

DELMIA

World News

21

FALL 2010

The DS Digital Manufacturing & Production Magazine



V6

**Delivers a Remarkable
Lifelike Experience**



**NASA KENNEDY
SPACE CENTER**

Simulates with DELMIA



FORCE TECHNOLOGY

Simulates Inspection Devices
with DELMIA Cycle Time
Performance



KOITO MANUFACTURING

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PLM to Drive Success

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Dear Valued Readers,

Thank you for joining us for the 21st edition of the DELMIA World News—this issue celebrates 10 successful years of DELMIA Digital Manufacturing and Production. For the past decade, we have shared in our success together and have worked diligently to deliver to you, strategic solutions to provide a competitive advantage for your manufacturing and production operations. Competitive pressures, both

globally and local, have evolved our industry and the technology that serves it. As we continue to grow and move forward, DELMIA promises to keep our commitment to deliver you a Lifelike experience of production systems for a sustainable future.

This issue of the DELMIA World News examines the latest in V6 with our recent V6R2011 release. You'll meet SIA and TEO, our new virtual manikins of unprecedented lifelike realism; experience how our Lifelike Conveyor solution simulates conveyors and items that are transported on them with such realism that they behave exactly as they would in the real world; and learn more about DELMIA V6 Machining, a solution that provides NC programmers the ability to program smarter and faster than ever before by integrating complete machine simulation into the heart of programming.

For years now, we have watched as manufacturers have achieved tremendous success with our solutions. This special Anniversary edition is no exception. You'll read how companies are achieving innovative sustainable benefits. KUKA Systems GmbH Optimizes Plant Conversions with DELMIA Automation and FORCE Technology Gets It Right the First Time With DELMIA Cycle Time Performance. Find out how NASA Kennedy's Design Visualization Group Visualizes in 3D in this edition. In Asia, Koito Drives Success as a Vehicle Lighting Leader with DELMIA and DS PLM solutions.

Some of you have been with us for our entire 10 years while others are newer to the digital manufacturing experience. All of us at DELMIA have appreciated your dedication, your enthusiasm and insights, and plan to continue to leverage all our partners within the DELMIA community. We will also continue to provide our customers with unique solutions to help you create tomorrow's manufacturing innovations. We are proud to have been your premier Digital Manufacturing and Production partner for the past 10 years and look forward to working together for many more. Enjoy this edition of the DELMIA World News!

Best regards,

Philippe Charlès
CEO, DELMIA, Dassault Systèmes

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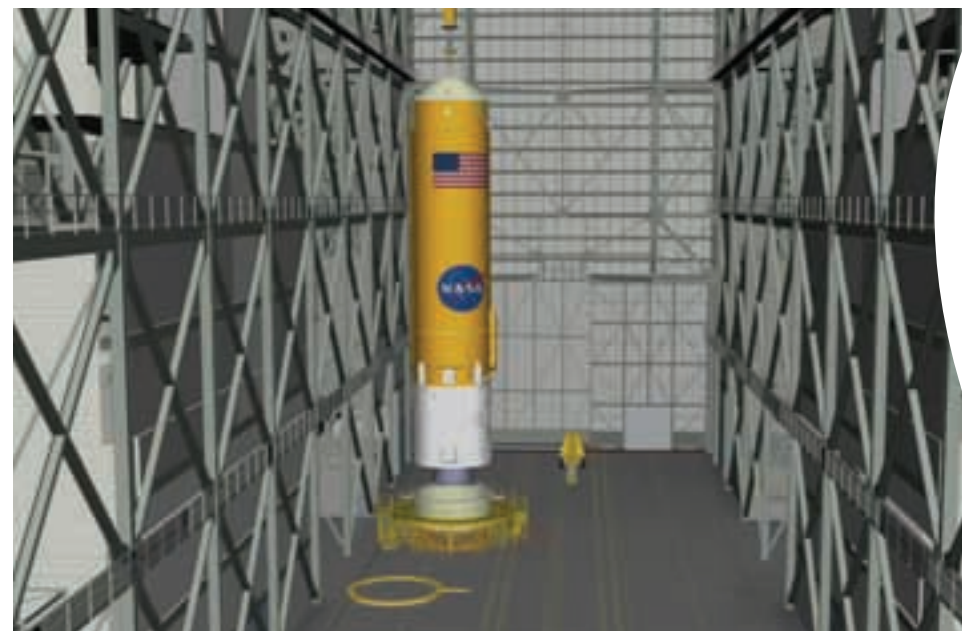
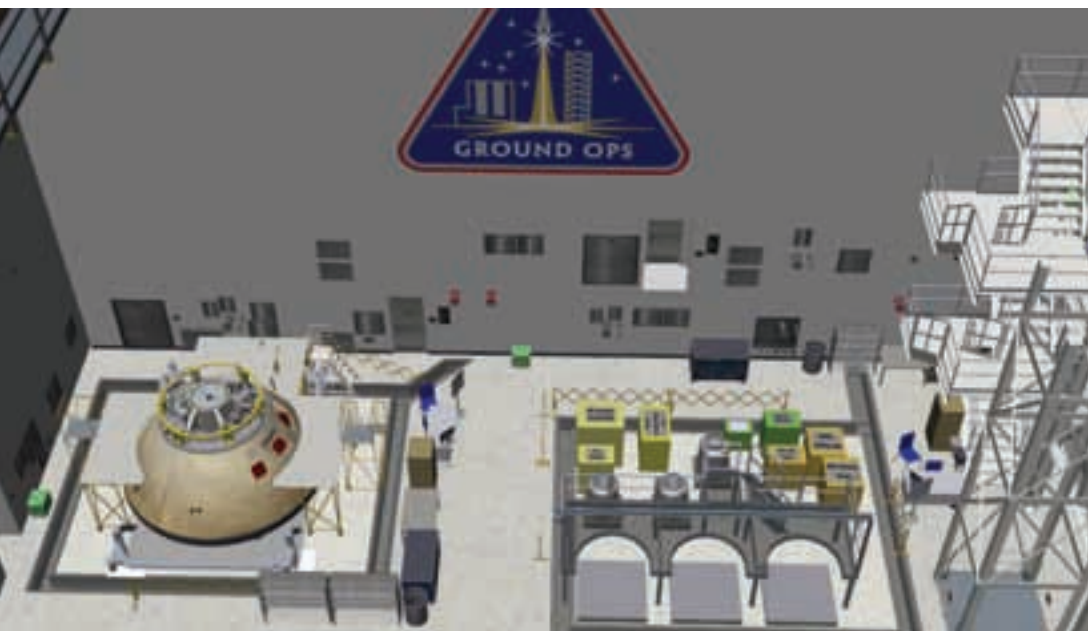
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NASA at takeoff (left) and outside at KSC, the site of one of the world's largest buildings by volume (right)



◀ NASA Kennedy's Design Visualization Group uses DELMIA to simulate ground operations in 3D, ensuring that projects are feasible and carried out. At left is de-servicing and right is a virtual model held in the Vehicle Assembly Building (VAB)

NASA's Kennedy Space Center Simulates with DELMIA

Visualizing Possibilities at America's Astronaut Launch Facilities

NASA's Kennedy Space Center manages and operates America's astronaut launch facilities, including the ground operations needed to prepare for each program. Engineering teams working on projects such as the Space Shuttle, the International Space Station, or the Launch Services program are responsible for designing components and making them become a reality. Since each project is highly unique, the Design Visualization Group is called upon to perform lifelike 3D simulations before any ground work occurs. The group simulates projects within Dassault Systèmes DELMIA to make sure operations are feasible, efficient, and safe.

