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SMARTEAM V5R17
Product Enhancement Overview

Part No.: GEN-A8-170006

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SMARTEAM V5R17 – WHAT'S NEW

Item management and Automated Bill of Materials (BOM) Management

ENOVIA SmarTeam V5R17 delivers next-generation Item and Bill of Materials management, enhancing the design-to-manufacturing process with guided engineering and dynamic lifecycle control of the items that make up a product. ENOVIA SmarTeam V5R17 guides engineers through enterprise business processes such as "design-to-configure" , "design-to-order" and "build-to-order." accelerating the engineering process and promoting the E-BOM across the organization and different disciplines from the earliest phases through to production.

For BOM-based engineering companies, Item Management is the basic backbone for managing product maturity. ENOVIA SmarTeam's new item lifecycle best practice enables a product's items to be moved to any engineering state at any time, enhancing the organization's ability to react swiftly to ensure item quality and maturity, and supporting engineering configuration management and concurrent engineering scenarios. ENOVIA SmarTeam's BOM platform has also been expanded to include multiple views, advanced rules, and enriched copying, editing and usability.

- ENOVIA SmarTeam introduces a unique concept in item lifecycle control: the configuration of item lifecycle rules to provide flexible and powerful control over an item's engineering state. Advanced, embedded business logic supports promoting or demoting of an item's routing.

- Multiple views management provides an out-of-the-box environment for managing cross-structural data flow throughout the product lifecycle

- Generic copy and compare enables pre-configured smart copy of object structures

Rapid Implementation of Data Management and Design Processes

V5R17 promotes rapid PLM implementation for small to mid-sized businesses with "Design Express" out-of-the-box, quick-start, best-practice packages that optimize collaborative design and data management. ENOVIA SmarTeam provides Design Express packages for users of CATIA and other CADs, and engineering teams in IP and electronics. The packages deliver robust, quick and easy-to-install collaborative CAD design and data management for design teams, providing the key first step for a comprehensive PLM solution.

The collaborative data management scenario is provided complete with a preconfigured, industrialized data model, a best-in-class CAD integration, an optimized data structure, and a proven and scalable PLM methodology. The Design Express package enables engineering departments new to PLM to deploy rapidly and successfully, while laying a solid groundwork for solution expansion over time.

The specific components of the Design Express packages include:

- Structured repository, document history, full revision and version control, advanced search and query, controlled document sharing, embedded viewing and standard design use

- Proven methodologies for optimal scenario implementation, with optimized CAD settings for scenarios, support for catalogs, business methods, tools for title block and BOM management

- Dedicated training program

CATIA V5 Design Collaboration

V5R17 expands CATIA V5 design collaboration with further enhancements to the Windows environment. ENOVIA SmarTeam's CATIA Windows integration, enhanced for usability, offers enhanced visualization in 2D and multiple page viewing, expanded efficiencies for administrators and users in controlling lifecycle operations, and dynamic revision replacement. ENOVIA SmarTeam's powerful showcase tool for CATIA data exchange, launched in V5R16, offers greater maturity through enhanced reporting, advanced queries, batch capabilities and tighter synchronization with CATIA and ENOVIA VPLM.

- ENOVIA SmarTeam provides market-differentiating CATIA V5 release support, across current and previous versions, optimizing business opportunities with different OEMs and supply chain partners.

Transformed Web User Interface

V5R17 simplifies the collaborative process with a web user interface redesigned to promote user productivity and ease of use. The visual makeover of ENOVIA SmarTeam's web environment optimizes user productivity with an intuitive layout and functional areas that streamline work, such as user cockpits, browsing, and profile card viewing.

V5R17 further promotes collaboration across engineering, the enterprise and supply chains through enriched digital mockup and viewing, data exchange and 3D XML. V5R17 expands the ENOVIA SmarTeam security backbone by extending project-based security to objects, promoting collaboration while protecting corporate knowledge assets.

Streamline Installation and Packaging

New ENOVIA SmarTeam packaging delivers PLM products according to business needs (engineering, web collaboration, enterprise, etc) consolidating and accelerating installation.

Latest ENOVIA SmarTeam certifications across infrastructure components, web clients, EAI middleware, LDAP and Web servers, including support for the Microsoft Windows 64 bit environment, ensure customers a robust platform for integrated solutions.

