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ENOVIA V5 DMU Validate & Optimize the Digital Product

About Dassault Systèmes

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 and ENOVIA for global collaborative lifecycle management, including ENOVIA VPLM, ENOVIA MatrixOne and ENOVIA SmarTeam. Dassault Systèmes is listed on the Nasdaq (DASTY) and Euronext Paris (#13065, DSY.PA) stock exchanges. For more information, visit http://www.3ds.com

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Validating and Optimizing the Digital **Product**

Today's manufacturers have never been under more pressure. Competition is global, customers are fickle and financial markets unforgiving. Beating the competition, creating customer loyalty and delivering strong business results are essential to survival. These factors depend on repeatedly delivering the right product at the right time and at the right price.

However, delivering the right product is far from easy - successfully balancing increasing complexity with rising performance and quality requirements is a challenge. As 80 percent of development and product costs are determined early in the product lifecycle, many companies are looking for ways to front-load product development decisions to help meet these time-to-market, quality and cost issues.

Seamlessly integrated within Dassault Systèmes PLM solutions, V5 DMU enables real-time visualization and review of the 3D product as it evolves, streamlining collaborative review and decision-making.

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It allows design teams to digitally build the product mock-up and its environment, and then analyze it to gain early insight into key factors determining design quality, product performance, and ultimate market success. Using V5 DMU testing and analysis tools, engineers can reduce and even eliminate the time and cost invested in "build it, break it" scenarios requiring multiple physical prototypes, allowing them to spend more time innovating.

Integrated and designed for multi-CAD environments, V5 DMU facilitates digital mockup validation and simulation from detail design to maintenance. It provides extensive support for engineering processes such as interference detection and analysis, hybrid mockup review, packaging and product synthesis, human ergonomics analysis, engineering data visualization and technical publication.

When V5 DMU is used in conjunction with ENOVIA V5 VPM, the benefits and savings increase exponentially. It enables global organizations - from marketing to design to maintenance - to collaborate in real time using configurable 3D mock-ups, and to rapidly validate product variants during testing of design alternatives. With V5 DMU, development teams can transform product information into business intelligence, improving decision making and product quality across the enterprise value chain.

Real Benefits

V5 DMU has enabled Bombardier Rotax to dramatically reduce the number of physical prototypes, saving 300,000 euros each; Toyota MotorSport has reduced the time needed to assemble its first car by 90 percent, significantly increasing vital testing time; and Dassault Aviation's first Falcon7X business jet achieved unparalleled quality levels early in production without a single physical prototype.

V5 DMU Key Business Benefits:

- Integrated design, review and simulation environment accelerates design maturity
- Real-time product insight improves decision-making and reduces physical prototypes
- Embedded collaboration capabilities boosts creativity and engineering productivity
- Upfront validation of product fit and function increases quality and eliminates downstream errors
- Multiple 2D and 3D format support enables efficient integration into any heterogeneous environment

These five processes on the opposite page demonstrate the broad, functional coverage of V5 DMU across the product lifecycle, and represent a range of offerings for enterprises of all sizes.

V5 DMU for 3D Master Support



- Provides a 3D master product definition for engineering terms & enterprise stakeholders
- Improve speed & accuracy of communication & decision making Helps value chains converge quicker on product designs, reducing time
- to revenue

/5 DMU for Design Review



V5 DMU for Advanced Product Simulation

Validating & Releasing Quicker Complex Product Designs

- Accelerates mock-up resolution issues
- Simulates complex behavior of the product by taking into account product kinematics & maintenance specificities
- Optimizes the size and re-usability of the mock-up
- Reduces the costs in the prototyping area

V5 DMU for Human Simulation



lifecycle

V5 DMU for Realistic Appearance Simulation



Right and Fast Decisions

- Allows guick iterations between design & product appearance studies
- Enables flexible refinement of the renderings
- Uses a unique & consistent technological material definition across diverse engineering areas

Leveraging 3D Rich Information Beyond the Design Office

Eliminates 2D-3D mismatch errors while improving 3D definition quality

Streamlining Digital Product Validation

- Integrated design & design review environment accelerates the detection & resolution of design files
- Fosters collaboration with 3D as a common language
- Facilitates innovation & improves product quality
- Accelerates decision-making on product changes and alternative design studies

Validating Ergonomics Early in the Product Lifecycle

- Seamless optimization loops between human & design solutions, which improves quality & security
- Takes into account target population specificity
- Supports a unique & accurate manikin model through the entire product
- Offers a wide set of ergonomic simulations & validations for a comprehensive product assessment

Improving the Product's Appearance & Helping to Make