NASA's Kennedy Space Center: Visualizing the Possibilities
In 1961, President Kennedy set the goal of

landing a man on the moon within the decade, and by December 1963, the installation built to help achieve this dream would bear his name. The facility known as the John F. Kennedy Space Center (KSC) has been the launch site for U.S. human space flight since 1968. KSC evolved to meet the changing needs of America's space program and controlled launch operations for lunar exploration, the Space Shuttle Program and current work on the Launch Services Program.

For nearly half a century, NASA built dozens of processing facilities—used to integrate and test rockets, capsules, launch pads and components of many projects—within KSC to support various programs. Starting with the early stages of its design cycle, KSC's Design Visualization Group is called upon to determine precisely how things will be assembled using the facilities and resources at its disposal.

The Design Visualization Group, a ten person Civil Service and Boeing team led by NASA veteran Tracey Kickbusch,

simulates ground operations before they occur to ensure that projects are not only feasible, but carried out safely, efficiently, and cost effectively. To do this, they use the 3D virtualization capabilities of DELMIA. 3D virtual models have been built within DELMIA for approximately 20 different facilities at KSC, along with thousands of models for ground support equipment including transporters and fixtures for rotating and assembling parts.

For example, KSC's iconic Vehicle Assembly Building (VAB), one of the largest buildings in the world by volume, was originally built to allow vertical assembly of the Saturn V rocket for the Apollo program. More recently, it's been used for housing external fuel tanks and flight hardware, and is the location of space shuttle orbiter mating (stacking) with the solid rocket boosters and external fuel tank, that combined makes up the complete space shuttle. These types of complex activities occur all across Kennedy Space Center. With so many moving parts, all of them very high dollar, one-of-a-kind systems, NASA engineers

need to understand how all of the equipment and operators will work together to accomplish certain tasks, and virtual simulation within DELMIA is key to achieving this directive.

The Design Visualization Group is responsible for evaluating predictable processes like the mating of the LRO/LCROSS spacecraft and its fairing, but is also called upon to consider unlikely scenarios so NASA can be prepared for even the most improbable occurrences. For example, a large hoister used to lift the shuttle orbiter into its vertical launch position and join the fuel tank is controlled by a person sitting atop the fixture. The Design Visualization Group simulated the stacking procedure to make sure the plan was feasible and cost effective, but was also tasked with simulating scenarios for specific safety procedures. In this case, the group was asked to determine a course of action should the operator of the hoister be stricken with a heart attack while behind its controls.

Engineering teams from various projects meet with the Design Visualization Group regularly to review proposals for how their designs become a reality. In the past this

process relied on verbal descriptions, which can be an inefficient method to communicate complex projects. Because of varied terminology, a large team with a diverse background and thousands of potential assets, relying solely on verbal descriptions could sometimes present an effective communications challenge. However, with the lifelike simulations in DELMIA, everyone can see and understand what is being proposed and engineering teams can be provided with videos and DVDs of the simulation to accompany the final ground operations processing documents.

This is an important element of design optimization. In fact, during the planning stages for Constellation, areas were identified that would not be accessible to technicians in their safety apparatus during contingency operations. The Design Visualization Group was able to send images to the Orion designers and enlarge a hatch opening to allow the work to occur. This capability was so well received that it will continue in the future. The former Program Manager, Jeff Hanley, was so impressed with the videos that were created from the Ground Operations Simulations that he requested they be put on YouTube.

DELMIA allows the Design Visualization Group to import CAD data directly from engineering teams, and with its support for STEP—an open file format—the data can come from whatever CAD system the engineering team chose to use. A complete design is imported into DELMIA down to each last nut and bolt, and powerful features enable the team to view objects in their entirety—as they would look in real life—or to drill-down and view specific components.

Once a design is imported into DELMIA, the team utilizes its 3D library of facilities and support equipment to visualize and simulate a project. To ensure that the 3D library is properly maintained, and that each 3D model is a true representation of the real-life facility, the team relies on laser scanning. For example, if the team chooses to use a platform that hasn't been in service for a few years, it could be scanned to validate or update the 3D model to account for any sagging that may have taken place.

Another situation where laser scanning proves invaluable is when the team adds equipment to the library and may have to rely on blueprints older than they are. Furthermore, the equipment being used will likely have had thousands of engineering orders since its creation. Instead of tracking the changes made through those orders over time, laser scanning is an efficient method to create a true 3D representation of the equipment. Most newly developed assets have CAD data available that can be easily imported into DELMIA, but laser scanning gives a renewed life to older assets, enabling them to be tested within a virtual environment for situations where they might once again be needed. In addition to the inherent values of virtual simulation, the ability to reuse older assets, with the help of laser scanning, is one more way it can increase efficiency and reduce costs. ■

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www.nasa.gov/centers/kennedy/home/index.html

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Complex production processes with co-operating robots demand for new approaches in commissioning



KUKA

The current status at KUKA Systems consists of a demonstrator system with DELMIA Automation. CATIA V5 is additionally used as a design tool. This simplifies the transmission of geometrical data to the simulation tool.

« The virtual commissioning is expected to become an important tool to improve the planning and realization processes

KUKA Relies on Virtual Commissioning

DELMIA Automation Used to Optimize Plant Conversion

KUKA Systems GmbH, headquartered in Augsburg, Germany, develops efficient solutions for the virtual commissioning of manufacturing plants, supported by Dassault Systèmes' PLM solution DELMIA Automation.

Implementing new methods and means to develop flexible and innovative manufacturing and plant concepts plays an essential role for this technology leader in plant and mechanical engineering. In addition to geometrical validation, it is increasingly important to confirm the control concept of a plant in operation—the interaction between different automation components and robots—before a plant actually

materializes. Virtual commissioning is intended to optimize concepts in the planning phase and develop them through to implementation status.

In plant engineering, special importance is placed on the use of DELMIA Automation when integrating modifications to existing plants. Necessary changes are examined in advance on a virtual model of the plant. For this reason, it is important to join the real robot control to the virtual plant, in addition to the PLC. Real programs thus drive the virtual model, in this case, with a hybrid plant. KUKA Systems sees the biggest demand for virtual commissioning especially where complex processes are concerned. That might be the case when integrating an extra robot into an existing plant because the plant should not come to a standstill longer than necessary during the process. The aim is to examine and optimize integration and interaction of the new component with the existing plant in the hybrid system.

Enhancement of Quality through DELMIA Automation

"Here we see substantial potential benefits for our customers. By applying the KUKA Systems approach for virtual commissioning to the conversion of plants, we're looking for enhanced quality in planning, plus cuts in how long it takes to implement what's planned at the site. That reduces the time a plant is shut down, and consequently the loss of output for the customer," said Dr. Christian Fedrowitz, data processing manager, KUKA Systems. This applies in particular to interaction of a number of robots and their super ordinate plant control. To date, processes of this kind were by no means easy to gauge in the digital world. Robots are often very densely packed and then get in the way of one another. That is the kind of thing you often do not notice until you are on site. "But then alterations are time-consuming and costly, and we hope that virtual commissioning will lead to

improvements," said Günther Mikuta, product manager control engineering, KUKA Systems.