Viewing Capability

- Viewing and markup of more than 450 file formats by integrating with the latest Cimmetry® AutoVue Solid Model Professional Viewer version 19. Support is applicable to SmarTeam V5R14 and V5R16, and ENOVIA SmarTeam V5R17. (Currently available as a package on the web site as an V5R16 Service Pack enhancement)

- Viewing of CATIA V5R17 documents by integrating with the V5R17 Dassault Systemes 3D PLM viewer (not applicable for CMT).

- ENOVIA SmarTeam's introduces 3D XML support for all CATProduct files and the ability to display the design structure

Enhanced Multi-CAD support

In V5R17, ENOVIA SmarTeam extends collaboration in a multi-CAD environment with latest certifications across the leading CADs ─ including advanced SolidWorks Integration, which supports "save as type", improved performance and usability.

"Design-to-Configure" Process Solution

These enhancements are applicable for SMARTEAM – Editor, SMARTEAM – Web Editor/Navigator and all CAD Integrations.

❑ Automatic BOM creation and update from SMARTEAM design environment.

A SMARTEAM – Item & BOM license, together with the CAD integration, provide a seamless work method with predefined settings based on best practices for automatic Bill of Material (BOM) creation and update directly from the design structure. In this manner, the Engineering BOM (E-BOM) is created automatically upon design, benefiting the entire organization for various purposes in very early stages; e.g. procurement department can send bids to suppliers for long-lead items, compare quotes, and order from as early as the design phase, thus saving time and money. Any change in the design will automatically update the relevant item line in the BOM, and will maintain other BOM Items, intact.

Design Items that are not part of the BOM, such as Jigs and Fixtures, will be manually flagged out by the users from creation or update of the BOM, thus providing accurate product structure. The proper BOM structure is propagated throughout the organization, minimizing errors, eliminating Item redundancy, and expediting processes.

This capability is applicable from the design environment, as well as upon demand directly from SMARTEAM – Editor, and requires a license of SMARTEAM – Item & BOM.

❑ Comparison of design tree to Engineering BOM:

SMARTEAM – Item & BOM enables users to easily compare a Document tree with its corresponding Item tree through an automatic, out-of-the-box, pre-defined Compare tool. In this manner, users are empowered with improved decision-making, taking into consideration design changes, and their implications on the BOM Items. In a concurrent engineering environment, where multiple engineers relate to a single source of Engineering BOM, they are able to retrieve the most relevant E-BOM representations.

This capability is applicable from the design environment, as well as upon demand directly from SMARTEAM – Editor, and requires a license of SMARTEAM – Item & BOM.

This document is a summary of the product enhancements across SmarTeam's range of products for V5R17. For detailed information, refer to the appropriate product documentation which is available on the V5R17 Documentation CD.

SMARTEAM V5R17 ENHANCEMENTS

SMARTEAM – Foundation

New Functionalities

❑ **Folder behavior:** This is a database mechanism that can be applied to any class. A Folder behavior includes the following functionality:

- ◦ Non file managed and non revision managed

- ◦ Ability to drag and drop objects from different super classes into the folder

- ◦ Ability to show all the contained objects in a tree view

- ◦ Special link type between Folder and included objects

  - o Enhance "Switch to latest" capabilities in Lifecycle operations - Propagate "Switch To Latest" option to all assembly levels (currently is performed on the first level only).

  - o Support in Lifecycle of Large Assembly (Partial copy) - Provide support in LC operations for light weight assemblies

❑ **Security:** Users are able to add objects and secure them to a restricted project based on their project-based authorizations. In previous releases, users needed to have global authorizations in order to add objects prior to linking them to a restricted project. In this manner, companies can assign users to selected projects, and the users get permissions to work in the boundaries of the specific project, thus adhering to enterprise security work model.
Note: This is applicable for SMARTEAM – Editor, SMARTEAM – Web Editor and CAD Integrations.

Enhanced Functionalities

❑ **System Configuration:** SmarTeam has implemented changes to the System Configuration mechanism. These changes provide a significant improvement to the performance of the system. It is mostly valuable upon "login" to any of SMARTEAM applications, and Right click menu for adding an object, display user list and lifecycle operations.

SMARTEAM – Editor

New Functionalities

❑ **Security: B**ased on a user's project-based authorization, they can add objects and securely link them to a restricted project. In previous releases, users needed to have global authorization to add objects prior to linking them to a restricted project. In V5R17 companies can assign users to selected projects, and the users get permission

to work in the boundaries of the specific project, thus adhering to an enterprise security work model.

