2021x Refresh1 Version News

Magic Systems of Systems Architect

Released on: June 4, 2021

The 2021x Refresh1 release introduces further performance and scalability upgrades in key product areas: compatibility modes, report generation, metrics calculation, integration, general modeling, and collaboration improvements. Furthermore, new tables and usability improvements are here to make your modeling experience better. Additionally, this version introduces a technology preview of ArchiMate model import.

This release also comes with Behavior to Structure synchronization, Contextual Relationships enhancements, and other improvements.

Collaborative modeling has been extended to assess the impact of element modification or deletion in other projects an element is used in, enable users to conveniently organize projects into the nested categories, customize the representation of Magic Collaboration Studio users in the modeling tool, and quickly return to the Merge dialog to change the merge decisions.

To download the latest version, see Downloading installation files. Don't forget to give us your feedback on LinkedIn, Twitter, or Facebook. For further information, check the product documentation.

2021x Refresh1 Hot Fix 2 available

Due to the Apache Log4j vulnerability issues, the 2021x Refresh1 HF2 has been released on March 4, 2022. The HF2 addresses Log4j 1.x and 2.x versions.

2021x Refresh1 Hot Fix 1 available

Due to the Apache Log4j vulnerability issues, the 2021x Refresh1 HF1 has been released on December 22, 2021. The HF1 addresses Log4j 2.x versions.

Also, see the Knowledge Base article at https://kb.dsxclient.3ds.com/mashup-ui/page/resultqai?id=QA00000102301e.

For more information, see CATIA Magic and No Magic products affected by Log4j vulnerability - CVE-2021-44228, CVE-2021-45046, CVE-2021-44832.

Also, see the Knowledge Base article at https://kb.dsxclient.3ds.com/mashup-ui/page/resultqai?id=QA00000102301e.

UAF Features

- Performance Improvements in UAF
- Diagrams and Tables
- Usability Improvements
- ArchiMate Model Import (Technology Preview)

SysML Features

- Behavior to Structure Synchronization
- Contextual Relationships Enhancements
- Other enhancements

Performance Improvements

Integrations

- Importing Variability Data Formulae ENOVIA Model Definition Application

Modeling and Infrastructure

- Tree View in Select Element Drop-Downs and Quick Find

Key Issues Fixed

Discontinued Products

Collaboration

- Global Element Usage Search
- Nested Categories
- Representation of Teamwork Cloud Users
- Returning to Merge Dialog
- Other Teamwork Cloud-related Improvements

Report Wizard

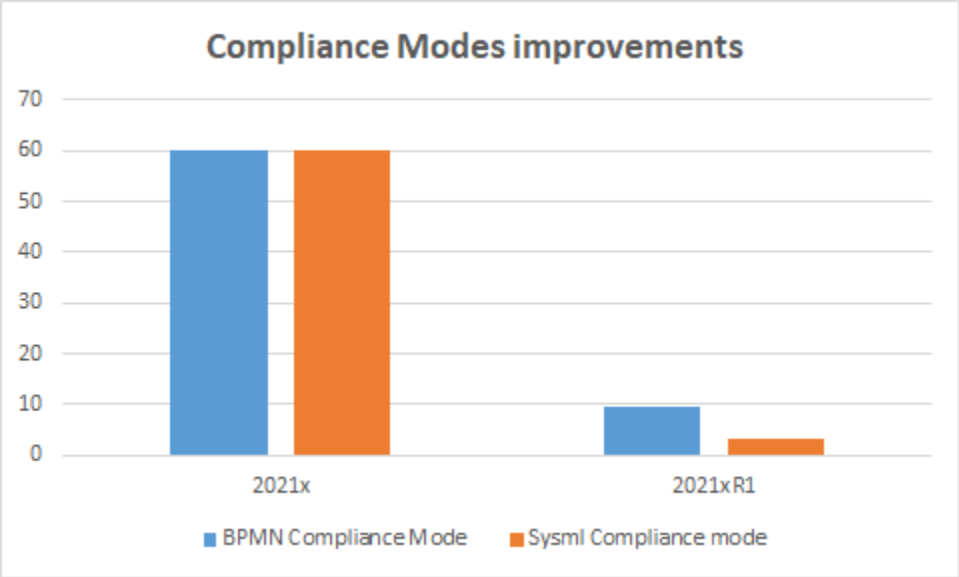
Performance Improvements in UAF

In this version, we continued improving the performance with a major focus on compliance mode, reports, and UAF metrics.

Compliance Modes

Turning on the BPMN or SysML compliance modes in large projects now takes less time than in earlier versions.

Feature	2021x	2021x Refresh 1
BPMN Compliance Mode (UAF)	> 60 min	9 min 27s
SysML Compliance Mode (UPDM)	> 60 min	3 min



Report

The report generation was optimized so it takes less time for large projects. In the optimization process, the tables, matrices, and relation maps were excluded from the scope of the Used in Diagrams column. MS Word supports files only up to 512 MB, therefore we do not recommend generating a report with the entire project as its scope.

The following table shows the testing, performed with the scope of ~ 5000 elements, results.

Feature	2021x Refresh 1
All views report (XL project)	5 min 30s
Dictionary report	31s
Summary and Overview report	15s
Dictionary Excel Spreadsheet	2 min 11s

UAF Metrics

The metrics calculation was also optimized and runs smoothly in the larger projects. However, we do not recommend selecting the entire project as a scope for calculating metrics.

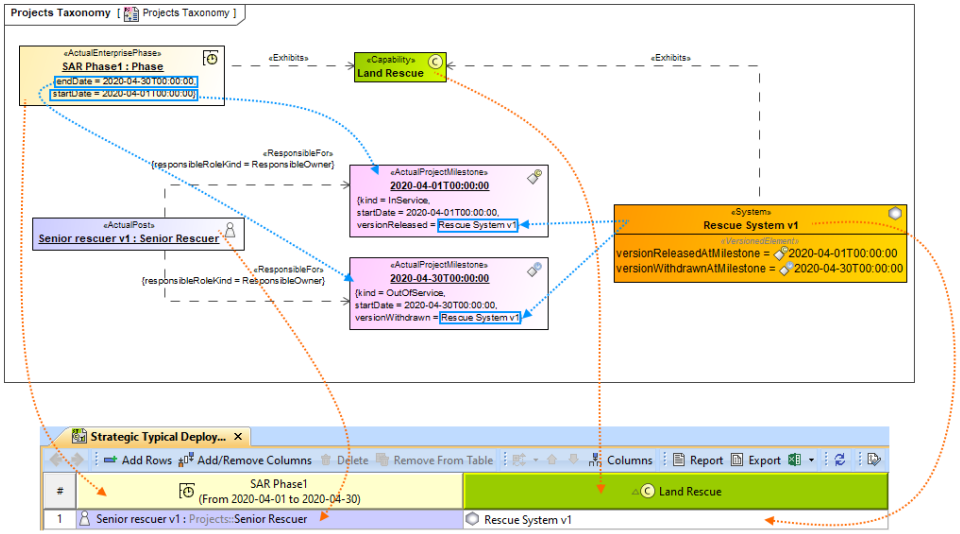
The following table shows the testing, performed with the scope of ~ 5000 elements, results.