A further focus is the timing of the plant. KUKA intends to fix and optimize timing on the virtual image of the plant. Because of the existing performance problems with the hardware and software that are used (especially graphics and logic processing, plus the lack of interfaces with real bus systems), it is not possible to run a virtual machine in real-time. The alternative here is virtual time management, which is meant to balance the effects of performance problems on the timing in a kind of slow motion.

Simplified Data Transmission to Simulation Tool

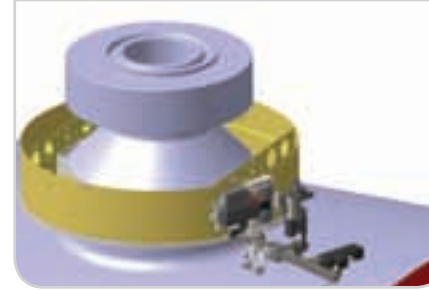
The current status at KUKA Systems consists of a demonstrator system with DELMIA Automation. CATIA V5 is additionally used as a design tool. This simplifies the transmission of geometrical

data to the simulation tool. In actual practice however, CGR format is still used here because the data quantities of the native format can then be sufficiently reduced to allow simulation in DELMIA Automation. The kinematics needed for virtual commissioning are then generated on the basis of the CGR graphics. After that, logic can be added to produce ready behavioral models. This procedure is still very cumbersome and always results in one-of-a-kind because as yet there are no libraries with mechatronic components that present their electrical and control engineering behavior in addition to their mechanical characteristics. Component manufacturers are consequently called upon to deliver a universal behavioral model of their components in addition to a mechanical description. KUKA Systems is therefore cooperating with research partners as part of the joint AVILUS project sponsored by the Federal German Ministry of Education and Research on devising neutral representations for such models.

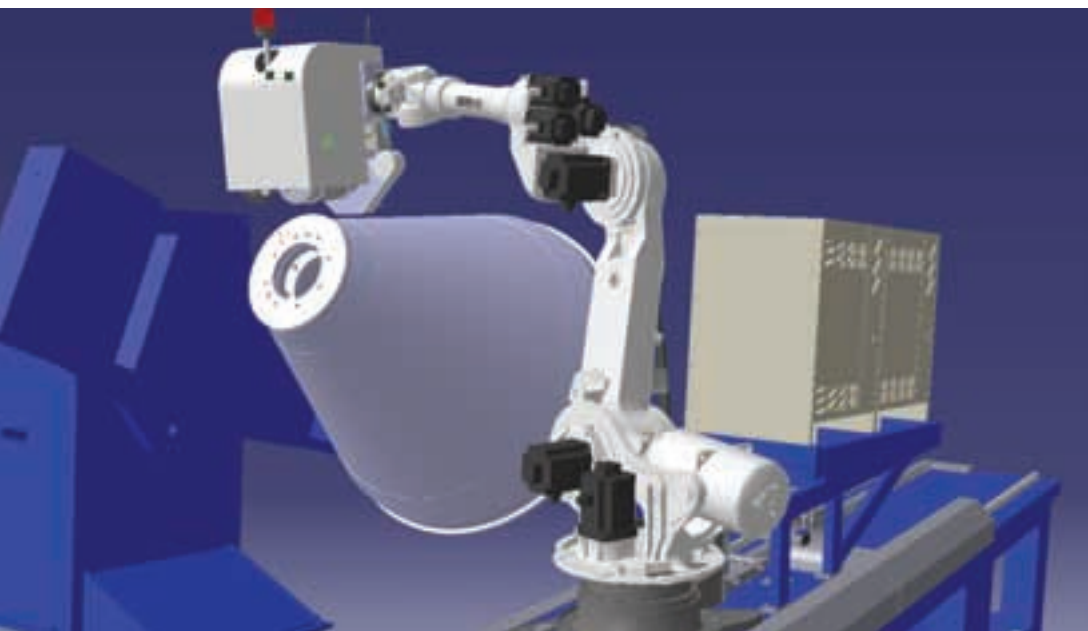
The considerable modeling effort still involved in virtual commissioning because of the lack of behavioral models often raises a question mark when it comes to the profitability of the technology. Therefore it can only fulfill the expectations formulated in singular cases. "Being able to state whether it's productive depends on the possibilities and the results you expect from its use. Even if we're already virtually setting up experimental, smaller manufacturing cells with as many as four robots and putting them into operation, a further development time frame of three to five years looks more realistic," said Günther Mikuta. ■

🔍 **FOR MORE INFORMATION VISIT:**
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www.avilus.de

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Simulating devices help predict nominal behavior



“We definitely want to have more people collaborating on the same model simultaneously; this will be possible thanks to our 3D virtual environment and real-time version control tools.”

« Using DELMIA Cycle Time Performance, FORCE Technology tests equipment and conducts feasibility studies before manufacturing begins

FORCE Technology Simulates Inspection Devices with DELMIA Cycle Time Performance

Gets It Right the First Time with DS PLM

Periodic testing for wear and potential damage is a requirement by which all manufacturing plants must respect. Non-destructive testing makes it possible to examine the condition and/or quality of an object without damaging it. Used preventatively and to improve safety, non-destructive testing helps avoid interruptions and breakdowns in production, and can often be performed without production interruptions. It is used in many different businesses and industries such as energy, offshore, construction, chemical and petrochemical. While some checks can be done during plant operation (such as inspecting a pipe's exterior), others may require shutting down the plant, which can be extremely costly.

Inspection Experts for the Heavy Machining Industry

Specialists in non-destructive testing of structures, products and materials, FORCE Technology has more than 60 years of experience in performing inspections of power plants, pressure tanks, bridges, pipeline systems, storage tanks and ships around the world. FORCE Technology also designs and builds the equipment used to carry out these inspections. Based in Brøndby, Denmark, FORCE Technology operates subsidiaries in Sweden, Norway, USA and Russia and has more than 1,000 highly skilled employees worldwide. FORCE Technology focuses on product and concept development, design, production optimization and operation, and maintenance of industrial facilities.

Since downtime in plants is expensive, FORCE Technology needs to verify beforehand that its devices work right the first time. There is no time to modify a device once in operation. “We need to go in and get the job done quickly so that the

plant can start up as soon as possible,” said Christian Brandt Lauritzen, project manager, FORCE Technology. “It simply has to work right the first time.”

Virtual Simulation for Custom-Made Devices

FORCE Technology relies on DELMIA Cycle Time Performance and CATIA PLM Express to design and test special design equipment before it is manufactured. “We do a feasibility study to see how big the device or manipulator can be, how we get it in and how we get it out,” said Brandt Lauritzen. “We receive from the customer the geometry of the pipe or object to inspect and import this data in CATIA PLM Express. We then design the inspection apparatus and use DELMIA to virtually simulate it in operation.” Each manipulator is unique and tailored to a customer situation, which is why physical prototypes in many cases can be avoided and save a lot of money and time in the development phase. “It’s a one-of-a-kind design,” said Brandt Lauritzen, “a product formulated to address one particular situation.”