SMARTEAM – Web Editor / Navigator

Enhanced Usability

New Graphical User interface (GUI)
The new SmarTeam – Web Editor GUI includes modern web design, utilizing an improved space usage and new icons. The interface is clearly divided into the following content areas: Menu, application toolbar, two object browsing panes, and the selected object profile card.

Ergonomics Enhancements
❑ New icon toolbar for the most commonly-used operations, e.g. add to clipboard, clear selection, filter, etc.

❑ Cockpit selection from the application toolbar

❑ Full text search box area

❑ Object browsing Capability

- ◦ Navigation pane – Upon selection of an object, the main object browsing pane includes its commonly-used linked object types. This flexible content area displays the linked objects in a tree structure. The user may override public settings with his/her selected ones.

- ◦ Related objects pane – A flexible and dynamic display area for presenting additional linked objects in a flat format, to reduce the visual overload of data from the main navigation pane. This pane can be resized and minimized.

❑ Selection of a leading object – Setting of a leading object default is now enabled directly from the new command bar of the object profile card. The selection of a leading object is now made easy as setting a "Favorite" object.

❑ Adding Clipboard capabilities for improved user productivity. The user can easily reuse selected objects for fast work experience.

❑ Desktop Last Public Revision filtering: In the first level of a Desktop View or in the first level of objects that are directly linked to folders, or leading objects, SmarTeam displays only the "Last public revision" objects, and filters out all the other statuses. The "Last public revision" selection does not propagate to its linked objects, thus does not break the product structure.

Lifecycle operations
❑ Open – Any file can be opened directly from SMARTEAM – Web Editor by its native authoring application, for read only or edit.

❑ The "Run" button in a lifecycle operation setting applies all changes automatically, replacing the "Apply Changes' button

Support for Workflow script tasks

SMARTEAM – Web Editor supports various workflow script tasks adapting to specific organizational process needs. For example, upon a "check-in operation of a new object, the script can automatically add the appropriate record in the relevant Enterprise Resource Planning (ERP) system (In case, such a connectivity is defined).

Security

Add & secure objects to restricted projects – users are able to add objects and secure them to a restricted project based on their project-based authorizations. In previous releases, users needed to have global authorizations in order to add objects prior to linking them to a restricted project. In this manner, companies can assign users to selected projects, and the users get permissions to work in the boundaries of the specific project, thus adhering to enterprise security work model.

SMARTEAM – Item & BOM

The SMARTEAM – Item & BOM product content in V5R17 has major enhancements. Using a SMARTEAM – Item & BOM license, these advanced capabilities are integrated directly from within SMARTEAM – Editor, SMARTEAM – Workflow and SMARTEAM design environment.

In V5R17, SMARTEAM – Item & BOM supports the following two main scenarios:

❑ Collaborative Engineering through Item and BOM management across the extended enterprise:

- Unique "Design-to-Configure" process solution
- Item Behavior and Lifecycle Management
- Product Behavior and Multiple Views management
- Engineering Configuration management capabilities
- Engineering Change Management capabilities
- BOM editing capabilities
- Generic Copy Tool and "Mapper" utility
- Structure comparison capabilities
- Baseline and snapshot management (BOM White Board)

❑ Supply Chain Collaboration through an Engineering data exchange Briefcase

- Easy-to-package Engineering data capability
- Editing capabilities
- Consolidation capabilities
- Synchronization capabilities

Collaborative Engineering through Item and BOM management across the extended enterprise:

"Design-to-Configure" process solution

❑ **Comparison of Document tree to Engineering BOM**

SMARTEAM – BOM enables users to easily compare a design tree with its corresponding Item tree through an automatic, out-of-the-box, pre-defined Compare tool. In this manner, users are empowered with improved decision-making, taking into consideration design changes, and their implications on the BOM Items. In a concurrent engineering environment, whereby multiple engineers relate to a single source of Engineering BOMs, they are able to retrieve the most relevant E-BOM representations.

This capability is applicable from any ENOVIA SmarTeam design environment, as well as upon demand directly from SMARTEAM – Editor, and requires a license of SMARTEAM – BOM.

Item Behavior and Lifecycle Management

Item Management is the basic backbone for BOM-based engineering companies, addressing all product maturity phases across a product's lifecycle, and providing an efficient framework for covering Engineering Configuration Management scenarios.