Feature	2021x	2021x Refresh 1
UAF metrics (1M)	Low memory	21.719 s
UAF metrics (10M)	Low memory	190.35 s
UPDM2 metrics (1M)	Low memory	42.564 s
UPDM2 metrics (10M)	Low memory	56.109 s

Diagrams and Tables

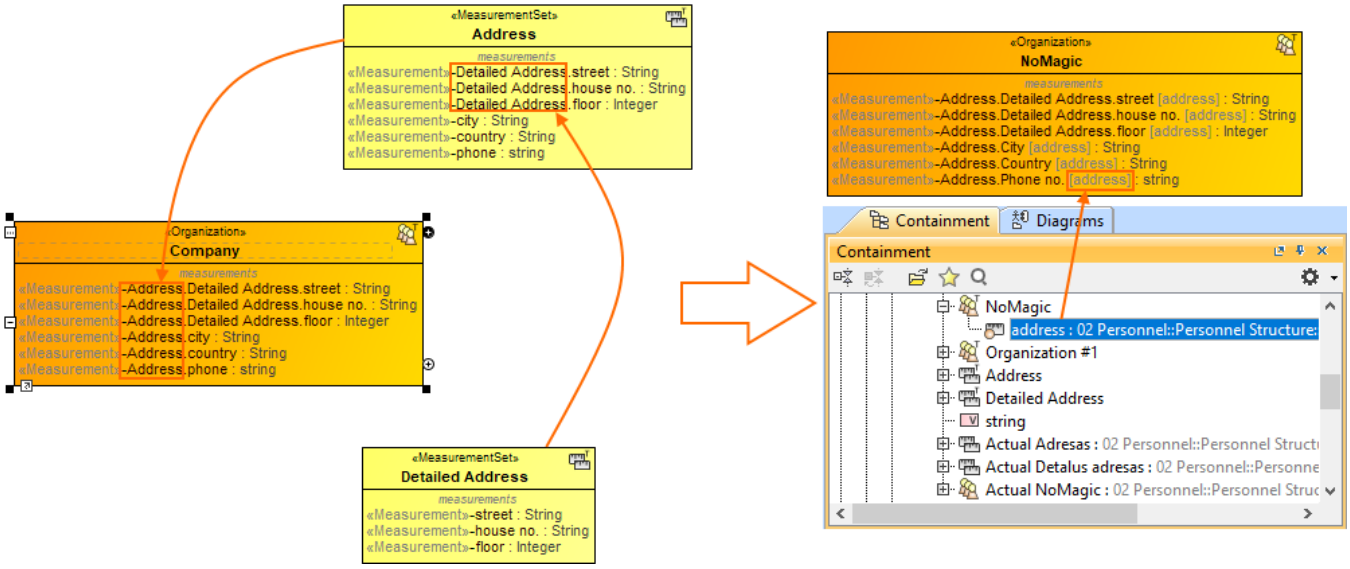
- The **Hierarchical Typical Measurements** tables were enhanced and no longer hold the status of technology preview. New hierarchical display modes were implemented. You can also generate predefined reports for these tables. Also, having the Hierarchical Typical Measurements table filled out makes it easy to create the Hierarchical Actual Measurements table by simply clicking the **Evaluate Measurements** button. Learn more >>
- The **Hierarchical Actual Measurements** tables are available for all domains. The hierarchical table for actual measurements allows working with the actual measurements directly in the table. You can add new or existing Actual Property Sets and define values. When you add a Property Set to the table, all existing Actual Property Sets will be collected recursively according to the defined scope. Learn more >>

- The **Actual Project Milestone Summary Table (Pj-Rm)** depicts all actual project milestones in the model. Adding the actual project milestones into the table allows you to see their name, kind, start date, project, project status, version released, version withdrawn, and actual resource information. You will also be able to add or modify the actual project milestone information directly in this table. Learn more >>
- The new **Strategic Typical Deployment** tables are now available in all frameworks. Two new wizards come along with this new type of table. Use the **Actual Resources Deployment Creation Wizard** to create a table and the **Typical Resources Deployment Wizard** to add resources to the table. Learn more >>



Usability Improvements

- If you need to see the original name, set the **Show Original Name of Measurement** symbol property to true. The original name will be displayed in brackets and in gray font. Learn more >>



- You can create a Model Library package for each UAF domain.
- A new system property is implemented to help with the migration of server projects. There are two cases regarding the migration of **UAF and UPDM** projects:
    - If you are performing UPDM project migration from the modeling tool with the UPDM environment, only the project version will be migrated.
    - The UPDM project migration from the modeling tool with the UAF environment will not be performed. However, if you want to migrate the UPDM project to UAF, you need to open the *magicdraw.properties* (or *cea.properties*) file and change the value of the system property - *Dmigrate.project.from.updm2.to.uaf\=false* to True. By default, the value of this property is False, which means that your UPDM projects will not be migrated.
      Learn more >>

ArchiMate Model Import (Technology Preview)

In this version, the import of the ArchiMate model from the open exchange file into the UAF project is implemented. As it is only a technology preview for this version, the imported element mapping is only partial. The mapping of ArchiMate 3.1 to UAF 1.1 approach is based on the NATO Architecture Framework.

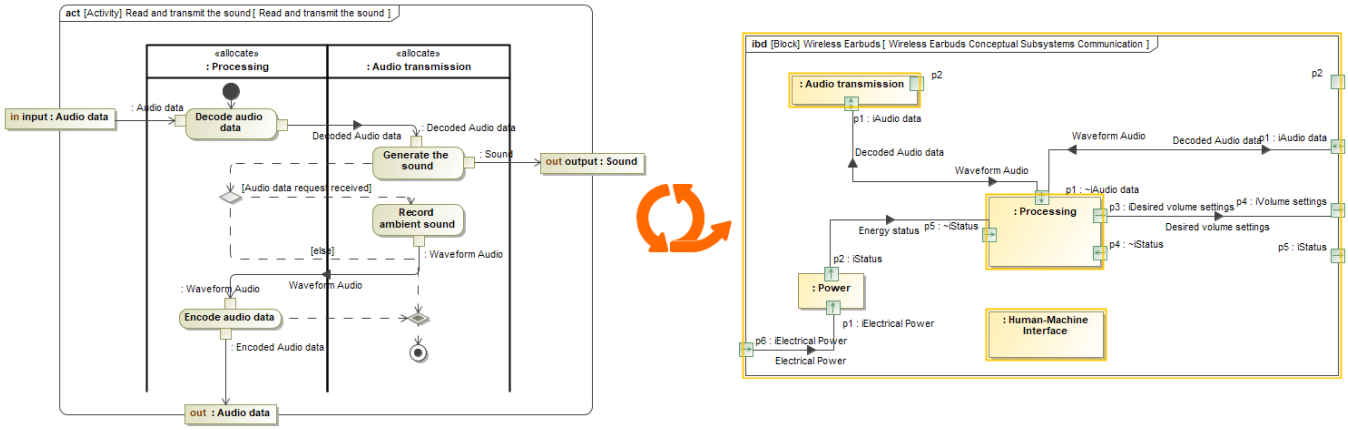
Learn more >>>

Back to Top

SysML Features

Behavior to Structure Synchronization

You can now keep your Internal Block diagram (IBD) consistent with Activities with less effort! Our brand new behavior-to-structure synchronization allows you to validate Part Properties in an IBD to check whether Proxy Ports exist and are typed by compatible Interface Blocks based on flows found in Activities. As a result, instead of manually updating IBDs to be consistent with Activities, coherence between them is ensured by automatically detecting inconsistencies and providing the user with the solvers to handle each inconsistency individually.

