

# ENOVIA V6R2012

## the facts



## INTRODUCTION

ENOVIA enables companies to bring together people, processes, content and systems during product development to achieve a competitive advantage. By unifying and streamlining product development processes across the product lifecycle, ENOVIA helps companies easily and cost-effectively work on projects within and outside of their enterprises. The adaptable and scalable technology accommodates the ever-changing marketplace at the lowest total cost of ownership and incorporates the proven best practices of some of the world's most innovative companies. ENOVIA addresses business process needs across a broad spectrum of industries, managing simple as well as highly engineered, complex products. Deployments can range from small development teams to extended enterprises with thousands of users, including suppliers and partners.

*“ENOVIA gives life to ideas through successful and rewarding collaboration”*

As the pace of change increases, companies are depending more on their intellectual capital to keep ahead of the competition. From creators to collaborators to consumers, everyone plays a critical role in bringing the right products to market at the right time.

PLM 2.0, product lifecycle management (PLM) online for any user, is a 3D environment for everyone to experience a product virtually while all user interactions generate intellectual property (IP). PLM 2.0 allows the product innovation process to start with consumer preferences and end with a virtual lifelike “test drive” of the product. PLM 2.0 is to PLM what Web 2.0 is to the Web.

Enabling PLM 2.0 collaboration requires a platform capable of federating all product-related knowledge, and managing easy access to it from anywhere. ENOVIA V6 is Dassault Systèmes (DS) next generation platform for enabling PLM 2.0 and harnessing the collective

intelligence among online communities. PLM 2.0 brings life to knowledge — from idea to product experience —merging the real and virtual in an Immersive lifelike experience.

DS is a world leader in 3D and PLM solutions. One of six DS brands, ENOVIA is a recognized leader in delivering collaborative PLM solutions.

The ENOVIA collaborative platform delivers the flexibility, open standards, scalability, and industry-specific functionality today's global companies need to tie together multi-discipline engineering groups and product development contributors from other business roles.

*“ENOVIA is the social and collaborative engine which powers Dassault Systèmes suite of innovation solutions”*

ENOVIA V6 opens up the possibility of PLM 2.0 by offering:

**Global Collaborative Innovation:** The future of PLM is about allowing the breadth and depth of collaboration. Everyone, regardless of location or status, can collaborate across business processes — from the lowest level of details across all engineering disciplines to the full product definition, bringing together Requirements, Functional, Logical and Physical (RFLP) definitions of the product.

**Online Creation and Collaboration:** Product creation and collaboration is enabled for real time, concurrent work, across multiple remote locations with only a Web connection. This capability is a major breakthrough for any company implementing a global engineering and manufacturing strategy.

**A Single Platform for IP Management:** On a single platform, V6 supports both IP modeling applications spanning all engineering disciplines, as well as collaborative business processes (CBP) covering the entire product lifecycle:

- CATIA / DELMIA / ENOVIA / SIMULIA applications are built natively on this single, open SOA platform.
- Data management is supported for most mechanical, electrical, and artwork CAD tools.
- V6 gives a unified, federated view and access to IP, whether the information is in the PLM system, another enterprise system or from an unstructured data source.

**Ready to Use PLM Business Processes:** ENOVIA V6 covers PLM processes across multiple industries, and unifies engineering processes and all enterprise business processes including program management, compliance management, and sourcing, as examples. The ENOVIA solution “speaks the customer’s language,” by providing the best practices and capabilities specific to these industries: Aerospace & Defense, Consumer Packaged Goods, Automotive, Retail, Footwear and Apparel, Industrial Equipment, Life Sciences, High-Tech and Semiconductor. ENOVIA V6 Industry Accelerators speed deployment and cut time to Return on Investment (ROI).

**A Lifelike Experience:** V6 provides all of the above with an intuitive interface critical to a fully immersive product experience. A common interface, across all applications brings IP to life in 3D. Any user can find/search information, understand others using the universal language of 3D, experience the product, and collaborate in an immersive online 3D environment.

#### **Lower Total Cost of Ownership (TCO)**

**Breakthrough ROI:** The flexible SOA architecture allows easy integration with existing systems, and modeling of business process with no programming skills, supporting an adaptable business model. Industry specific solutions capture the value within each industry and provide the best and most tailored path to PLM. This will spur the adoption and evolution towards complete PLM strategies, and lead to breakthrough ROI.

## DOMAIN OVERVIEW

The ENOVIA portfolio is organized by domains, which are logical product groupings based on business processes that they address. All products across these domains are built with the same technology and can be deployed together as part of a single ENOVIA system or separately. The ENOVIA domains are *Unified Live Collaboration, IP Lifecycle Management, Global Sourcing, and Governance*.

