



ENOVIA VPLM V5R18 – FACT SHEET

Extending Engineering and Business Process Innovation

- [Introduction](#)
- [What's New at a Glance](#)
- [Overview](#)
- [Detailed Description](#)



INTRODUCTION

ENOVIA VPLM helps companies take more innovative products to market faster by providing scalable Virtual Product Lifecycle Management of complex Product, Process, and Resource (PPR) information and services. By linking key lifecycle processes and knowledge, ENOVIA VPLM improves decision making and removes obstacles to innovation. Stakeholders in medium to large enterprises can leverage real-time PPR information, Web-based 3D navigation, advanced simulation, and collaboration tools to share insights, optimize designs, and reduce development time and costs - anywhere, anytime.

Integrated and built on a common architecture with CATIA and DELMIA, ENOVIA VPLM provides a virtual, 3D-collaborative environment where stakeholders from marketing to design, to production planning and support can explore and validate decisions within the context of the rich relationships between Product, Process, and Resource knowledge throughout the product development lifecycle.

What distinguishes ENOVIA VPLM from integration-driven PLM systems is our focus on ensuring that product, production, and maintenance data are defined, captured, and managed concurrently so that digital Design for Manufacturability and Maintainability can be achieved. By exploring the rich relationships between product, process, and resource (PPR) objects defined in CATIA and DELMIA, developers and planners can optimize designs and production processes early on in development when the

opportunity to innovate is high and the cost of change is low. Validating the product and its production processes before the design is released and any capital investment made eliminates costly physical prototypes and significantly reduces development costs and time-to-value. With this new paradigm, “First Built First Sold” products are no longer a dream but a reality.

ENOVIA VPLM places lifecycle engineering, manufacturing, and maintenance information securely at the fingertips of global development stakeholders, whether it is trade studies, sourcing data, digital mock-ups, design reviews, or supply chain production status. This knowledge- rich PLM environment based on a single, digital PPR reference provides the best opportunity for our customers to generate the time and cost savings they need to compete and the continuous innovation they need to win.

Finally, to facilitate flexible and cost-effective integration of our solution with other enterprise systems such as SAP, ENOVIA VPLM solutions are built on standards-based middleware to support changing market requirements and business growth.

ENOVIA VPLM Delivers:

- Virtual product development environment and lifecycle management of 3D Product, Process & Resource (PPR) data.
- The only integrated PLM platform (based on common architecture) for digital design, manufacturing, and maintenance.
- Leverages CATIA and DELMIA Relational Design capabilities for concurrent development of design and the virtual production.
- Real-time digital mockup validation - from visualization through virtual reality – to drive product optimization.
- Connectivity and openness across engineering, manufacturing, and the value-chain.
- Sourcing and manufacturing fully immersed in PLM from design through end-of-life.

WHAT'S NEW AT A GLANCE

ENOVIA VPLM V5R18:

- Delivers additional process richness to optimize concurrent work in process design activities and fully leverage all information contained in CATIA V5.
- Strengthens the immersive management of configured products to speed the design of new variants and the exchange of configured product information.
- Provides instant notification of changed feature level information and CATIA session refresh to streamline and harmonize change throughout the product definition phase.
- Integrates ENOVIA VPLM with ENOVIA MatrixOne to synchronize engineering and business processes at the detailed design level which speeds design innovation, ensures definition accuracy, and guarantees uptime by using an optimized and scalable architecture.
- Reduces the risks of distributing and costs of protecting confidential V5 PLM information with the introduction of digital rights management technology.
- Provides engineers and ergonomics specialists with additional applications including an out-of-the-box solution to validate vehicle interiors, reducing costs of regulatory conformance validation.

- Lowers barriers to photorealistic rendering technology with a new entry-level product for small and medium business and casual users.
- Enables direct communication between designers and sourcing managers and improve tools for catalog administrators to create robust Collaborative Enterprise Sourcing processes.