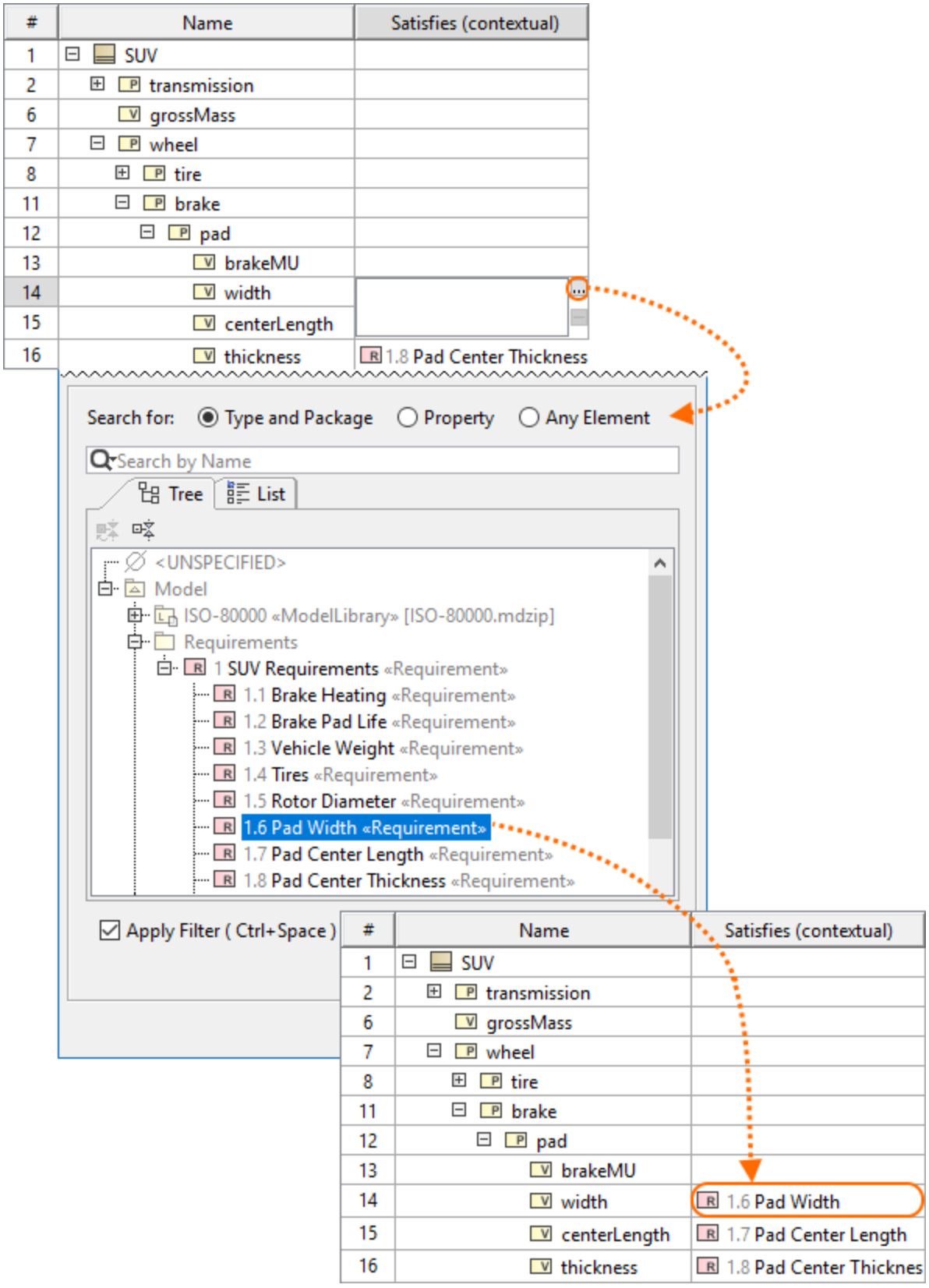


Synchronizing IBD based on Activities.

Learn more about behavior to structure synchronization >>

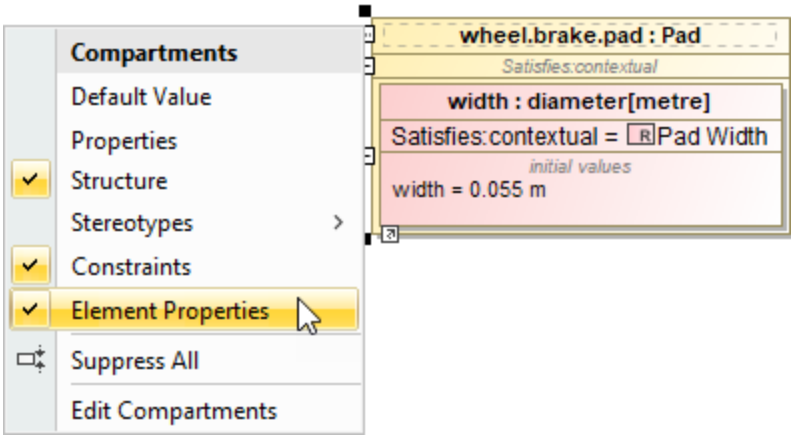
Contextual Relationships Enhancements

Contextual Relationships have undergone major improvements! From now on, you can create contextual relationships directly in structure tree view tables and represent data in table columns by considering the usage context of the row elements.



Creating contextual relationships in tables.

Additionally, for a more compact Internal Block Diagram (IBD) view, you can now represent contextual relationships in the **Element Properties** compartment of the element shape.

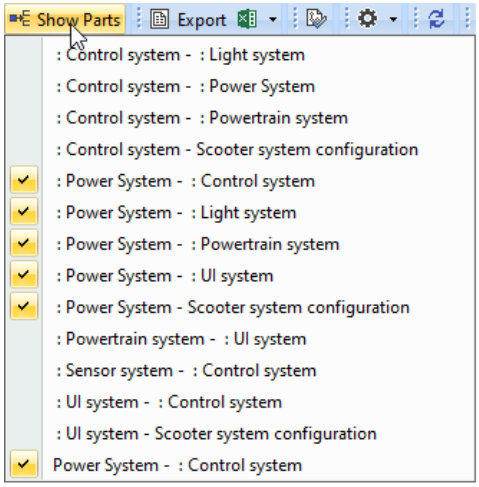


Displaying contextual relationships in the element compartment.

Learn more about creating and displaying contextual relationships >>

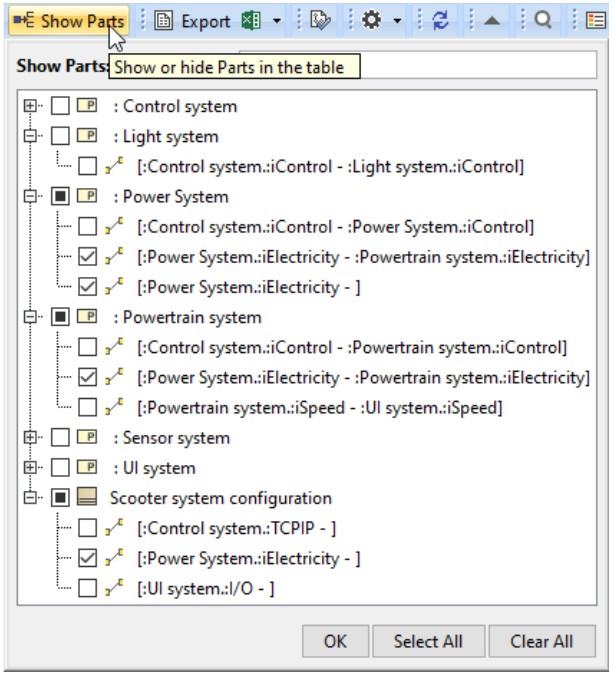
Other enhancements

- In earlier versions, the **Show Parts** filter in the ICD Whitebox tables was hard to use in larger projects: only a limited list of connectors was visible; and identifying the connectors was difficult in some cases. This version brings enhancements that will allow easy searching, identification, and selection of all connectors outgoing from the parts. Using this dialog, you can easily filter connectors and choose which ones should be displayed in the table or hidden from it. Learn more >>



