

COLLABORATIVE

ENOVIA Collaborative Design for Pro/ENGINEER



ENOVIA® Collaborative Design for Pro/ENGINEER provides a multi-site Pro/ENGINEER design data management solution for the extended enterprise. It allows designers to access and share each other's designs from within the native Pro/ENGINEER user interface by leveraging the design team collaboration capabilities of ENOVIA® Designer Central™.

Key Benefits

- Maintain accurate representations of the intended design in the PLM database.
- Achieve centralized management of all CAD files.
- Control work-in-process, engineering changes, data, documents, and dynamic configurations.
- Give non-engineering personnel direct, task-specific access to current CAD data.
- Reduce the possibility of redundant, inaccurate, or out-of-date product information.
- Increase information sharing while protecting intellectual property from unauthorized access.
- Achieve ISO compliance.
- Improve design control and business process management to realize truly functional product development and delivery.

Product Overview

ENOVIA Collaborative Design for Pro/ENGINEER allows designers to effortlessly access, manage, share, and store Pro/ENGINEER data without leaving their preferred environment. ENOVIA Collaborative Design for Pro/ENGINEER facilitates process workflow, increases data integrity, and improves configuration management. From Pro/ENGINEER, users can search and browse the ENOVIA system, and lock and checkout design or drawings to their local drives. After modification, users can upload changes to ENOVIA.

Product Highlights

ENOVIA Collaborative Design for Pro/ENGINEER connects the Pro/ENGINEER application and ENOVIA Designer Central. It provides the CAD user with a rich set of design data management tools accessible from within the CAD application. ENOVIA Collaborative Design for Pro/ENGINEER organizes the native types of parts, assemblies, attributes, etc. in Pro/ENGINEER and maps those entities to associated items in ENOVIA that the entire corporation will understand.

Microsoft Windows Explorer-based Interface for Workspace Management

A Microsoft Windows Explorer-based interface lets users access their local workspaces to perform lock/unlock, open, update, revert, copy, move and delete operations. Access is also available to ENOVIA workspaces and folder content, "My Locked Objects," "Collections" and "Recently Checked in Files." All ENOVIA managed data is represented to the user as if it is stored locally on the client. Users are able to utilize standard Microsoft Explorer user interaction techniques to perform lock/unlock and open designs operations.

Product Structure Data Integrity

The combination of ENOVIA Collaborative Design for PRO/ENGINEER and ENOVIA Designer Central provides a powerful solution in maintaining the integrity and timeliness of PRO/ENGINEER data in the ENOVIA system. ENOVIA Collaborative Design for PRO/ENGINEER controls the relationships between PRO/ENGINEER entities and how they are presented in the database. When a drawing is created, it becomes the parent by the very nature of the internal reference to the part. Another example is when a structure is being checked out for loading in the CAD application. ENOVIA Collaborative Design for PRO/ENGINEER controls what must be checked out for proper assembly in the CAD application while ENOVIA Designer Central capabilities provide the user interface and business process accesses for the operation to be performed. Once files are checked out, data integrity issues may occur prior to checking the file back in to ENOVIA. ENOVIA Collaborative Design for PRO/ENGINEER provides an auto-recognition capability that gives the user confidence that on check-in the file will be associated with the same revision/version stream from which it was checked out. Another aspect of maintaining data integrity is the synchronization between the CAD designs and the objects stored in the PLM database.

Product Driven Designs

ENOVIA Collaborative Design for Pro/ENGINEER and ENOVIA Engineering Central allows the automatic synchronization of a CAD design structure to an engineering bill-of-material (EBOM). This link is critical to the correct representation of the intended design. While saving designs to ENOVIA, there is an option for users to automatically create and associate an engineering part to the corresponding CAD design. An additional aspect of the synchronization process is the automatic transfer of drawing balloon numbers directly to the engineering BOM as "Find Numbers." The Pro/ENGINEER design is available immediately to the engineering community as a specification to the engineering part. Engineers may view a graphical representation of the associated specification.

The graphical representations stored with the 3D model may be of many different formats and they are stored when the design is saved to ENOVIA. The "derived output" formats are controlled by the user. When saving to ENOVIA, different formats may be selected for each type of design. For example, PDF files may be generated for drawings, while IGES or STEP files for 3D models could be generated for broader access to the design data without the CAD application.

Quick Access

ENOVIA Collaborative Design for Pro/ENGINEER has been designed to allow users to manage their CAD files with minimal effort. The User Interface allows users to remain in the context of the CAD Application while performing daily routine tasks that interface with ENOVIA. Quick access to familiar ENOVIA icons or menu commands is a natural extension of the Pro/ENGINEER product interface. During a save operation, the user is presented with only preselected new and modified designs, which eliminates the need to traverse the structure to locate the desired items. Opening designs is also easy. Users may search ENOVIA, or access workspace folders and stored collections directly from the "Open" dialog. In order to encourage users to frequently update the system with their latest design versions, ENOVIA Collaborative Design for Pro/ENGINEER maintains a list of recently accessed designs that users can quickly reference from the "Open" dialog for future download and provides a "Quick Save" command that saves the active in-session design without any further display or user interaction.

