

WHAT'S NEW IN INTEGRITY MODELER 9.1

Systems and Software Engineering

March 2019



ptc



AGENDA

- OSLC integration with Integrity Lifecycle Manager
- Editable Traceability Matrix
- Usability
- Architecture



AGENDA

- OSLC integration with Integrity Lifecycle Manager
- Editable Traceability Matrix
- Usability
- Architecture

PTC TOOLCHAIN INTEGRATION OBJECTIVES

Toolchain integration across PTC & 3rd party, tools & their data

Connected User Interfaces & User Experiences

- Contemporary, consistent & stunning

Contiguous Processes

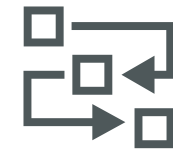
- Workflows within tools and across the toolchain

Contextualized Data

- Digital Thread

Family First

- PTC first, then 3rd party tools



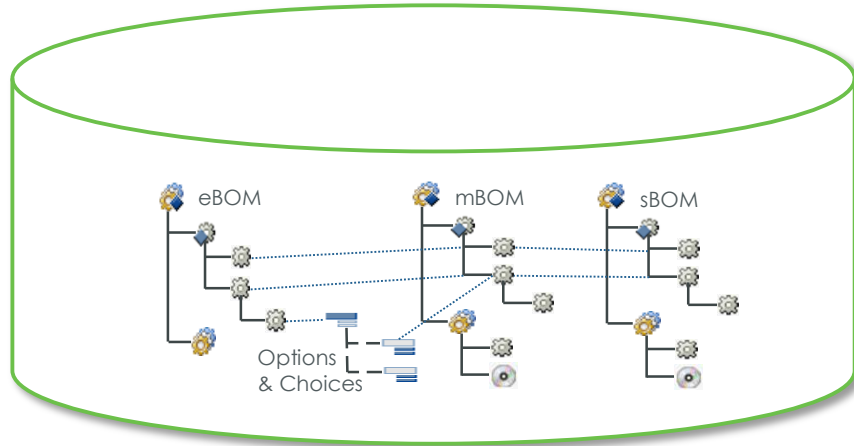
SYSTEMS OF RECORD (SsOR)



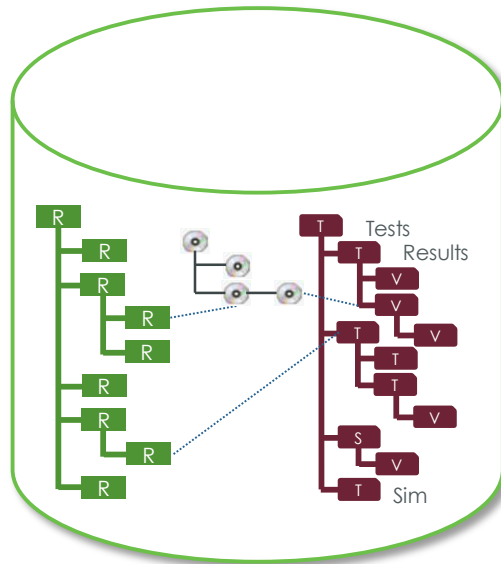
Windchill, Integrity Lifecycle Manager, Integrity Modeler, SAP...



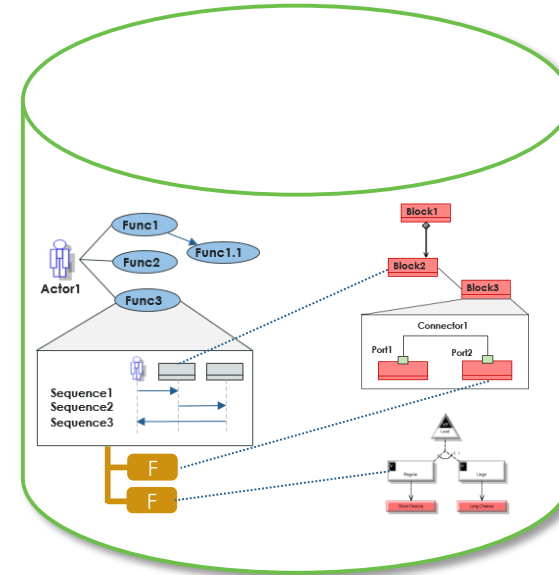
windchill pdmlink®
windchill bom management
windchill platform structures



integrity lifecycle manager



integrity modeler



3rd Party...



Customer's Best-of-Breed Toolchain

SYSTEM OF RECORD (SoR)