### Unified Live Collaboration

- **Data Warehouse Indexing and Search** aggregates IP across all business process domains into a single meta-model so users across the extended enterprise can easily and quickly find product IP based on key words and file content, regardless of how it was originally created.
- **Business Process Management & Execution** enables collaboration involving stakeholders across product development and identifies where the business process needs to be modified to eliminate bottlenecks.
- **IP Asset Federation** leverages product information from other enterprise systems by federating their IP into the context of product development business processes.
- **I-PLM Collaboration Studio** provides the administrative tools to manage and deploy the ENOVIA system with flexible tools that lower total cost of ownership while fulfilling unique business needs.

### IP Lifecycle Management

- **IP Work-In-Progress** manages the iterative vaulting of IP from engineering tools so the latest information is available to design teams and cross-functional collaborators throughout the world and supply chain.
- **IP Asset Release** synchronizes specifications and bills of material (BOMs) from concept to planning to production, reducing errors and costs while enhancing quality and time to market.
- **IP Classification & Re-use** decreases costs and promotes knowledge transfer by classifying IP for reuse.

## Global Sourcing

- **Supply Chain Network** capabilities allow companies to involve supply chain employees securely in the entire product lifecycle.
- **Collaborative Sourcing** implements a “design for supply” strategy with repeatable and standardized direct material sourcing processes that provide the latest design information to the supply chain and valuable supplier quotation input to engineering.
- **Supplier Performance Monitoring** enhances the supplier partnership by designing, implementing and tracking part qualification plans, supplier development plans, and scorecards.

## Governance

- **Requirements Management** captures customer needs and drives downstream development by planning new products with the greatest market impact.
- **Portfolio Configuration Management** determines the optimal mix of product capabilities to meet market demands and minimize engineering costs.
- **Program Management** schedules and tracks all aspects of the product development process in real time as the work is completed (from creator to collaborator to consumer), enabling visibility of milestone progress, resource utilization, project deliverables, and potential risks and issues across the enterprise.
- **Decision Support Business Intelligence** harnesses the organization’s collective intelligence in real-time with an immersive 3D environment and dashboards that reveal issues in the product development process.
- **Compliance** ensures that product development activities comply with government and industry regulations, and product quality targets.

## V6R2012 OVERVIEW

The ENOVIA V6R2012 release increases user adoption across a broader range of communities by greatly simplifying the user’s experience with improved navigation, visibility and search technologies. All of ENOVIA’s collaborative business process products have been updated with a modernized user interface. This release leverages “touch” technology for collaborators to intuitively view and navigate 3D product representations. V6R2012 also integrates Exalead Cloud View as the default full text search engine for ENOVIA. Finally, in order to leverage the full power of “the Cloud”, users can easily search, explore, and access 3D media from the communities using Dassault Systèmes 3DSw4m service to add them to their designs.

ENOVIA V6R2012 continues to optimize the management and access of CAD data in order to execute the full breadth of product development in a single unified system. Data management capabilities for CATIA V5, SolidWorks, and Pro/ ENGINEER have all been updated with a user experience completely immersed in the native CAD tool for improved designer productivity and ease-of-use. Finally, for customers using non-DS products to manage their CAD data, it is now possible to bidirectionally exchange product structure and exact geometry to V6 in order to benefit from the full scope of V6 functionality without requiring a system migration.

### Streamline ENOVIA User Experience for Boosted Productivity and Improved Collaboration.

- ENOVIA V6R2012 provides all users of web applications with a revamped user interface. Initial tests on customer scenarios show reductions of up to 60% in number of clicks and up to 90% in number of screens shown. It allows a more intuitive and visual user experience while still requiring only a simple Web browser to deploy to thousands of users.
- V6R2012 introduces multi-touch devices support for an enriched user experience. For instance, the award winning 3DLive navigation paradigm is now enhanced so that users can take advantage of “touch” as an intuitive way to quickly and easily discover, inspect and review designs and 3D models. It also provides a new level of

collaboration using large screens as virtual white boards for design reviews with multidiscipline teams.