Optimal Performance of Testing Equipment

With the help of DELMIA, FORCE Technology equipment is designed to obtain the best possible results during an inspection. In effect, DELMIA helps FORCE Technology optimize the nominal cycle time of each manipulator as well as its performance, eliminate collisions during the simulation phase and implement design changes early and quickly. “In the past, when designing static 3D models, we could not see all problems before the machine was built,” said Brandt Lauritzen. “But with our new dynamic digital manufacturing tool, we can predict any real-world problems early and correct the design, confident that when it’s built it will operate error-free. Ramp-up time is faster now thanks to DELMIA.”

Positive Impact on Sales

3D DELMIA animations of the proposed solution help FORCE Technology’s sales force communicate more effectively, replacing documents and words with a

visual experience. “It helps build customer confidence,” said Brandt Lauritzen. “Manipulators are expensive equipment and customers need to know that FORCE Technology can handle the job.” And the 3DXML Player, currently used by the sales force to communicate with one another, will soon be extended to production to show how a manipulator should be assembled. “This will promote better collaboration between the design and production departments,” said Brandt Lauritzen.

From One-of-a-Kind to Standard Reusable Components

CATIA PLM Express with its integrated ENOVIA SmarTeam capabilities is important to FORCE Technology since production has increased over the years and a more standard data structure is necessary. “Before we opted for one-of-a-kind components for each project, but over the years we have been using more and more standard components, which we can equip with different tooling depending on what needs to be inspected,” said Brandt

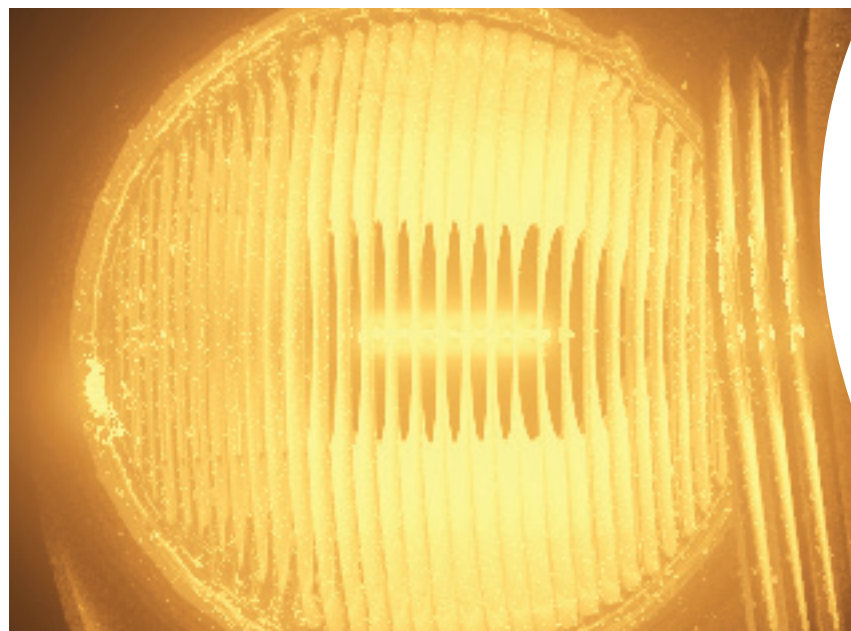
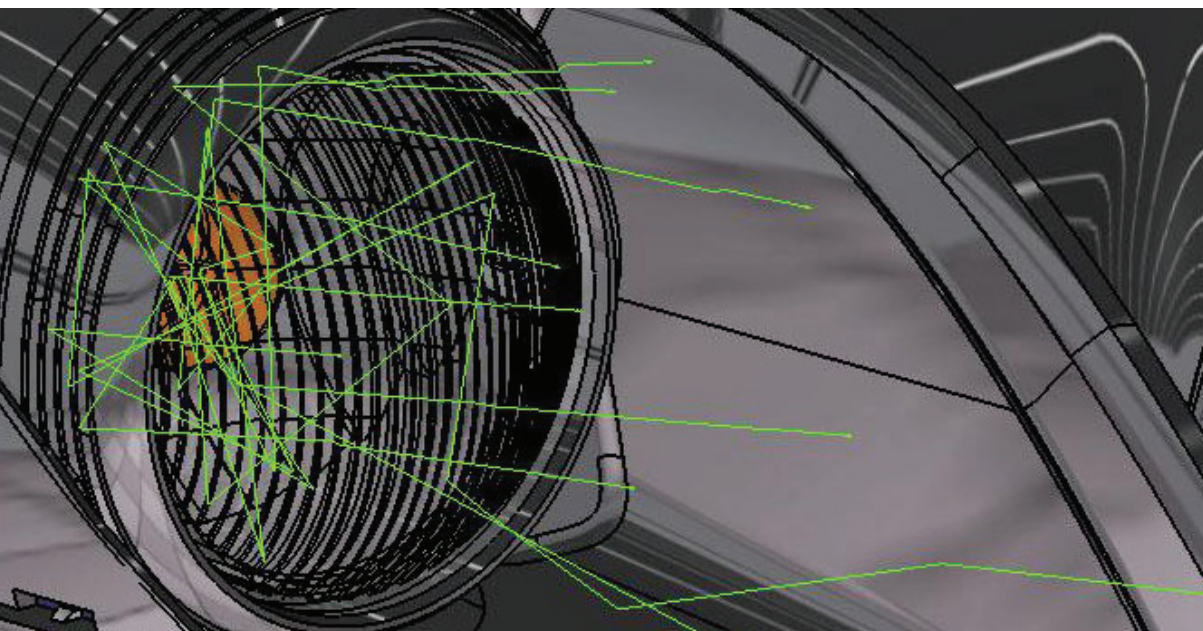
Lauritzen. “We are creating a database that contains all our standard components and their associated specifications so that everyone will know which components to use. Thanks to ENOVIA SmarTeam, the data will be readily available to them.”

Collaborating on the same model is another short-term goal for FORCE Technology. “We already had cases where one developer was working on a model and another was working on the same model, which resulted in conflicting data problems,” said Brandt Lauritzen. “We definitely want to have more people collaborating on the same model simultaneously; this will be possible thanks to our 3D virtual environment and real-time version control tools.” ■

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Koito

◀ Left: Image of a ray-trace simulation
Right: Image of lighting with Koito

In order to keep abreast of automakers' market strategies, we develop innovative products by leveraging DELMIA, CATIA V5, and ENOVIA SmarTeam while continuing to develop and assess the highest-quality prototypes

Koito Manufacturing Co., Ltd. Uses Dassault Systèmes PLM to Drive Success

Leverages DELMIA to Develop Innovative Products

Japanese Vehicle Lighting Leader

Since its inception in 1915, Koito Manufacturing Co., Ltd., has been a leading Japanese supplier of vehicle lighting systems for the automotive industry. In order to maintain its substantial global share and anticipate future customer needs, Koito has developed a strategic global network throughout North America, Europe and Asia with 12 production bases in nine countries.

Under the slogan, "Entrusting Safety to Light," the Koito Group continues to develop technically advanced lighting systems primarily for the automotive and other high-tech industries.