ENOVIA VPLM V5R18 OVERVIEW:

- VPM Navigator in V5R18 includes Product View Specifications to expose more product design information in design context and Product View Results to allow designers to more easily build, share, and maintain comprehensive design environments for studies involving kinematics, digital mock-up, and assembly drawings for layout and/or production intent. *
- V5R18 VPM Navigator provides dynamic configuration filters, automated publish and subscribe tools, and enhanced Action and Instance Editor tools to provide designers more insight on product modifications resulting from changes to configuration variation, part versioning or substitution, and document management activities.
- New product evolution and design maturation processes are simplified through automated product duplication, advanced part *where-used* analysis, and part replacement capabilities within V5R18. Taken together, these enhancements enable designers to make changes quickly and accurately for rapid product optimization.
- Relational design across the supply chain is more efficient with V5R18 because applied configuration filters enable larger work packages containing more product information, and multi-site replication of data packages are more easily managed. *
- Configuration tools within V5R18 enable more accurate definition of the final product beyond 'As-designed' and into the 'As-manufactured' and 'As-supported' stages to foster greater involvement and earlier participation of these teams in the concurrent planning of an entire product lifecycle. *
- Advanced mock-up analysis and validation offers provided within the ENOVIA DMU V5 portfolio are greatly expanded in V5R18 to cover and reach new processes and users. For instance, the Vehicle Occupant Accommodation product provides engineers and ergonomics specialists with an out-of-the-box solution to automatically predict a vehicle occupant posture, and then optimize and validate the vehicle interior packaging using human manikins in a 3D environment. In another domain, the Photo Studio 1 product provides designers and casual users with an easy way to produce photorealistic images at the earliest stages of product development and for downstream processes such as documentation and marketing collaterals creation.
- Digital Product Rights Management in V5R18 offers designers the data protection they need to freely distribute innovative ideas in 3D among suppliers and partners outside their organization with the assurance their intellectual property is secure.
- The integration of ENOVIA VPLM with ENOVIA MatrixOne enables the continuous synchronization of Engineering and Business processes companies need to rapidly develop new and exciting products right the first time using VPLM and also on time using ENOVIA MatrixOne.

- Continuous improvements within ENOVIA^{VPM} in R18 help companies leverage their current PLM investment and smooth the migration to ENOVIA V5 VPLM.
- Collaborative Enterprise Sourcing streamlines the part standardization process by allowing the definition of a part family to be automatically influenced with each new part added by an administrator. Leveraging the native integration with VPM Navigator, designers can work directly with supply managers to easily substitute standard parts that optimize the final product.

* Previously released in a V5R17 service pack

DETAILED DESCRIPTION

VPM Navigator

- V5R18 introduces Product View Result, a contextual dataset stored in ENOVIA and used in CATIA to maintain a fixed design context for use in any situation where a subset of the entire product is needed. Examples where a fixed design context is desired include design studies, kinematic layouts, digital mockup, and assembly drawings. Design context can be added and Product View Results removed as needed to convey design intent. This can be reconciled at any time with the underlying product structure in ENOVIA for update to the latest product information. All application data created within CATIA can be stored into a Product View Result and kept up-to-date as part changes occur. *
- V5R18 introduces Product View Specifications (PVS), persistent product filters to store and maintain a fixed design context for easy recall, reuse, and sharing of a design context with others. Product View Specifications save time and reduce error by allowing designers to specify exactly the criteria important to their design concept and maintain these even as the underlying product changes. *
- V5R18 establishes Product Specification maturity and lifecycle to control changes that occur to the Product Specification and provides administrative security on Product Specifications to protect them through the duration of product development. *
- V5R18 VPM Navigator includes powerful *Where-Used* analysis to help designers determine the change impact on reused parts. Furthermore, V5R18 allows users to promote/demote, lock/unlock, and change part attributes directly within the *Where-Used* results panel, greatly improving designer productivity.
- The *Insert Existing Component* selection within V5R18 provides fast and direct ENOVIA VPLM data access to designers inserting existing versions of CATPart or CATProduct documents into their current CATIA V5 session.
- V5R18 VPM Navigator allows designers to delete unused part versions and/or document revisions directly from within the impact graph and/or search results windows. VPM Navigator performs several quality checks before actually deleting a file including “Where-Used” and People and Organization (P&O) privileges. This makes ENOVIA VPLM cleanup more efficient for designers and administrators alike.
- Based on a pre-determined server process memory size set by the administrator, V5R18 routinely checks the current VPM Navigator server process size to actively optimize the user performance invisible to the user. If the server size is exceeded, these actions follow: kill existing server process, and launch a new server process, bind the running client process to this new server process using the same logon criteria (user/password/role) as previously used. *

