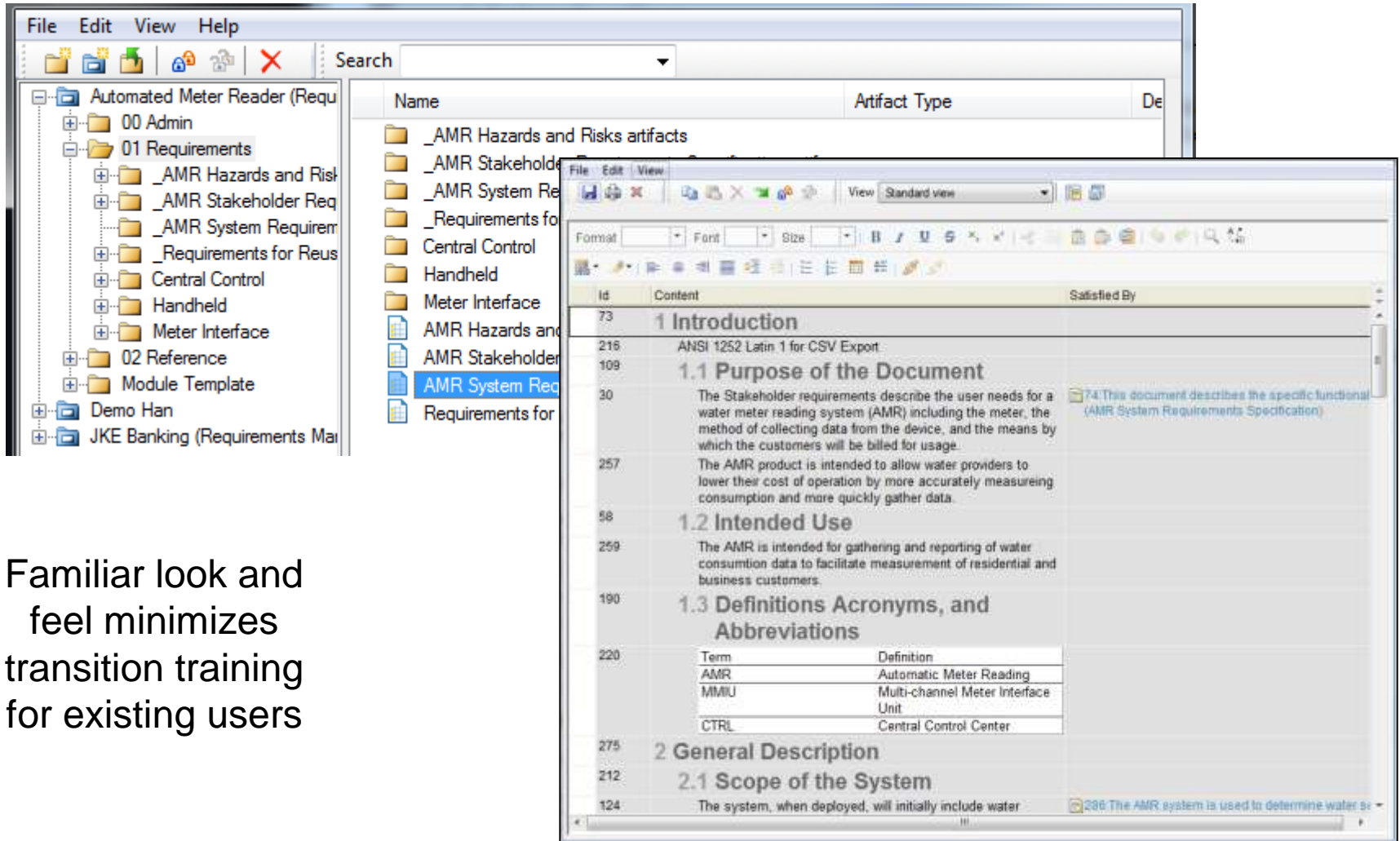
## Planning

NEW!

