

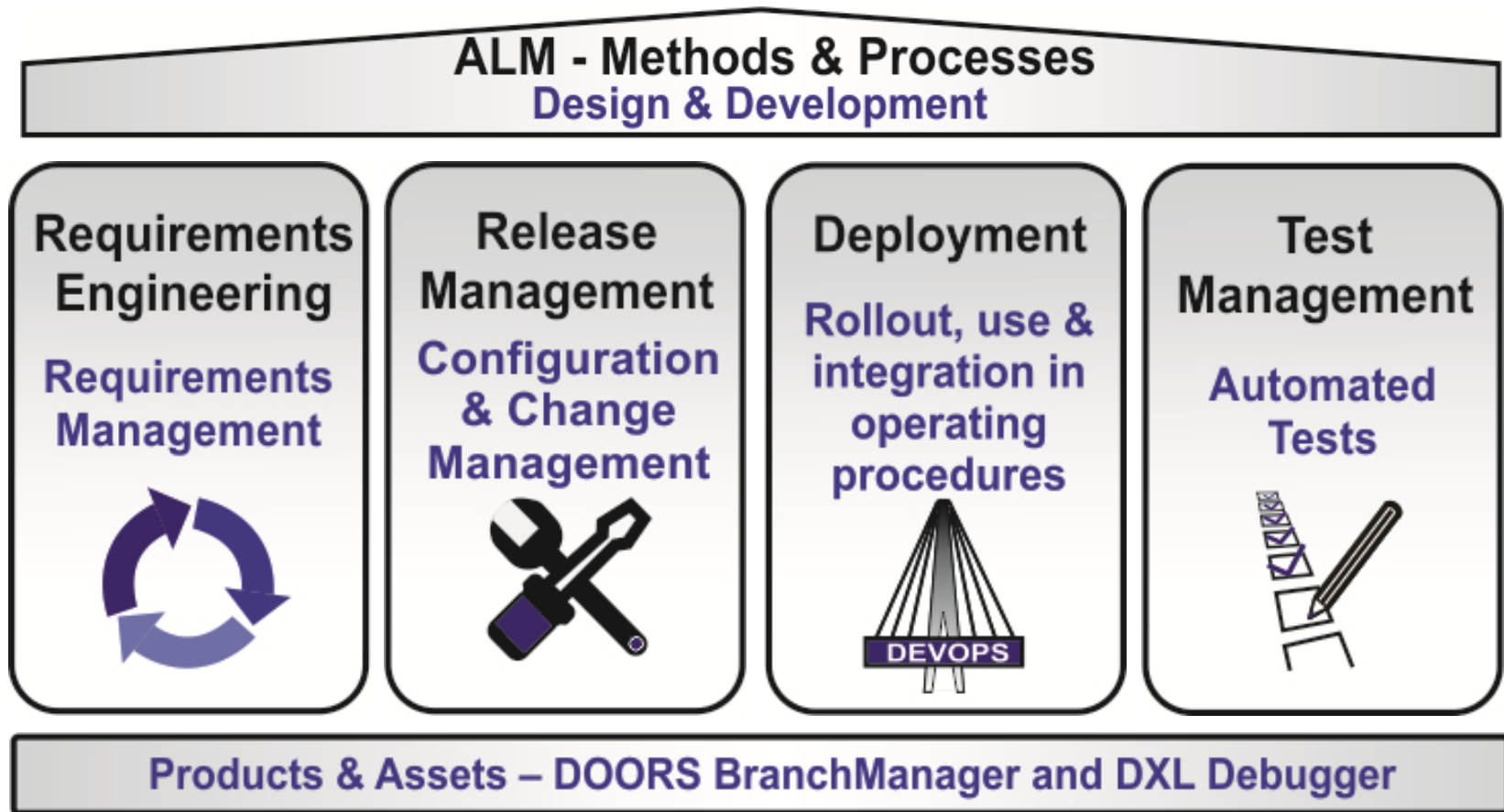


BranchManager for DOORS

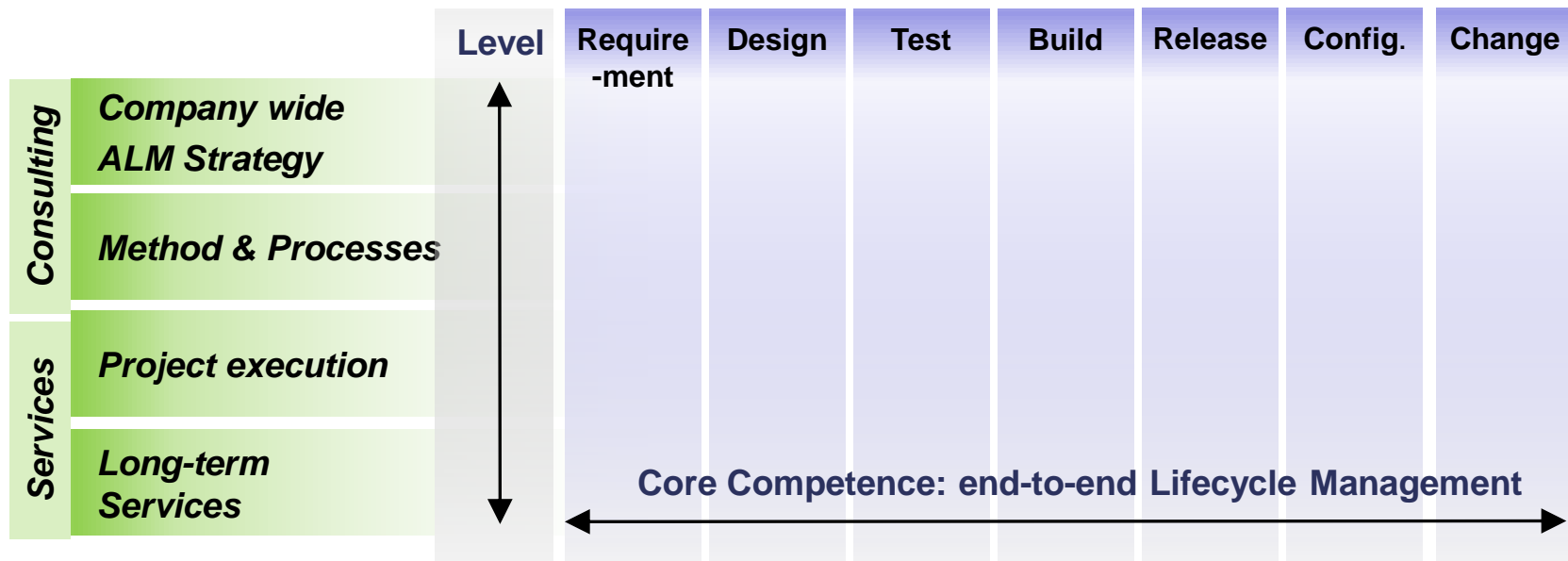


branchmanager@it-qbase.com

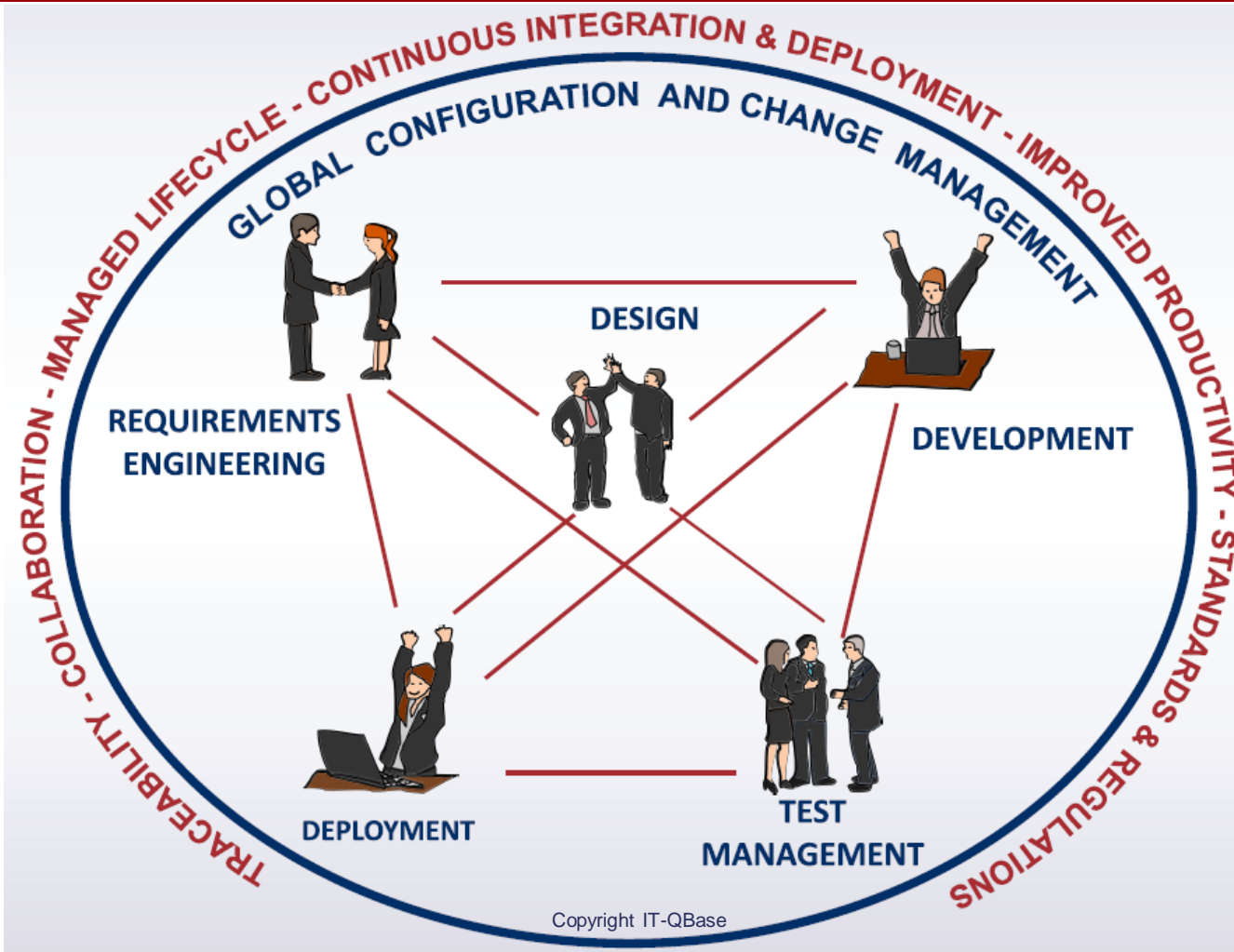
- Founded in 2003, located in Frankfurt, Germany
- Managing Director: Adrine Hairapetian



- Our core competence is to treat the comprehensive approach to Application Lifecycle Management (ALM) – from the requirement to the deployment
- Our services range from the practical implementation of concrete results to strategic consultancy of middle and high management concerning potential capabilities and ways to handle ALM topics