"In order to keep abreast of automakers' market strategies, we develop innovative products by leveraging DELMIA, CATIA V5, and ENOVIA SmarTeam while continuing to develop and assess the highest-quality prototypes," said Masahito Ishikawa, Manager, CAE Competency Center, Engineering Department, Koito Manufacturing Co., Ltd.

New Challenges from OEM Customers

Global automotive manufacturers are under pressure to deliver new vehicles in less time and at lower costs. This pressure has reached the automotive supplier community which faces increased demand for flexible, fast, and low-cost solutions to meet the development needs of automotive Original Equipment Manufacturers (OEMs). Vehicle lighting systems require sophisticated design technology, quality, and precision. Since they include optical components, headlights have complex shapes and are subject to many legal regulations in areas such as light distribution and visibility.

In addition, headlights are a vital part of a vehicle's style and appearance and therefore must reflect the latest trends in automotive design.

Finally, there is increasing pressure on automotive suppliers to implement turnkey production systems capable of developing more product in a shorter period of time, while entering mass production faster.

"At Koito, we strive to improve client satisfaction by meeting and even exceeding their needs in the areas that are most important to them: quality, cost and delivery. Safety and environmental factors are built into the very essence of our product development process. We work hard to boost our growth, competitive advantage and earning power," said Masahito Ishikawa.

Outperforming in the Highly Competitive Automotive Industry with V5 PLM

In 2000, to optimize product development,

Koito deployed Dassault Systèmes V5 PLM solutions including DELMIA, CATIA, and ENOVIA SmarTeam. With V5 PLM and the review of its development process, the company is increasing collaboration between its design and tooling departments to further streamline operations and attain high efficiency and high product quality.

DELMIA for Shop Floor Simulations

In response to OEM pressure for turnkey mass production solutions, Koito loads CATIA V5 data into DELMIA to optimize manufacturing processes such as assembly planning and robot simulations enabling Koito to ensure, in advance, that jigs hold products correctly and that there is no part interference.

Optimized Manufacturing Processes

The Dassault Systèmes DELMIA solutions for assembly planning and robot simulations enable them to ensure in advance that jigs hold the product correctly

and that there is not an interference. This helps prevent errors and accidents.

"We needed to reengineer the process between the design and manufacturing departments. Tooling requirement definition is now handled by the engineering department. The tooling department must set up efforts to develop a process that emphasizes 'mold-ability' verification and enhanced precision when creating products from data," explained Seiji Igarashi, manager, Fujikawa Tooling Department, Production Headquarters, Koito Manufacturing Co., Ltd.

By automating the entire Computer Aided Manufacturing process from design to manufacturing, Koito is confident they will not only streamline the entire production system, but will also continue to provide unbeatable solutions to market in a timely manner.

"V5 PLM solutions from Dassault Systèmes are enhancing our product

development efficiency while improving overall product quality through improved departmental collaboration," concluded Masahito Ishikawa.

Results Driven Overview

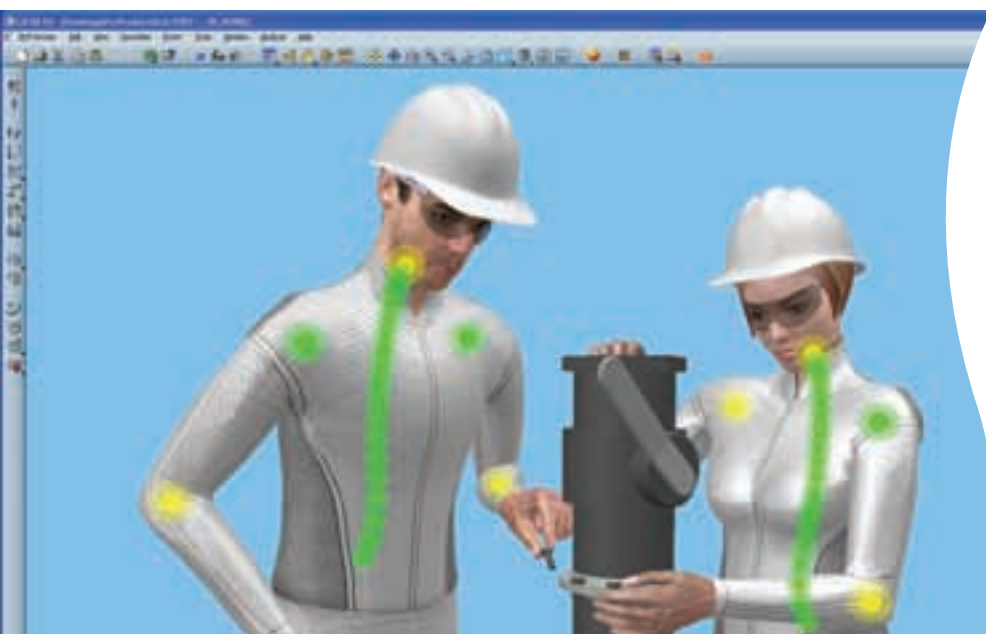
Koito needed to offer automotive OEMs flexible, rapid, low-cost solutions. As a solution, they chose DELMIA, CATIA, and ENOVIA SmarTeam to gain a larger share of the world automotive lighting market and create a global development and manufacturing network. With a consistent development process from product to manufacturing design based on PLM, Koito is creating high-quality, high-performance products faster than before. ■

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Meet Sia and Teo, the new Dassault Systèmes V6 manikins with a realistic look for a lifelike experience



Lifelike Human Advances Virtual Ergonomics

Provides Realism to Manikins

Meet Sia and Teo, the new female and male 3D manikins from Dassault Systèmes known as Live Human. Live Human is built on a lifelike human manikin model to empower users with the capability of evaluating ergonomics and human factors at all levels of product lifecycle management: virtual design, manufacturing and maintainability. As part of the latest V6R2011 release, Lifelike Human is easy to program and sets a new standard in virtual ergonomics.

Live Human has a face, a skin and a realistic look that captures the subtle, but visually significant ways the surface of the human body and skin reacts to movement, providing a 3D image that is much closer

to reality than ever before. By reaching a lifelike level with such meticulousness, the manikin plays a crucial role within the whole Dassault Systèmes lifelike experience strategy.

Human-Centered Design

By beginning with the product's ultimate user, Live Human enables human-centered design. For example, car designers start with a 3D manikin as the driver and a 3D manikin as the passenger, designing the car around them. Beginning with a human enables them to design based on the human experience and significantly reduce the need to re-engineer further along in the development process because humans were taken into account from the start.

Human-Centered Manufacturing

Live Human also enables users to evaluate and analyze how a person really interacts with a product or workplace

« Live Human enables users to analyze how a real person will interact in a work environment

design virtually. This is hugely beneficial because it's much easier to make changes in a 3D environment to solve ergonomic problems than it is to stop an assembly line at the end of production. Live Human helps eliminate the need for physical mockups, saves money by catching ergonomics problems as early as possible in the design process, and lowers the cost of work-related injuries.

Human-Centered Maintenance and Training

Live Human helps designers envision and eliminate potential maintenance problems. For instance, to change an airplane's air filter, designers must consider its weight and location— and how will these factors impact the worker? If the filter weighs 80 lbs. and the person has to awkwardly contort to reach the part, that increases accident risk. Uncovering these issues in the virtual environment reduces future costly design fixes.

