



IBM Rational Software Conference 2009
As Real as It Gets!



Best Practices for Effective DOORS Implementation

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Rational. software

AGENDA

- Overview of DOORS
- Project Architecture in DOORS
 - Database schema
 - Module framework
 - Setting linking schema
 - Application of access rights
 - Importing legacy data from Word
 - Baselines/Baseline sets
- Summary
- Demo
- Questions



Overview Of DOORS



What is DOORS?

- Rational DOORS is the market and technology leader for Requirements Management
- A requirements management tool with:
 - Multi-user document access
 - Extensive access controls
 - Change control & tracking
 - Requirement linking
 - Filtering & sorting of data
 - Traceability & impact analysis support



Database Structure

The screenshot shows the DOORS Database interface with the following components:

- Database Root:** The top-level folder in the tree view, labeled 'DOORS Database'.
- Project:** A folder within the tree view, labeled 'Common Desktop Environment'.
- Folder:** A sub-folder within the project, labeled 'Requirements'.
- Navigation:** A callout pointing to the tree view structure.
- Formal Modules:** A callout pointing to the table of formal modules.
- Content:** A callout pointing to the 'Vision Document' entry in the table.

Name	Type	Description
Stakeholder Requirements Specific...	Formal	
System Requirements Specifications	Formal	
Vision Document	Formal	

Username: Bill Young User type: Database Manager

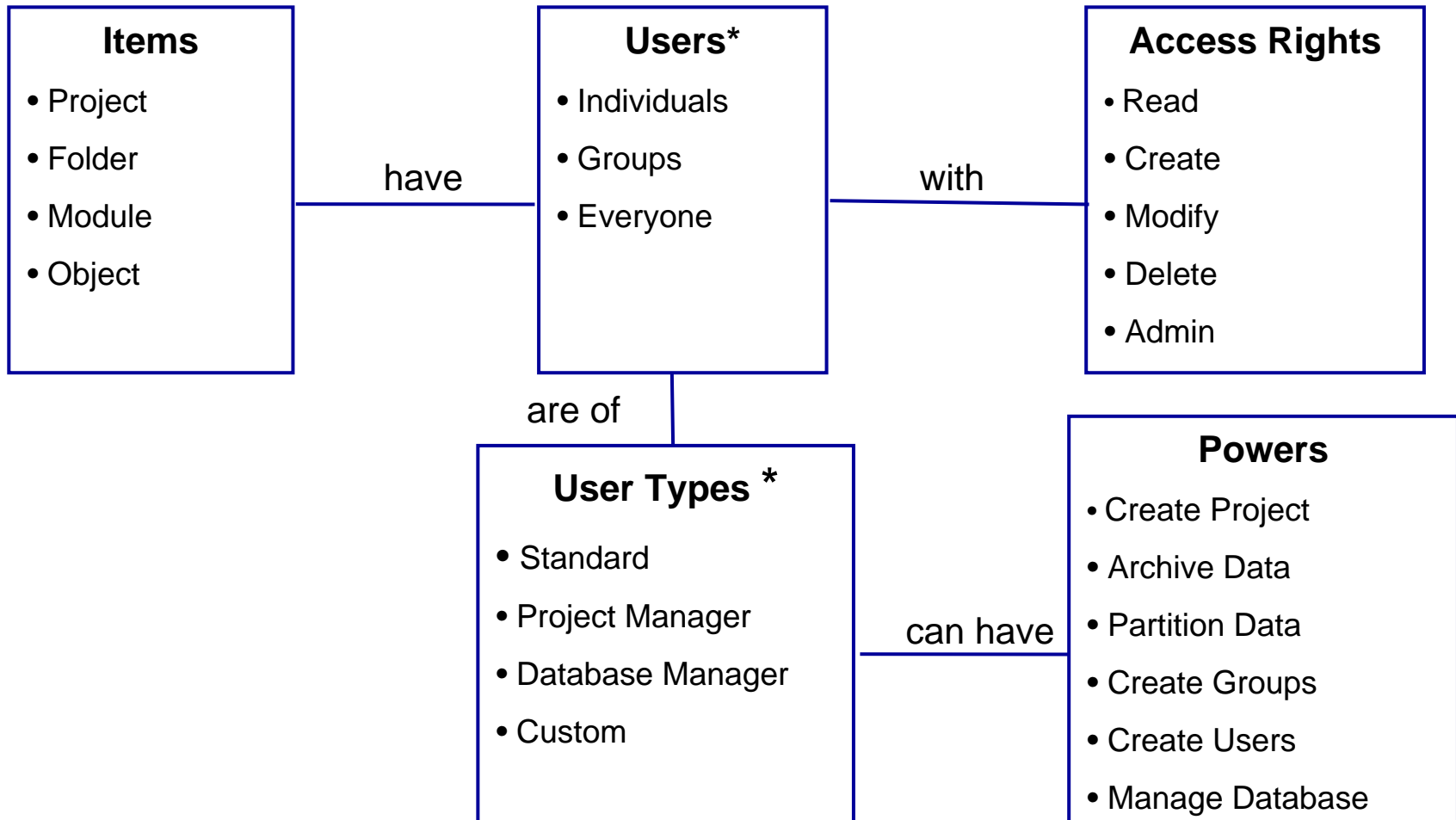
Modules

The screenshot shows the DOORS software interface for a project titled "'Stakeholder Requirements' current 1.1 (Issue 1) in /Training Database (Formal module) - DOORS". The interface includes a menu bar (File, Edit, View, Insert, Link, Analysis, Table, Tools, User, Help) and a toolbar. The left pane displays a hierarchical tree of requirements under "Stakeholder Requirements", with "3.1.2.2 Distance" selected. The right pane shows a list of requirements with columns for ID and description. A blue callout box labeled "Module Explorer" points to the "3.1.2.2 Distance" requirement in the list. A red box highlights the "3.1.2.3 Stopping" requirement in the tree and the corresponding entry in the list.