Earlier versions

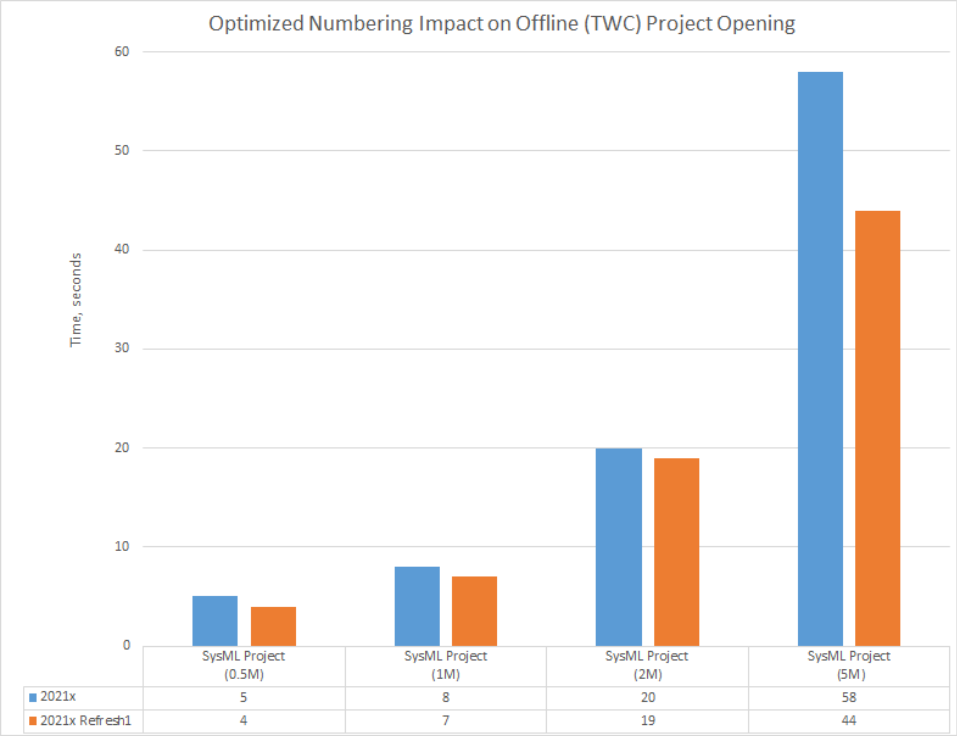
2021x Refresh1



Back to top

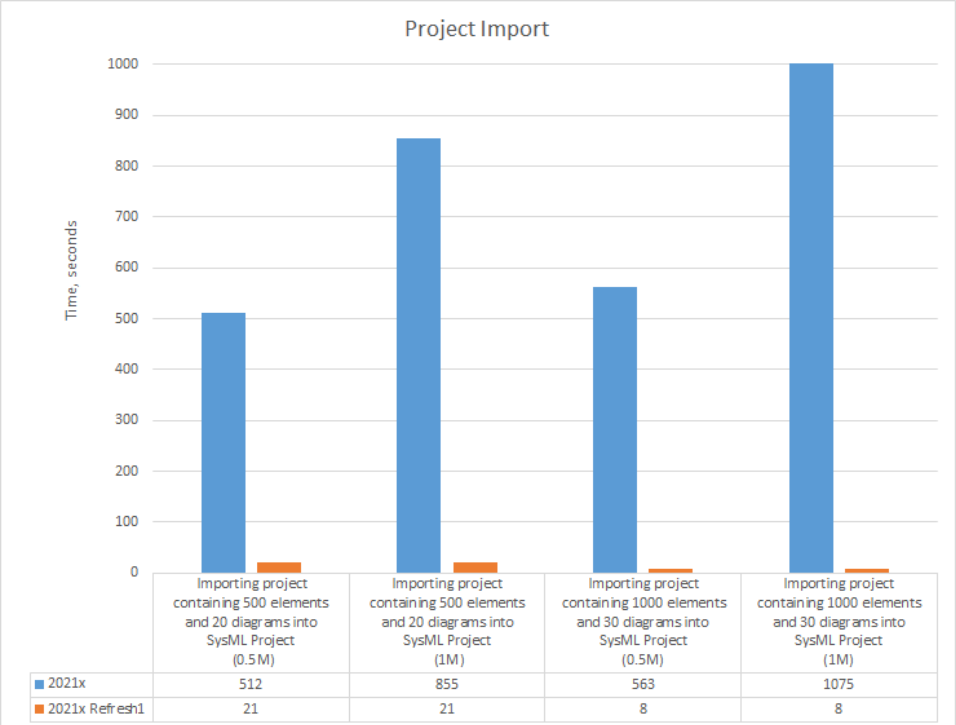
Performance Improvements

- **Numbering validation**. Project opening now takes less time as a result of boosting numbering validation efficiency.



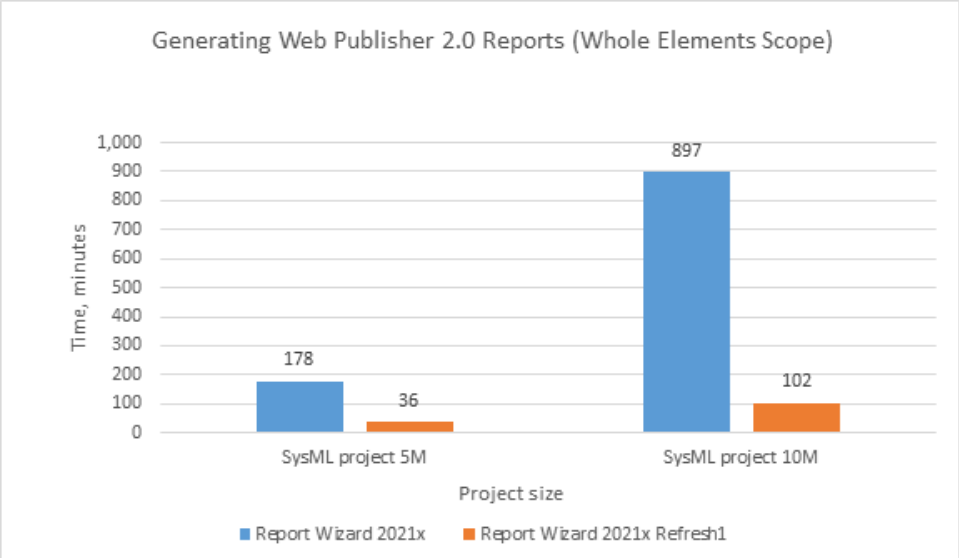
A chart comparing the project opening speed in 2021x and 2021x Refresh1 SysML projects with 0.5M, 1M, 2M, and 5M elements.

- **Element selection**. Further improvements have been introduced to element selection (i.e., the **Select Element** dialog and drop-down lists) performance. The stereotyped element search is now performed approximately 20-200 times faster.
- **Import from another project**. Projects can be imported much faster as the import operation now works more like Copy/Paste rather than Merge.



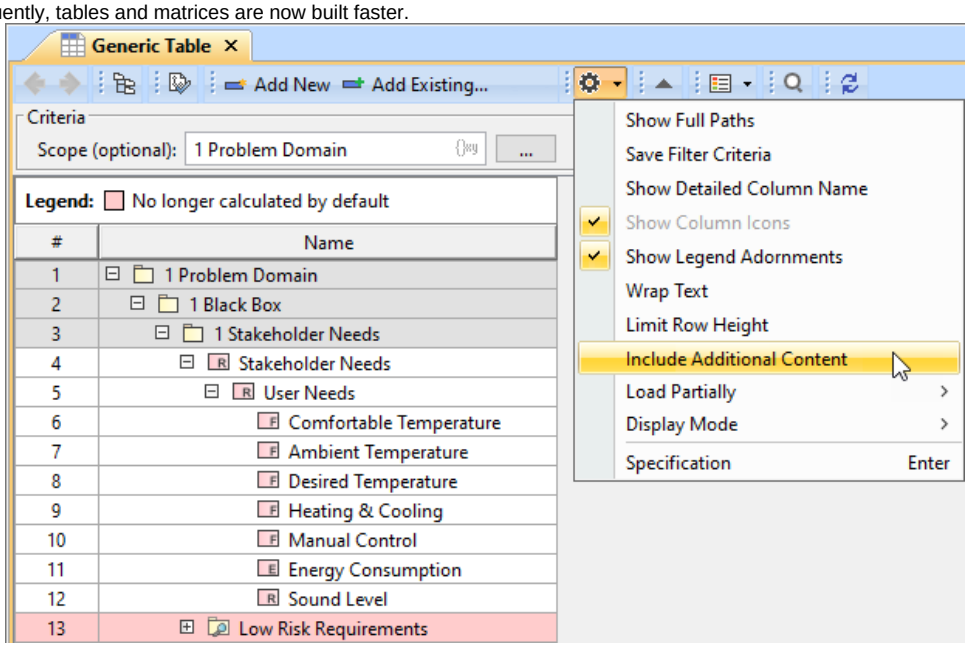
A chart comparing the sample project import speed in 2021x and 2021x Refresh1 SysML projects with 0.5M and 1M elements.