- Integrated planning
- Effort estimation
- Progress tracking

# Familiarity for existing DOORS users

*DOORS Next Module view (rich client)*



Familiar look and feel minimizes transition training for existing users

# Fully functional Web client

## DOORS Next Generation Module view (web client)

Modern web look and feel minimizes adoption cost for new and casual users

**Filter Pane**

**Module**

**Properties**

The screenshot displays the DOORS Next Generation web client interface. The main content area shows a requirement module titled "149: Automated Meter Reader System Requirements". The module content is structured as follows:

ID	Primary Text
150	<b>1 Introduction</b>
151	<b>1.1 Purpose of the Document</b>
152	This document describes the specific functionality of the Automated Meter Reader system. The system is currently available with a handheld collection device. The mobile and fixed network methods of data collection are outside the scope of this system.
153	<b>2 General Description</b>
154	<b>2.1 Functions and Purpose</b>
155	The AMR system is used to determine water service / consumption for the more than 79,000 meter connections to residential, commercial and industrial customers inside a 72 square mile area.
156	In handheld AMR, a meter reader carries a handheld computer with a built-in or attached receiver/transceiver (radio frequency or touch) to collect meter readings from an AMR capable meter. This is sometimes referred to as "walk-by" meter reading since the meter reader walks by the locations where meters are installed as they go through their meter reading route. Handheld computers may also be used to manually enter readings without the use of AMR technology as an alternate but this will not support comprehensive data which can be accurately read using the meter reading electronically.
157	<AMR Artist Rendition>

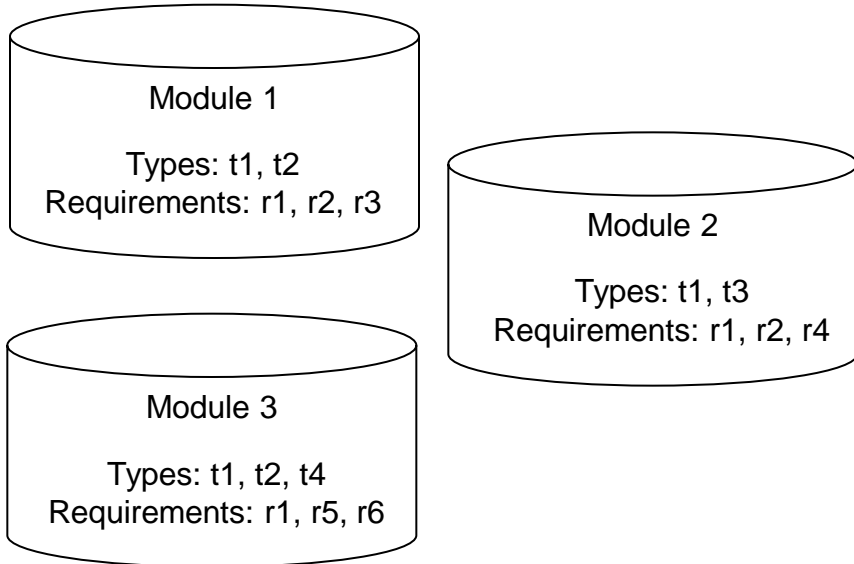
Annotations in the image point to three key UI elements:

- Filter Pane:** Located on the left side of the interface, containing a "Create Requirement" button, "Saved Filters" search box, and "Modules" list.
- Module:** The central content area displaying the requirement structure and text.
- Properties:** A sidebar on the right side showing details for the selected requirement, including "Overview", "Description", "Project", "Team Ownership", "Created On", "Created By", "Modified On", "Modified By", "Type", and "Format".