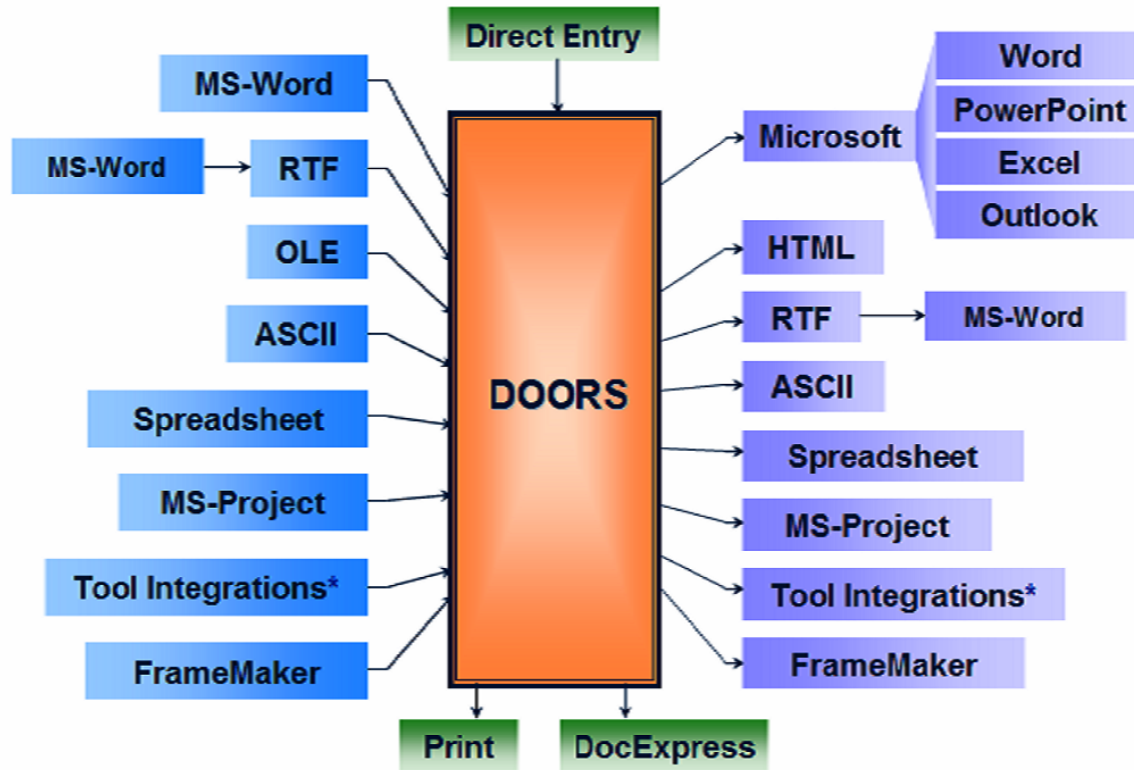
ID	Car user requirements
TRN-CSR-31	3.1.2.2 Distance
TRN-CSR-32	Users shall be able to travel 800 kilometers without the need for any add
TRN-CSR-33	Users shall be able to travel 800 kilometers without the need for any ad
TRN-CSR-34	Users shall be able to travel 800 kilometers without the need for any ad
TRN-CSR-35	3.1.2.3 Stopping
TRN-CSR-36	Users shall be able to stop safely.
TRN-CSR-37	Users shall be able to stop with the vehicle maintaining a straight track or distance when the steering is maintained to within + or - 10% of a straig
TRN-CSR-38	3.1.3 Fuel economy
TRN-CSR-39	Users shall be able to obtain fuel consumption better than that provided b 2003. Care should be taken to ensure that fuel consumption does not adv exhaust standards [API-4538, page 47]
TRN-CSR-40	3.1.4 Safety