*“New user experience metrics show up to 60% less number of clicks and up to 90% less number of screens shown”*

- V6R2012 integrates Exalead Cloud View as the default full-text search engine for ENOVIA V6. This demonstrates the fast progress in integrating Exalead within the V6 platform. It will provide customers with best-in-class scalability & performance, easy administration and installation and reduced costs as it requires only standard hardware equipment to index millions of data objects

### **Enrich Existing Interoperability Scenarios Between V6 and Others Systems for Best-in-Class Collaboration in Heterogeneous Environments**

- ENOVIA V6R2012 further demonstrates DS commitment to address heterogeneous design environments by making its users more productive whatever CAD/authoring is used. V6R2012 introduces a new Immersive data management interface for CATIA V5 users, allowing V5 designers to stay focused on their creative work while taking advantage of all the capabilities of the V6 PLM platform. First tests show up to 60% clicks reduction and up to 55% performances gains. V6R2012 also enhances existing immersive ENOVIA V6 data management for SolidWorks and Pro/E users, complementing existing immersive solutions for NX, SolidEdge, MicroStation, Inventor and AutoCAD. V6R2012 also supports version 5 of Adobe Creative Suite, including integration of Color Palette, critical for users in the CG/CPG industries.
- V6R2012 introduces a new interoperability scenario, based on XML schema and web services, between V6 and other PDM systems for additional support of bidirectional exchanges of CAD product structures & exact geometry (including STEP and CATIA V5 formats), and between V6 and ERPs for exchange of Product Process Resource. It promotes tighter collaboration during the product design stage for customers in heterogeneous design environments, as well as during the manufacturing

stages. It complements existing scenarios and technologies supporting integration with other PDMs, including the exchange and synchronization of bill-of-materials; federation capabilities with existing systems (ERP, CRM, etc.); as well as out-of-the-box integrations with ERPs.

- ENOVIA V6R2012 leverages the power of communities on “the Cloud”. ENOVIA 3DLive users can publish 3D assets into 3DSw4m communities, providing an efficient mechanism to get initial feedback from users and potential customers. Conversely, community members can use ENOVIA 3DLive to navigate their rich content, import and fully leverage those 3D assets in the enterprise with ENOVIA. This provides companies with an easy way to benefits from crowd sourcing methods when creating new products.

*“New CATIA V5 immersive interface requires only about 40% of the clicks I am used to... easy to use... saves me time.”*

- With V6R2012, ENOVIA provides customers and partners with close to 3,000 APIs, and 300 use cases and technical articles to accelerate deployment and ROI. These APIs have been developed in close collaboration with our customers, and enable them to further tailor V6 to their specific business processes needs.



# VALUES by INDUSTRY

## Aerospace and Defense

Successful execution of an Aerospace and Defense (A&D) program means managing volumes of information to efficiently meet all contractual obligations. Tracking, reporting, and communicating that information involves teams of people across multiple functions and organizations. A solution is required that integrates all of the critical data and program information into one consistent whole.

To address the complexity of the Aerospace and Defense industry, ENOVIA products deliver the following value:

- Capture and share customers' requirements to plan new products with the greatest compliance and customer satisfaction.
- Schedule and track all aspects of the program process in real time as the deliverables are completed.
- Improve how organizations identify and resolve program issues through intuitive 3D navigation and dashboards.
- Ensure that program execution complies with government regulations.
- Leverage the cross-functional extended enterprise throughout the product development process.
- Securely involve the supply chain in the entire Product Lifecycle to enable efficient collaboration.
- Implement a "design for supply" strategy to provide the latest design information to the supply chain and valuable supplier quotation input to engineering.
- Consolidate WIP from many engineering tools into multi-view change-controlled bills of material.
- Consolidate data from multiple sources into a single environment to improve collaboration and cycle time and reduce non-value-added effort.
- Protect company IP and support government regulations by ensuring that International Traffic in Arms Regulations (ITAR) compliancy can be defined and enforced.
- Execute program driven change management to enable the authorization and monitoring of complex system-wide changes assigned to multiple engineering groups.



## Automotive

The globalization trend forcing asset reallocation, increased competition, high material costs, and increased governmental, regional and industry regulations are all pressures confronting the automotive industry today. These challenges, along with increased responsibility shifting down to the supply chain tiers, add to the complexity of managing automotive vehicle programs to budget and schedule. Consequently, automotive original equipment manufacturers (OEM) and suppliers need to be flexible and execute flawlessly when managing global vehicle product programs.

To address the competitive pressures of the automotive industry, ENOVIA products deliver the following value:

- Determine the optimal mix of product capabilities and platforms to meet market requirements and minimize engineering costs.
- Schedule and track all aspects of the product development process in real time as the work is completed.
- Securely involve the supply chain in the entire Product Lifecycle to enable efficient collaboration.
- Actively engage in supplier development by designing, implementing and tracking supplier performance plans

and scorecards.