- **Time consumption on large server projects**. Report Wizard now utilizes significantly less time on large server projects using the Web Publisher 2.0 template, in comparison with the 2021x version.



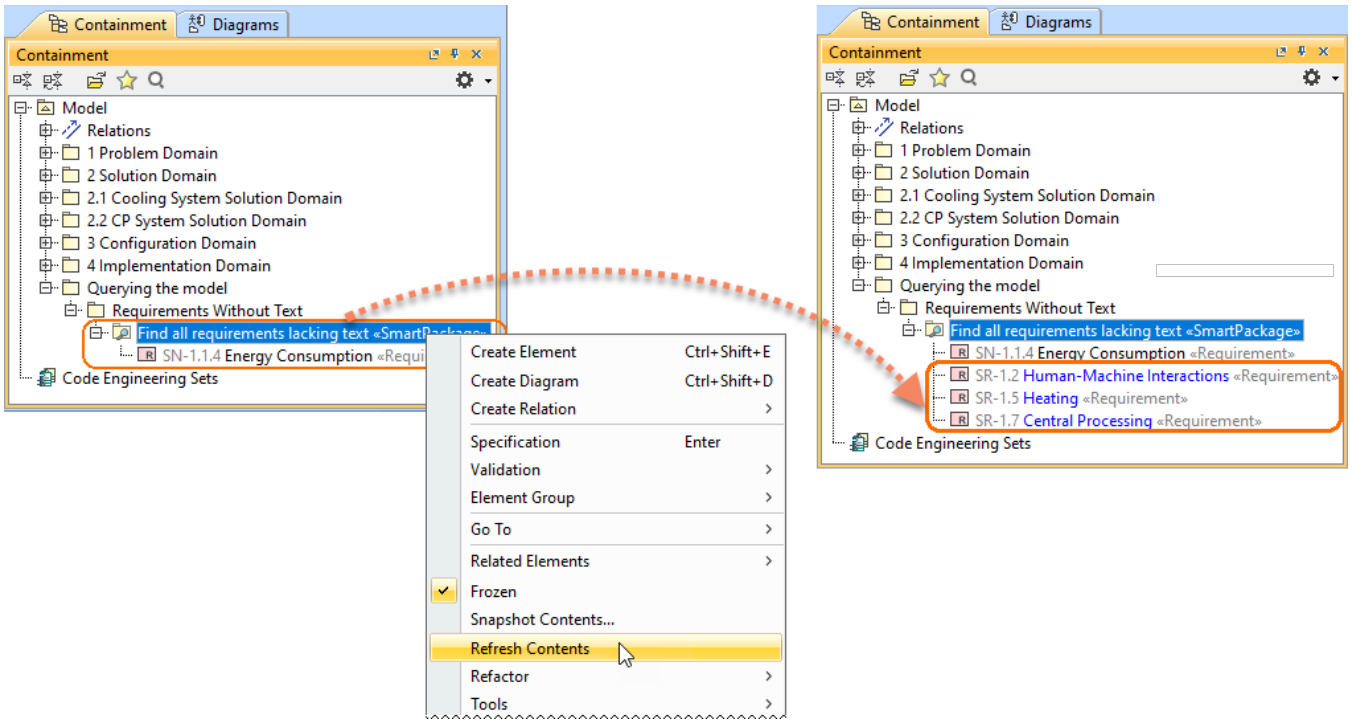
A chart displaying the results of performance testing between SysML project 5M and 10M sizes in the whole elements scope.

- **Ignoring Smart Package Calculation in Tables and Matrices**. Depending on the complexity and the total number of Smart Packages within the specified scope in tables and matrices, significant performance degradation can be caused while building tables and matrices. Since the 2021x Refresh1, the inner Smart Packages are no longer calculated by default unless you turn on the **Include Additional Content** option. Consequently, tables and matrices are now built faster.



The contents of a Smart Package that falls within the specified scope is excluded when building a table.

- **Refreshing Smart Package contents on demand**. You can now suspend the automatic Smart Package contents recalculation in the background to enhance performance by simply changing the Smart Package state to Frozen. As a result, elements are no longer automatically added to the Smart Package contents; however, the dynamic contents can still be refreshed on demand by clicking the button.



Refreshing the Smart Package contents on demand.

Learn more about freezing the contents of Smart Packages >>

Four SysML projects in 2021x that were used to run the performance tests, ranging from 0.5M to 5M in size, are equal in size to projects of earlier versions with sizes ranging from 1M to 10M.

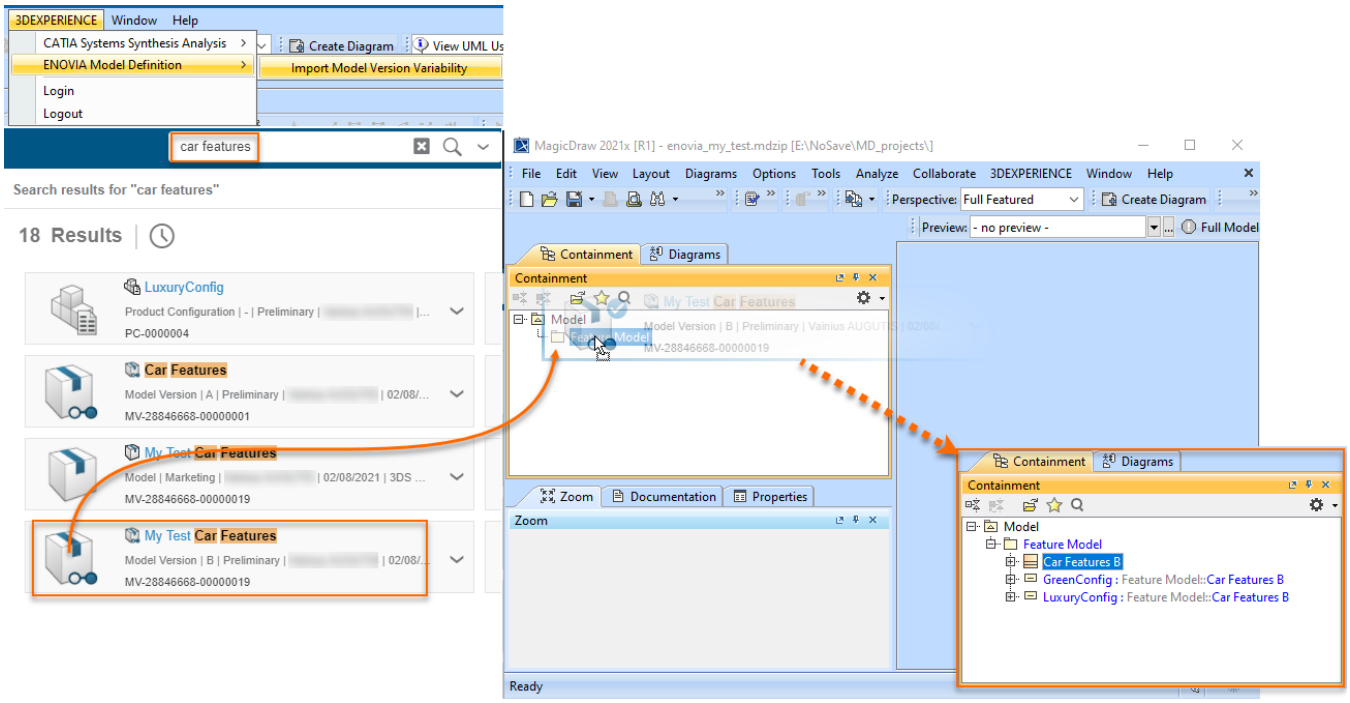
Back to top

Integrations

Importing Variability Data From the ENOVIA Model Definition Application

This functionality is available with the 3DEXPERIENCE ENOVIA Model Definition Integration and Product Line Engineering plugins.