Username: Bill Young Exclusive edit mode

DOORS Item Entity Relationship



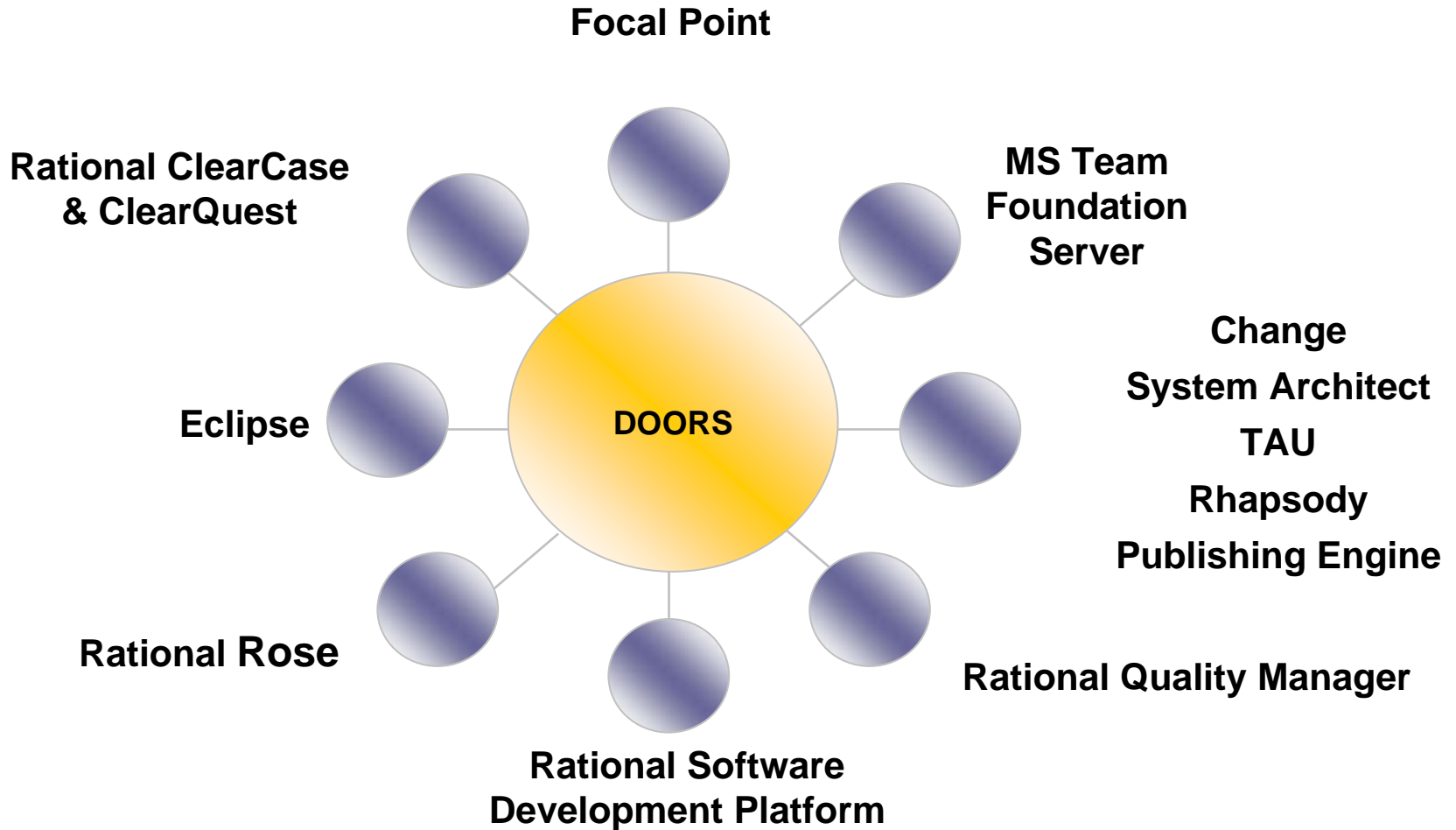
DOORS Data Exchange Options



Other options include

- * Partition/Rejoin, RIF
- * Archive/Restore
- * DXL based data Exchange Tools

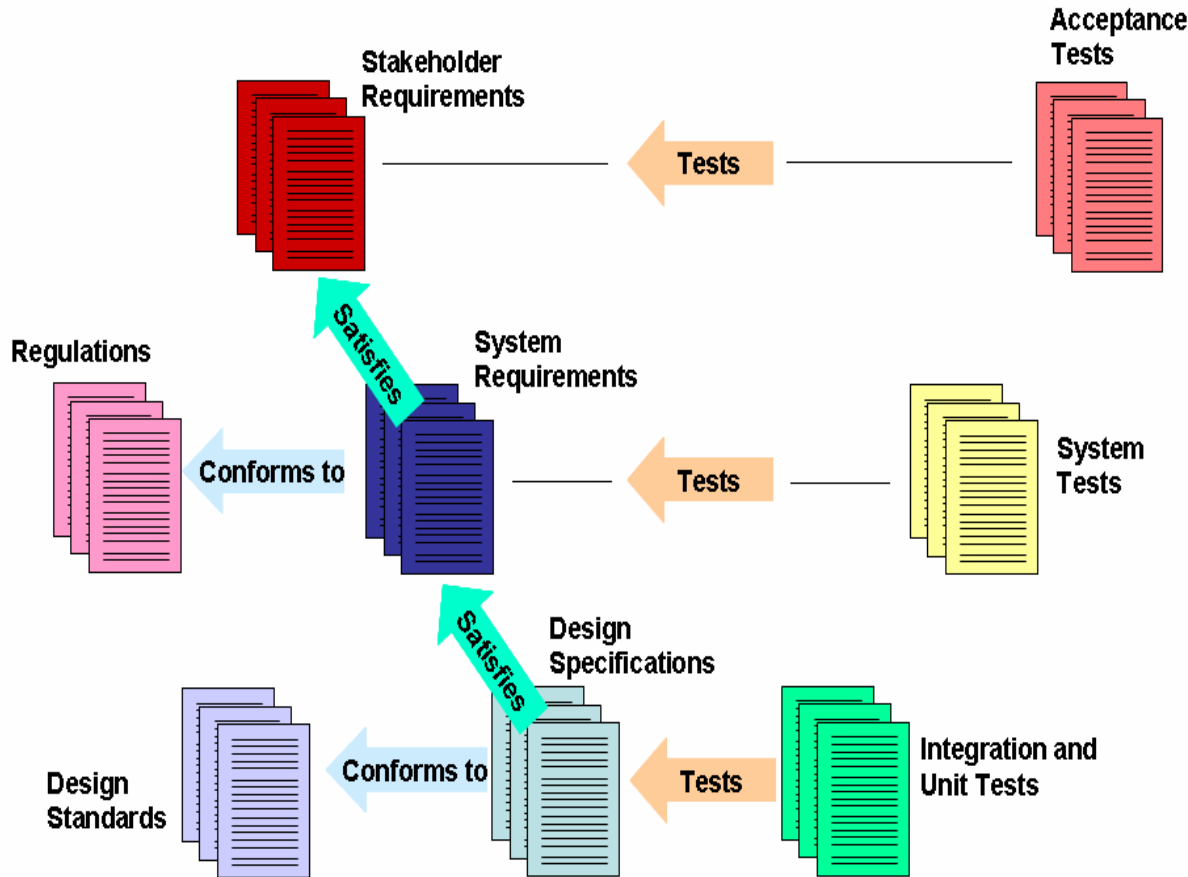
DOORS Integrations - Current



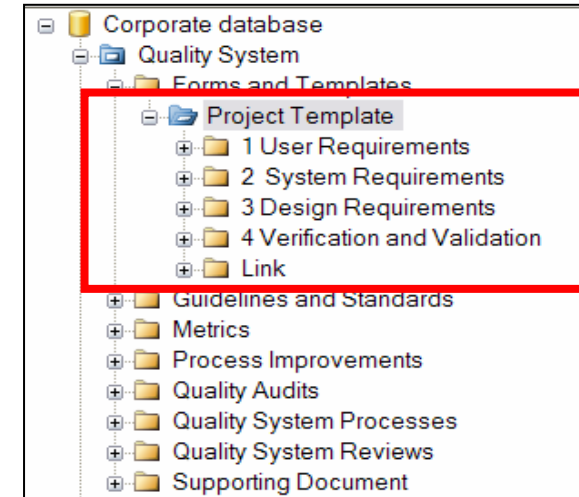
Project Architecture in DOORS



Database Schema contd.



Example of Project Template

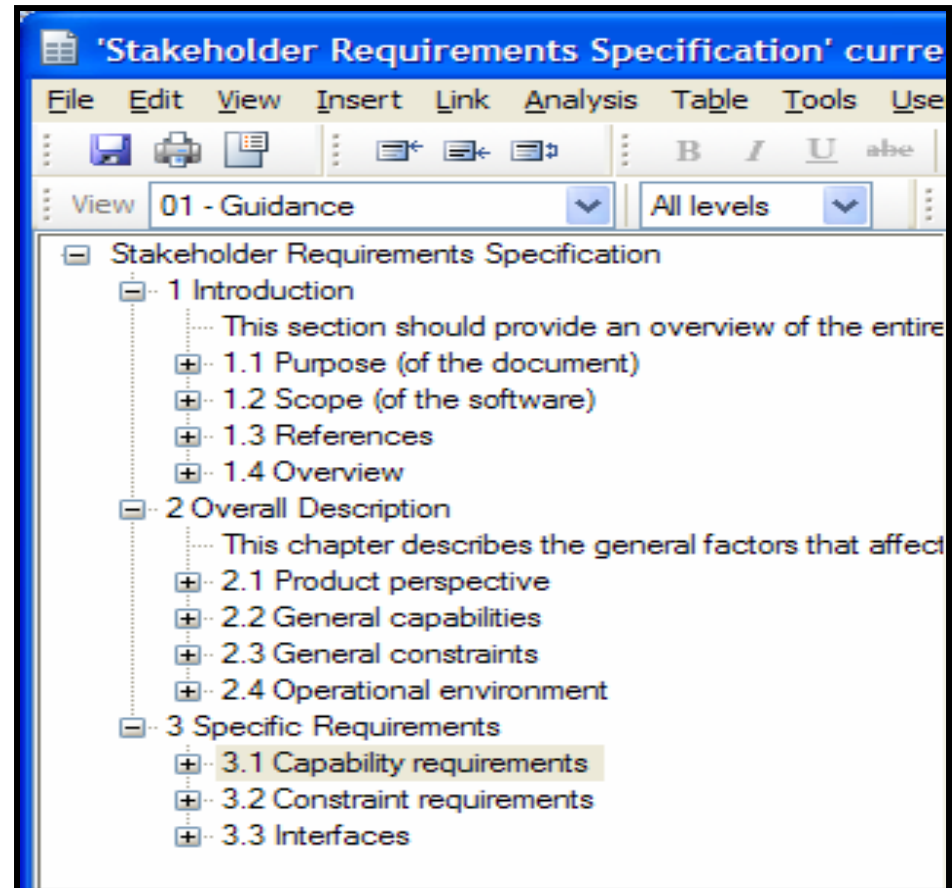


Module framework

Create a new module or use an archetype

Using archetypes enables re-use of the consistent schema and the best practices in the organization.

Template Example



Module framework

Module considerations to optimize performance

- History/Baselines
- Shareable Edit
- Views (default) –Module explorer, Layout/Attribute DXL
- Deleted Non-Purged Objects
- OLEs
- Tables



History/Baselines

The image displays two screenshots of the IBM Rational Software Conference 2009 interface, illustrating the History and Baselines functionality.

Left Window: Architectural design Properties - DOORS

General Access **History** Linksets Statistics Discussions Discussions Access List

User	Session	Date	Modification
Bill Young	1	8/7/2009 1:22:07 PM	Create Module

Details of selected history record

Show History of
 All Module Sessions

Only show entries with

Dates: from: 8/7/2009 1:20:22 PM to: 8/7/2009 1:20:22 PM

User:

Details... Refresh Export... OK Cancel Apply Help

Right Window: Architectural design Properties - DOORS

General Access **History** Linksets Statistics Discussions Discussions Access List

User	Session	Date	Modification
Bill Young	1	8/7/2009 1:22:07 PM	Create Module
Bill Young	1	8/7/2009 1:22:46 PM	Create Object 1
Bill Young	1	8/7/2009 1:22:46 PM	Modify Object 1: Object Heading
Bill Young	1	8/7/2009 1:22:46 PM	Create Object 2
Bill Young	1	8/7/2009 1:22:46 PM	Modify Object 2: Object Text
Bill Young	1	8/7/2009 1:22:46 PM	Create Object 3

Details of selected history record

View Baseline - DOORS

Select the baseline you want to view

Baseline	Created By	Created On	Deleted By	Deleted On
----------	------------	------------	------------	------------