*Jazz*

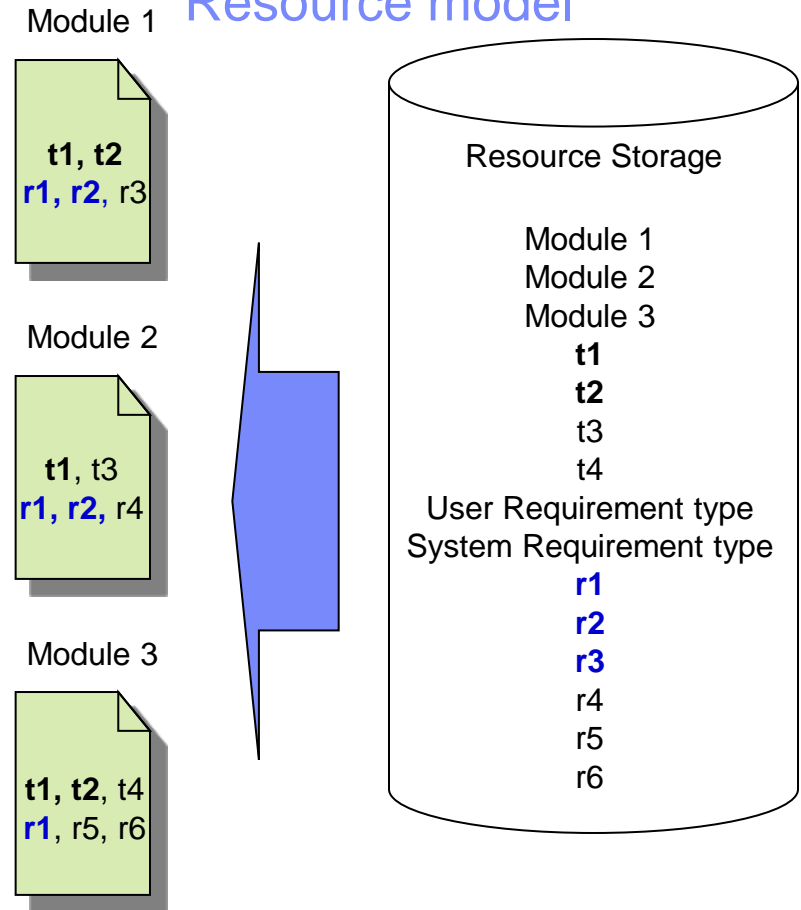


## Current DOORS Resource model



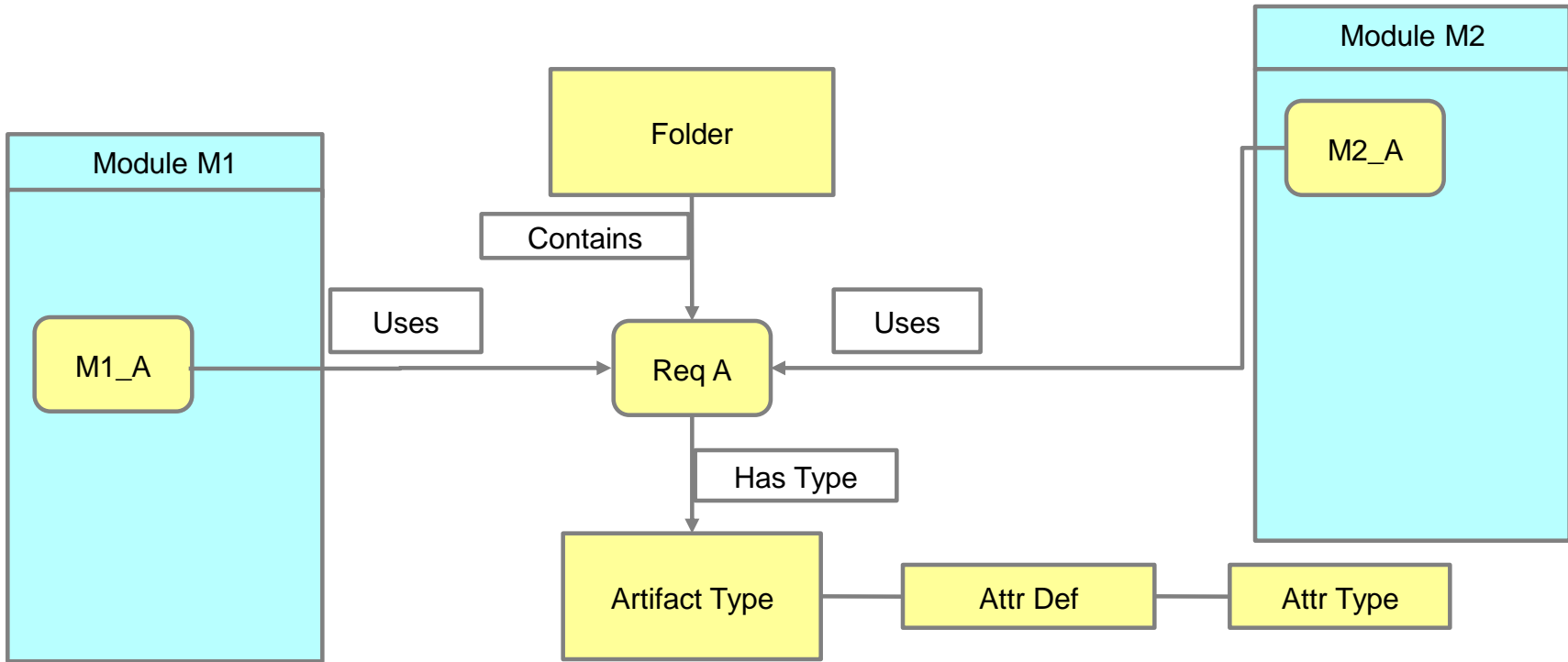
When a type or requirement is needed in multiple modules, copies must be made of each and maintained