- Design change activity in V5R18 is more efficient due to the addition of Action Management within VPM Navigator to create, query, and view/edit Actions as needed throughout the course of a design modification.
- V5R18 improves Publish & Subscribe usability through easier retrieval of published events, offering a consolidated view of active event subscriptions, new capabilities to launch downstream functions (that is, open, properties, impact graph), the ability to discard subscriptions, and customized NLS messages to convey additional information specific to local ENOVIA environments.
- VPM Navigator in V5R18 includes new document management tools to directly create, edit, and open/view documents stored within the ENOVIA V5 database. Check-in/check-out capabilities complement the full array of document management functions to enable designers to work inside or outside of CATIA as needed to complete designs quickly and right the first time.
- VPM Navigator in V5R18 automatically attaches design tables containing all of the parameters and optimizations necessary to define a part directly to the product structure of the part itself, tightly linking source to result and eliminating a separate query for this data. *
- New settings in V5.18 allow administrators to specify how synchronization of product structure instances will occur as designers save CATIA changes into ENOVIA. Within CATIA, given a positional (relative part move) or product structure (add/delete child) modification of an ENOVIA instance, an administrator setting determines which changes will be automatically propagated to the other instances. The choices - None, Position, PS (product structure), and Full - refer to the level of automatic synchronization to be made upon save. Selecting 'None' speeds performance while 'Full' best enables active concurrent engineering.
- Designers using ENOVIA V5R18 are able to select **Refresh document in session**. Through an unload/reload dialog screen, designers can refresh their existing context to easily incorporate the latest changes of parts within their context made by the responsible designer working elsewhere at the same time.
- VPM Dynamic Configuration Handler in V5R18 provides designers an easy method to stay informed of pending changes to their active design context. Dynamic configuration handlers within VPM Navigator extend the filter criteria beyond instance effectivity and actions to include filtering by modification criteria. The dynamic aspect is delivered by the storage and recalculation of the modification search query, thus providing a list of modifications that can change frequently as modifications are added, modified, or deleted by other designers. *
- V5R18 extends the 'Edit Applicability' functionality from Product Editor into VPM Navigator enabling designers to easily extend usage of his or her design. 'Edit Applicability' assigns a new effectivity to a specified part instance without the need for extensive change control.
- The new VPM Navigator ability to 'Set Configurable' in V5R18 broadens the scope of the designer and provides a method to create configurable objects which leads to greater understanding of the configuration context used during detailed design or during the development of advanced design studies. *
- In V5R18 opening large assemblies is easier with the new VPM Navigator 'Select Under CGR' option to open and load work package content into a CATIA V5 design context. When 'Select Under CGR' is specified, only a single light representation of the work package contents will open, providing designers easier navigation of large assemblies and faster construction of the appropriate design context.
- Together, enhancements to the 'ENOVIA – Send to File' function in V5R18 improves data exchange productivity because designers receive access to parts via the Impact

Graph, notification on send that a part is not the latest version, additional control of user settings, and semi-automated data handling of parts previously sent to the destination file.

- In VPM V5R18, the user setting to 'expand-by-level' after applying a configuration handler improves expansion performance and makes design session building faster and more responsive. *
- V5R18 makes it easy for designers to reuse assemblies previously intended as "single-use only" by providing a selection to automate the re-use operation in VPM Navigator. VPM Assembly Reuse considers the product structure of both VPM Navigator and CATIA V5 to ensure the resulting product matches exactly the designer's assembly reuse intent.
- Construct more powerful VPM Navigator filters in V5R18 by including attributes from any desired environment (domain) and stack them based on and/or criteria to quickly build the design context desired.
- A new capability in V5R18 to store user-specific filter and query information expands accessibility of these settings to other users and allows the owner to set default settings to values to return more useful query results.
- Scan and Save avoids errors in the V5R18 database by validating before the actual Save process that all part attributes have been established completely within the values expected and, in conjunction with CATIA V5, ensures accurate population of the ENOVIA V5 database as required by other designers. *
- Version management within V5R18 streamlines the part versioning process by further distinguishing one attribute from another through custom tailoring by the individual user and automatic unlock of new versions immediately upon creation.
- Design change activity in V5R18 is more efficient due to the addition of Action Management within VPM Navigator to create, query, and view/edit Actions as needed throughout the course of a design modification. Furthermore, designers obtain query results faster in V5R18 because Action queries can be restricted to search only within a specific Product Root Class.