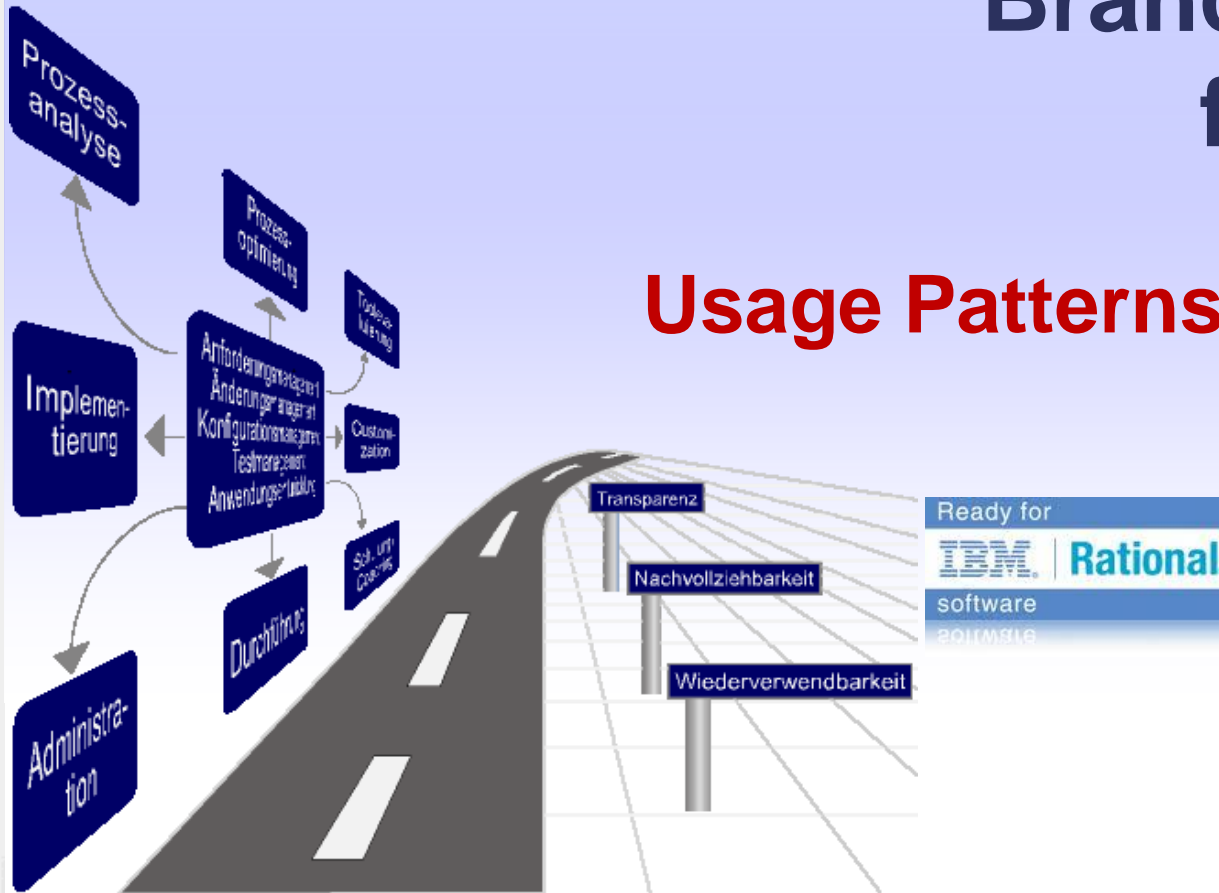


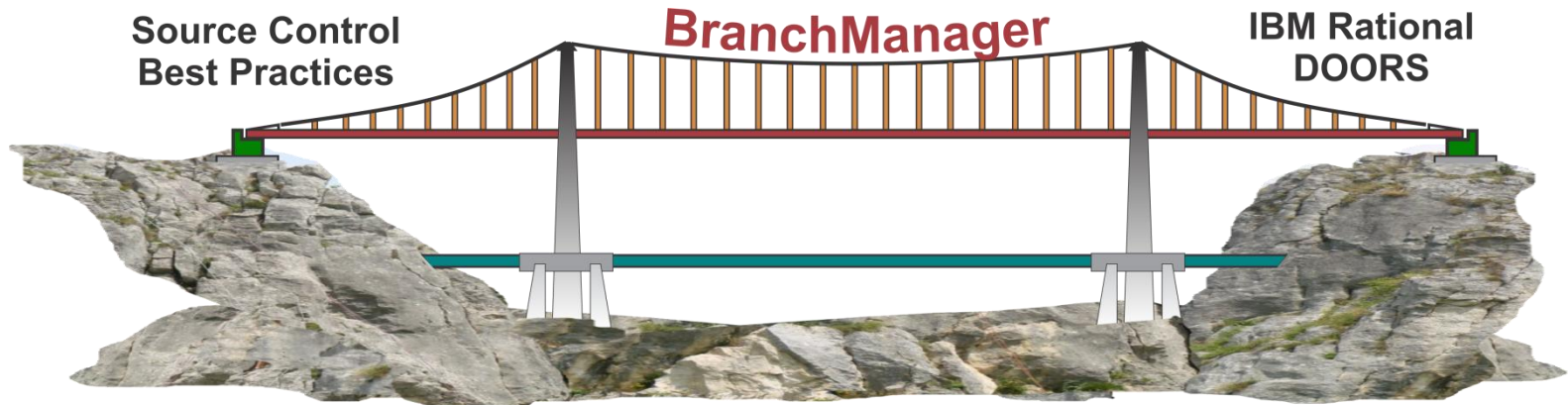
- IT-QBase' mission is to **improve the engineering process** through **advanced interoperability solutions**.
- IT-QBase excels at:
 - **collabrative lifecycle management and flow of Engineering data**
 - **Exchange and Synchronization of Engineering data**
 - **Customized and Optimized Generation of Engineering artifacts**
 - the **Amplification of Engineering expertise** across an organization through automation tooling



BranchManager for DOORS

Usage Patterns & Examples





- DOORS BranchManager provides **version and variant management for DOORS**
- Especially to create a base for fulfillment of authority rules like SPICE, DO178B/C, EN50128, IEEE 1558, CMMI, IRIS
- This solution will be successfully used in the industries Aerospace, Transportation, Automotive, Telecommunication and Government

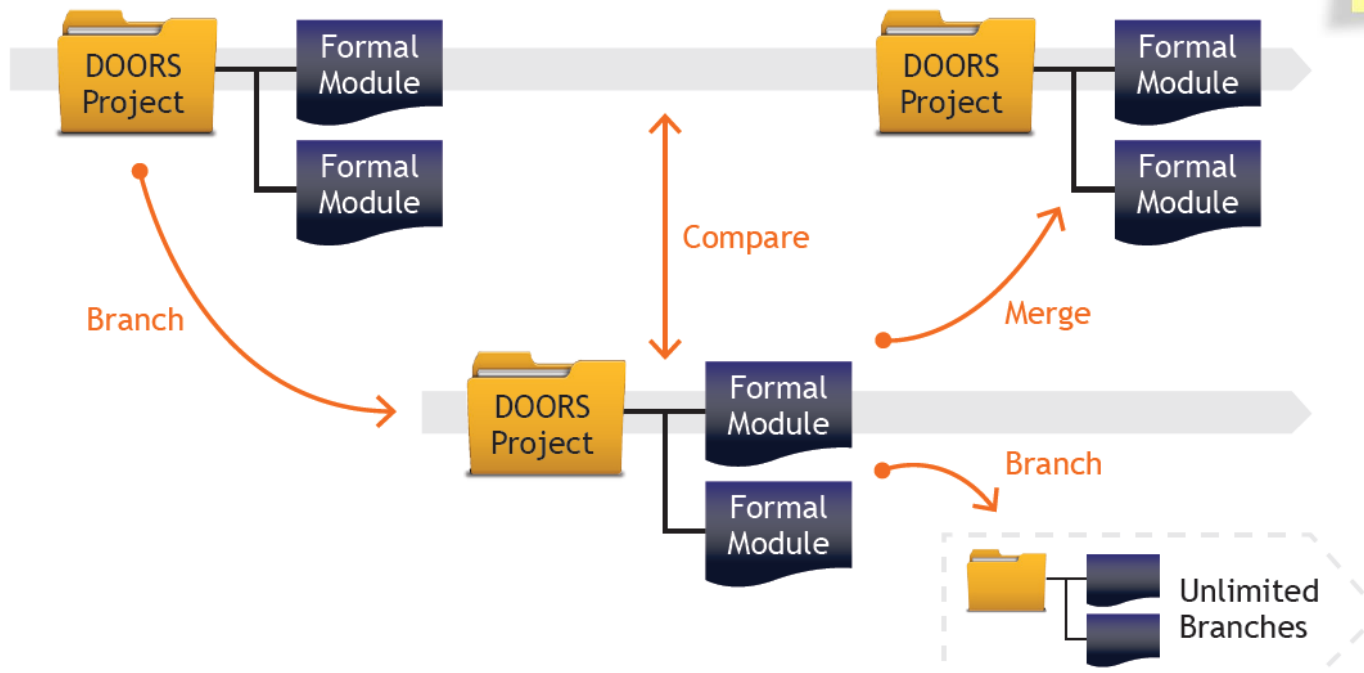
DOORS BranchManager provides Stream management to Rational DOORS

Challenge: Manage similar requirements set across many projects

- Provide the ability to compare formal modules with differences in content and structure
- Provide the ability to branch sets of modules as a new stream of requirements
- Provide the ability to merge changes across branches

BranchManager for DOORS Usage

- Product Line Engineering
- Maintenance Streams
- Requirements Library
- Personal Sandbox
- ...



Fully integrated in DOORS Database Explorer and Module window

The screenshot displays two windows from the DOORS BranchManager application. The top window, titled 'DOORS Database: /Integration_Test_Data - DOORS', shows a tree view of the database structure. The bottom window, titled ''HRD' current 3.0 (INT2014-11-12) in /IntegrationTest_BranchA (Formal module) - DOORS', shows a detailed view of a module with a table and descriptive text. Both windows have their 'Configuration Mgt' menus open, with red boxes highlighting the menu items.

Top Window Menu Items:

- Branch Modules
- Show Branch History
- Restore Branch Archive
- Topological Sort
- Edit Tag Lists
- Technical Information
- Setup Tutorial
- Use Information...
- Contents...

Bottom Window Menu Items:

- Refresh Comparison Columns
- Copy Layout DXL To Attribute
- Compare Modules
- Integration
- Quick Merge
- Show Branch History for Current Module
- Relink Source Module
- Technical Information
- Help Contents...
- About

Table in Bottom Window:

ID	Description
1	1 Description
72	<input checked="" type="checkbox"/> This module is autoge " _ Compare Test Data add a new text.
2	<input checked="" type="checkbox"/> This is a test data mo comparison and come - Link Target (Formal - DOORS Links (Link)

Branch modules

Branch Copy - DOORS

This script will copy the selected modules from the source project branch, to the target project branch, trying to recreate the links to already existing objects. Only those modules will be copied, that do not already exist in the target branch.