## DOORS Next Generation Resource model



Information is not stored within a module, only referenced from the module. Types and requirements can be used in multiple modules but stored in one place – improves consistency

# DOORS Next Generation Information Model – supporting reuse



# Project wide artifact type administration

Requirements Management (/rm)

Automated Meter Reader (Requirements)

Susan | Settings | Help

Project Dashboard | Artifacts | Collections | Modules | Reports

Search Projects

Artifact Types | Artifact Attributes | Attribute Data Types | Link Types | Templates | Team Ownership Overview

## Artifact Types

An artifact type is a definition for a group of objects that serve a similar function in the requirement management process. For example, there may be a need for a user requirement artifact type, a functional requirement artifact type, and a use case artifact type. Use this page to define the artifact types available in this project.

**Artifact Types** + New Type...

Name

- Hardware Requirement
- Hazard and Risk
- Heading
- Information
- Requirements Specification
- Software Requirement
- Stakeholder Requirement
- System Requirement

Cancel Save

Name: \*

Icon: Change...

Description:

Default Artifact Format: \* **Text**

Preferred Link Types:  Choose... Copy from...

Artifact Roles:  Use artifacts of this type as glossary terms.

**Artifact Attributes** ↑ ↓ ✕ Remove Attribute + Add Attribute...

Name	Data Type	Description
Accepted	Boolean	
Clarity	HighMediumLow	

# DOORS Next Generation, resource model in practice (1)

The screenshot displays the IBM DOORS Next Generation interface. On the left, a project tree shows the hierarchy: Automated Meter Reader (Requ) > 00 Admin > 01 Requirements. The main pane shows a table of artifacts:

Name	Artifact Type	De
_AMR Hazards and Risks artifacts		
_AMR Stakeholder Requirements Specification artif...		
_AMR System Requirements Specification artifacts		
_Requirements for Reuse artifacts		
Central Control		
Handheld		
Meter Interface		
AMR Hazards and Risks	Requirements Specification	
AMR Stakeholder Requirements Specification	Requirements Specification	
	Requirements Specification	
	Requirements Specification	

An artifact detail window titled "948: AMR Stakeholder Requirements Specification" is open, showing the following content:

- 1 Introduction**
  - 1.1 Purpose of the Document
  - 1.2 Intended Use
  - 1.3 Definitions Acronyms, and Abbreviations
- 2.1 Scope of the System**