Import variability data to your modeling tool project directly from the 3DS ENOVIA Model Definition application on the 3DEXPERIENCE platform. The 3DEXPERIENCE ENOVIA Model Definition Integration plugin is available for your modeling tool (together with the Product Line Engineering plugin).



Learn more about importing ENOVIA models >>

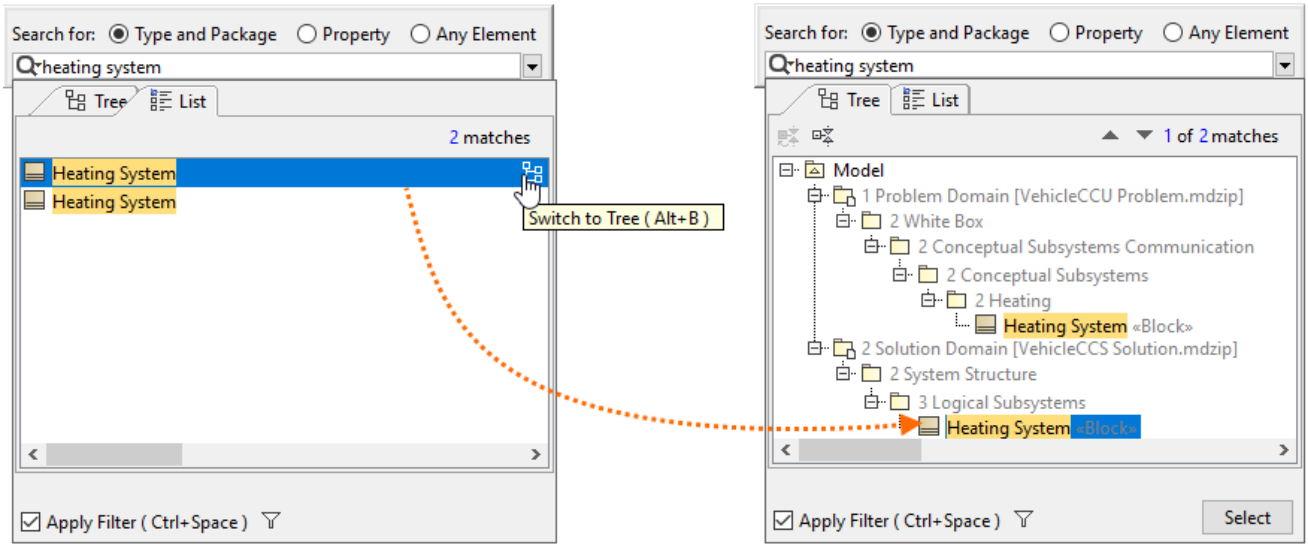
Learn more about authenticating with 3DEXPERIENCE platform >>

Back to top

Modeling and Infrastructure

Tree View in Select Element Drop-Downs and Quick Find

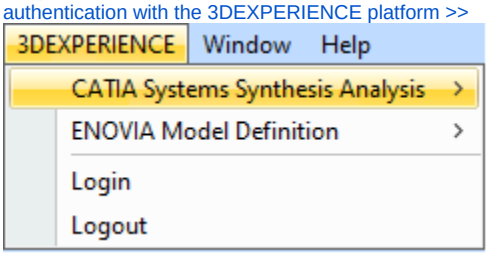
Quick Find and Type Selection drop-downs have been enhanced with the **Tree** view. In cases when multiple elements share the same name, it will no longer be confusing as to which one to select: all you need to do is switch to the Tree view to identify the element's place in the model hierarchy.



Switching between the Tree and List views to find the needed element faster.

Other improvements

- The **3DEXPERIENCE** menu item groups all available integrations with the 3DEXPERIENCE platform. When you install plugins that support integration with the platform, all their available functionalities will be added under the **3DEXPERIENCE** menu. Learn more about authentication with the 3DEXPERIENCE platform >>



- Since the *UsageInDiagrams* Opaque Behavior is a time-consuming operation (it loads all diagrams - matrices, tables, and maps), it has been deprecated and replaced with the *UsageInDiagramsWithSymbols* Opaque Behavior that searches for symbol usages only. Learn more about built-in operations >>

Back to Top

Key Issues Fixed

The following key issues have been fixed with this version:

- Improved performance - Smart Packages that fall within the tracking scope are no longer automatically calculated when the **Suspect Links** > **Show Suspicions** command is executed.
- The problem with Java sign-in is solved and the modeling tool now launches on macOS Big Sur without warnings.
- The project update no longer fails when the standard profile has no internal version specified.
- The modeling tool no longer becomes unresponsive when the element search is in progress.
- The diagram is no longer scaled incorrectly on mouse click/drag.
- The filtered changes are now accepted/rejected recursively when performing the merge operation.
- The information in structured expression queries is properly updated when adding projects to Teamwork Cloud.
- The element refactoring no longer fails when the Legend item is applied.
- The applied Legend item adornments are no longer removed after saving a Teamwork Cloud project locally.
- The Diagram Info box in the diagram no longer changes its position after performing the merge operation.
- Action pins no longer remain synced to Activity when the action behavior is unset.
- Associations are no longer moved when centering Classes vertically.
- The modeling tool no longer freezes when publishing large projects to Teamwork Cloud.
- When two different custom prefixes are applied for two different sets of elements, the element renumbering no longer works incorrectly for the set of elements with one custom prefix.

Back to Top

Discontinued Products

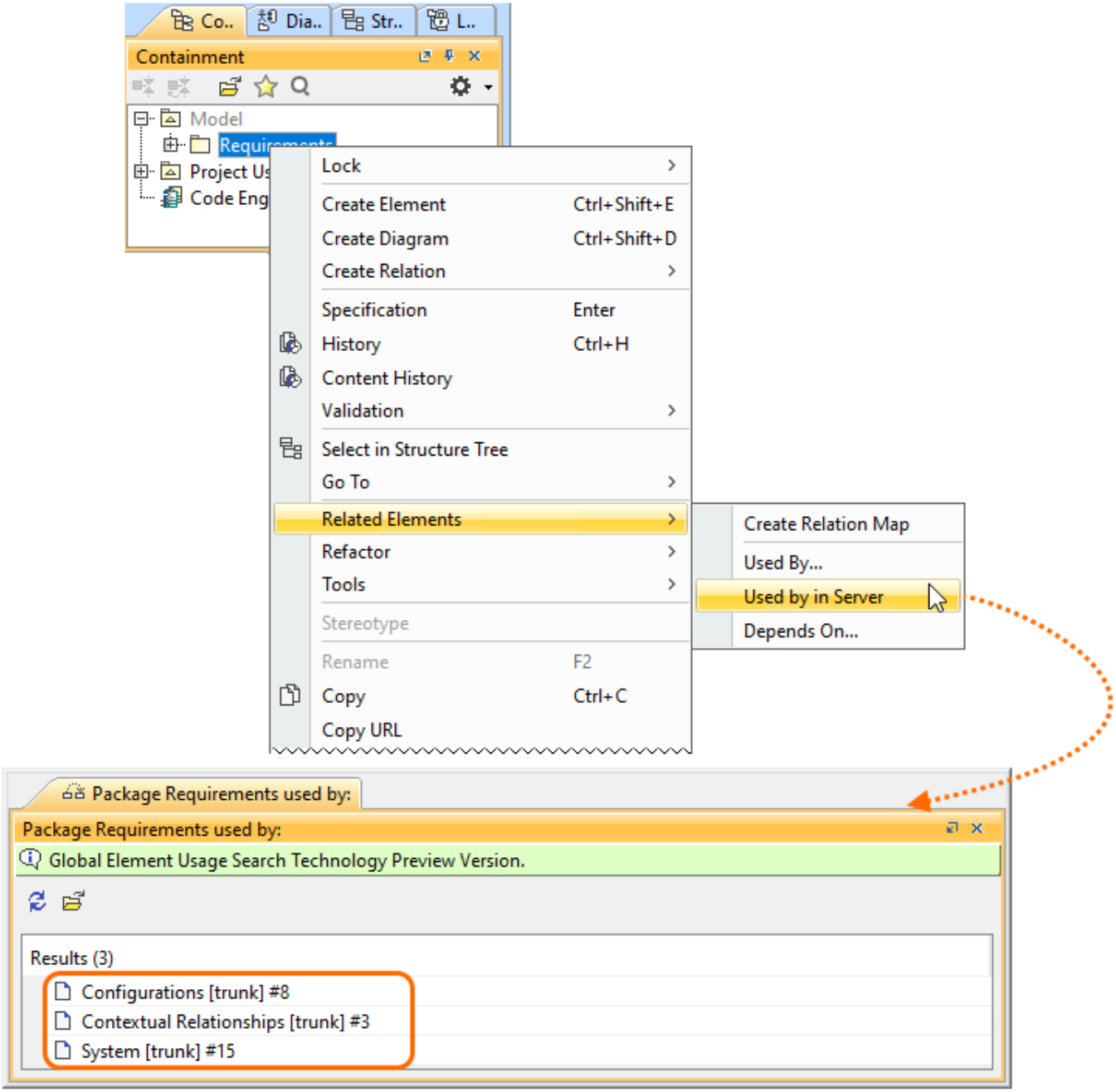
CSV Import Plugin support will be discontinued from the next major version. Excel/CSV Sync or Excel/CSV Import features will be replacing the CSV Import Plugin.