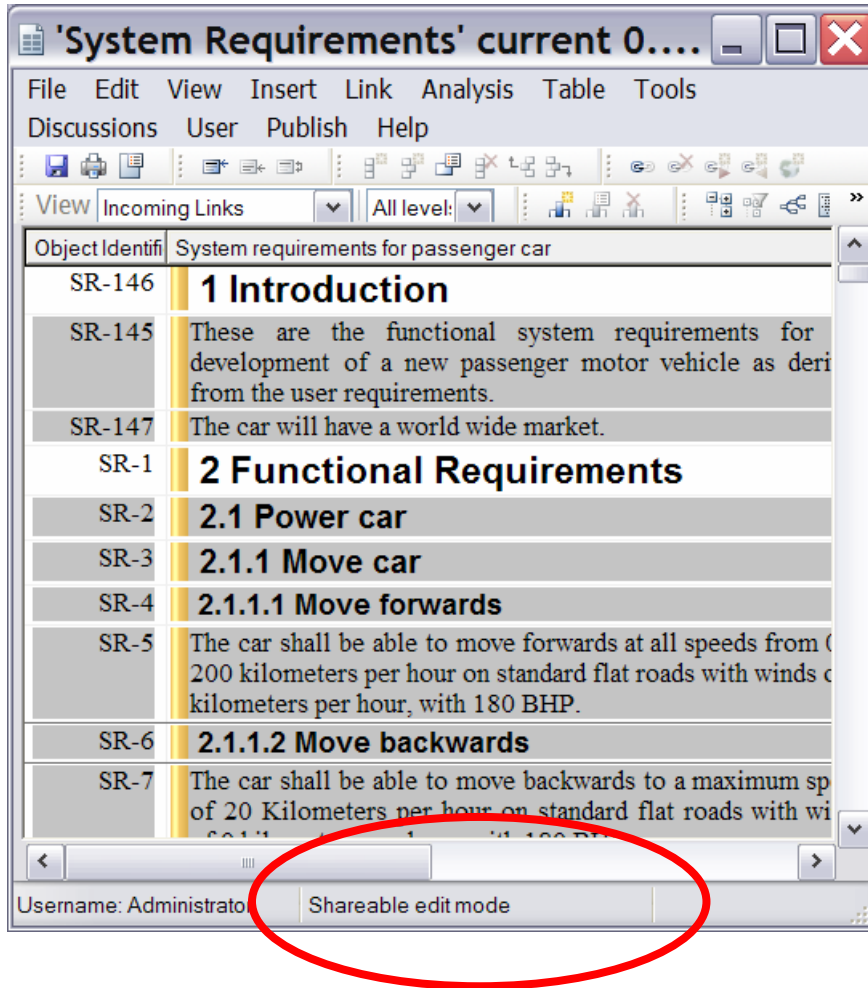
Baseline Set: View

Description

Open Signatures Cancel Help



Shareable edit



- Setup for sharing the module at levels 1, 2 or 3.
- Open the module in exclusive edit mode and save on a periodic basis

Views (default)

Module Explorer/Layout/Attribute DXL

The screenshot shows the 'Marketing Requirements' current 0.0 in /Training Car Project (Formal module) - DOORS. The interface includes a menu bar (File, Edit, View, Insert, Link, Analysis, Table, Tools, Discussions, User, TraceLine, RIF, addins, Help) and a toolbar. The main window is divided into three panes:

- Left Pane (Tree View):** A tree view showing the project structure under 'Marketing Requirements'. The root is '1 Plan journey', which contains several sub-items: 'The user shall be able to de...', 'The user shall be able to de...', 'The user shall be able to est...', 'The user shall be able to est...', 'The user shall be able to est...', '2 Prepare car', '2.1 Check car status', 'The user shall be able to...', 'The user shall be able to...', '2.2 Prepare basics', '3 Undertake journey', '3.1 Outward journey', '3.1.1 Enter car', '3.1.2 Load car', '3.1.3 Drive car', '3.1.4 Unload car', '3.1.5 Exit car', and '3.2 Return journey'. This entire tree view is enclosed in a red rectangular box.
- Table View:** A table with columns for requirements and their associated data. The table has four columns: 'A typical journey scenario', 'In-links at depth 1', 'In-links at depth 2', and 'In-links at depth 3'. The table contains several rows of requirements (MR-1 to MR-6) with their descriptions and associated object identifiers and text. This table area is enclosed in a red oval.
- Bottom Pane:** A status bar showing 'Username: izimm' and 'Exclusive edit mode'.



Deleted Non-Purged Objects

The screenshot displays two instances of the 'Architectural design' application window. The left window shows a tree view of the design structure and a table of objects. The right window shows a similar table but with some objects marked as deleted (indicated by a red 'X' in the status column). A dialog box titled 'Architectural design Properties - DOORS' is overlaid on the right window, showing statistics for the selected object. The 'Total objects' field is circled in red and contains the value 1920.

Architectural design Properties - DOORS

Total objects:	1920
Words in heading and text:	38412
Characters in heading and text:	216792
Words in other attributes:	0
Characters in other attributes:	0
Total words:	38412
Total characters:	216792

Buttons: Refresh, OK, Cancel, Apply, Help



OLEs

DOORS Database Properties - DOORS

General | Access | Login Policy | Password | Message of the Day | Welcome Screen | Discussions Access

Name: Default display scheme:

Type: Legacy data locale:

URL:

E-Mail

SMTP Mail Server:

Mail Account:

Prefix emails with text:

Directory Configuration

This database is currently set up to use DOORS Local Directory for user / group information as well as authentication.

Login History

Record failed logins

Record successful logins

OLE in History

Save OLE objects in attribute history

Baseline Deletion

Allow deletion of module baselines

Edit DXL

Only users with "Edit DXL" power may edit and run DXL

History Details - DOORS

From: (The user shall be able to see to route map in the specified area (s))

To: (The user shall be able to see to route map in the specified area (s))

Registry Editor

Name	Type	Date
develermode	REG_SZ	READ_WRITE
Home	REG_SZ	C:\Program Files\Telelogic\DOORS_8.1\
InstallDate	REG_SZ	9-30-2006
LayoutAddrs	REG_SZ	C:\Work Files\Misc Scripts_Layout Addrs
LocalData	REG_SZ	C:\Program Files\Telelogic\DOORS_8.1\temp
develermint	REG_SZ	5
ProjectAddrs	REG_SZ	C:\Work Files\Misc Scripts_Project Addrs\C\W
Security	REG_SZ	soft

My Computer \HNEY_LOCAL_MACHINE\SOFTWARE\Telelogic\DOORS\8.1\Config



Tables

- Use OLE for tables if:

The entire table represents a single requirement

The table does not contain requirements, and the data can be easily displayed in an OLE object

- ▶ Convert the table to DOORS text objects if:

Entire rows or columns represent single requirements

You want to be able to display and modify attribute values in a separate column for each requirement in the table