**Location**  
Water Meter > 01 Requirements

**Attributes**

Type:	Requirements Specification	Artifact Format:	Module
Approved By:		Approver Position:	
Description:			

Username: susan

# DOORS Next Generation, resource model in practice (2)

The screenshot displays the Rational DOORS Next Generation interface. The main window is titled "AMR Stakeholder Requirements Specification - Rational DOORS Next Generation". A pop-up window titled "1201: Application server with the following minimum specifications:" is open, showing details for a requirement. The "Type" field is set to "System Requirement" and the "Artifact Format" is "Text". The "In Modules" section shows "Requirements Specification: 943".

In the background, a list of artifacts is visible, with the "Artifact Type" column highlighted. The list includes:

- Application Server
- Application server with the following minimum specificati...
- Heading
- System Requirement
- Heading
- Heading
- Heading
- Heading
- System Requirement
- Heading
- Heading
- Heading
- Heading
- Heading
- Heading
- Information
- System Requirement
- System Requirement
- System Requirement
- Heading
- Heading
- System Requirement
- Heading

# Project wide views

Filter columns by types: All

Select types:

- Alternative Spelling
- Artifact Format
- Artifact Type
- Child Of
- Contributor
- Created On
- Creator
- Derives
- Derives From
- Description

Columns to show:

Column	Width
Id	50
Contents	300
Used in Modules	300

Buttons: Add >>, << Remove, Edit, OK, Cancel, Help

Select view: Reuse view

View name: \* Reuse view

Description: My view description

View type:  Personal  Shared

Use in all modules

Buttons: Save, Cancel

File Edit View

View: Reuse view

Format Font Size | B I U | x<sub>2</sub> x<sup>2</sup> | [Clipboard icons]

Id	Content	Used in Modules
676	1 Introduction	System Requirements
677	2 Requirements	System Requirements
678	2.1 Functional requirements	System Requirements
679	The system shall be able to ....	System Requirements
681	New System requirement	

# Dashboards

**Water Meter Project Dashboard**

Project Dashboard | Artifacts | Collections | Modules | Reports | Search Projects

**General**

**Welcome**

Requirements Management helps you create, organize, and review a project's requirements documents. You can also set up and monitor the relationships between the requirements and development and testing activities, by linking to artifacts in other Collaborative Lifecycle Management projects.

For information about how to get started with Requirements Management and the other Collaborative Lifecycle Management products, visit the [Help Information Center](#).

Watch the [Access and Manage Your Work](#) videos to learn about the navigation features available to you in your Jazz-based applications.

**My Requirements Projects (1)**

- Water Meter [Show artifacts](#)

Page 1 of 1

**Reviews in Water Meter (0 of 0)**

**Recent Changes in Water Meter (100)**

- Brazil Canada China European Union Japan United States of America (970) (AMR Stakeholder Requirements Specification) 3 hours ago
- Brazil Canada China European Union Japan United States of America (970) 3 hours ago
- Envelope Requirements (1030) (Requirements for Reuse) Yesterday
- Envelope Requirements (1030) Yesterday
- Communication Requirements (981) (Requirements for

**Project Members in Water Meter (4)**

	Name: Bob	Email: bob@jkebanking.net
	Name: Dave	Email: dave@jkebanking.net
	Name: Sally	Email: sally@jkebanking.net
	Name: rm_user	Email: rm_user@us.ibm.com