Back to Top

Collaboration

Global Element Usage Search

No more accidental Recovered Elements and unexpected surprises when updating Used Project versions! The latest release introduces the global element usage search functionality that allows you to query for the usages of the element you are about to modify or delete. Depending on the server-side configuration, projects using the element in question can be returned either from the entire Teamwork Cloud repository or the chosen custom indexed scope.

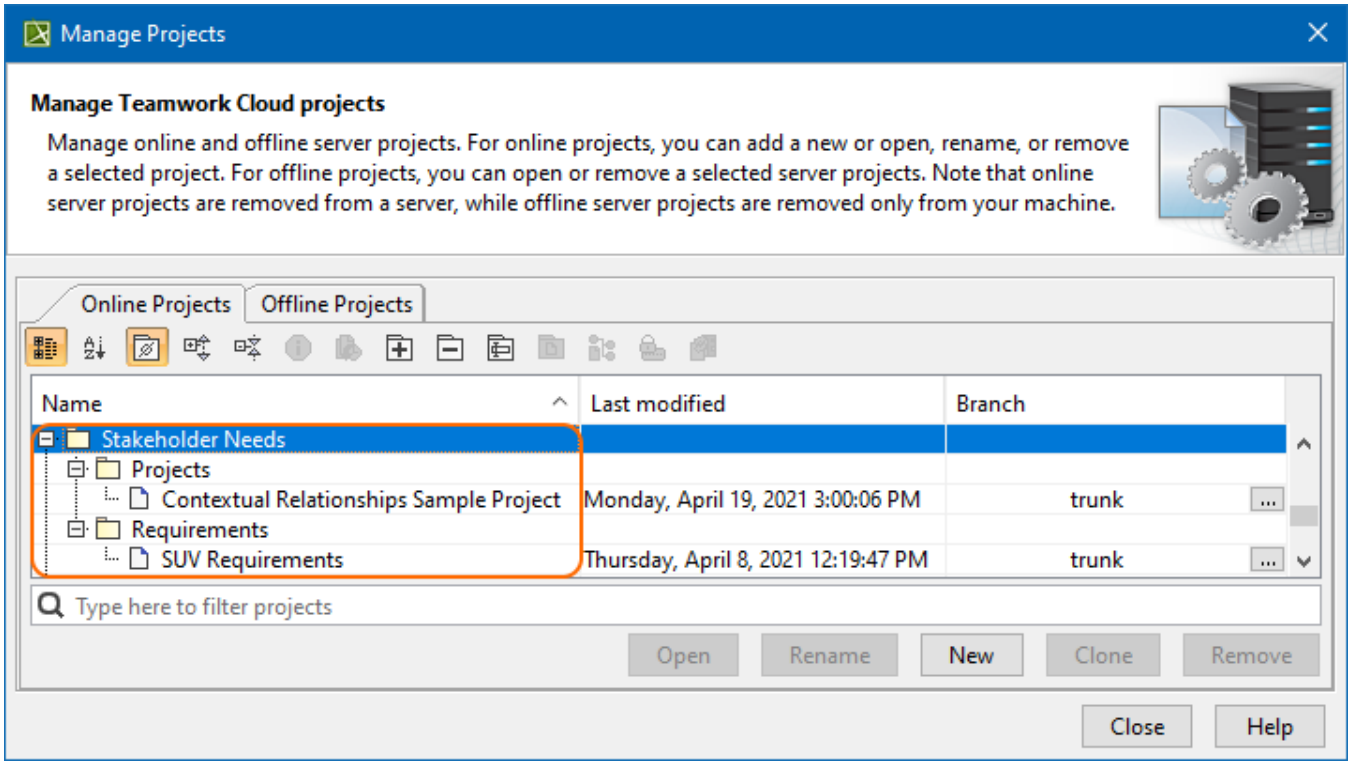


Searching for element usages within the Teamwork Cloud repository.

Learn more about global element usage search >>

Nested Categories

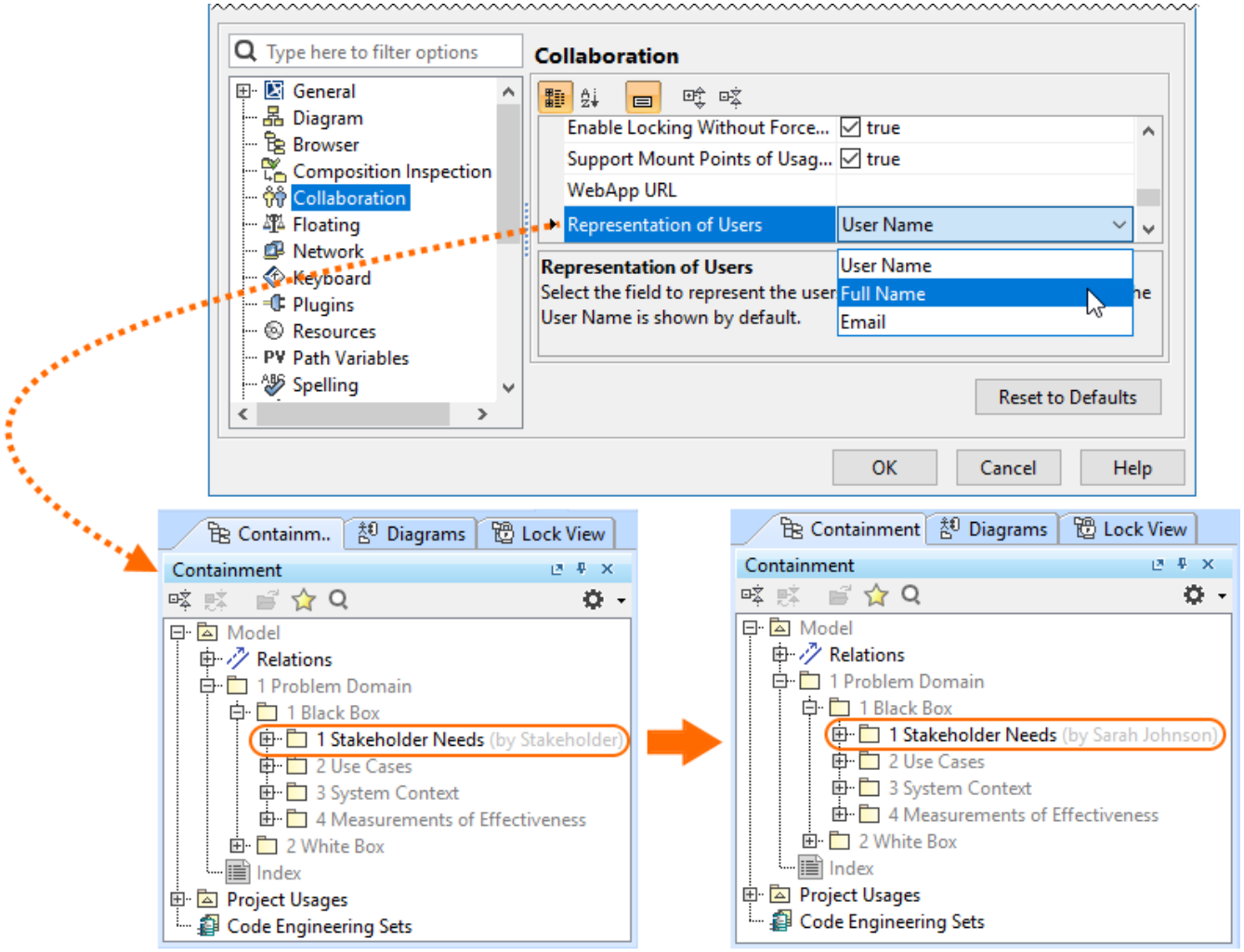
Do your projects need to be grouped hierarchically? Are you seeking to organize them in a folder-like manner? We have a solution! You can now organize your projects into nested categories so you can find them later with no difficulty.