Setting linking schema

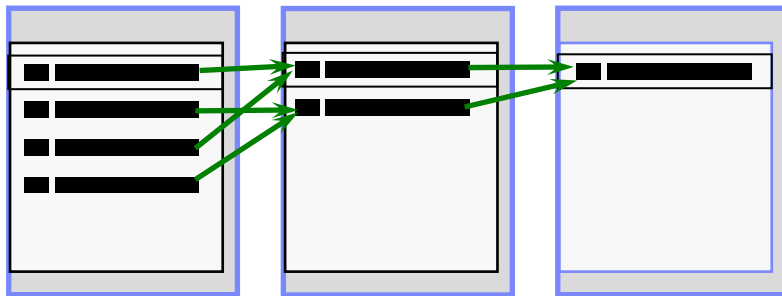
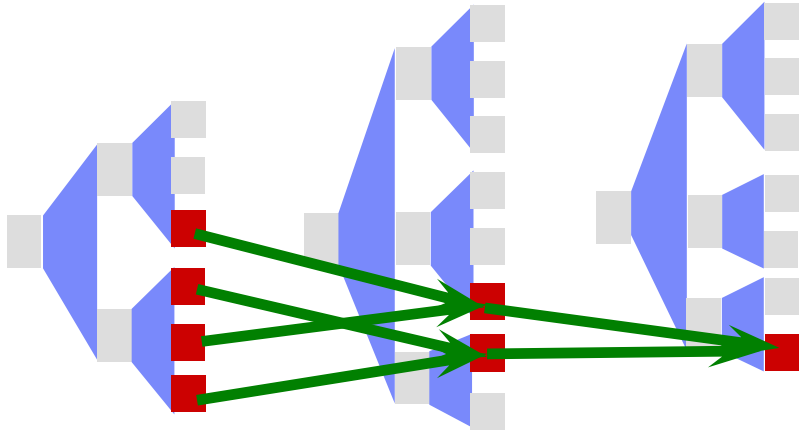
- Direction and Type of Links
- Use of DOORS Links
- Link Enforcement



Direction and Type of Links

Direction of links

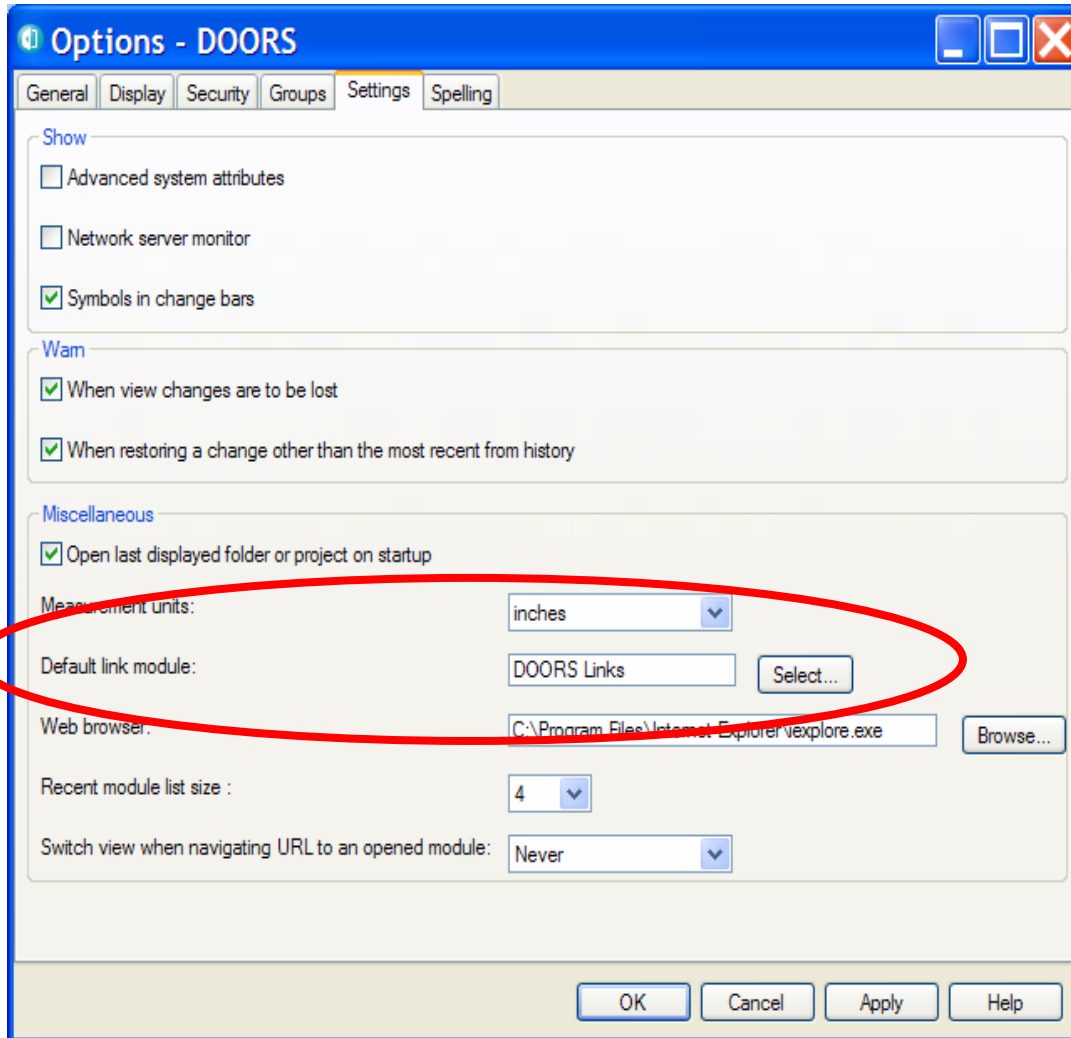
Architecture design **System requirements** **Stakeholder requirements**