Selected source modules to be branched:

Select Modules

Module Name (Baseline)
HRD (3.0 INT2014-11-12)
SES (1.0)

Select target project:
/my new branch

Recreate links to foreign projects
 Redirect links to objects that
 Do not allow new links outside
 Create log of branching operations

Please select the modules to be branched - DOORS

IntegrationTest_BranchA

- HRD
 - 0.0
 - 1.0
 - 1.0 (xyz)
 - 2.0
 - 3.0 (INT2014-11-12)
- SES
 - 0.0
 - 1.0

Module Name	Baseline	Module Path	ID
<input checked="" type="checkbox"/> HRD	3.0 INT2014-1...	/IntegrationTest...	00000941
<input checked="" type="checkbox"/> SES	1.0	/IntegrationTest...	00000942

Select All
Unselect All
Invert Selection
Remove Selected
Search

Insert all from Folder

Show Complete Database

TagLists Baselines

Load Most Recent Baselines Load Baseline Set

Use selected modules Cancel Help

Choose modules and baselines

Integration of HRD - DOORS

Open Source Source Module: /Base/HRD (current)
 Open Source Base Source Base: /Base/HRD (1.0)
 Open Target Target Module: /IntegrationTest_BranchA/HRD (current)
 Open Target Base Target Base: /Base/HRD (1.0)

Changes:

- Non Conflicted Changes
 - module 0 (A)
 - object 7 (U)
 - (U) Object Undeletion [4]
 - object 32 (D)
 - object 39 (S)
 - (S) Structure Change [11]
 - object 37 (S)
 - object 19 (L)
 - object 24 (A)
 - cell 50 (D)
 - cell 146 (C)
 - cell 58 in 'HRD' (P)
- Conflicted Changes
 - object 72 (A)
 - (A) Object Text [92]

Refresh All

Changes in source module:

The attribute 'Object Text' of this object was changed:
 This module is autogenerated by the makeTestData_Compare.dxl script xxx. Start the script with the "_Compare Test Data - Base" as a current module.

Conflict Information (changes in current Module):

One of the following changes in the target conflicts with at least one of the source changes:
The attribute 'Object Text' of this object was changed:
 This module is autogenerated by the makeTestData_Compare.dxl script. Start the script with the "_Compare Test Data - Base" as a current

Merge Selected Changes Mark Object as Integrated

Merge All Non Conflicted

A = attribute change, C = create new object, T = picture change,
 D = (soft)delete object, U = undelete object, L = link change, E = external link change,
 S = structural change, P = purge object, B = base difference (possible conflict)

Settings Abort Integration Finalize Integration Save and Continue Later

Comparison Finished!

Merge Modules

hA (Formal module) - DOORS

Discussions User Configuration Mgt Change Management Help

Source Changes	Target Changes	Conflict Information
<p>The attribute 'Object Heading' of this object was changed: Description of test data structure</p> <p>The attribute 'Object Text' of this object was changed: This module is autogenerated by the makeTestData_Compare.dxl script xxx. Start the script with the "_Compare Test Data - Base" as a current module.</p>	<p>The attribute 'Object Heading' of this object was changed: Description of test data structure</p> <p>The attribute 'Object Text' of this object was changed: This module is autogenerated by the makeTestData_Compare.dxl script. Start the script with the "_Compare Test Data - Base" as a current module. add a new text.</p>	<p>One of the following changes in the target conflicts with at least one of the source changes: The attribute 'Object Text' of this object was changed: This module is autogenerated by the makeTestData_Compare.dxl script. Start the script with the "_Compare Test Data - Base" as a current module. add a new text.</p>

Compare

Comparison mechanism identifies differences between baselines and across branches

Its intelligent comparison engine can compare based on a selectable list of attributes...

...and can detect changes in attributes, OLE objects, links and structural changes such as moving a requirement in the hierarchy.

- Modify / delete/ add
- Text attributes
- OLE-Attributes
- DOORS pictures
- DOORS tables
- Link changes
- Object displacements

The screenshot shows the DOORS BranchManager interface. At the top, there's a menu bar with 'File', 'Edit', 'View', 'Insert', 'Link', 'Analysis'. Below it, a toolbar and a 'View' dropdown set to 'Standard view'. The main area is split into two panes. The left pane shows a table titled 'User Interface Options' with columns for 'Keypad', 'Numeric', and 'Alphanu'. The right pane shows a list of requirements with their status. A blue callout box is overlaid on the right side, listing comparison capabilities with red checkmarks.

Display	Keypad	Numeric	Alphanu
Basic	x		
Small Color	x	x	
Large Color		x	

object is new. object is new.

'Object Text' was changed: The system shall have support multiple sensors/sensors to detect the status of a window. object 23 in /AlarmSystem/HighLevelRequire

'Object Text' was changed: The system shall have support multiple sensors/sensors to detect the status of a window. object 23 in /AlarmSystem/HighLevelRequire