Exploring in ENOVIA

With the "Explore in ENOVIA" command, users may quickly review related parts and associated drawings, perform where used and lifecycle operations, and interrogate associated Engineering Change Orders (ECOs).

Baseline Structures

ENOVIA Collaborative Design for Pro/ENGINEER provides a baseline capability that permits users to preserve a specific configuration of a structure. Baselines can be created from the CAD application or ENOVIA for any stored configuration of a design. A baseline may be retrieved at any time for further investigation or used as the design's final representation for release.

Multi-Level Simplified Representations

Users that develop large structures utilize simplified representation. ENOVIA Collaborative Design for Pro/ENGINEER users may now utilize these representations at any level in the structure. As users check-in/out structures, the relationships are maintained for each level.

Attribute Synchronization for Large Structures

Updating metadata from ENOVIA to Pro/ENGINEER is often needed when loading large structures into Pro/ENGINEER. This is a time-consuming process when there is interest initially in only a few components. When loading designs from the local disk into Pro/ENGINEER is attempted, ENOVIA Collaborative Design for Pro/ENGINEER checks for a live connection to the ENOVIA database. If a connection exists, the design is loaded into a session and the attributes are updated. If there is no connection, the user is prompted to connect, allowing for the metadata update; or to proceed without connecting, and loading the design without the metadata update.

Product Structure Maintenance

ENOVIA Collaborative Design for Pro/ENGINEER represents and maintains accurate, complex product structures throughout the product's lifecycle. The product maps and maintains relationships among assemblies, parts, and other application-specific items as users check in and checkout items, or users browse the ENOVIA Designer Central vault contents. Before users attempt design edits they may perform a "where-used" operation to evaluate the extent of the potential impact of the intended modification. In addition, ENOVIA Designer Central can store previous configurations to permit baselines and rollbacks. This also allows for virtual structure management through direct access to previous revisions/version combinations stored in the database.

Users often utilize configurations of designs or family tables in their structures. These instances of designs streamline the user development process through the reuse of similar existing geometry. ENOVIA Collaborative Design for Pro/ENGINEER manages and tracks the associative relationships of these instance designs. To avoid any confusion when saving modified instances, the family object is not displayed, only the affected instances. Relationships to the generic instance and family table are maintained in the ENOVIA database.

Revision Control

Organizations can maintain multiple revision trees of designs within ENOVIA Designer Central without manually creating new subdirectories or changing filenames. When ENOVIA Collaborative Design for Pro/ENGINEER users create a new revision, ENOVIA Designer Central automatically saves it as a new business object, adds the sequential revision code to the item name, and relates it to the previous release. There is no need to propagate name changes interactively in the CAD application across files that reference the revised item.

Design Team Collaboration

ENOVIA Collaborative Design for Pro/ENGINEER provides the critical connection between the Mechanical CAD process and effective product development. By uniting the management power of ENOVIA Designer Central with the design and engineering power of ENOVIA Collaborative Design for Pro/ENGINEER, users are provided real-world control of the work-in-progress product design environment. ENOVIA Collaborative Design for Pro/ENGINEER benefits from the following collaboration features in ENOVIA Designer Central:

- CAD structure and EBOM synchronization validation
- Advanced CAD structure management in ENOVIA
- Design data workspaces
- Quick access to most-recently used design data
- Mixed design flows between mechanical and electrical disciplines
- Notification of design modifications of interest with automatic update
- Instant access to ENOVIA design status
- Online collaboration meetings
- Web- based design visualization without native CAD tool.

To ensure that designers that do not overwrite each other's work, it is possible to query for the status of locally referenced designs from the context of the CAD tool. This display shows the design's type, name, current revision, current version, latest version available, and the user that has the design locked. Right mouse button commands allow users to lock, unlock and display design properties. Once this window is activated, it may stay on the desktop while the user continues to work in the CAD application. When a user changes work designs, the PLM status window may be 'refreshed' to update the display with the current active design status. In addition to this status display, users may also update their in-session design through the "Global Refresh" action. Any designs that are out-of-date are updated with the latest version available in ENOVIA, without closing in-session design files.

The Role of ENOVIA V6 and PLM 2.0

ENOVIA Collaborative Design for Pro/ENGINEER supports PLM 2.0, product lifecycle management online for everyone, and the ENOVIA V6 values, which are:

- Global collaboration innovation
- Single PLM platform for intellectual property (IP) management
- Online creation and collaboration
- Ready to use PLM business processes
- Lower cost of ownership.



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