**Comments in Water Meter (1)**

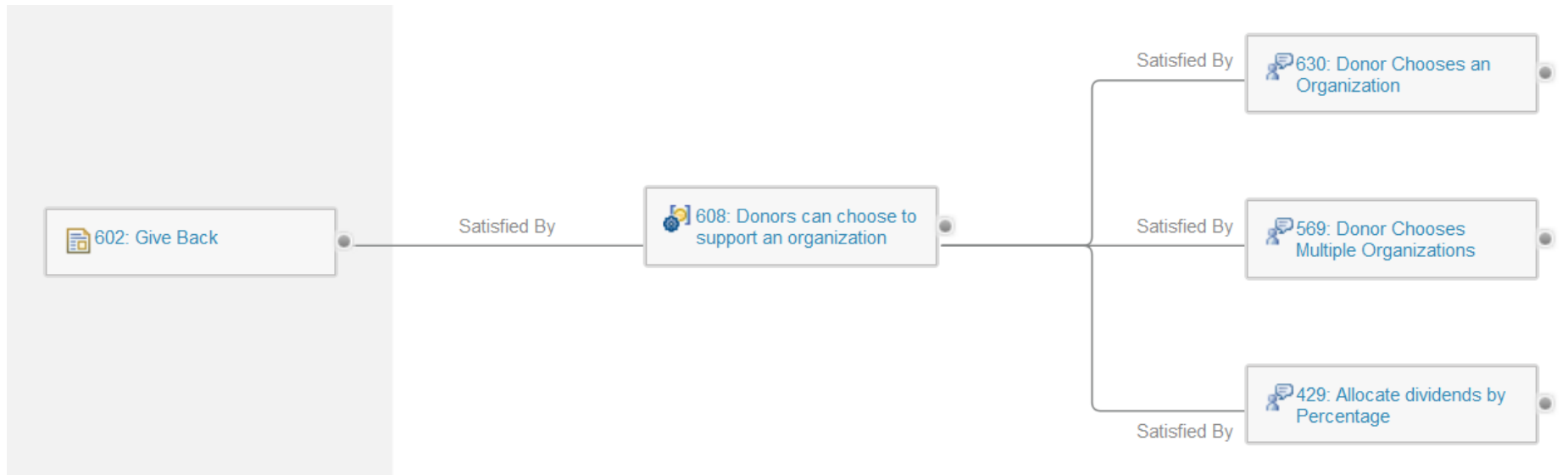
Sally to rm\_user 45 minutes ago

All portable equipment should survive multiple 6 ft drops on to concrete. (Requirements for Reuse)