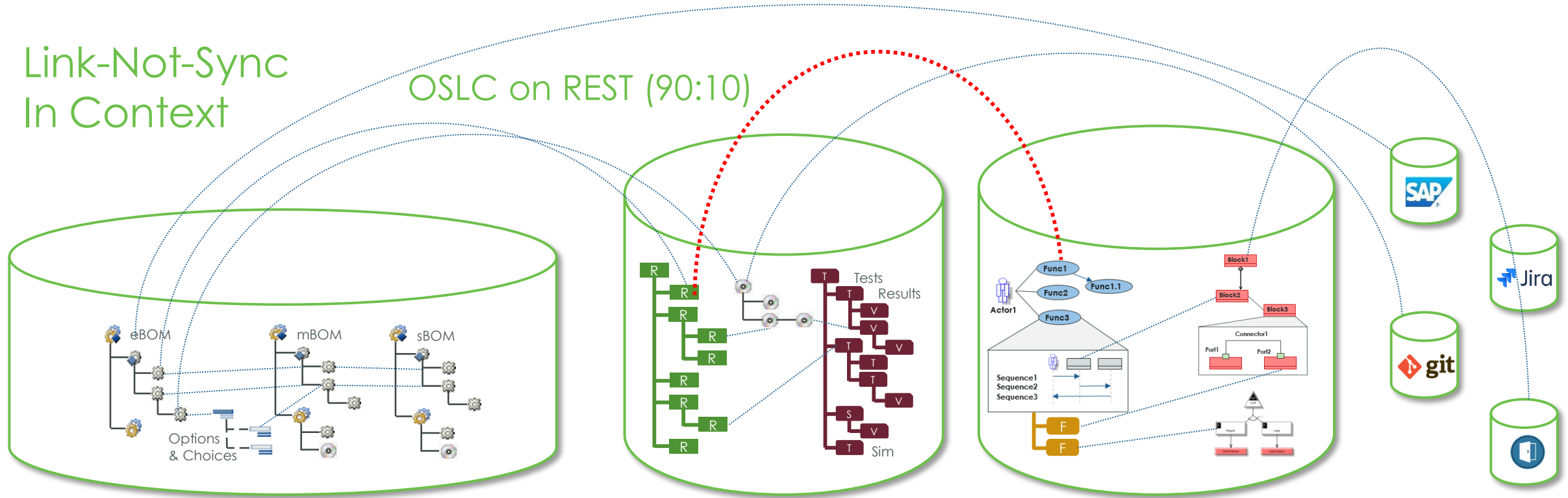


Digital Thread for Design Abstraction, Compliance Traceability and Impact Analysis

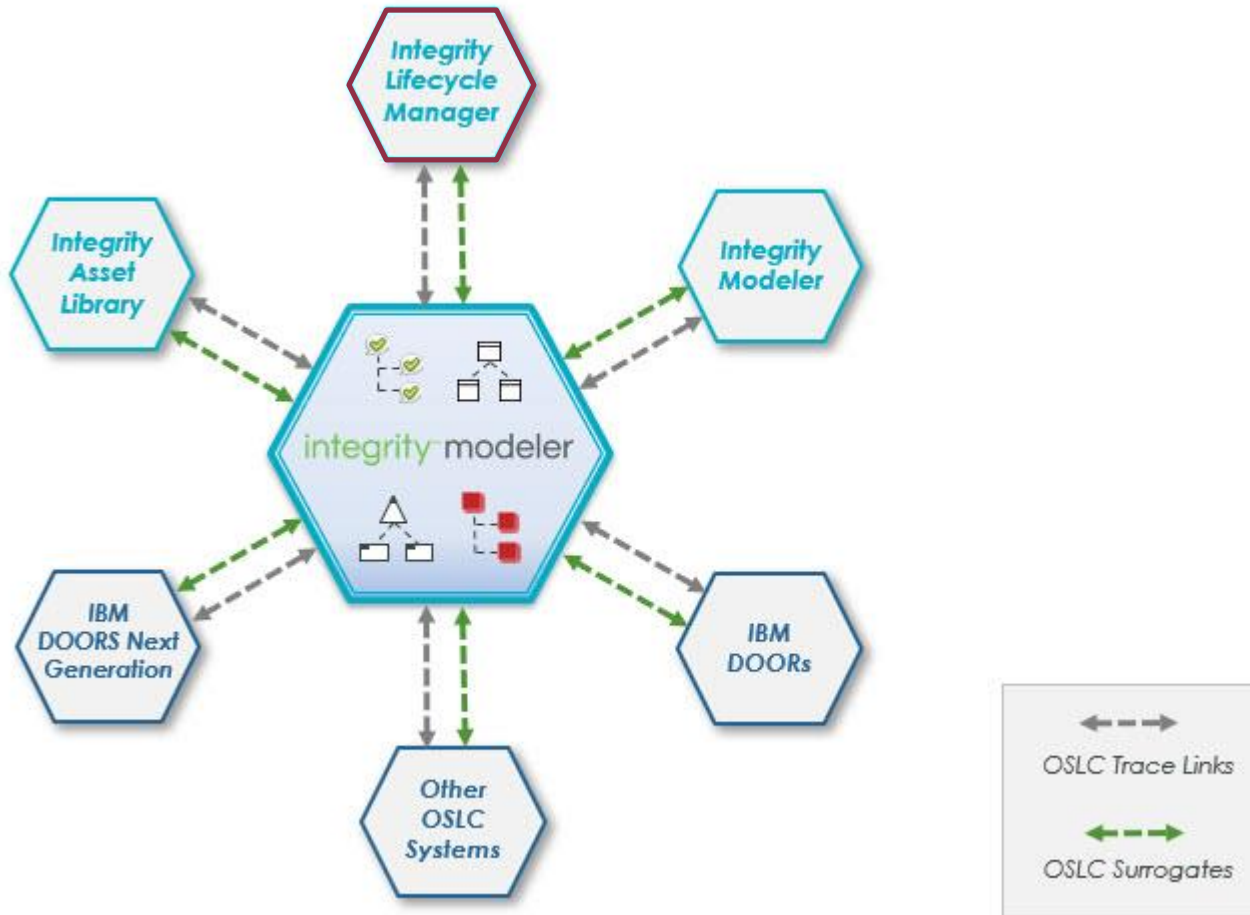
Persistent Inter-System of Record Links using Product UIs & UXs

Link-Not-Sync
In Context

OSLC on REST (90:10)