- Enable systems engineering through a comprehensive strategy based on Requirements, Functional, Logical and Physical (RFLP) product definitions.
- Single integrated environment for CATIA, DELMIA, and SIMULIA.
- Manage most MCAD and ECAD tools in a single environment to accommodate OEM demands and internal standards.
- Aggregate design work-in-process into bill-of-materials satisfying the needs of product and manufacturing engineering.
- Decrease costs and promote knowledge transfer by classifying IP for reuse, and utilizing extended enterprise information in planning and decision making.

### Retail Footwear and Apparel

The Footwear and Apparel industry is facing a new set of business challenges that are forcing companies to focus on product development improvements in order to respond more rapidly to market trends and changing customer needs. These challenges include increased global competition, the need to target new markets and create new revenue streams, customer demands for more innovative products and pressures to reduce new product development costs.

ENOVIA helps Footwear and Apparel companies address these challenges with products that deliver the following values:

- Improve development productivity by including seasonal line plan data into the overall process.
- Securely involve the supply chain in the entire Product Lifecycle to enable efficient collaboration.
- Connect sourcing and production offices seamlessly to brand and retail headquarters.

### Consumer Packaged Goods

Consumer Packaged Goods companies often must adhere to specific compliance rules for manufacturing especially when selling regulated products. If a product is designed and manufactured without authorized and approved product specifications, there is significant cost/risk involved in either shutting down manufacturing lines

or in the case of defective product, huge legal liability for damages. Under regulatory guidelines, products cannot be manufactured without proper product specifications.

To help CPG companies comply with quality and regulatory guidelines across worldwide brands, ENOVIA products deliver the following value:

- Practice open innovation by capturing the voice of your customers (VOC) early in the design phase to plan new products with the greatest market impact.
- Leverage the cross-functional extended enterprise throughout your product development process.
- Securely collaborate with supply chain partners and foster supplier development by designing, implementing and tracking supplier performance plans and scorecards.
- Enable quality/manufacturing organizations to maintain product compliance for manufacturing operations.
- Leverage product information from other enterprise systems by federating IP into the context of product development business processes.
- Aggregate IP across all business process domains to enable efficient search and reuse of brand assets and ensure brand integrity.

### High-Tech / OEM

The development process for High-Tech continues to grow in complexity, requiring shorter development cycles to achieve market goals for new products. Increased interaction of mechanical, electrical and software development has placed rising demands on selecting, qualifying and testing parts for new designs. In addition, the needs for an electronic part and a mechanical part for example are completely different, and new part requirements can differ based on division, location or product line. Therefore the part development processes for High-Tech companies require interaction and approvals by cross-functional users with different skills such as product design, testing, manufacturing, purchasing, and quality. This creates many issues in coordinating the complex workflows, tasks, and deliverables required for efficient part qualification and development.

In order to help High-Tech companies address these challenges, ENOVIA products deliver the following value:

- Practice open innovation by capturing the voice of your customers (VOC) as well as market requirements early in the design phase.
- Document and plan new product capabilities and technologies with the greatest market impact.
- Give end-to-end traceability throughout the product lifecycle from conception to retirement.
- Reduce the cost of compliance, improve supplier selection, and improve data quality and accuracy for regulated materials and substances.
- Enable a consistent, multi-discipline product definition by uniting creators, collaborators, and consumers through a single process based on Requirements, Functional, Logical and Physical (RFLP) product definitions.
- Support global supplier component and part management capabilities to reduce product costs and optimize cost-of-goods-sold.
- Implement a “design for supply” strategy with repeatable and standardized direct material sourcing processes that provide the latest design information to the supply chain and valuable highly scalable supplier quotation input to engineering.
- Leverage 3D and design IP to the extended enterprise of collaborators and end-users.

### High-Tech / Semiconductor

Semiconductor development today is based on shorter lifecycles, more competitive markets, and less forgiving technology than ever before. Product complexity and density continue to increase while average sales prices and margins continue to shrink. Problems that increase the length or number of design cycles or mistakes that cause additional re-spins of a die can make the difference between profit and loss for a new product or even result in project cancellation.

Helping Semiconductor companies address these challenges, ENOVIA products deliver the following value:

- Provide technical and business decision makers with increased project status visibility and accuracy so that



they can determine and update investment priorities.

- Capture the voice of the customer with a robust requirements management process that is used to drive intellectual property (IP) buy versus build decisions and flexible design solutions.
- Equip digital and system-on-chip (SoC) design teams with differentiating “modules” technology that increases productivity in hierarchical, SoC product development and integration projects.
- Provide open collaboration to digital and software developers within the Microsoft Visual Studio environment.
- Enhance design efficiency and extend product life spans with an enterprise IP management platform to capture, search, request, deliver and support the vast amount of corporate IP available to all IC design teams.
- Provide a scalable and extensible PLM platform covering the full breadth of product development and aligned with corporate IT specifications and forward-looking architectures.
- Increase accuracy and automation in creating and organizing product configurations.