10 1.3 Sensor Network

45 The sensor network shall be a wireless system.

11 1.4 Sensor Types

21 1.4.1 Door Monitor

24 The system shall have a sensor to detect the status of the door.

25 The allowable status of the door shall be either 'open' or 'closed'.

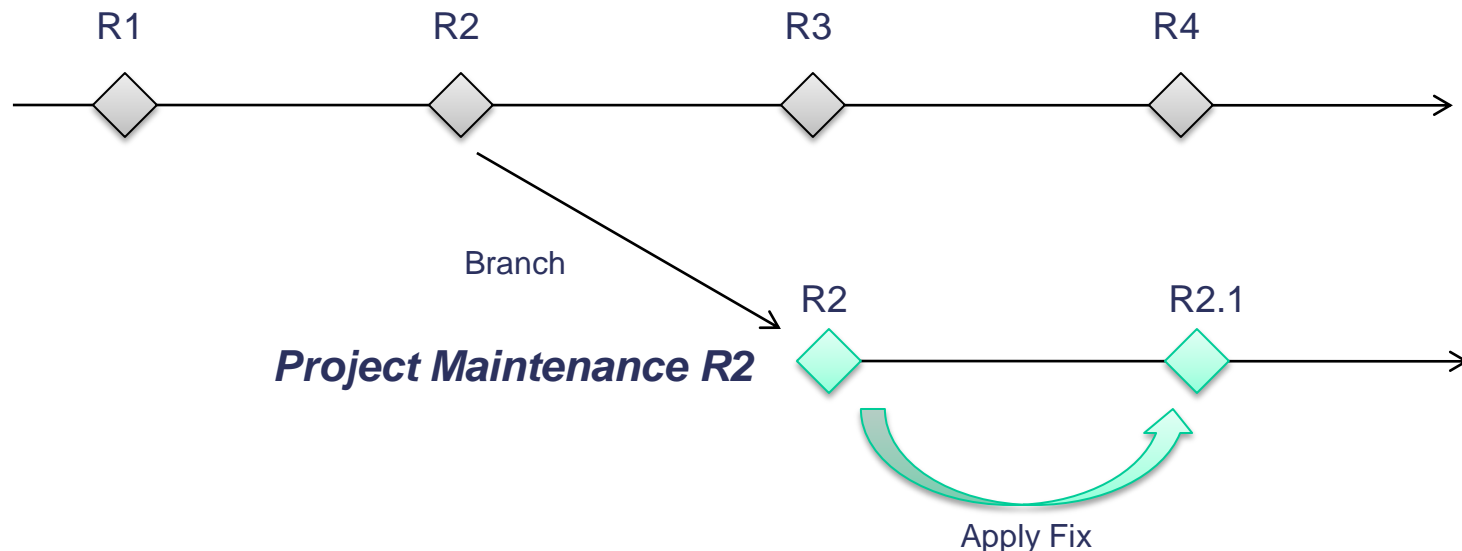
22 1.4.2 Window Monitor

26 The system shall support multiple sensors to detect the status of a window.

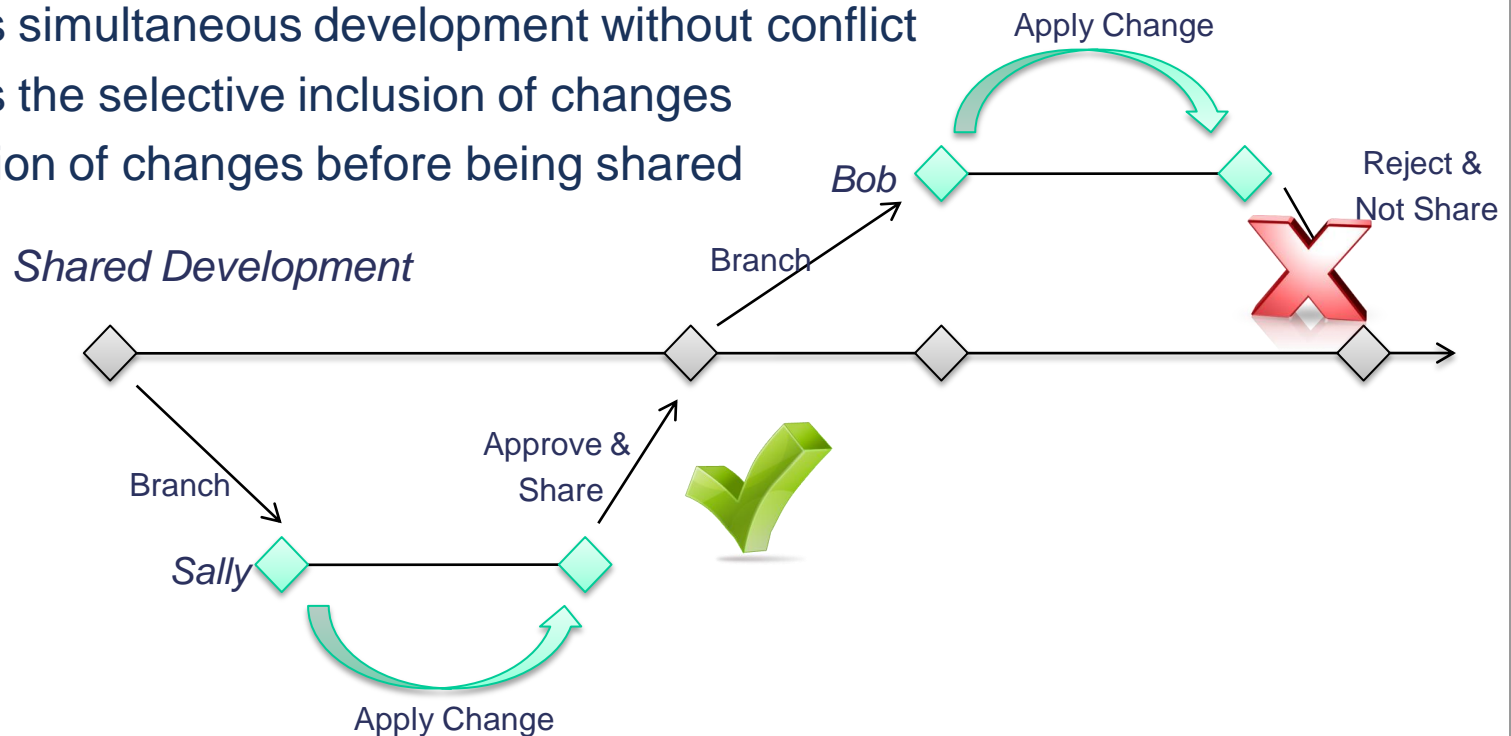
27 The system shall have a window status of either 'open' or 'closed'.

- What
 - Branch off the main development to support released product
- Why
 - Enable a clear separation of current development and released and maintained assets

Project Development



- What
 - Branch off the main development to individual development
- Why