Type of Links

- Satisfies links
- Verification links
- Recursive links
- Confirms to links

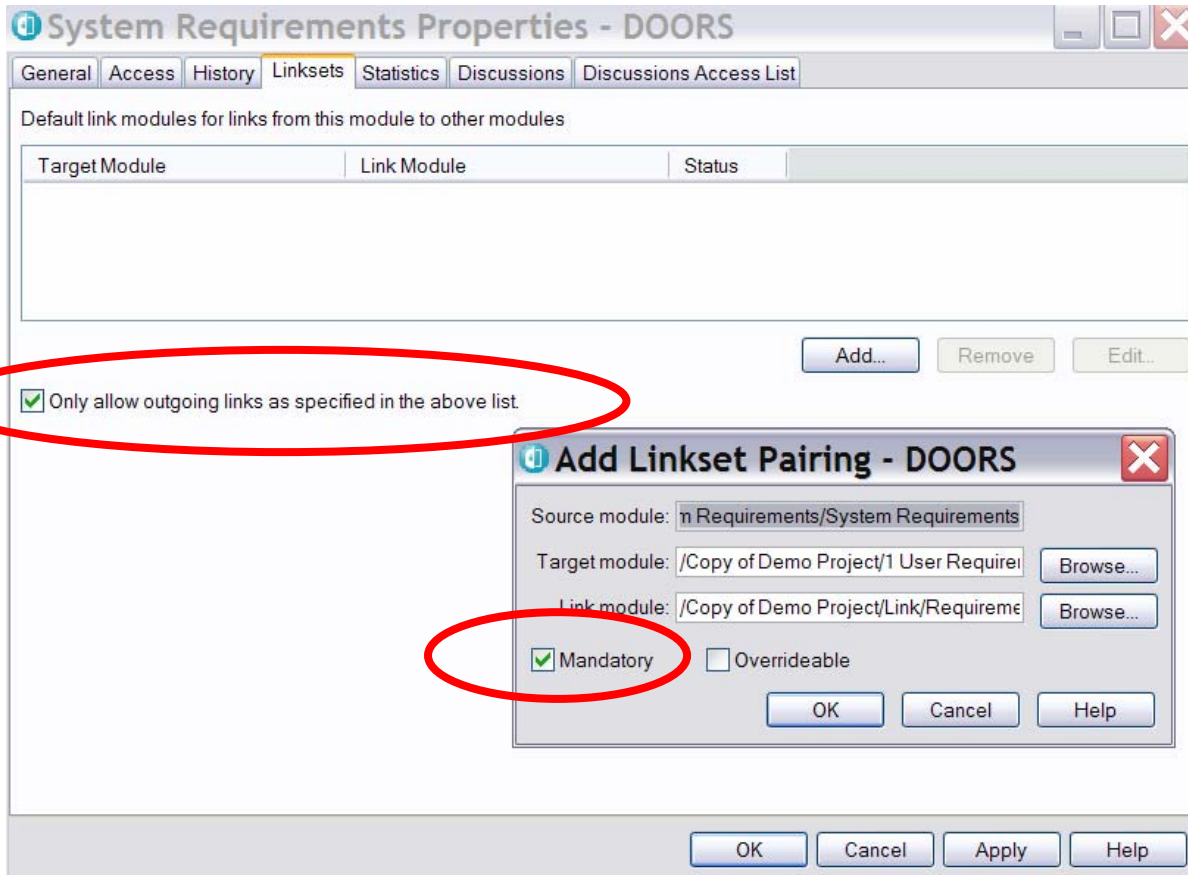
Use of DOORS Links



“DOORS Links” is the default

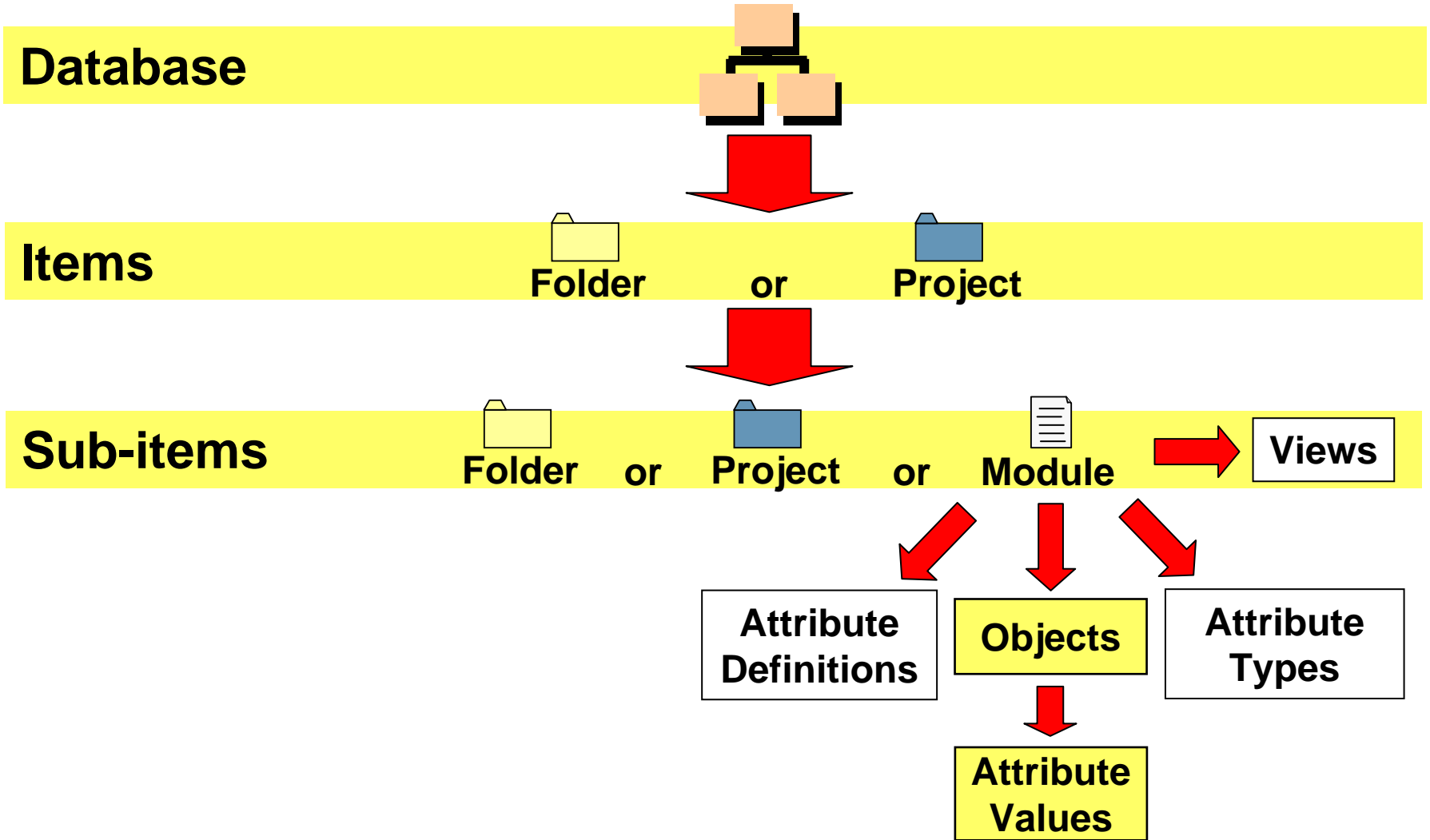


Link Enforcement



- Only allow outgoing links as specified in the above list
- Ensure every rule has a defined linkset

Access Rights Application

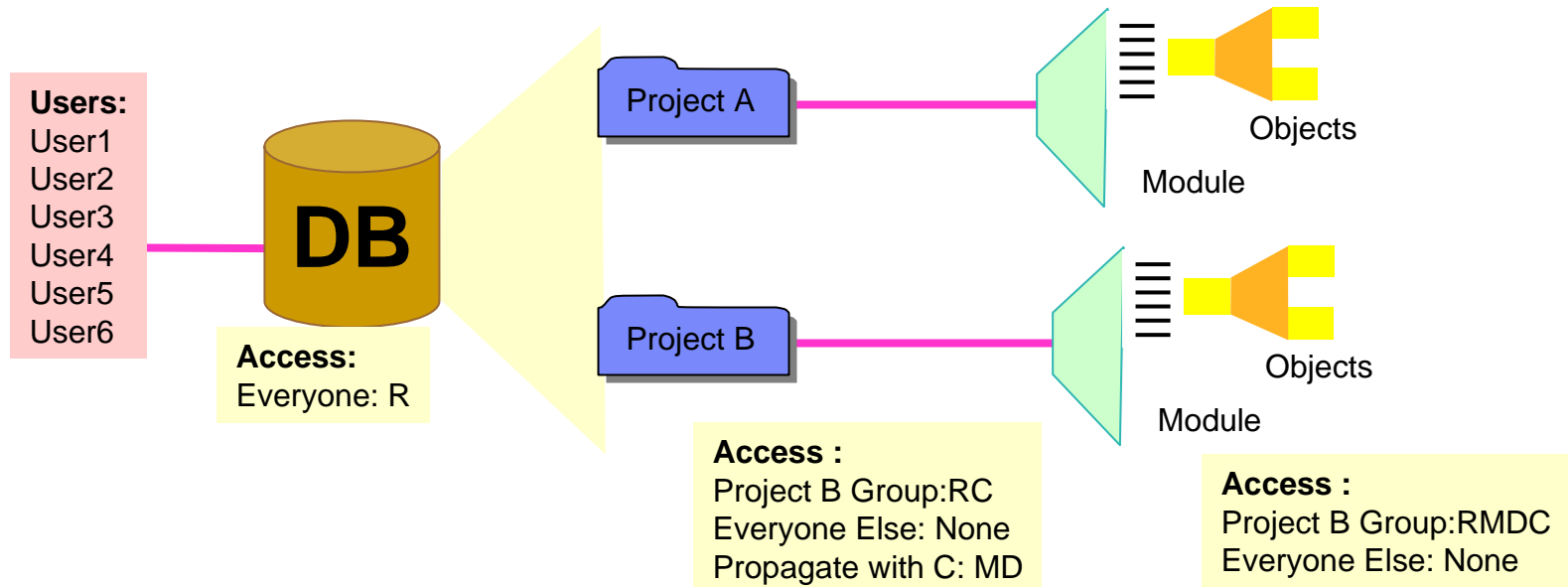


Access Control Strategies

- Use strict controls at top levels
 - Prevent accidental data moves and copies
- Use propagation to allow easier access
 - Each project/level can have separate access
- Use groups rather than named users
- Use groups for common permissions
 - Set project access to “None”
 - Explicitly allocate rights through groups
- No one (except the Admin Groups) should have access to anything as a default.
 - Users who are both Admins and Engineers should have two accounts to keep the work done separate.