### Industrial Equipment

In today’s challenging and competitive environment, innovation is one of the most important drivers for industrial equipment manufacturers. The need of innovation is not limited to engineering and product development, but has to be extended to production and after market services to bring more value. Companies are aggressively taking measures to drive down costs, shorten time from quote to delivery, close collaboration with suppliers, access foreign markets and find ways to

stay close to customers. ENOVIA products enable industrial equipment manufacturers to continue to operate in this global networking model. ENOVIA products support leading edge business processes, enable innovation and boost customer/supplier collaboration.

ENOVIA helps Industrial companies address these challenges with products that deliver the following values:

- Capture, share, track, and report customer and internal requirements through project closure ensuring delivered product has met all commitments.
- Schedule and track all product development resources, deliverables and engineering tasks for on-time delivery.
- Allow configure-to-order OEMs to manage complex product configurations and engineer-to-order OEMs to efficiently manage one-off complex products.
- Enable enterprise and engineering users to collaborate and identify business issues through intuitive 3D navigation and federated dashboards.
- Meet design business targets with single PLM instance – design for sourcing, cost, compliance, and manufacturing.
- Implement “design anywhere / build anywhere” strategy with suppliers across the globe.
- Enable system engineering through a single process based on requirements, functional, logical, and physical product definitions.
- Enable digital product conceptualization, detail design, synthesis, simulation, and manufacturing in a multi-CAD environment.
- Allow engineers to create IP leveraging relational design, concurrent engineering, and contextual design at granular level.
- Seamlessly integrate to ERP applications or federate legacy/xPDM applications within PLM context to leverage investment.
- Ensure product, service and maintenance documentations are in-sync.

## Life Sciences

Due to increasing product complexity, Life Sciences companies must incorporate a broader array of contributors and stakeholders located throughout the world into their design processes. At the same time, regulations from government bodies such as the United States Food and Drug Administration (FDA) requires companies to manage vast amounts of data and documents under formal and repeatable change control

processes. Most importantly, medical device companies must constantly produce new and innovative products faster than before while containing costs in an ever-shifting marketplace.



In order to help Life Sciences companies address these challenges, ENOVIA products deliver the following value:

- Improve compliance efficiency through automated processes to support part 820, part 11 and part 803 FDA requirements.
- Practice Open Innovation by capturing the voice of your customers (VOC) early in the design phase to plan new products with the greatest market impact. Leverage the cross-functional extended enterprise throughout your product development process.
- Achieve lean quality and compliance with holistic quality issue mitigation by integrating seamlessly with all other related product lifecycle processes.
- Improve quality and consistency of the corrective action preventative action (CAPA) and complaint mitigation processes to dramatically reduce regulatory risk and avoid audit findings.
- Ensure that project and design execution complies with regulatory requirement FDA 21 CFR.820.30 under design controls.
- Decrease costs and promote knowledge transfer by classifying IP for reuse, and utilizing extended enterprise information in planning and decision-making.
- Deliver company scalability and growth with highly configurable processes and systems to enable unique business needs.
- Provide a scalable and extensible PLM platform to enhance the ability to deliver “right to market” products through enterprise wide PLM system integration of quality systems management.



## Six Brands, Six Promises

### **CATIA**

Virtual Product Design

### **ENOVIA**

Global Collaborative Lifecycle Management

### **3DVIA**

Online 3D Lifelike Experiences

### **DELMIA**

Virtual Production

### **SIMULIA**

Realistic Simulation

### **SolidWorks**

3D for Professionals

As a world leader in 3D and Product Lifecycle Management (PLM) solutions, Dassault Systèmes brings value to more than 100,000 customers in 80 countries. A pioneer in the 3D software market since 1981, Dassault Systèmes develops and markets PLM application software and services that support industrial processes and provide a 3D vision of the entire lifecycle of products from conception to maintenance. The Dassault Systèmes portfolio consists of CATIA for designing the virtual product—SolidWorks for 3D mechanical design—DELMIA for virtual production—SIMULIA for virtual testing—ENOVIA for global collaborative lifecycle management, and 3DVIA for online 3D lifelike experiences. For additional information, contact us at: Dassault Systèmes ENOVIA Corp., 900 Chelmsford Street, Lowell, MA, USA 01851, +1 978 442 2500

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