 - Enable a clear separation of current approved content
 - Enables simultaneous development without conflict
 - Enables the selective inclusion of changes
 - Evaluation of changes before being shared



■ What

-Baseline set of requirements set over an entire product base. Boilerplate requirements, baseline capabilities, “platform” requirements.

■ Why

Common sets of requirements are common across multiple products

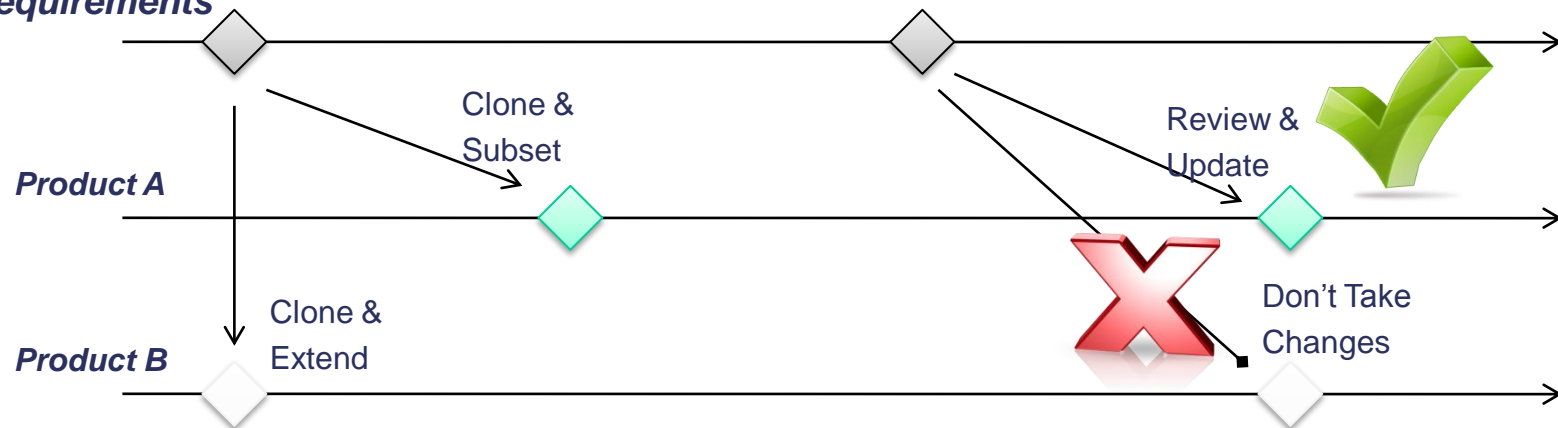
Subset & extend requirements

Identify changes and merge updates from the common set.

Update the core requirements

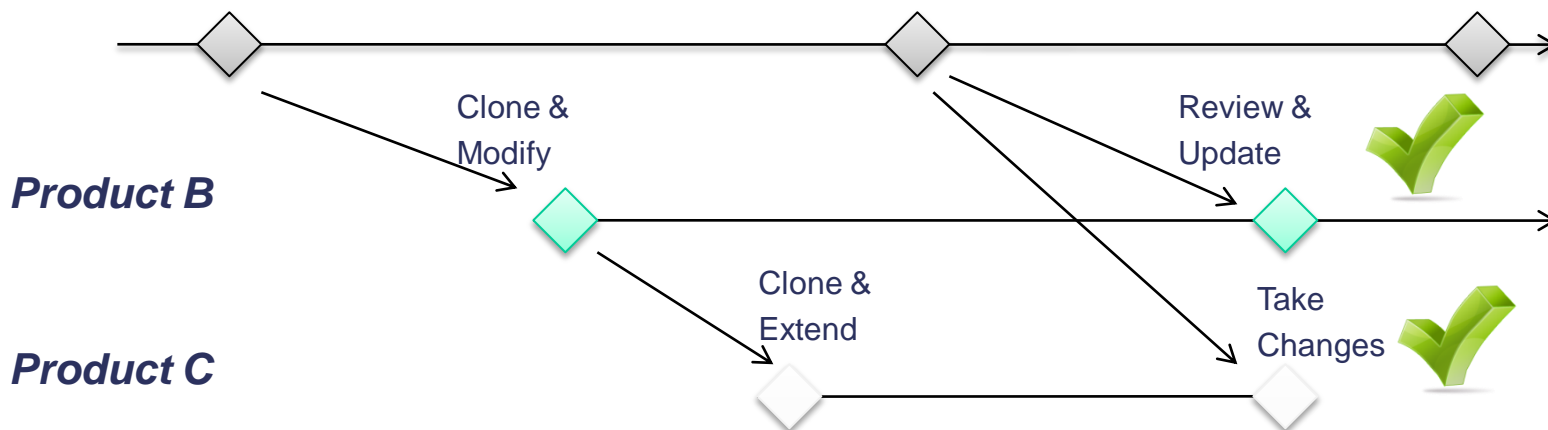
Standard

Requirements



- What
Creation of a new product as a subset or extension of an existing product
- Why
Allows rapid creation of a new product
Still enables sharing across products