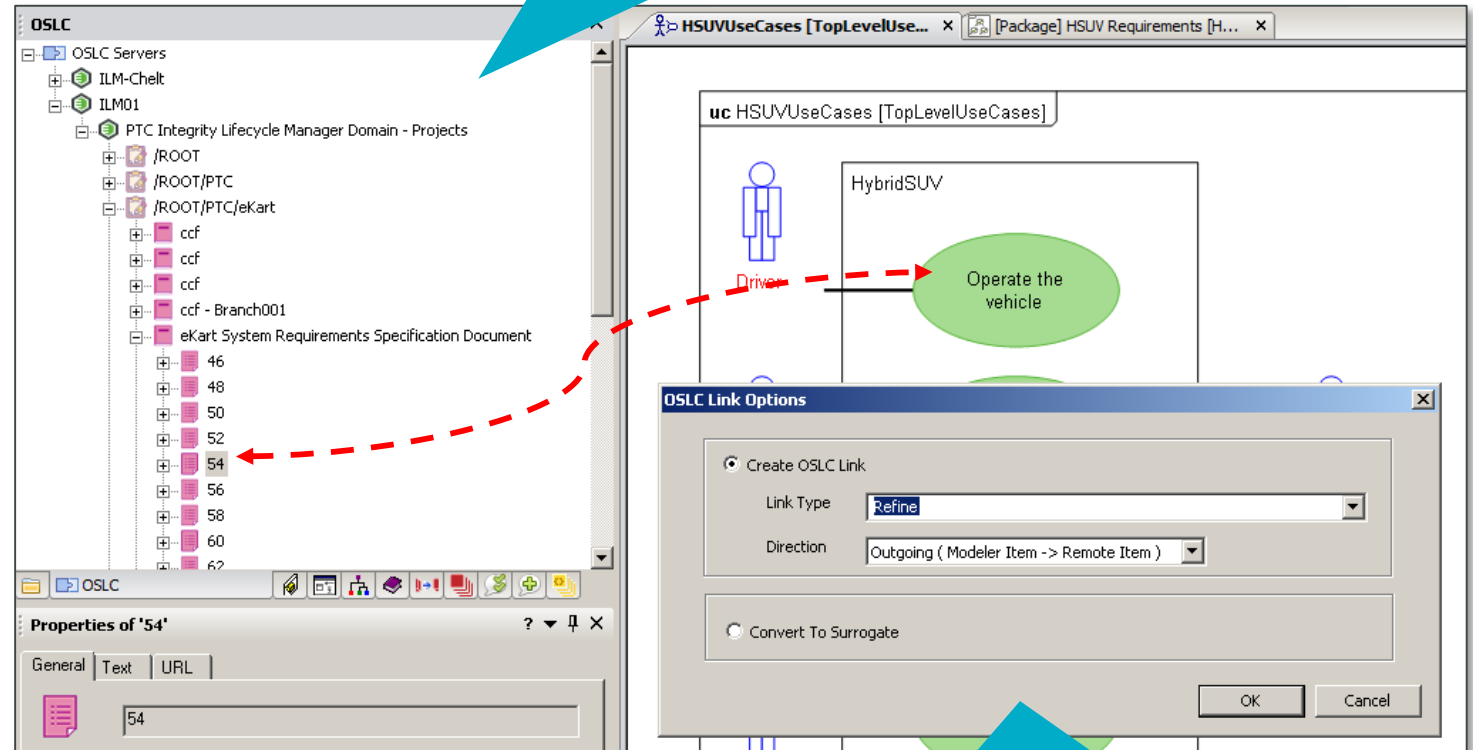
e.g. Trace Requirements 'implemented' by Parts without Duplicating Data



- Enables digital product traceability between requirements engineering and systems and software engineering
- Ensures design dependencies are defined and managed
- Provides visibility to design changes across the product development lifecycle

- Browse Integrity Lifecycle Manager requirements from within Integrity Modeler
- Create OSLC links or surrogates to define digital product traceability
- Connect requirements to systems or software designs (e.g. functions, logical structure)