Access Control Strategies - Example

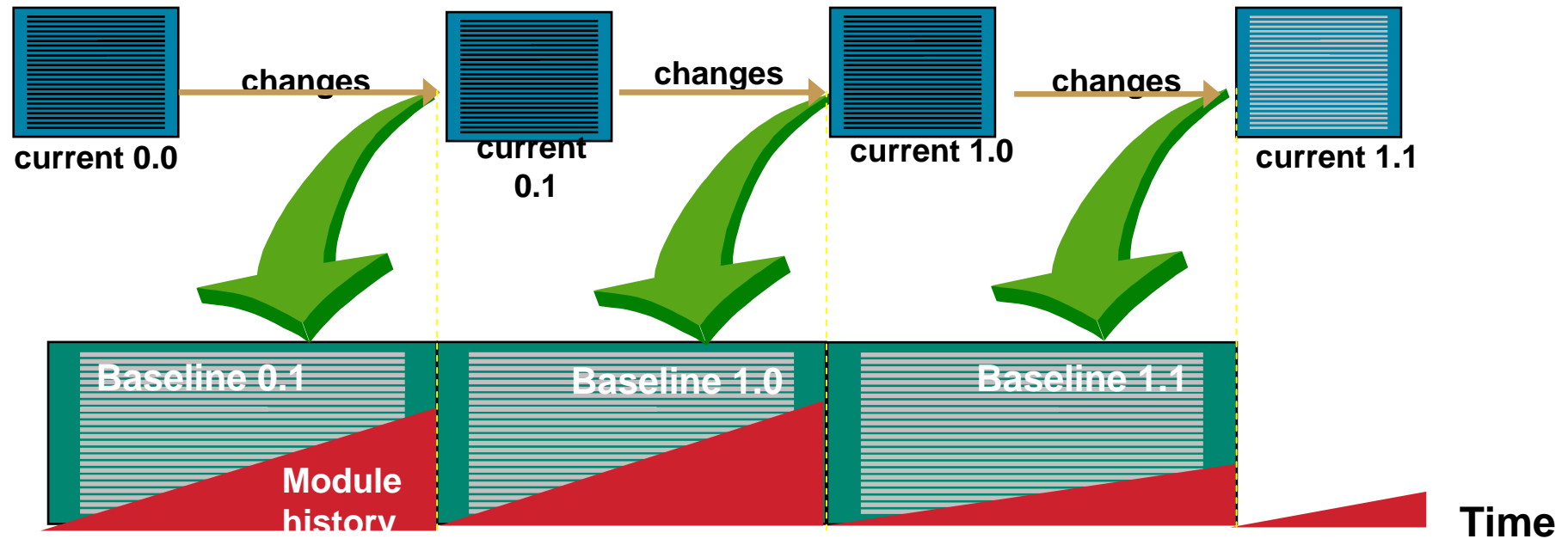


Group Definitions

Project A Group
 User1
 User2
 User3

Project B Group
 User2
 User4
 User5
 User6

Baselines

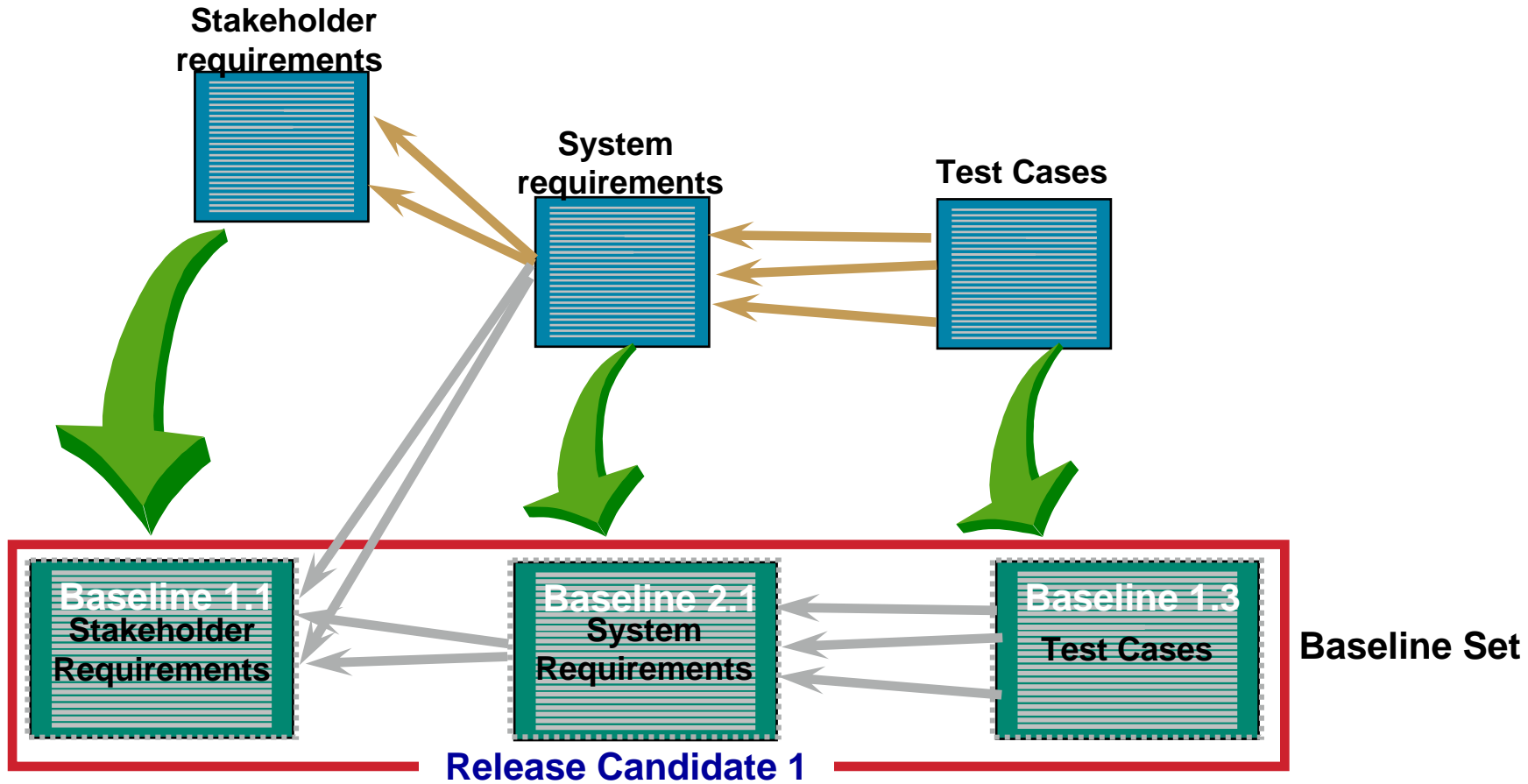


Some basic guidelines :

Minor baseline after initial import, after reformat , prior to purge of deleted objects

Major baseline after Review, consensus, Build Definition.