Product A (Original)



- DOORS® Projects become Branches
 - Containerizes concepts and naturally contributes
- Object Relationships captured in Metadata
 - Available in tooling to enhance functionality to the user
- Comparison Technology presented in DXL layout
 - Provides view flexibility and efficient update performance
- Three way merge solution for “pull-basis”
 - Common parent eases change assessment and merge choices
- Quick merge
 - Enables update to multiple streams at once

Trunk

- HWRequirements
- SoftwareRequirements
- SystemRequirements

Location: /Trunk/SystemRequirements

Name	Type
HRD	Formal
SES	Formal

↓

- Branch Replicates
- Structure and Content

Release_20121031_Maintenance

- HWRequirements
- SoftwareRequirements
- SystemRequirements

Location: /Release_20121031_Maintenance/SystemRequirements

Name	Type
HRD	Formal
SES	Formal

Branch History - DOORS

Selected Modules

Name	Branch + Folder	Last Modified
HWRS	/Release_20121031_Maintenance/HWRequirements	2012-11-13, 05:08:49
HRD	/Release_20121031_Maintenance/SystemRequirements	2012-11-13, 05:08:57
SES	/Release_20121031_Maintenance/SystemRequirements	2012-11-13, 05:08:54
SWRS	/Release_20121031_Maintenance/SoftwareRequirements	2012-11-13, 05:08:56

Module History

Date	Action	Details
2012-11-08	Baseline	Of: /Base/SES (1.0)
2012-11-08	Branch	From: /Base/SES (1.0), To: /IntegrationTest_BranchA/SES (0.0)
2012-11-08, 21:49:06	Baseline	Of: /IntegrationTest_BranchA/SES (1.0)
2012-11-08, 21:50:27	Branch	From: /IntegrationTest_BranchA/SES (1.0), To: /IntegrationTest_BranchAD/SES (0.0)
2012-11-12, 17:52:39	Branch	From: /IntegrationTest_BranchAD/SES (0.0), To: /Trunk/SES (0.0)
2012-11-13, 05:08:54	Branch	From: /Trunk/SystemRequirements/SES (0.0), To: <selected module> (0.0)

Export upper plane to Excel | Show integration with Source Branch | Close

Creating a Branch

Please select the Modules to be branched - DOORS

Release_20121031_Maintenance

Module Name	Baseline	Module Path	ID
<input checked="" type="checkbox"/> HWRS	0.0	/Release_2012...	00000280
<input checked="" type="checkbox"/> HRD	0.0	/Release_2012...	000002a0
<input checked="" type="checkbox"/> SES	0.0	/Release_2012...	000002a1
<input checked="" type="checkbox"/> SWRS	0.0	/Release_2012...	000002c0

Buttons: Select All, Unselect All, Invert Selection, Remove Selected, Search

Insert all from Folder | Show Complete Database

Tag Lists | Baselines | Load Most Recent Baselines | Load Baseline Set

Use selected Modules

Branch Copy - DOORS

This script will copy the selected modules from the source project branch, to the target project branch, trying to recreate the links to already existing objects. Only those modules will be copied, that do not already exist in the target branch.

Selected source modules to be branched:

Select Modules

Modulename (Baseline)

- HWRS (0.0)
- HRD (0.0)
- SES (0.0)
- SWRS (0.0)

Select target project:

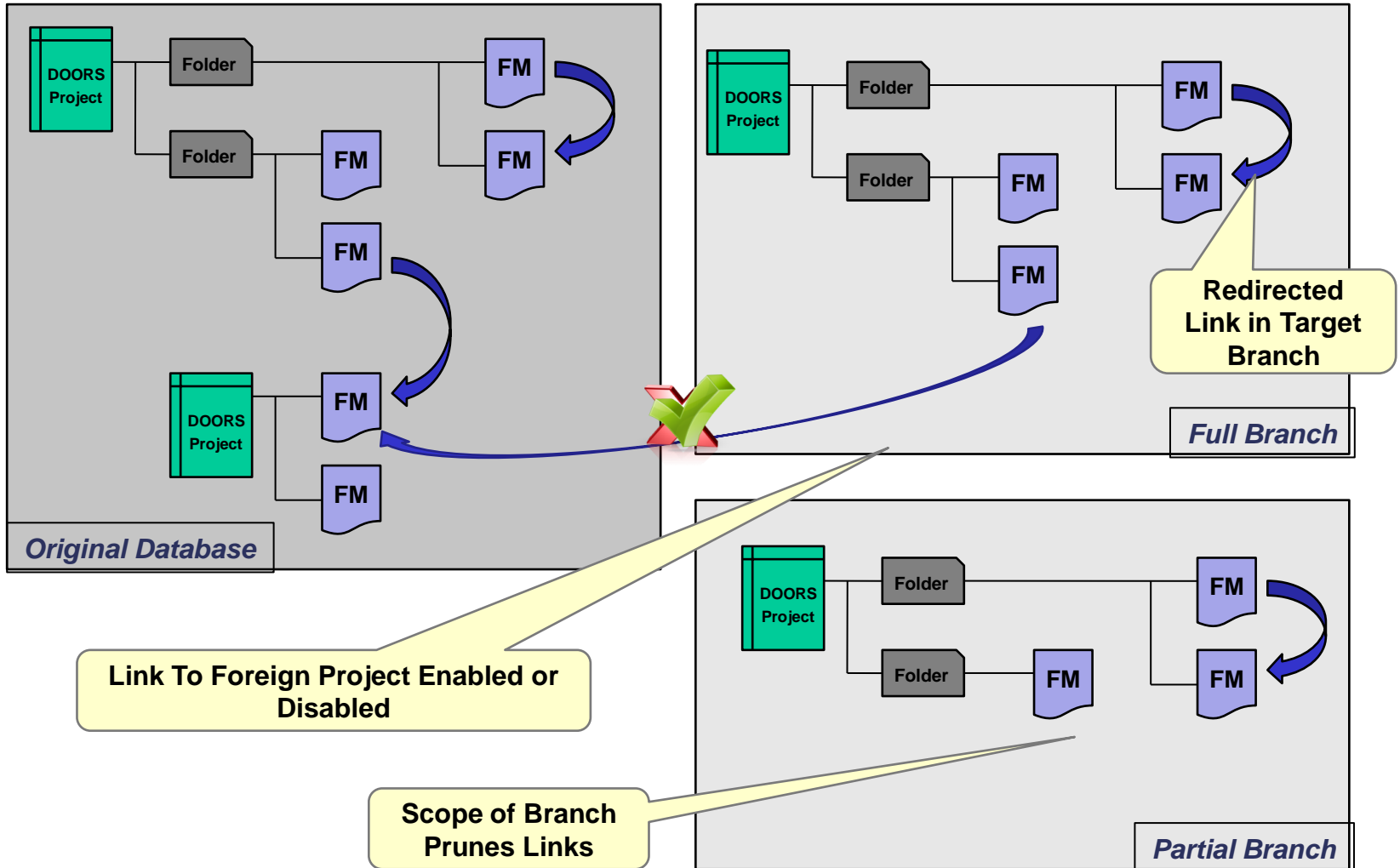
Browse

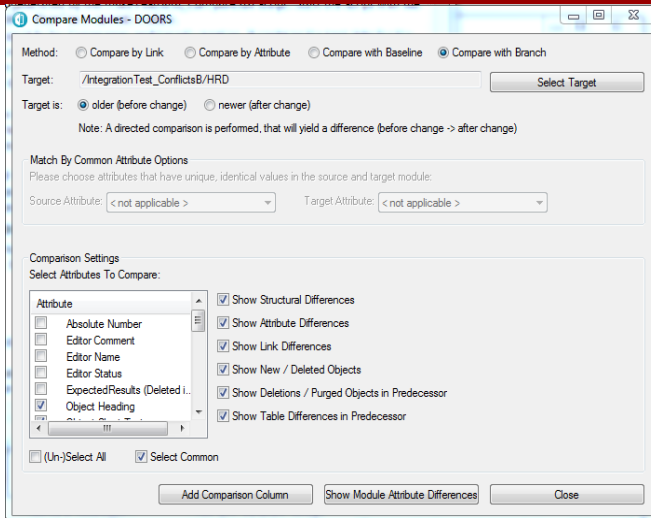
Recreate links to foreign projects

Redirect links to objects that are missing in the target branch to objects in the source branch

Do not allow new links outside the branch

Start Branch Copy | Close





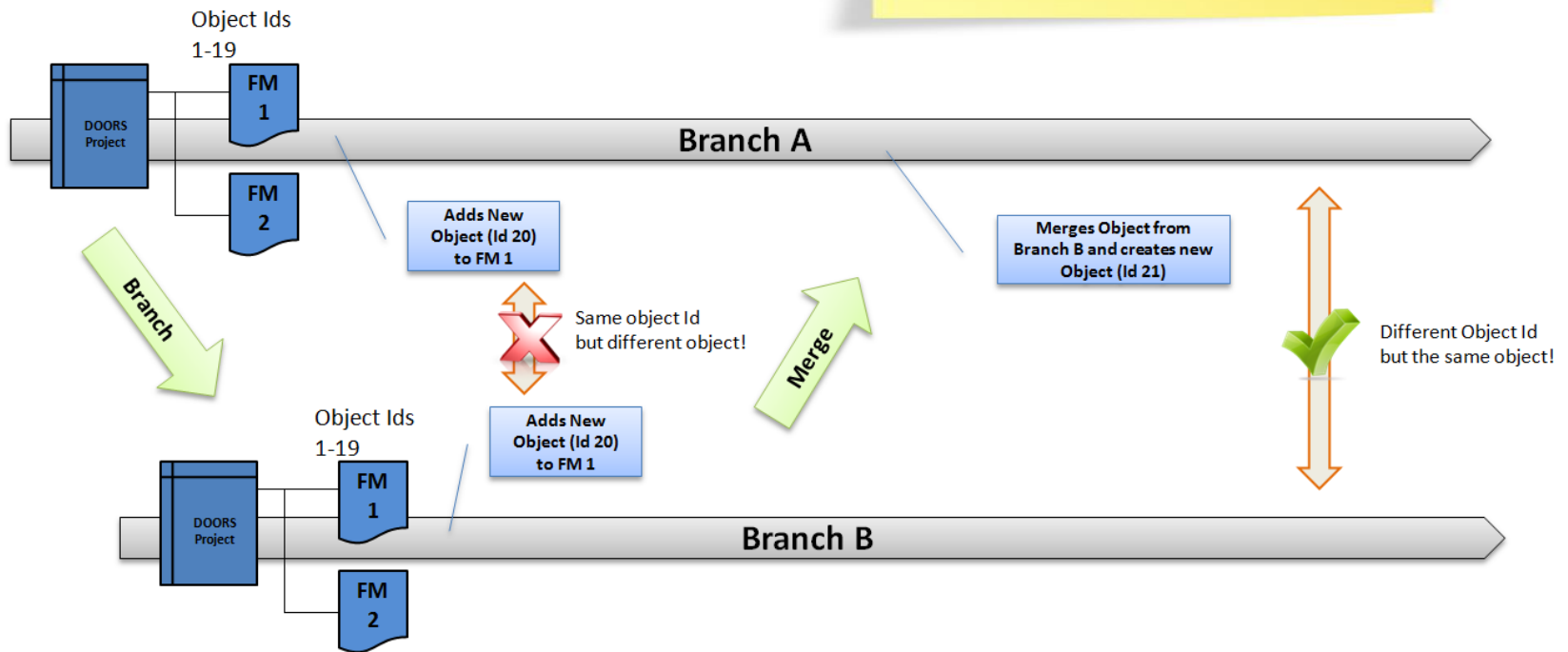
- Detected Changes**
- Modification/Deletion/Addition
 - Textual Attributes
 - OLE Attributes
 - Images
 - DOORS Tables
 - Link Changes
 - Object Movement

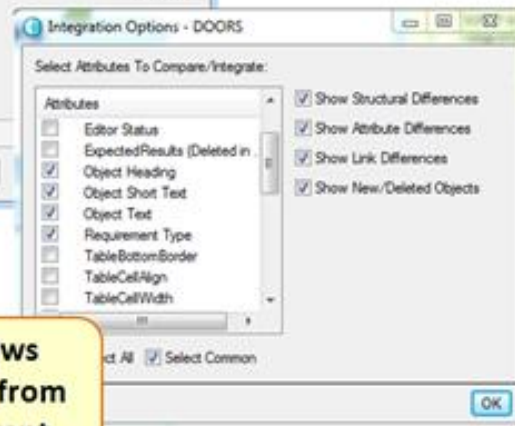
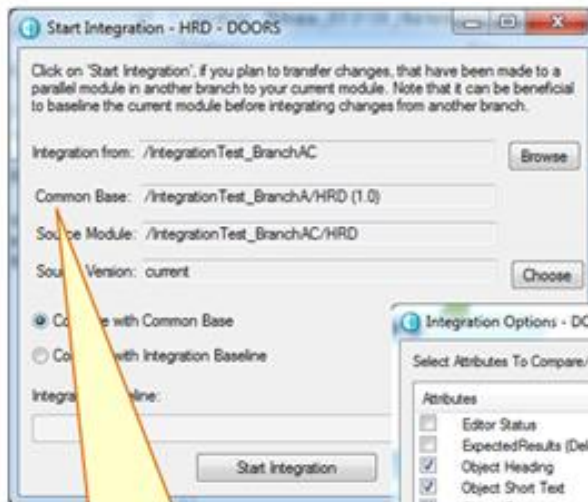
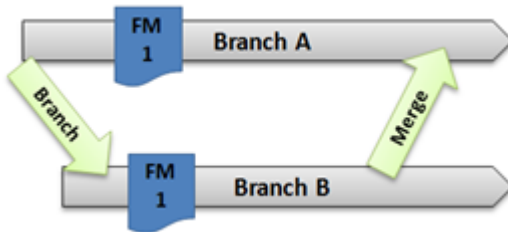
Comparison with HRD current	ID	This is the autogenerated Test Data for Integration Modules (see 'make TestData_Integration.dg')
	1	1 Description of test data
'Object Text' was changed: This module is autogenerated by the makeTestData_Compare.dxl script. Start the script with the "_Compare Test Data - Base" as Change to current textual module data	72	Change to textual data
object 2 in '/Project A/HRD Folder/HRD (current)' was moved to section 1.1.0-1. object 2 in '/Project A/HRD Folder/HRD (current)' was deleted. object 71 in '/Project A/HRD Folder/HRD (current)' was deleted.	70	1.1 Test accomplishment
object was moved to section 1.1. 'Object Text' was changed: OLE Object 0 has changed. OLE Object 0 was resized. Old Size: (161/52) New Size: (167/53) Content before change: This is an embedded OLE Excel TEST	30	This is an embedded OLE Excel TEST