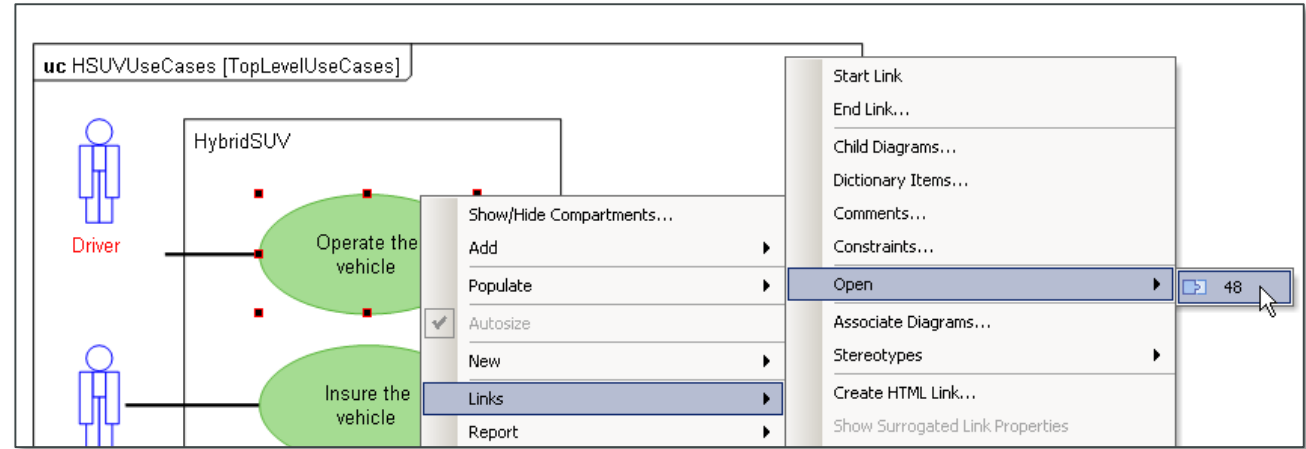
Familiar, consistent user experience



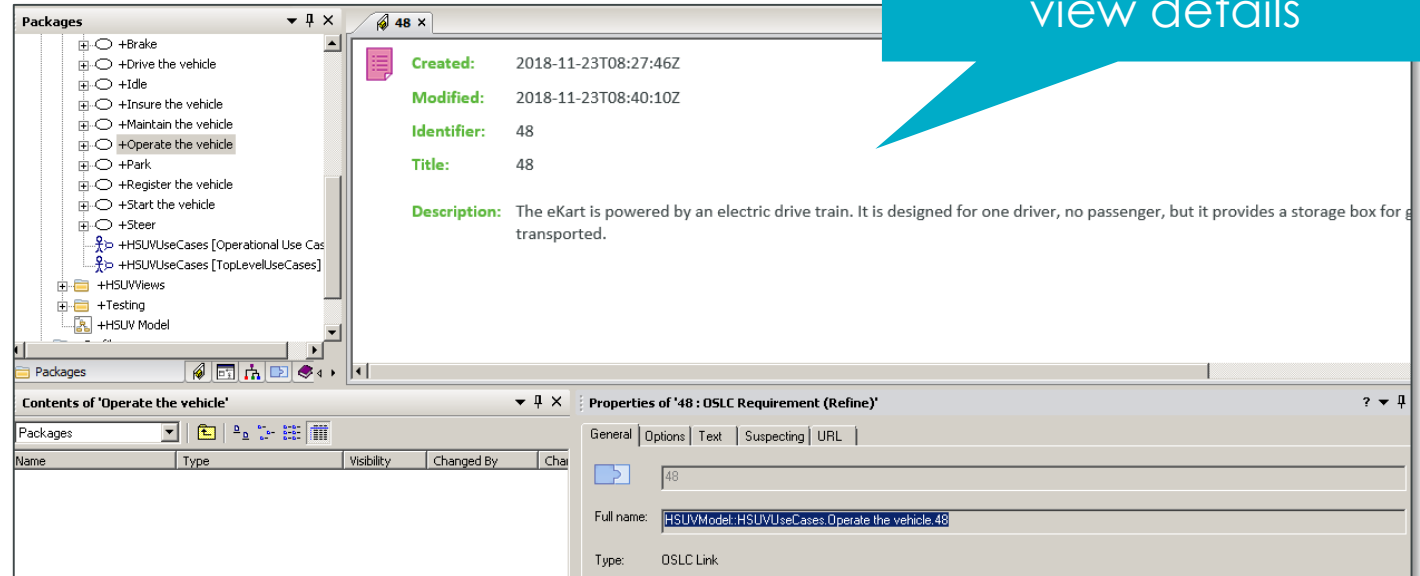
Quick and easy to create relationships in using drag-and-drop

OSLC INTEGRATION WITH INTEGRITY LIFECYCLE MANAGER

- Easily access and manage links
- View properties for linked requirements
- Navigate to linked requirement in Integrity Lifecycle Manager web client



Open linked items to view details

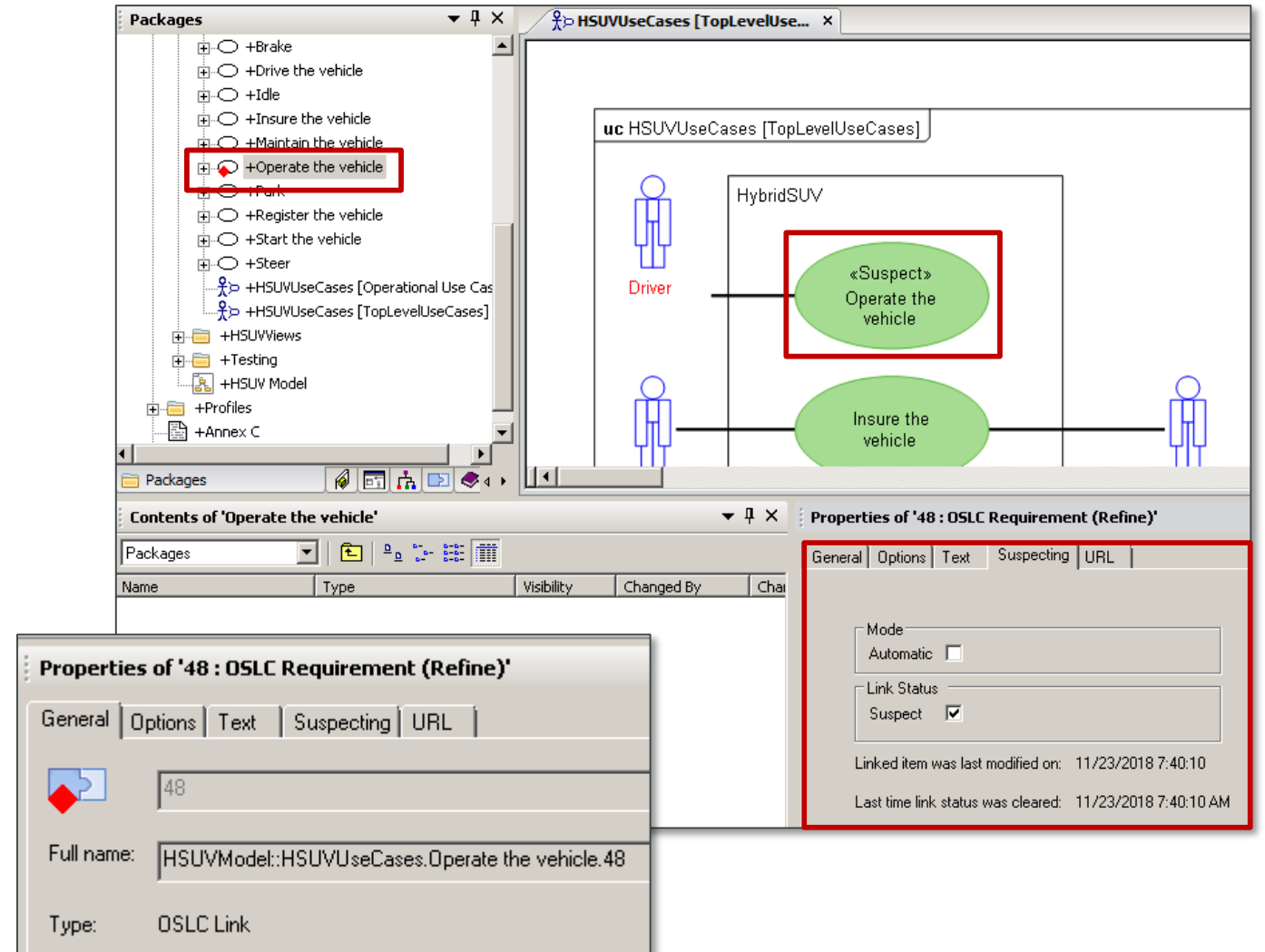


Created: 2018-11-23T08:27:46Z
Modified: 2018-11-23T08:40:10Z
Identifier: 48
Title: 48
Description: The eKart is powered by an electric drive train. It is designed for one driver, no passenger, but it provides a storage box for goods transported.