Baseline sets



Importing Legacy data from Word



Word Paragraph Styles

The screenshot shows a Microsoft Word document titled "Mkting - Microsoft Word". The document content is structured as follows:

- 1.0 Marketing Scenario Documentation** (Level 1 DOORS Heading)
 - These are requirements for the new car project developed by the marketing department. (Level 2 DOORS Text Object)
- 2.0 Plan journey** (Level 2 DOORS Heading)
 - The user shall be able to decide date of journey. The user shall be able to decide route of journey.
 - The user shall be able to estimate distance of journey.
 - The user shall be able to estimate fuel required for journey and shall be able to estimate duration time for journey. (Level 3 DOORS Text Object)
- 3.0 Prepare Car** (Level 2 DOORS Heading)
 - 3.1 Check car status** (Level 3 DOORS Heading)
 - The user shall be able to ascertain fuel state.
 - The user shall be able to ascertain maintenance state. (Level 3 DOORS Text Object)
 - 3.2 Prepare basics** (Level 3 DOORS Heading)
 - The user shall be able to fuel car.
 - The user shall be able to top up fluid levels. (Level 3 DOORS Text Object)

Checking Styles

The screenshot shows a Microsoft Word document titled "Mkting - Microsoft Word". The document content is as follows:

- Heading 1:** 1.0 Marketing Scenario Documentation
- Normal:** These are requirements for the new car project developed by the marketing dep
- Heading 1:** 2.0 Plan journey
- Normal:** The user shall be able to decide date of journey. The user shall be able to deci
- Normal:** The user shall be able to estimate distance of journey.
- Requirement:** The user shall be able to estimate fuel required for journey and shall be able to journey.
- Normal:**
- Normal:**
- Heading 2:** 3.0 Prepare Car
- Heading 2:** 3.1 Check car status
- Normal:** The user shall be able to ascertain fuel state.
- Normal:** The user shall be able to ascertain maintenance state.
- Heading 2:** 3.2 Prepare basics
- Normal:** The user shall be able to fuel car.
- Normal:** The user shall be able to top up fluid levels.
- Heading 1:** 4.0 Undertake journey
- Heading 4:** 4.1 Outward journey
- Heading 3:**

The Styles and Formatting task pane on the right shows the following information:

- Formatting of selected text:** Requirement : Heading 6 + Font: 10 pt, Not Italic, Space Before: 0 pt, After: 0 pt, Automatically update
- Pick formatting to apply:**
 - Heading 2 + Not It
 - Heading 3
 - Heading 3 + Bold
 - Heading 4
 - Heading 5
 - Heading 6
 - Heading 7
- Show:** Available formatting

The status bar at the bottom indicates: Page 1, Sec 1, 1/2, At 5.7cm, Ln 6, Col 1, REC, TRK, EXT, OVR, English (U.S.).



Export to DOORS

'Marketing Scenario Documentation' current 0.0 in /Training Database (Formal module) - DOORS

File Edit View Insert Link Analysis Table Tools User Help

View Standard view All levels

ID	Marketing Scenario Documentation
1	1 Marketing Scenario Documentation
2	These are requirements for the new car project developed by the marketing department.
3	2 Plan journey
4	The user shall be able to decide date of journey. The user shall be able to decide route of journey.
5	The user shall be able to estimate distance of journey.
6	2.0-2.1
7	2.0-2.1.1
8	2.0-2.1.1.1
9	2.0-2.1.1.1.1 The user shall be able to estimate fuel required for journey and shall be able to estimate duration time for journey.
10	3.0 Prepare Car
11	2.1 Check car status
12	The user shall be able to ascertain fuel state.
13	The user shall be able to ascertain maintenance state.
14	2.2 Prepare basics

Username: Bill Young Exclusive edit mode



Summary

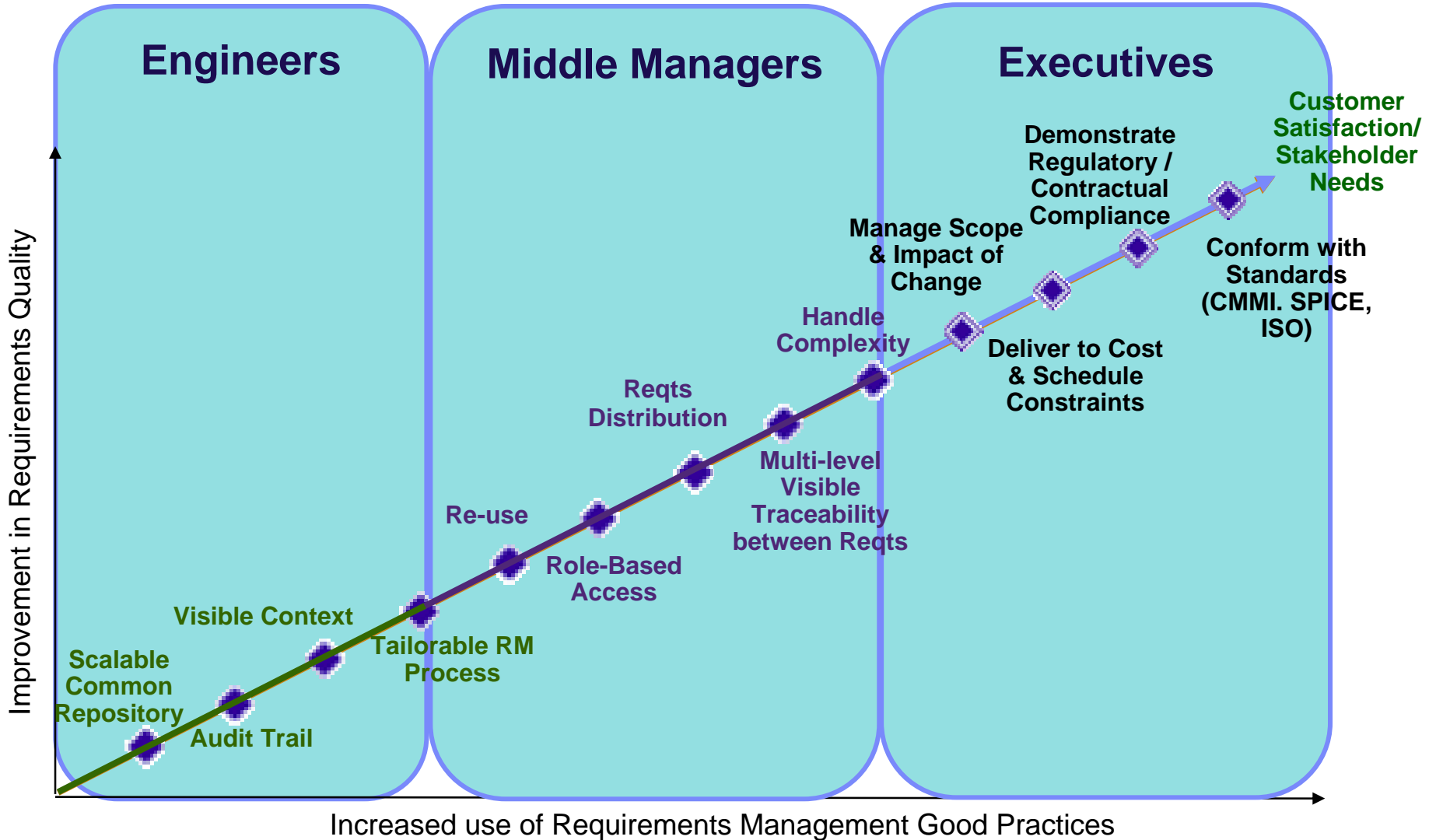


Benefits

- Re-usability
- Performance optimization
- Traceability/Impact Analysis
- Effective word imports
- Effective Management of Access Controls



What RM Best Practice Means to Stakeholders



Acknowledgement

Ian Zimmermann, IBM Software Group

Bob Parro, River North Solutions



DEMO

Questions

Thank You

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