Live Human also helps train users effectively because they recognize themselves more, versus watching a robot, and provides decision-making executives confidence that the simulated data will translate to reality because it looks real.

Within a world where products are built, used and maintained by people, humans are the central actors of the digital enterprise. Setting a new standard for lifelike product innovation, it's no wonder that Live Human is the 3D personification of Dassault Systèmes' Lifelike Experience. ■

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Still using outdated machining technology?

Times have changed and so have the tools.

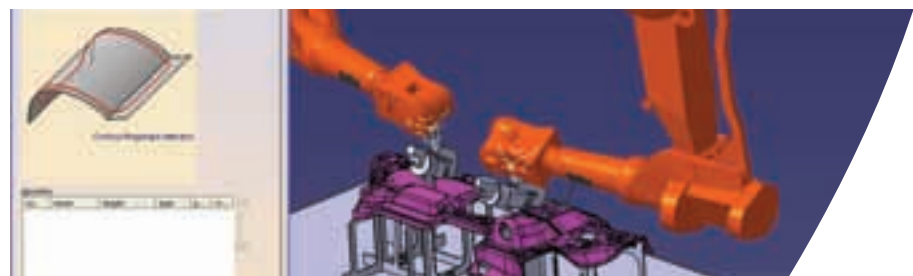
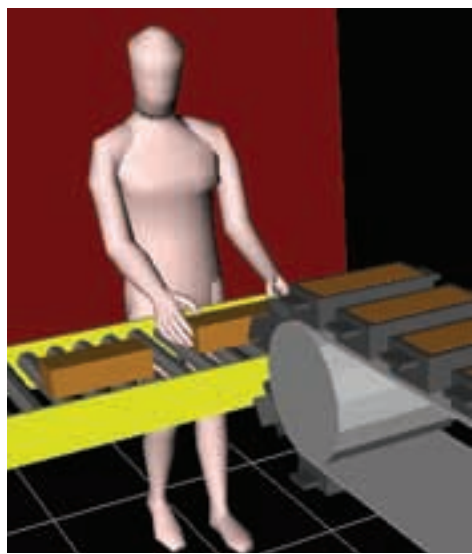
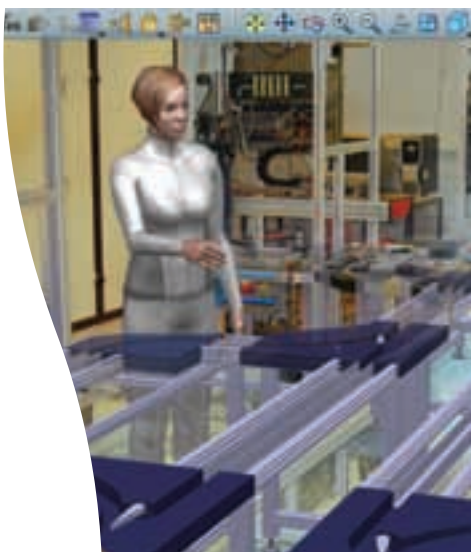
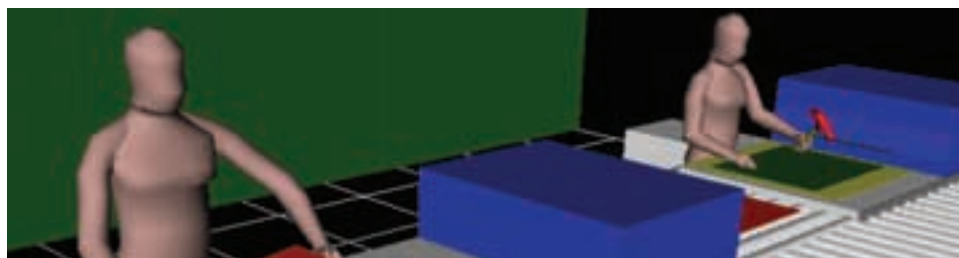
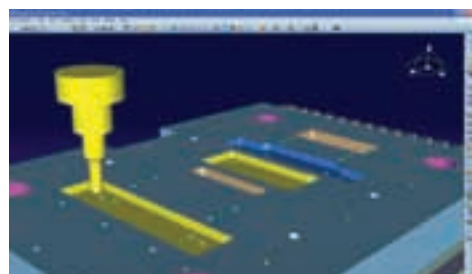
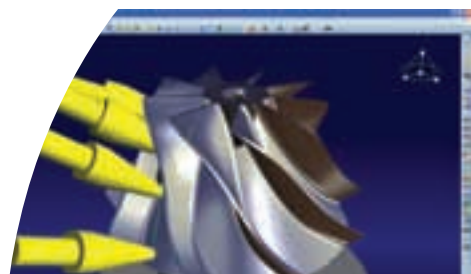
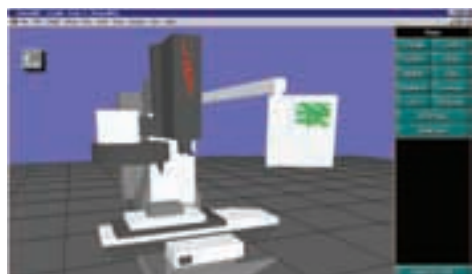
DELMIA V6 Machining revolutionizes your process by enabling you to program smarter, faster directly in a 3D lifelike simulation. It joins engineering and manufacturing knowledge to save critical time and optimize your process, all in the context of the machine simulation.

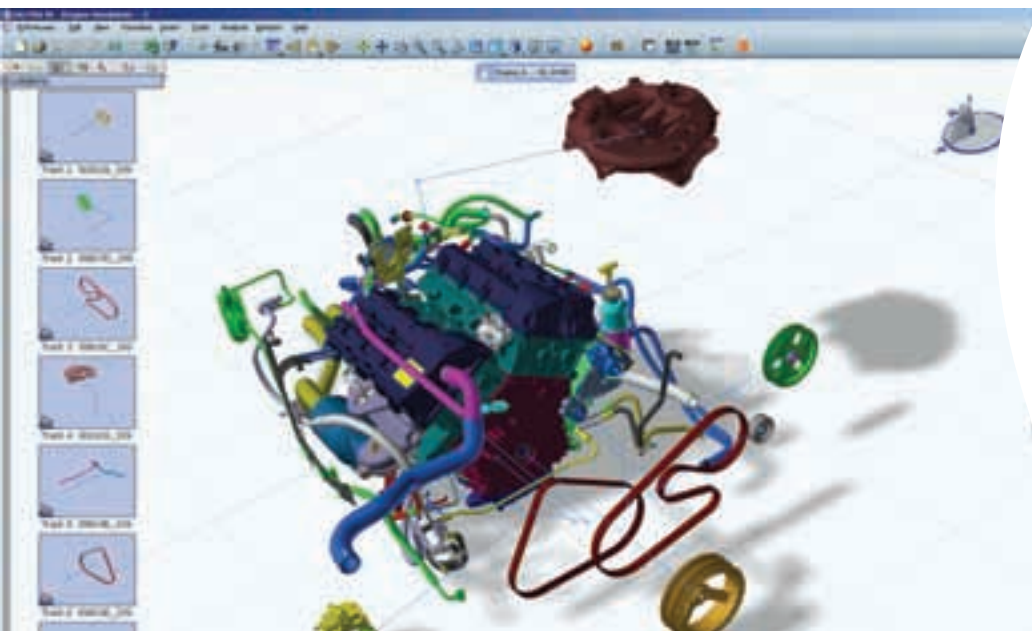
Find out more at 3ds.com



Ten Years of DELMIA Digital Manufacturing & Production

From Early Simulations to Today's Complete Lifelike Experience





◀ DELMIA V6 provides a lifelike view, such as this engine work in progress

New Collaborative Creation, Collaborative Innovation and Academia Solutions Headline V6R2011

This Latest DS Release Sets a New Standard

V6R2011 is the latest release of the DS PLM 2.0 platform as part of the Lifelike Experience strategy. It includes unprecedented new advances in collaborative creation with 874 new features, additional collaborative innovation enhancements, as well as an entirely new V6 Academia solution.