Name	Type	Visibility	Changed By	Cha

Properties of '48 : OSLC Requirement (Refine)'
General | Options | Text | Suspecting | URL
48
Full name: HSUVModel:HSUVUseCases:Operate the vehicle.48
Type: OSLC Link

- Suspecting provides visibility of changes to linked requirements
- Suspect OSLC relationships are flagged as possibly invalid, requiring review and disposition
- Manual and automatic modes



The screenshot illustrates the OSLC integration in PTC Integrity Lifecycle Manager. The main window shows a use case diagram for 'HybridSUV' with actors 'Driver' and 'Insure the vehicle'. A use case '«Suspect» Operate the vehicle' is highlighted with a red box. The 'Packages' tree on the left shows '+Operate the vehicle' also highlighted with a red box. Below the diagram, the 'Contents of 'Operate the vehicle'' table is visible. Two 'Properties of '48 : OSLC Requirement (Refine)'' dialog boxes are shown, one in the foreground and one in the background. The foreground dialog shows the 'Suspecting' tab with 'Mode' set to 'Automatic' and 'Link Status' set to 'Suspect'. The background dialog shows the 'Suspecting' tab with 'Mode' set to 'Automatic' and 'Link Status' set to 'Suspect'.

Name	Type	Visibility	Changed By	Cha

Properties of '48 : OSLC Requirement (Refine)'

General | Options | Text | Suspecting | URL

Mode: Automatic

Link Status: Suspect

Linked item was last modified on: 11/23/2018 7:40:10
Last time link status was cleared: 11/23/2018 7:40:10 AM

Properties of '48 : OSLC Requirement (Refine)'

General | Options | Text | Suspecting | URL

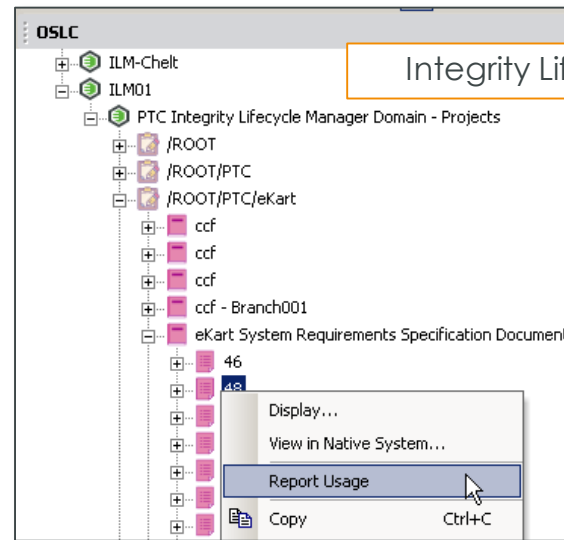
48

Full name: H SUVModel::H SUVUseCases.Operate the vehicle.48

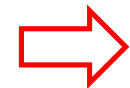
Type: OSLC Link

OSLC INTEGRATION WITH INTEGRITY LIFECYCLE MANAGER

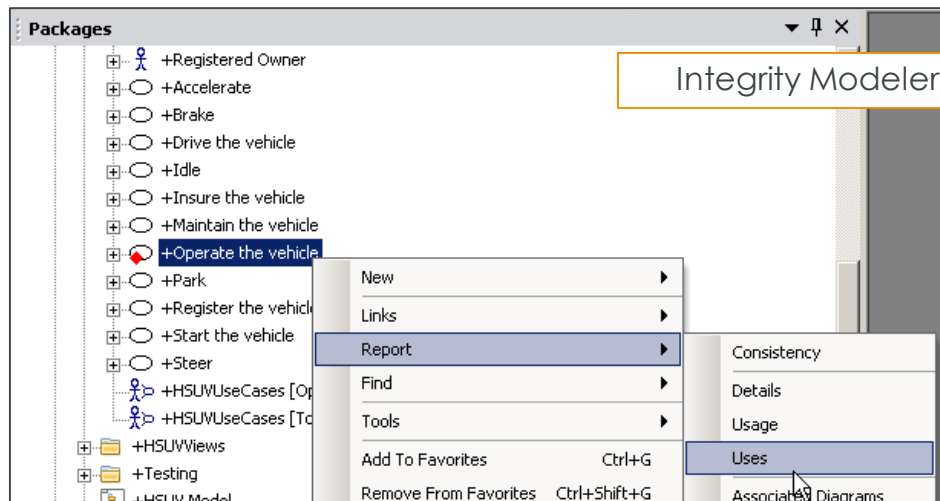
- Reports enable users to navigate traceability relationships in either direction



Integrity Lifecycle Manager requirements > Integrity Modeler items



Items and Diagrams which use 48.	
Name	Type
H5UVModel::H5UVUseCases.Operate the vehicle	Use Case



Integrity Modeler items > Integrity Lifecycle Manager requirements



Items and Diagrams which Operate the vehicle uses.	
Name	Type
H5UVModel::H5UVUseCases.Operate the vehicle.48	OSLC Link



AGENDA

- OSLC integration with Integrity Lifecycle Manager
- **Editable Traceability Matrix**
- Usability
- Architecture

EDITABLE TRACEABILITY MATRIX

- Provides a powerful, efficient way to define, visualize and manage design traceability within complex system and software models
- Shows the “big picture” so you can better understand and optimize design dependencies
- Use within Integrity Modeler or external web browser

Existing relationships are populated when matrix is opened

The screenshot shows the Integrity Modeler interface with a traceability matrix for H SUV Requirements. The matrix is a grid with 'Derived From' on the left and 'Derived' on top. A tooltip is visible over a cell, showing options to create a relationship.

Derived From	Power	PowerSourceManagement	Range	RegenerativeBraking
Power		●		
Acceleration	●	●		
CargoCapacity	●			
OffRoadCapability	●			
FuelEconomy			●	●

Add or remove relationships with single click

EDITABLE TRACEABILITY MATRIX

- Optimized user experience
 - Modern, streamlined user interface makes it easy to learn for new users
 - Powerful for experienced users
 - Options and filters to control what is included within the matrix

The screenshot shows a web browser window titled "Traceability Matrix (tm)". The main heading is "[Package] HSUVRequirements [2]". Below this, there are controls for "Columns" and "Rows". The "Columns" dropdown is set to "Intersected Items" and the "Rows" dropdown is set to "All Items & Diagrams". An "Apply" button is visible. The main area is a matrix with "Derived From" on the left and "Derived" on top. The matrix contains requirements like Power, Acceleration, CargoCapacity, OffRoadCapability, and FuelEconomy. A tooltip is shown over a cell, describing the relationship between "PowerSourceManagement" and "Power".