EBOM & Configuration

- VPM V5R18 limits the scope of product freeze to only domains specifically identified. Typically, managers avoid freezing changes on product areas actively involved in post-build and/or post-certification activities.
- V5R18 strengthens the relationship between the 'As Supported' and 'As-Designed' product specifications by synchronizing them using common filter criteria plus any criteria added specifically in the 'As Supported' domain. Read-only 'As Designed' filter criteria, automatic version association, and standard P&O security within the 'As Supported' specifications maintain filter accuracy and provide unauthorized modification. Where-Used analysis produces the 'As Designed' and 'As Supported' specifications in the same relationship browser.
- By exposing the relationship between a primary part and its substitute, VPM Navigator in V5R18 allows designers to search, lock, and view or edit primary part attributes to limit part substitution by approval only. Tight control over part substitution provides more flexibility in detailed product definition.
- Publish and subscribe enhancements in V5R18 use automatic subscriptions to guarantee designers maintain awareness of the changes affecting them. Notifications arrive when designers have subscribed either to an Action that has changed or to a part that has had a new version created.
- Layout Engineers in V5R18 can automatically copy an existing product structure (PRC) to quickly and completely build a new product evolution skeleton complete with duplicate part instances sourced directly from the original product.

Product Interference Management

- Interference checking can be done faster and with more accuracy when configuration filters are used as part of the ENOVIA V5R18 Clash Update routine.

Electrical Cable Route Management

- Network Run information stored in V5R18 VPM Navigator is available in CATIA V5 to assist the electrical designer in locating the specific electrical route to modify and also provides the ability to edit the Network Run to modify the information it conveys and store those changes back to VPM.

Supply Chain Engineering Exchange

- V5R18 supports exchange of product information between OEMs and Suppliers using VPM Navigator when work package information contains and is subsequently filtered by configuration information. Management of configuration within work package exchange gives designers a single step process to share ever-more complicated designs with suppliers with more speed and efficiency. *
- Multi-site data exchange using V5R18 “Replication Package Manager” simplifies administration by providing interactive tools to filter and view data packages, change status, simulate the package exchange itself, or delete entire packages from the queue.
- New authorizations in V5R18 to reclaim data ownership help administrators clean up unnecessary data or recover from transmission errors without intervention from the receiving party.

VPM Lifecycle

- The homepage content displayed within VPM Lifecycle Navigator Web is controlled in V5R18 by role and authorization and more choices are available to choose content with scrolling combo boxes to simplify the Web-page setup and customization.
- Environment deployment and data validity are enhanced in V5R18 with reverse proxy support and server checks of user data input to further strengthen ENOVIA VPLM Web security.
- V5R18 extends Web Services capabilities by improving the management of multi-valued attributes, Best-So-Far filters and customizations, and block document extractions to allow handling of documents larger than 90MB.
- Enterprise Process Management in V5R18 extends the ENOVIA VPLM leadership in Aerospace processes by supporting multi-level expand of tasks and steps in routing slips and permitting the view of container data without the need to issue a check-out request.

Digital Mockup

- Better V5R18 performance within a DMU scene makes measuring and sectioning faster to improve designer productivity. *
- V5R18 extends the scalability of the 3D XML standard by offering the ability to generate 3D XML from CATDrawings, CATParts and IGES files in batch mode.
- V5R18 includes new plug-ins to convert 2006 Solidworks and ProE Wild Fire 3 data into V5 to further handle heterogeneous CAD environments.
- Vehicle Occupant Accommodation 2 (VOA) provides engineers and ergonomics specialists with a solution to validate vehicle occupant packaging using human manikins in a 3D environment. Users can set up a vehicle interior configuration, place and position manikins, and validate the interior layout according to the

Society of Automotive Engineering standards. VOA will help companies save time and money when conforming their vehicle interiors.

- In addition, the following sets of catalogs are delivered in V5R18, allowing users to save time and speed solution deployment:
 - Human Posture Catalog 2 (HPC) gives users two sets of catalogs containing more than 350 postures for both static and grasping postures. HPC enables users to quickly insert a human manikin in a digital mockup and fine tune it until it reaches the targeted manikin position.
 - Human Preferred Angles Catalog 2 (HAC) gives users a set of preferred angles associated to the preferred comfort and strength of some actions. HAC enables users to quickly optimize human manikin postures.
 - Human Anthropometry Catalog 2 (HTC) gives users a set of anthropometry data to ensure users accommodate and optimize products for different population segments.
- Photo Studio 1 (PH1) further democratizes photorealistic rendering creation by providing non-experts and casual users with an easy-to-use product to produce rendered pictures. It can be used at the earliest stages of product development for a first validation of the product's appearance and/or a downstream process such as documentation, marketing collaterals, and so on. PH1 is based on the industry-proven Mental Ray™ ray-tracing engine.
- DMU Composites Review 2 (CPR) expands the access to composites design information across the value chain by providing on-the-fly composites information access, numerical analysis, and core sampling in a 3D product context. It enables users to easily check composites design and make decisions more accurately while involving the different product development stakeholders.
- New in V5R18, Digital Product Rights Manager 1 (RM1) provides users with an integrated solution to secure and control exchanges of CATIA V5 files including 3D XML, CATPart, CATProduct, CATDrawing and CGR. RM1 enables an administrator to define and apply a corporate Intellectual Property (IP) policy to all the CATIA V5 data users. Users can access protected files when they are both online and offline while a rights 'expiration date' enables a time limit to be defined for the access to the data. This protection is also extended to the cache that may have been created from protected data. RM1 provides users with a comprehensive set of rights enabling the handling of simple as well as more complex scenarios. It's completely integrated into the Dassault Systèmes V5 architecture and based on Microsoft Windows Rights Management Services (RMS) technology. This product will be available with V5R18 SP2.