V6R2011 delivers new capabilities in collaborative creation, one of the key tenets of PLM 2.0. It includes CATIA advancements in systems functionality and content, such as various automotive-focused Modelica libraries, as well as Lifelike Human and Lifelike Conveyor, two new DELMIA production solutions for enterprise resource modeling. SIMULIA V6R2011 delivers to designers the power

of Abaqus technologies for complex assemblies. 3DVIA Composer continues to extend its competitive advantage in 3D lifelike technical publishing experience. Finally, V6R2011 also updates Dassault Systèmes' PLM Express offer with new key attributes for the mid-market.

V6R2011 features new capabilities in collaborative innovation, extending the depth of ready-to-use solutions in its eleven target industries, including CPG, fashion, high tech, aerospace & defense, and automotive. These ENOVIA-based solutions deliver a strategic foundation for all communities to participate in the product lifecycle online.

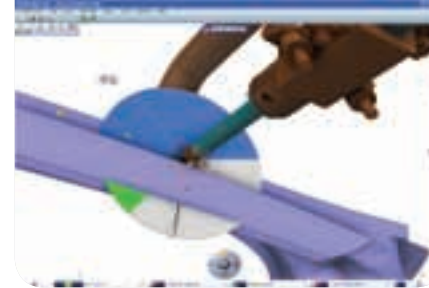
"Lifelike experience is about putting the customer's voice at the heart of collaborative creation and collaborative innovation. V6 is the best way to do that. Its platform and solutions, at their core, give our customers a unique competitive advantage," said Dominique Florack,

senior executive vice president, Products, Research and Development, Dassault Systèmes. "The power to 'See What You Mean' cuts across language barriers, enterprise barriers, and value stream barriers, to create an innovative, collaborative product development culture within a company."

In addition to addressing current and prospective users, Dassault Systèmes addresses future PLM users with a new V6 offer for educational institutions. The V6 for Academia solution is tailored to the needs of universities and research facilities in a ready-to-use environment engineered for rapid deployment. Because understanding and practicing the entire range of PLM domains is crucial to future engineers, V6 for Academia includes CATIA, DELMIA, SIMULIA, ENOVIA, and 3DVIA in an integrated collaborative platform.

Lifelike Experience

It involves all stakeholders in product



Manufacturers can strengthen and evaluate processes with a more realistic view

innovation, including consumer communities, requires that a 3D product be experienced as it looks and behaves in real life. V6R2011 sets a new standard by extending Lifelike Experience to include the underlying human, process environment and systems under multiple physical phenomena.

This includes V6R2011's easy-to-program Lifelike Human, a virtual manikin of unprecedented lifelike realism, enabling sophisticated ergonomic evaluations and interactive, lifelike product-human and process-human experiences; The Lifelike Conveyor solution simulates conveyors, and the items that are transported on them, with such realism that, for instance, they behave according to principles of physics.

Now, in addition to simulating work at a work-station, users can also simulate how parts will be transported from one workstation to the next; CATIA Systems further advances its ability to model and reproduce the dynamic behavior of systems under multiple simultaneous physical phenomena. DS's Dymola technology and component libraries are now augmented with 11 new libraries specifically designed for advanced modeling of complex systems in the automotive, aerospace, robotics, and energy sectors. Using realistic simulation, SIMULIA enhances lifelike experience by ensuring a 3D product's physical performance is exactly as it would be in the real world. SIMULIA DesignSight Structure Plus, a seamless extension of CATIA V6, now enables up-front linear and non-linear structural analysis of product assemblies. This represents another important step in enabling designers and others to simulate realistic product performance leveraging Abaqus finite element analysis technology. 3DVIA Composer delivers numerous enhancements for an even more productive user experience, allowing for rapid creation of interactive 3D communications, such as marketing materials, assembly and service instructions, and technical illustrations. V6R2011's intuitive navigation tools improve audience comprehension by hyperlinking to additional visual information when needed.

Collaborative Innovation

ENOVIA V6R2011 delivers new industry vertical capabilities for rapid adoption and optimized time to value, including a new system-on-a-chip (SOC) capabilities, with integrated defect management for both hardware and embedded software to improve quality and reduce development time; the ability for high tech OEMs to assess the impact of planned obsolescence of purchased components during the product development process, yielding longer product life and better inventory management; a new consumer packaged goods (CPG) raw material management solution to track the composition of raw materials obtained from suppliers all the way to the finished formulas and packaged products. This enables manufacturers to be compliant with country-specific consumer and environmental regulations; an expanded PLM solution for Fashion companies in design, product development, sourcing, and production execution. It enables the management of sets and packs and allows manufacturers to score and audit suppliers for maximum quality and compliance; and an enhanced aerospace and defense contract management solution addressing more industry and government standards. It also allows for the creation of contracts and the inclusion of specific items required by enterprise resource planning (ERP) systems for program execution. V6R2011 PLM Express introduces new out-of-the-box program management capabilities based upon the same sophisticated solution previously only available to larger companies. This new addition allows companies to create and manage multiple parallel projects, give project status through dashboards optimized for product introduction, and manage data and resources. ENOVIA V6R2011 also delivers a product to transition ENOVIA VPM V5 to V6. All CATIA, ENOVIA and DELMIA users now have specific transition solutions to V6.

Collaborative Creation

In V6R2011, CATIA pushes ahead and extends its unique functional modeling technology to surfacing for the Body-in-White community. For years, CATIA's

functional modeling capability has enabled users to focus on and capture their design intent, by freeing themselves from the sequence in which they model, associating behaviors with design features, thereby decreasing design complexity. With this release, CATIA V6's surfacing offer is fully mature and integrates industry leading ICEM technologies. By combining freeform explicit modeling from ICEM with associative feature-based modeling, CATIA V6 delivers a powerful set of tools to model aesthetic and ergonomic shapes from the most basic to Class-A surfaces. State-of-the-art wire harness symmetry capabilities, incorporating best practices from various industries, are unveiled in CATIA V6R2011.

V6R2011 strengthens manufacturing preparation processes with CATIA Bent Part Design to quickly create bent part designs, from paper wrappers and cardboard boxes to aerospace sheet-metal components, and a new specialized product for mold tooling injection.