Derived

	«Requirement» Power HSUVModel::HSUVRequirements	«Requirement» PowerSourceManagement HSUVModel::HSUVRequirements	«Requirement» Range HSUVModel::HSUVRequirements	«Requirement» Regeneration HSUVModel::HSUVRequirements
«Requirement» Power HSUVModel::HSUVRequirements		●		
«Requirement» Acceleration HSUVSpecification::Performance	●			
«Requirement» CargoCapacity HSUVSpecification::Capacity	●			
«Requirement» OffRoadCapability HSUVSpecification::Performance	●			
«Requirement» FuelEconomy HSUVSpecification::Performance		●	●	●
«Requirement» FuelCapacity HSUVSpecification::Capacity			●	


Derived From

Remove Relationship:
«Requirement» PowerSourceManagement
"Derived From"
«Requirement» Power
Existing Links:
«Derive Req» Dependency
(HSUVModel::HSUVRequirements::PowerSourceManagement)

Tooltip describes the relationship that will be added / removed

EDITABLE TRACEABILITY MATRIX

- Modify relationships
 - Single click to add/remove relationships
 - Changes saved to model immediately
- Configure the information displayed
 - Text filter on item or package name to remove rows/columns
 - Options to show all items or just linked items
- Configure matrix
 - Specify packages to be included

	«Requirement» Power HSUVModel::HSUVRequirements	«Requirement» PowerSourceManagement HSUVModel::HSUVRequirement
«Requirement» Power HSUVModel::HSUVRequirements		
«Requirement» PowerSourceManagement HSUVModel::HSUVRequirements		
«Requirement» Range HSUVModel::HSUVRequirements		
«Requirement» ResonantiveParking HSUVModel::HSUVRequirements		

Create Relationship:
«Requirement» Power
"Derived From"
«Requirement» PowerSourceManagement

Existing Links:
None

Hide Filters

Enter the partial name or scoped name to filter upon

Column:

Row:

Hide Options

Choose whether to display the scoping name in row/column headings

Columns:

Rows:

Choose whether to display all items or just intersected items

Columns:

Rows:

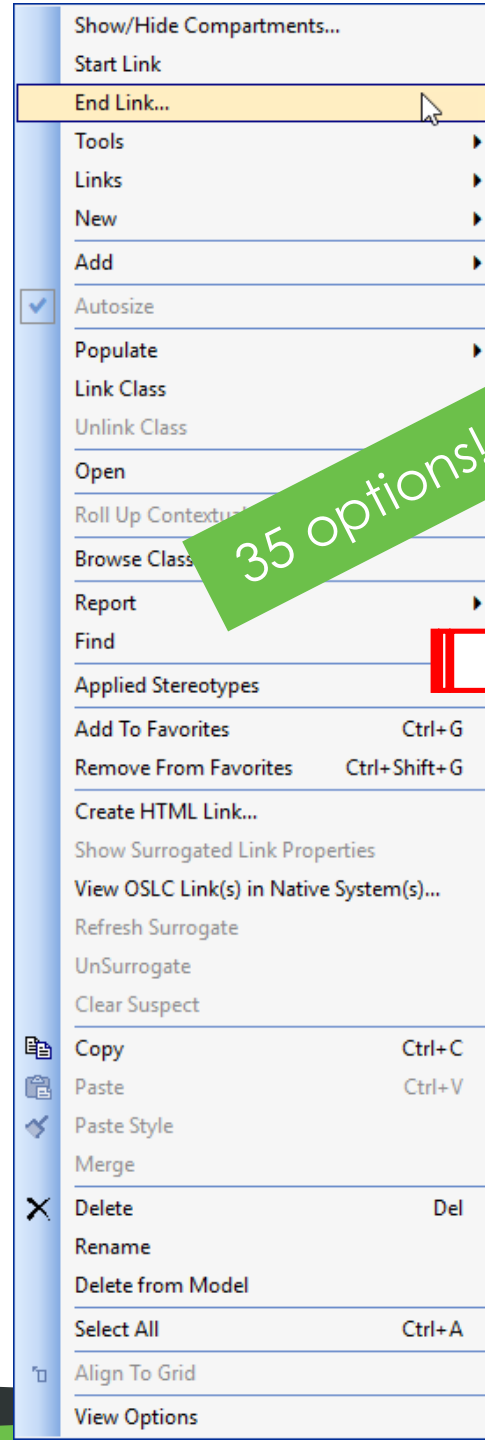


AGENDA

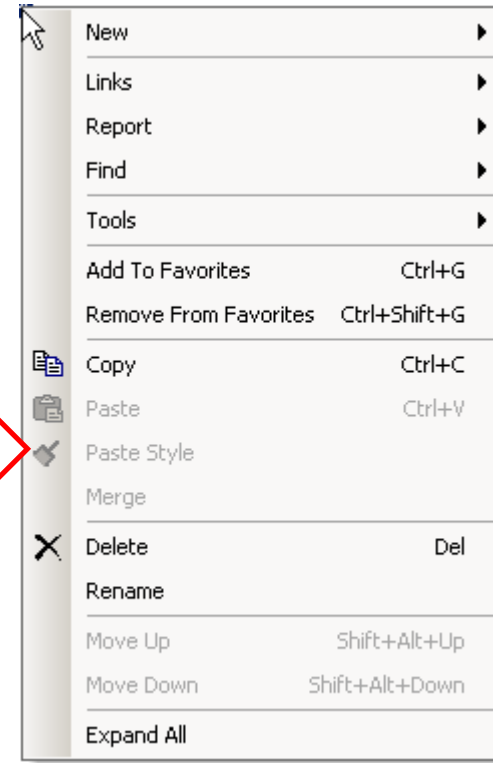
- OSLC integration with Integrity Lifecycle Manager
- Editable Traceability Matrix
- Usability
- Architecture