The typical Engineering Configuration Management scenario is about establishing a process for identifying and defining Configuration Items, and recording, reporting on the status, and verifying their completeness and accuracy.

SMARTEAM – BOM manages the physical and the logical relationship of engineering data by supporting specific data manipulation and features as described below.
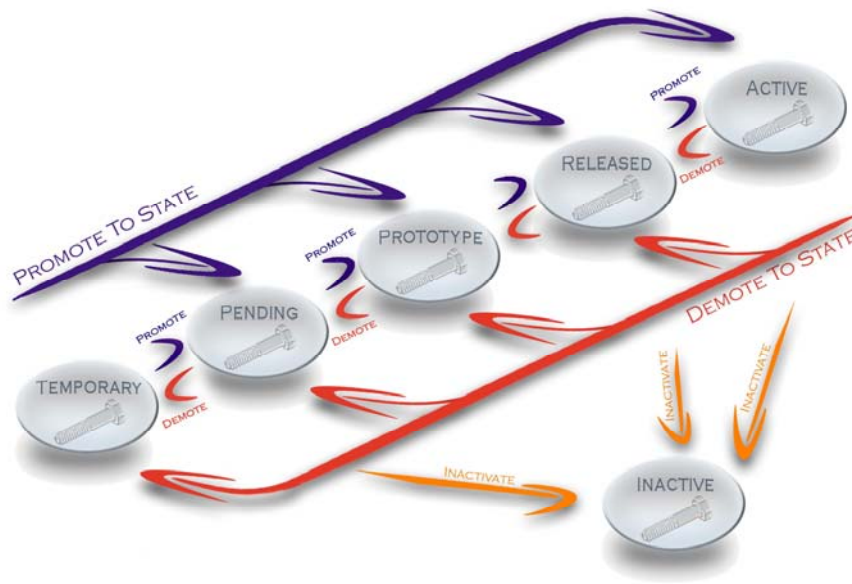
Item Lifecycle management is the core enabler for Item Management. In V5R17, SMARTEAM – BOM provides flexible and configurable Item lifecycle rules, addressing complex Engineering Configuration Management scenarios.

V5R17 introduces a new and extremely powerful concept of item lifecycle management,. Depending on their actual status, items can be shifted back and forth to any engineering state including all behaviors and business rules that relate to that state. Item management greatly enhances an engineering organization's ability to react swiftly and flexibly to the development engineering and manufacturing reality, promoting or demoting an item to another state, as the situation demands, and in accordance with enterprise rules.

SMARTEAM Item & BOM product delivers a highly flexible Item Behavior definition that includes diverse, pre-defined, yet flexible item lifecycle statuses, specific properties for each state, business rules, and an engine that drives items between states, based on these rules. Organizations can use the core Item Behavior definition to rapidly define the states relevant to their needs, such as "Design-for-Prototype", "Release-for-Planning", "Release-for-Mass Production", etc.

SMARTEAM - BOM's Item Lifecycle promotes the optimal management of an item over the course of the item's lifecycle, enhancing the engineering process to ensure item quality and maturity.

ITEM LIFECYCLE MANAGEMENT

SMARTEAM – Item & BOM lifecycle management capabilities are applicable for both complete Item Structures, as well as for Single Items, and their corresponding flexible business rules.

Item Lifecycle management provides the following capabilities:

❑ Ability to grant "Lock Structure", "Revise" (New Item Revision) and "Public" properties to any Item's Lifecycle State

❑ Product Structure filtering according to complex lifecycle revision rules, based on Revision, State and Maturity Phase.

❑ Demote and Inactivate operations for Items lifecycle

This capability is applicable from SMARTEAM – Editor, and requires a license of SMARTEAM – BOM.

Product Behavior and Multiple Views management

SMARTEAM - BOM delivers an out-of-the-box environment for defining and managing the product throughout its lifecycle. This environment enables engineering organizations and manufacturers to handle:

❑ Overall product information as a single structured source of data

❑ Several configurations throughout the lifecycle

❑ Multiple versions and efficient revision control

❑ Different revision rules on different item structures and dynamic filtering criteria

❑ Item – Product relations and definition of various Product Views for items top assemblies.