Organizing server projects into nested categories.

Representation of Teamwork Cloud Users

You now have the freedom to customize how individual Teamwork Cloud users are represented in the modeling tool (for example, when they lock elements) by simply changing the value of the **Representation of Users** environment option. It is your choice whether a User Name, a Full Name, or an Email address is shown to identify them.

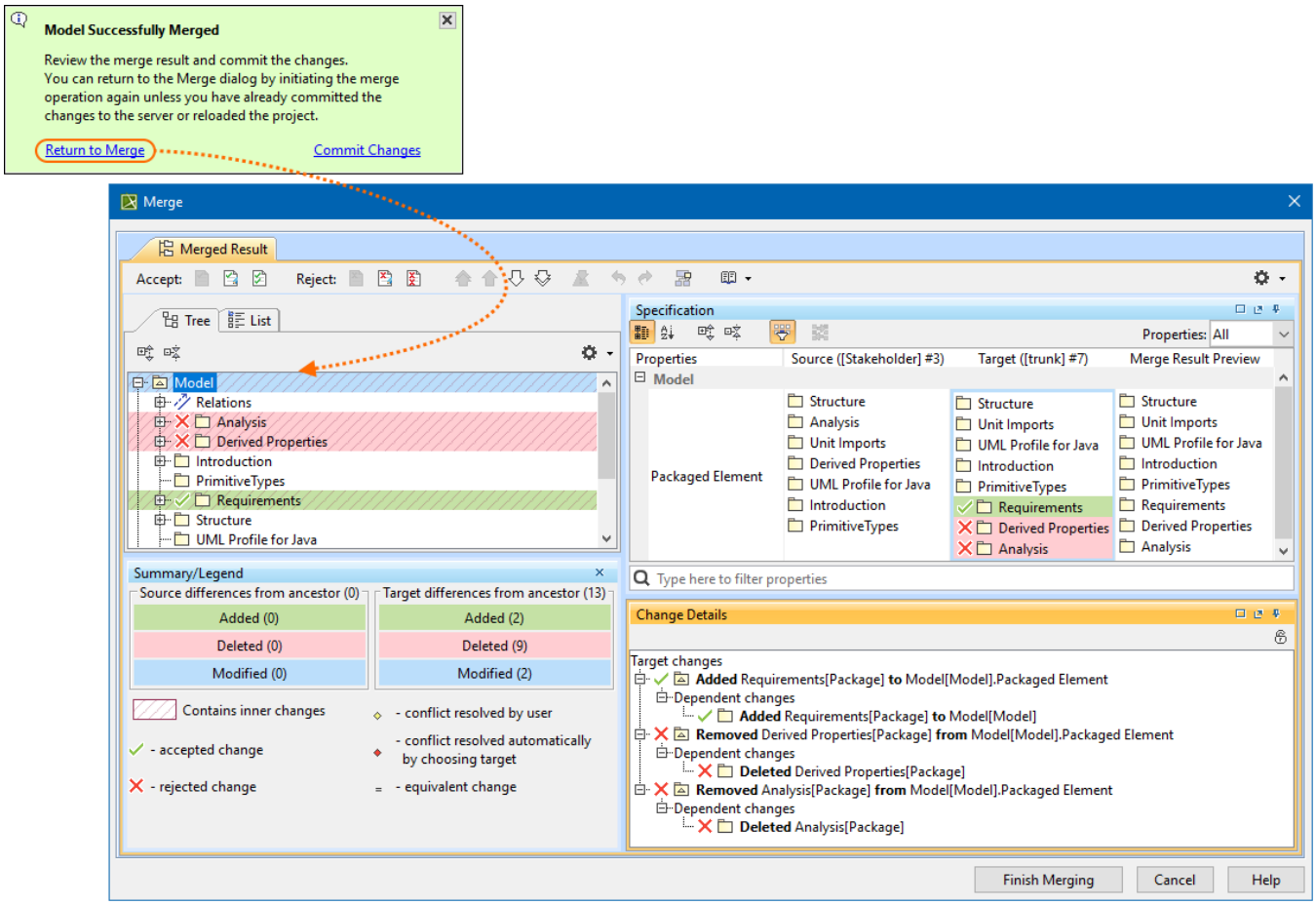


Changing the user representation in the Teamwork Cloud project.

Learn more about representation of Teamwork Cloud users >>

Returning to Merge Dialog

Need to make some adjustments after finishing the merge operation? Not a problem! You can now quickly return to the previously performed merge operation if you notice that you have accepted or rejected the changes (e.g., rejected the element creation) by mistake and need to change your merge decisions.



Returning to the **Merge** dialog to change merge decisions.

Learn more about returning to Merge dialog >>

Other Teamwork Cloud-related Improvements

- Filters in the **Merge** dialog have been redesigned to improve the user experience.
- Updating a server project with local changes in disconnected team collaboration now handles the Used Project branch deletions more effectively, with no errors.

Back to Top

Report Wizard

- Groovy Tool now supports use of relative paths, apart from Groovy file names and absolute paths, starting from the template to the Groovy file. Learn how to deploy this feature >>
- Report Wizard 2021x Refresh1 allows specifying DPIs of images in generated reports at three levels: global, template, and object. Learn more about this helpful function >>
- Warning messages can be enabled and disabled through setting the **Report Environment** options in addition to editing the **config.xml**. Find out more about disabling/enabling warning messages through the Report Environment options >>
- The Web Publisher 2.0 template can now show applied stereotypes of elements in the Containment tree. Learn how to utilize this function >>
- An increasingly effective utility of the Presentation Report Designer diagram has been ultimately designed for designing and generating PPTX and ODP templates. Discover Presentation Report Designer more >>
- With **$report.getMetaClass($element)**, you are able to acquire a metaclass from a specific stereotype element. Learn about this function more >>
- The SVG image format is more inclusively supported for text, HTML, DOCS, and DOCBOOK templates for report generation. Learn more how to achieve this capability through the user interface >>
- The Dialog tool has additionally applied the capability of hiding element icons to the **Sort and Enable** and **Selection** dialogs. Discover further detail of its applications >>
- You can now use both the relative and absolute paths of the image file on your system to display it as a homepage image by utilizing the **HomeImage** variable of the Web Publisher 2.0 template. Know more about how this function works >>
- A new creation of the **loadmodule** command deployed with the Generate command helps load all unloaded modules while opening MagicDraw projects. Get familiar with loading all unloaded modules >>
- The exported image scaling option for Web Publisher 2.0 reports has become available in Report Wizard 2021x Refresh1, so that you can reduce, maintain, and enlarge the image size percentage. Find out how to make use of this option >>

Back to Top