USABILITY

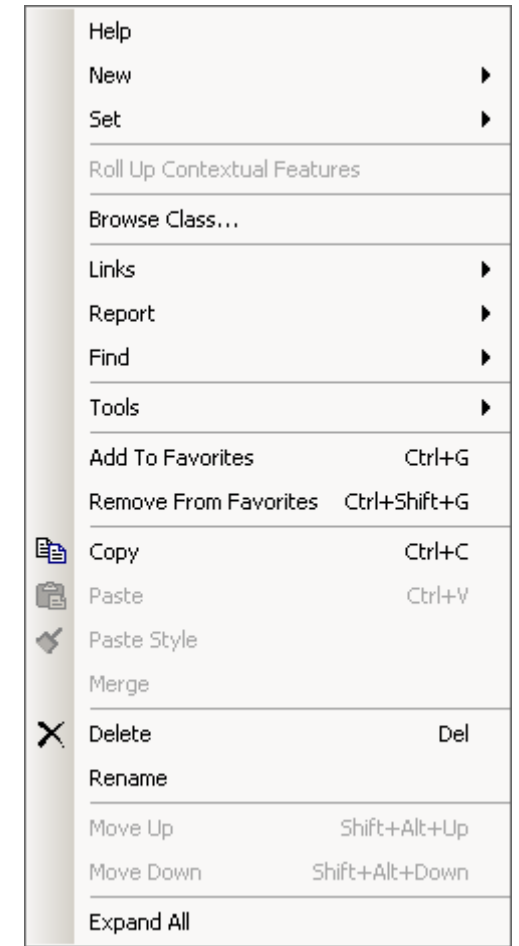
- Context menu rationalization
 - First level context menu much simpler
 - Initial function selection much faster
 - Easier to learn and adopt



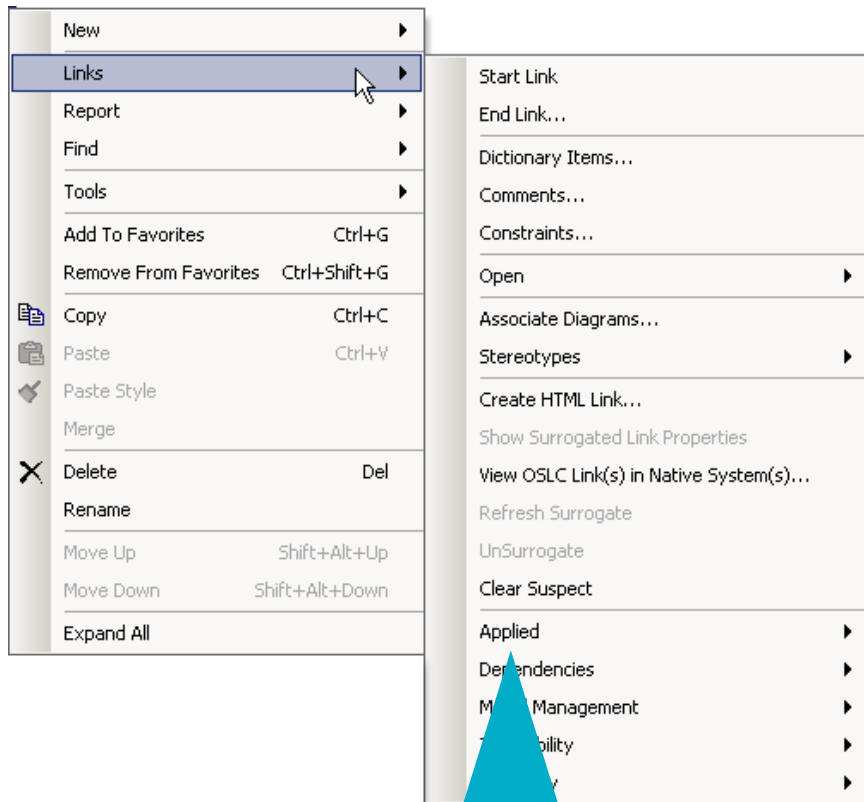
35 options!



Package/Use Case/Activity/Event etc.