3D For All

- V5R18 introduces support for Functional Tolerances & Annotations (FT&A) within the lightweight 3DXML representation to allow for full part definition within this open, industry-standard data format.

VPLM / MatrixOne

- ENOVIA V5R18 VPLM synchronizes engineering and business processes by sharing data crucial to innovative design through detailed, bi-directional bill of material synchronization, collaborative change management including Action information, multi-CAD Digital Mockup and design-in-context, and management of program deliverables from the designer role to the program manager.

Collaborative Enterprise Sourcing

- V5R18 automatically synchronizes families of standard parts associated to a design table. On import, CES communizes the design tables within family of parts and ensures the associated part geometry is up to date.
- CES in V5R18 improves control for supply managers and designers to specify under which circumstances an approved part may be used (instanced) in a particular product.
- In V5R18, CES allows display of additional part details such as: specifications, supplier/manufacturer, internal item, CAD information, PLM properties, where-used (PLM usage), pricing & availability, and alternates.
- In V5R18, ENOVIA VPLM delivers Collaborative Enterprise Sourcing capabilities to product managers to create and link catalogs to selected PLM parts, display part where-used information based on a current project, and export the CES results panel to a report.
- Administrators in V5R18 can now use ENOVIA VPLM to manage Collaborative Enterprise Sourcing parts catalogs, synchronize attributes between ENOVIA and CES, and administrate the workflows and templates that guide part approval.

ENOVIA_{VPM} V5R18 and ENOVIA 3dcom

- In a Microsoft Windows environment, ENOVIA_{VPM} in R18 highlights product structure differences by comparing two open Product Structure Navigator (PSN) sessions or by comparing an open PSN to the VPM database and presents the results into either a PSN graphical format or as a simple list of nodes.
- ENOVIA_{VPM} in R18 allows administrators to map more than five attributes while setting the CATIA V5 interoperability, thus providing designers more part information during design.
- In R18, ENOVIA_{VPM} positions the Configuration Handler identifier within the Product Structure Navigator's Information Line making it easy to identify the applied configuration.
- A new R18 ENOVIA_{VPM} User Exit provides programmatic control of Zone creation and deletion to extend the management of Zones beyond interactive mode.
- ENOVIA_{VPM} in R18 makes it possible to view the option description in the info link panel when investigating instance links.
- ENOVIA_{VPM} in R18 forbids users from performing memory-intensive empty queries often run unintentionally.
- Users of ENOVIA_{VPM} in R18 will notice an automatic width change in the configuration panel during configuration operations such as: Select Configuration Handler, Category/Option management, etc.
- Parts with identical naming in R18 ENOVIA_{VPM} display in the product structure by usage of parts to improve visibility.
- New functionality within the AT0EXPND API extends the data transfer between the Engineering Hub and Manufacturing Hub using ENOVIA_{VPM} in R18 to include options extraction and attributes filtering.
- A new R18 ENOVIA_{VPM} User Exit performs a model or document size check upon opening in CATIA V5 to prevent delay before reaching session overload.
- New APIs in R18 ENOVIA_{VPM} allow external programs to initiate CSB creation and deletion for automated spacemap and bounding box calculations, retrieve the history of an instance link, and modify ownership of configured objects providing more control to data administrators.

- Data migration into ENOVIA V5 from ENOVIA_{VPM} in R18 preserves multi-model links (doc-doc) and makes them immediately usable within CATIA V5 after migration.

* Previously released in a V5R17 service pack