Page 1 of 1

**Requirements View**

# Graphical browser

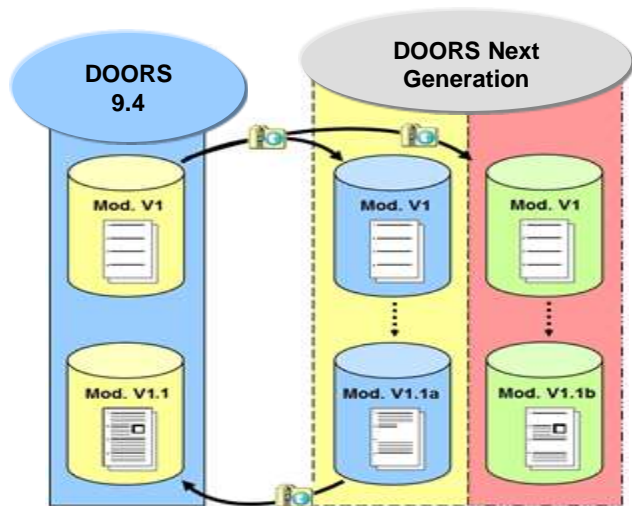




# DOORS 9 and DOORS Next inter-operation scenarios under consideration

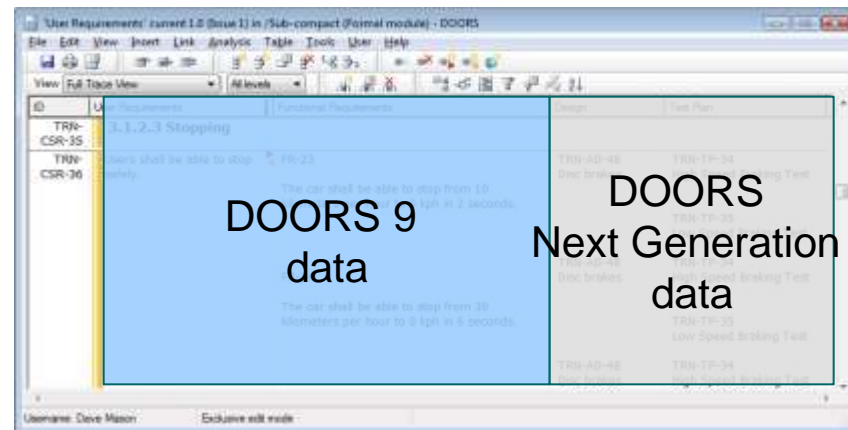
## 1. Offline data exchange

- Support import / export of ReqIF requirements data between DOORS 9.x and DOORS Next Generation.
- Support supply chain scenarios where downstream suppliers can use the DOORS Next Generation and exchange data with your DOORS 9.x projects.



## 2. Cross application linking and query

- Support linked data across DOORS 9.x and DOORS Next Generation projects.
- Rich hover and traceability columns supported in DOORS 9.x and DOORS Next generation



## 3. Cross application reporting and publishing

- Metrics reporting across DOORS 9.x and DOORS Next Generation via Rational Insight.
- Document generation across DOORS 9.x and DOORS Next. Generation via RPE

## 4. Dashboards

- View data from DOORS Next Generation and data in DOORS 9.x.

## Adopt DOORS Next Generation at your own speed

*Both Products can be used in parallel to ensure pragmatic low-risk stepwise migration*

- Continue to work with DOORS and DWA
  - Gain the benefits of DOORS 9.x and future 9.x releases
  
- Use DOORS Next Generation with DOORS 9.x
  - “Recognizably DOORS” to aid adoption
  - Use DOORS Next Generation for new projects as it meets your needs
  - Data Import / Export between DOORS Next Generation and DOORS 9.x projects
  - Bi-directional linking between DOORS Next Generation and DOORS 9.x
  - Support for distributed RM development and Supply Chains
  
- Participate in DOORS & DWA beta programs
  - Follow DOORS Next Generation on jazz.net
  - Participate in the beta, managed or unmanaged
  - Download milestone releases
  - Participate in development discussions
  - Submit defects/enhancements



# DOORS Next Generation, a new project on Jazz.net

<http://jazz.net>

- Introducing DOORS Next Generation in an open forum
- Transparent development of DOORS Next Generation
  - Full details of product plans
  - Interact directly with developers
  - Explore a library of articles, videos, podcasts and more
  - Get answers in the forums



## Rational DOORS Next Generation

**Collaborative specification development and requirements management**

The IBM Rational DOORS project on Jazz.net is an initiative to develop a “next generation” requirements management solution for complex software and systems engineering environments. The goal of this initiative is to help engineers work more effectively across disciplines, time zones, and supply chains to achieve better project outcomes.

### The growing complexity of engineered systems often combine mechanical, electrical, and software components. An increasing portion of the innovation in modern products comes from software. These complex products are developed by a large collection of suppliers and subcontractors. Teams design and develop parallel activities. Agility in this context means managing the growing complexity of engineered systems into action that are essential for high quality complex systems:

- Develop requirements specifications collaboratively
- Manage requirements-related tasks and change
- Manage quality from requirements through verification

## Statement of Direction

- Protecting our customers investments
- Allowing customers to transition between DOORS and DOORS Next Generation
- The following announcement has been made with the release of DOORS 9.4:

IBM intends to include next-generation capabilities as part of a future DOORS release.

For each DOORS license entitlement that has active Subscription and Support, a customer will be able to use either DOORS V9 or next-generation capabilities.

## Summary

- DOORS 9 continues to make progress
  - DOORS 9.4 released today
  - DOORS 9.next planned for next year
  
- DOORS Next Generation evolution begins
  - Currently in open beta – <http://jazz.net>
  - First commercial release expected Q4 2012

IBM intends to include next-generation capabilities as part of a future DOORS release. For each DOORS license entitlement that has active Subscription and Support, a customer will be able to use either DOORS V9 or next-generation capabilities.



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