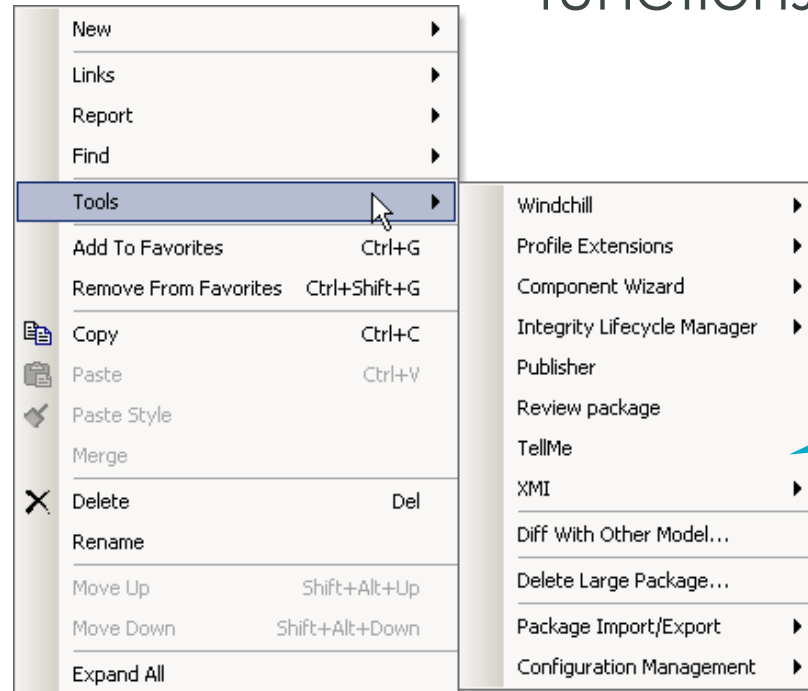


Class/Block/Requirement



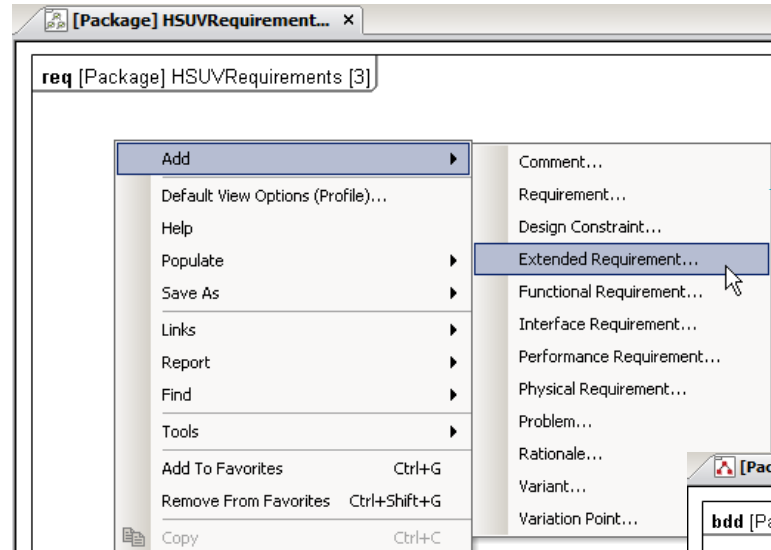
Linking functions
no longer
dispersed across
menus

- Context menu rationalization
 - Tools and linking functions grouped more logically
 - Consistent ordering of functions, across

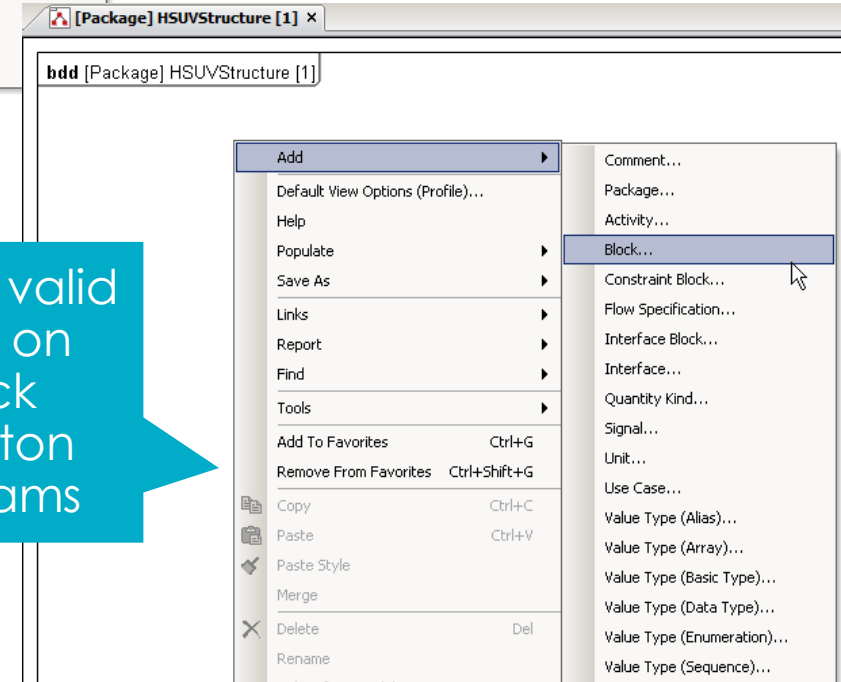


Low frequency
functions moved
from first level
menu

- Context menu rationalization
 - Now able to create all valid items using diagram context menus

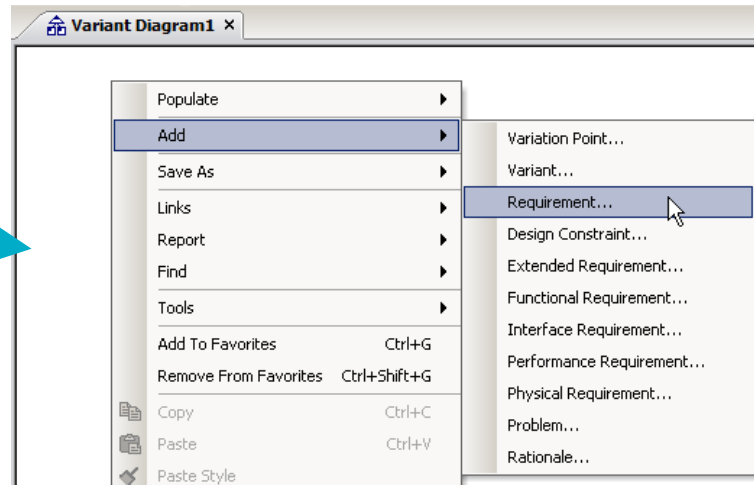


Add all requirements types to requirement diagrams



Add all valid types on block definition diagrams

Add all requirement types on variant diagrams



- OSLC Provider
 - The browser name is now displayed for Modeler OSLC resources, instead of full scoped name
 - Property mapping can be configured, but now consistent with Package browser by default
- Web Interface
 - When you click on out-of-date diagrams they are now automatically re-generated



AGENDA

- OSLC integration with Integrity Lifecycle Manager
- Editable Traceability Matrix
- Usability
- **Architecture**

- Database
 - Support for Microsoft® SQL Server® 2016 and 2017
 - Perform and schedule database upgrades using Model Manager
 - Performance improvements (e.g. clearing locks)
- Integrity Lifecycle Manager Synchronizer
 - Support for Integrity Lifecycle Manager 12.1
- Security improvements
 - Ongoing security scans
 - Improved handling of credentials

- Integrity Modeler 9.1 enables digital product traceability with an OSLC-based integration for Integrity Lifecycle Manager
- New editable matrices allow you to better understand and manage complex system and software design relationships
- Improved usability and user experience with simplification and rationalization of context menus
- Database, security and architecture improvements



ptc