The new DELMIA V6R2011 Production System Simulation solution allows an industrial engineer to define the logical, manufacturing system that will be used to execute a process plan. The engineer can evaluate what manufacturing equipment is needed, how the material will flow from each processing station to the next, and resource utilization and plant capacity. With V6R2011's new DELMIA Robotics Arc Welding solution, users can program in an offline mode various complex, multi-axis robotic arc welding systems in a 3D environment.

DELMIA V6R2011 introduces a new role to the PLM Express offering: the robot engineer. Robot Engineers can define robotic work cell layouts, create robot programs, define and validate the behavior of devices, and download programs to the robot controller. ■

🔍 **FOR MORE INFORMATION VISIT:**
www.3ds.com/products/v6

OR E-MAIL:
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AMERICAS

34th Annual Global Conference on Product Innovation Management

October 16-20, 2010
Rosen Shingle Creek
Orlando, Florida, USA
www.pdma.org

AdvaMed 2010

October 18-20, 2010
Walter E. Washington Convention Center
Washington, D.C. USA
www.advamed.org/memberportal/

Apparel Tech Conference

November 10-11, 2010
Fashion Institute of Technology
New York, New York USA
www.apparelmag.com

Aviation Week A&D Programs

November 2-3, 2010
Arizona Biltmore Resort & Spa
Phoenix, Arizona USA
www.aviationweek.com/events

AWEA Small & Community Wind Conference & Exhibition

December 7-9, 2010
Double Tree Hotel Portland
Portland, Oregon USA
www.smallandcommunitywindexpo.org/index.cfm

COE 2011 Annual PLM Conference and TechniFair

April 3-6, 2011
Rosen Shingle Creek
Orlando, Florida USA
www.coe.org

COE Aerospace & Defense Workshop

October 11-12, 2010
Ft. Worth Marriott Hotel & Golf Club at Championship Circle
Ft. Worth, Texas USA
www.coe.org

Composites 2011

February 2-4, 2011
Broward County Convention Center
Ft. Lauderdale, Florida USA
www.acmashow.org/

DMC 2010

November 29-December 2, 2010
The Venetian
Las Vegas, Nevada USA
www.dmc2010.com/pages/register.html

DSCC 2010 (Dassault Systèmes Customer Conference)

November 9-10, 2010
Renaissance Orlando at SeaWorld Hotel
Orlando, Florida USA
www.dsc2010.com/ms_home.htm

MS&T '10 (Materials Science & Technology Conference)

October 17-21, 2010
George R. Brown Convention Center
Houston, Texas USA
<http://matscitech.org/>

Medical Design & Manufacturing West Conference

February 7-10, 2011
Anaheim Convention Center
Anaheim, California USA
www.canontradeshows.com/expo/west10/conference.html

OTC's Arctic Technology Conference 2011

February 7-9, 2011
George R. Brown Convention Center
Houston, Texas USA
www.arctictechnologyconference.org/about.cfm

Power-Gen International

December 14-16, 2010
Orange County Convention Center
West Halls
Orlando, Florida USA
www.power-gen.com

RAPS Annual Conference & Exhibition (Regulatory Affairs Professional Society)

October 24-27, 2010
San Jose McEnery Convention Center
San Jose, California USA
www.raps.org/personifyebusiness

SAE World Congress 2011

April 12-14, 2011
Cobo Center
Detroit, Michigan USA
www.sae.org/congress/

SNAME Annual Meeting & Expo (Society of Naval Architects & Marine Engineers)

November 3-5, 2010
Hyatt Regency Bellevue
Bellevue, Washington USA
<http://snameexpo.com/2010/>

EUROPE

ARCSIS Rencontres Scientifiques et Techniques

November 18-19, 2010
Rousset, France
www.arcsis.org/

Auditing ENERGIA 24

October 8, 2010
Milano, Italy

Compositi Expocongress

October 13-14, 2010
Modena, Italy
www.compositiexpo.it

DCI Premium in Machine

December 7, 2010
La Défense
Paris, France
www.in-machine.com/paris_7-12-2010.asp



ECF 2010
Dassault Systèmes' European Customer Forum
November 23-24, 2010
Disneyland Paris
Paris, France
www.3ds.com/ecforum

EDUCATEC

November 24-26, 2010
Porte de Versailles
Paris, France
www.educatec-educatice.com

Electronica 2010

November 9-12, 2010
Neue Messe
Munich, Germany
www.electronica.de

Euromold 2010

December 1-4, 2010
Exhibition Center Frankfurt
Frankfurt, Germany
www.euromold.com

ICEM User Conference 2010

October 20-21, 2010
Millennium Hotel
Stuttgart, Germany
www.3dsevents.de/icemuserconference

IMB Select 2010

November 10-11, 2010
Kölnmesse
Cologne, Germany
www.imb-select.de

Industrie 2011

April 5-8, 2011
EUREXPO
Lyon, France
www.industrie-expo.com/

Innovation Festival

October 6-10, 2010
Milano, Italy
www.innovationfestival.it

JEC Composites Show 2011

March 29-31, 2011
Porte de Versailles
Paris, France
www.jeccomposites.com/

Offshore Production Technology Summit

January 31-February 1, 2011
London, United Kingdom
www.offshore-summit.com

PLM Forum Barcelona

October 19, 2010
Barcelona, Spain
www.3ds.com/es/company/events/encuentros-2010

PLM Forum Bilbao

October 26, 2010
Bilbao, Spain
www.3ds.com/es/company/events/encuentros-2010

PLM Forum Greece

October 13, 2010
Athens, Greece
www.3ds.com/company/events/events-list/

PLM Forum Madrid

October 28, 2010
Madrid, Spain
www.3ds.com/es/company/events/encuentros-2010

PLM Forum Russia

October 14, 2010
Hotel Radisson SAS Slavyanskaya
Moscow, Russia
www.plmforum.ru

PLM Forum Turkey

December 1, 2010
Istanbul, Turkey
www.3ds.com/company/events/events-list/

PLM Innovation Congress 2011

January 19-20, 2011
London, United Kingdom
www.plminnovation.com

PRODEX

November 16-20, 2010
Exhibition Center Basel
Basel, Switzerland
www.prodex.ch/html/e_willkommen.htm

Scanautomatic Fair

October 26-28, 2010
Svenska Mässan
Mässans Gata/Korsvägen
Gothenburg, Sweden
www.scanautomatic.se

SIMVEC (Simulation in Vehicle Engineering)

November 16-17, 2010
Kongresshaus
Baden-Baden, Germany
www.vdi-wissensforum.de/index.php?id=1226

TEKOM

November 3-5, 2010
Rhein-Main-Hallen
Wiesbaden, Germany
www.tekom.de

Vienna Tec

October 12-15, 2010
Reed Messe Wien
Vienna, Austria
www.vienna-tec.at

ASIA PACIFIC

4th Annual DS India PLM Executive Summit

November 16, 2010
India
www.3ds.com/company/events/events-list/

ArchiFuture 2010

October 28, 2010
Tokyo, Japan
www.archifuture.jp/2010/

DS PLM Conference Osaka

November 11, 2010
Osaka, Japan
www.3ds.com/company/events/events-list/

Shanghai Expo Online Event

Present-October 31, 2010
Online from Great China
www.3ds.com/company/events/events-list/





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