Comparison with HRD (2.0 (INT2012-05-03))	Comparison with HRD current	ID	This is the autogenerated Test Data for Integration Modules (see 'make TestData_Integration.dg')
		1	1 Description of test data
'Object Text' was changed: This module is autogenerated by the makeTestData_Compare.dxl script. Start the script with the "_Compare Test Data - Base" as Change to current textual module data	'Object Text' was changed: Another Change to textual data	72	Change to textual data
object 2 in '/Base/HRD (2.0 (INT2012-05-03))' was moved to section 1.1.0. object 2 in '/Base/HRD (2.0 (INT2012-05-03))' was deleted. object 71 in '/Base/HRD (2.0 (INT2012-05-03))' was deleted.	object 2 in '/Project A/HRD Folder/HRD (current)' was moved to section 1.1.0. object 2 in '/Project A/HRD Folder/HRD (current)' was deleted. object 71 in '/Project A/HRD Folder/HRD (current)' was deleted.	70	1.1 Test accomplishment
object was moved to section 1.1. 'Object Text' was changed: OLE Object 0 has changed. OLE Object 0 was resized. Old Size: (161/52) New Size: (167/53) Content before change: This is an embedded OLE Excel TEST	object was moved to section 1.1. 'Object Text' was changed: OLE Object 0 has changed. OLE Object 0 was resized. Old Size: (161/52) New Size: (167/53) Content before change: This is an embedded OLE Excel TEST	30	This is an embedded OLE Excel TEST

Why Object Ids alone don't work

- Not globally unique
- No knowledge on branches
- Same Object Id for different objects
- Different Object Id for the Same Object

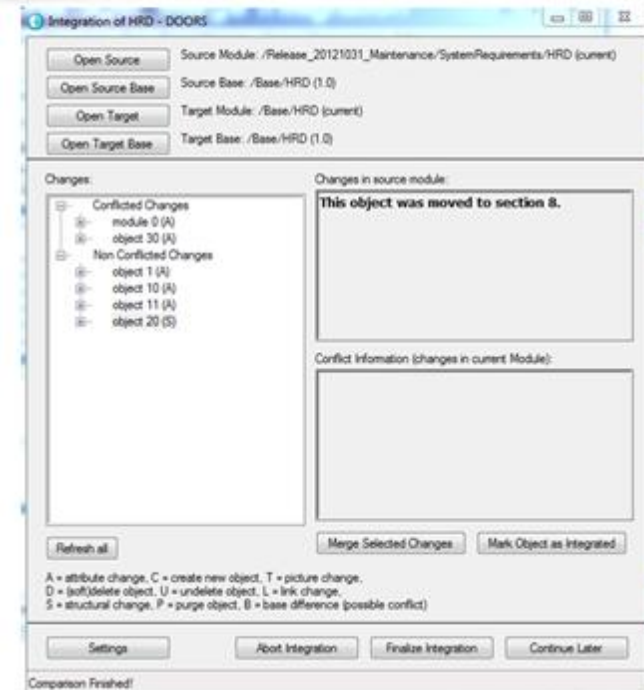


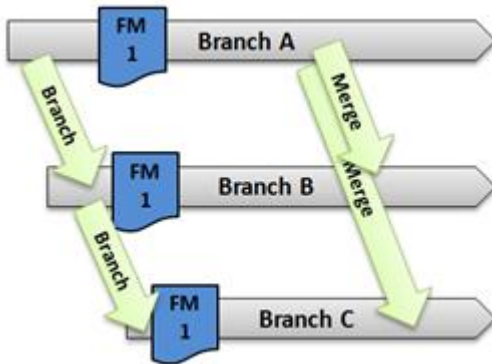


Integration base allows evaluation of changes from the last integration event.

BranchManager Integration

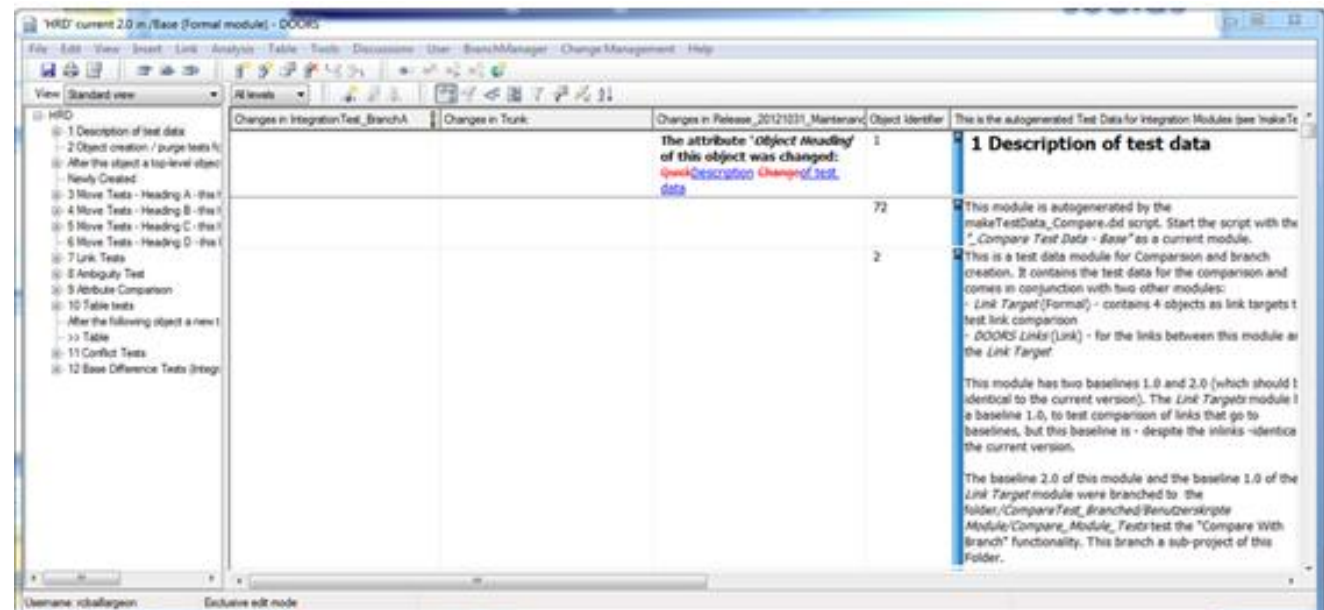
- Three-way merge using common parent
- "Pull-Based" One-to-One Merge Solution
- Automatic Conflict Detection
- Applies in any direction for modules with a "common parent"
- Integration Baseline supports merging only changes since last integration event
- Forces Baselines for consistent references





BranchManager QuickMerge

- “Push-Based” One-to-Many Merge Solution
- No Conflict Detection
- Applies for modules with a “common parent”
- Interactive Merge Solution
- Dynamic Evaluation



■ BranchManager Provides Core Needed Capabilities

- Reuse for reduced investment and higher quality
- Gatekeeping for quality controls and reviews
- Cloning for rapid new derivative products, yet still linked

■ Flexible Adoption

- Applicable to many user scenarios
- Strong foundation resolving major challenges of configuration management in DOORS
- Configurable to an organization's specific practices



Wir optimieren & automatisieren
Ihre Entwicklungsprozesse.

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