❑ Product families, models and Configuration Items

❑ Alternative sets of items

SMARTEAM – Item & BOM supports alternative configuration views of the product and its item structures. SMARTEAM – Item & BOM's powerful Multiple Views configuration management environment optimizes product development and knowledge reuse processes across the enterprise. Multiple Views functions include:
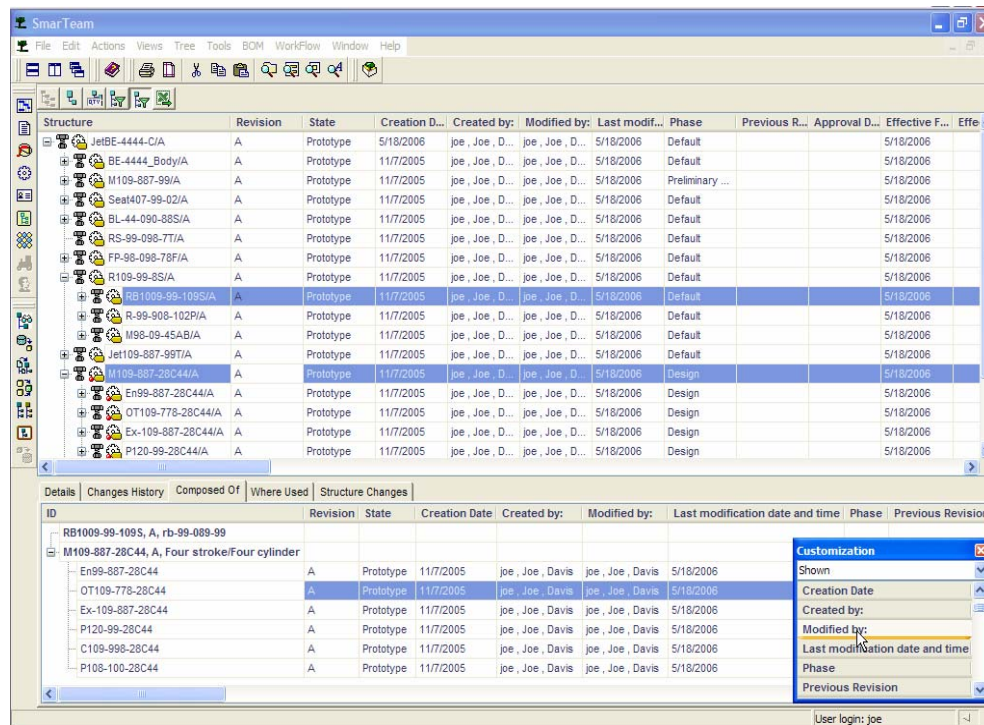
❑ Open a Configuration View" from an Item

❑ "Where Used" and "Composed of" operations across various Configuration Views

❑ Easy "Drag and Drop" of Items and Assemblies across Multiple Views

❑ "Mass Change" across Multiple Structures by "Revise" lifecycle operation – "Link to Parents of previous revisions"

BOM editing capabilities

The BOM Editor provides several structure representation modes, such as Multi-level and Single-level quantity-based representations, BOM Summary mode and a configurable item location validation mechanism, such as reference designator for electronic components or balloon numbers for mechanical engineering. Item multi appearance (Instantiation) mode efficiently represents manufacturing BOMs, with operational sequence per location capabilities.

The embedded BOM Editor empowers the user with an easy-to-use editing environment, enabling:

❑ Full editing capabilities

❑ In- session Highlighting

❑ Multi-cell "In-cell" editing

❑ Multi selection and bulk update of attributes

❑ Notes & Comments

❑ "Wise" bulk replace – for replacement of all Item appearances within a specified BOM

❑ Summary BOM mode for quantity calculation

❑ Filtering rules

❑ Export Data to Excel

❑ History of changes tracking

❑ Multi level and single level representation modes

Generic Copy Tool and "Mapper" utility

A unique and powerful Generic Copy Tool combines object structures copy and synchronization capabilities. It is based on data model business rules that enable mapping of various object classes and attributes, and provides enterprise users with continuous structured data flow and transformation on top of different data model implementations, such as from a "Requirements BOM" to a "Cost BOM", from a Design structure to an Engineering BOM structure, and so on.

This pre-configured Generic Copy tool:

❑ Enables the creation and management of complex product structures, with configuration management rules applied. Users can:

　◦ Copy structures from any given class to any class

　◦ Use existing objects or create new ones

❑ Provides support for Multiple Views, combined with the required management tools for creation, manipulation and synchronization of views

❑ Enables workflow automation on BOM changes

❑ Incorporates suppliers and sub-contractors in an easy and secured way, using data exchange tools

In addition, the Generic Copy tool:

❑ Maps 'Not in BOM' business rules

❑ Synchronizes structures in various phases (not only upon initial creation)

- ❑ Fully supports "FFF" (Form, Fit, Function) revision rules and changes through structures consolidation

- ❑ Operates in a silent mode for auto-synchronized views, within the CAD environment

This capability is applicable from SMARTEAM – Editor, and requires a license of SMARTEAM – BOM.

Change naming titles and labels in UI

SMARTEAM – Item & BOM user interface has been updated in order to support the new BOM concept, which distinguishes between fully embedded Item and BOM management capabilities in SMARTEAM – Editor and capabilities which enables off-line BOM handling based on the SMARTEAM Briefcase tool.

SMARTEAM – CATIA Supply Chain Engineering Exchange

New Functionalities

- ❑ **Report:** The Report command generates a synthesis of the reconciliation choices you have made. You can customize the layout of the generated report file.

- ❑ **Batch Process:** The CATPDMReconcileSTBatch batch process allows you to reconcile large assemblies. Using this tool, you can gain a considerable amount of time.

- ❑ **Show SMARTEAM Profile Cards:** The Show Profile Card contextual command is available for each object in the CATIA View area.

- ❑ **CATIA 2D View:** A CATIA 2D View tab is now displayed in the lower part of the Reconciliator window. It previews CATIA CATDrawing documents.

- ❑ **Document View**

  - ◦ Document View: This new view type represents the documents to be reconciled as a tree of documents.

  - ◦ VPDM View tab: This new tab displays a tree based on the expanded VPDM root product corresponding to the CATIA root product.

Enhanced Functionalities

- ❑ **Global Query**

  - ◦ A progress bar is now displayed during the global query process. It allows you to cancel the process if needed.

  - ◦ You can now apply Global Set options to a restricted number of objects

- ❑ **Interactive-Latest Available Revision Queries:** When defining an interactive query for a given document, the values you enter in the dialog box will be reused the next time you will launch again a query for that document.

❑ **Query Contextual Command:** You can now search for SMARTEAM objects using the Query contextual command.

❑ **Automatic Pre-selection:** Performs automatic queries, object mappings and applies reconciliation rules on the documents to be reconciled. It automatically decides which rule to apply on the document to be reconciled.

❑ **Customizing your Environment for Reconciling ENOVIA Documents:** The CATIA_TEAM_PDM_SUPPLIER_EV5 environment variable is no longer required for ENOVIA V5 VPM and ENOVIAvpm supply chain management.

SMARTEAM – CATIA Integration

New Functionalities

❑ **3D XML (EXtensible Markup Language) Format:** You can now use 3DXML format to preview CATProduct documents

❑ **Enabling Multi-sheet CATDrawing Documents Preview:** You can now enable the preview of the different sheets of a CATDrawing document in the SMARTEAM viewer.

Enhanced Functionalities

❑ **Light Weight Mode for Managing Large Assemblies:** When loading very large assemblies from the SmarTeam vault, instead of loading and visualizing the whole related CATPart documents, it is possible to use alternate CGR (CATIA Graphical Representation) representations just to visualize these documents. You can decide which CATPart documents you want to load. This solution optimizes performance.

❑ **Managing Catalogs:** It is possible to reduce the transfer time from vault to client work. Instead of loading the contents of catalogs, just extract the catalog and then the requested parts. This solution optimizes performance.

❑ **Inserting Components:** You can now choose between displaying the Search Editor or Insert Components dialog box when using Insert Component.

❑ **Undo Check Out:** In some cases, it is possible to apply Undo Check Out to modified documents.

❑ **Replace with Selected Revision:** In some cases, it is possible to apply Replace with Selected Revision to modified documents.

SMARTEAM – SolidWorks Integration

V5R17 SMARTEAM – SolidWorks integration has been enhanced with the following:

New Functionalities

❑ **Save as type feature:**

  o   Save assembly as part

  o   Import and link to different file types

Enhanced Functionalities

❑ **SolidWorks Detached Drawings Support:** Improved performance

❑ **Check out on the fly:** Improved Usability

  o   Popup message

  o   No user interaction

  o   Ability to take needed actions from report