Contact mag

The DS PLM Magazine

06 2008

Special Edition

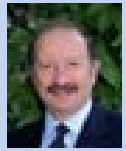
Gucci Group
Streamlines
Engineering Process

Daimler
End to end Process
Cooperation

AGME
Reduces Design
Time by 30%

DASSAULT SYSTEMES

Editorial



This special edition of Contact Mag is a "Best Of" of our ENOVIA-centric articles published over the last 12 months. You will discover the result of our strategy to consolidate MatrixOne, VPLM and SmarTeam into a strong and proven ENOVIA brand at the heart of Dassault Systèmes PLM offering. These customer testimonials truly acknowledge that our ENOVIA collaborative PLM solutions federate data coming from multiple CAD, PDM and ERP systems throughout the extended enterprise, at a worldwide level and in a very effective manner.

The publication of this special ENOVIA issue coincides with the first ENOVIA conference for our European customers. We are quite pleased that so many of our customers have chosen to present their achievements, challenges and strategies. We also take this opportunity to introduce PLM 2.0 with our V6 platform, just recently announced. Rest assured: V6 and PLM 2.0 are just as important for PLM as Web 2.0 is to the Internet world!

Last but not least you will see how Dassault Systèmes expands into new markets such as Life Sciences, Architecture, Energy, Apparel, Footwear and Retail as the quest for structured innovation grows across all industry sectors.

So dive right into this exciting special ENOVIA edition: "you're worth it" as one of our famous customers used to say!

Didier Gaillard
Vice-President, Marketing
ENOVIA Europe

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Contact mag
The DS PLM Magazine published by Dassault Systèmes
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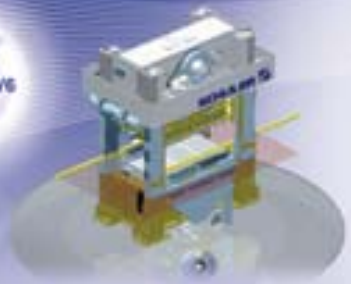
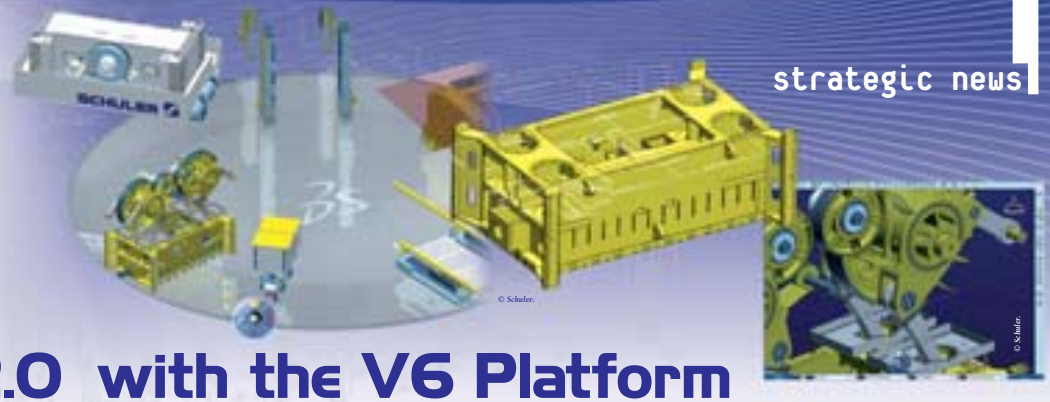




By Fabien Fedida

Introducing PLM 2.0 with the V6 Platform

PLM 2.0, the PLM* online for all, is an online environment for virtual product experience in 3D which allows everybody to see and participate in the product lifecycle. Providing PLM on line for all becomes possible thanks to V6, Dassault Systèmes' next generation platform.

PLM 2.0 is about realizing the promise of web 2.0 - the participative web where user interactions generate knowledge - in industry. It is an environment that will make it possible for user communities to take advantage of on-line applications from anywhere to imagine, share and experience products using the universal language of 3D. As such, PLM 2.0 expands PLM to include business users and end consumers. It is based on the new V6 platform, a unified and open Web services architecture that makes it possible to develop new types of online applications allowing everybody who has a role in the life of the product to participate in designing the product with a very intuitive interface and from anywhere in the world.

EVERYONE CAN COLLABORATE ON A PRODUCT

With market and consumer tastes and needs varying at an increasingly fast pace, companies depend more and more on innovation to continuously bring new and better products to their customers. This requires that they maximize their intellectual capital by allowing everyone (employees and consumers as well) to participate in a product's lifecycle from initial idea all the way to how the consumer will buy and use the product. Collaboration between the various participants on a product's life requires a platform capable of federating all product-related knowledge, and managing easy access to it from anywhere. V6 goes as far as enabling on-line product authoring in real time from anywhere in the world with only an Internet connection. Just picture yourself actually modeling in 3D with CATIA from your home, and in a concurrent fashion with co-workers in the office!

PLM 2.0 is also about harnessing the collective intelligence of online communities such as designers, marketers, or just about any innovators. With V6, it is possible to identify co-workers of interest online, form a group in an ad-hoc fashion, share one's work and ideas in 3D, and act as a group.

A LIFELIKE PRODUCT EXPERIENCE

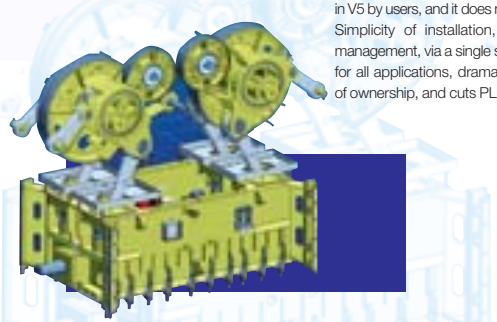
Focusing on the end consumer's experience of the product has emerged as an essential driving force when designing a product. PLM 2.0 allows the product innovation process to start with the consumer specifying his/her desired customer experience, and to end with the consumer "test driving" the future product virtually. This requires a lifelike experience: experiencing the product and its behavior just like in real life, including the shopping experience, and having a virtual product model compliant with reality: for instance, the virtual fall of a cell phone on the ground produces the exact same outcome as in reality.

*Product Lifecycle Management.

ONE SINGLE PLATFORM

V6 presents a wide range of growth opportunities for the ecosystem and third parties developing applications. V6 also addresses new types of users, providing a single platform spanning from multidisciplinary engineering groups all the way to enterprise business users, including users dealing with consumer profiling, marketing, etc.

The V6 platform is one environment for Dassault Système (DS) and non-DS applications. Its single PLM Enterprise Foundation provides a federated view and access to all product-related information – or Intellectual Property (IP) - whether it comes from a DS application, or from other PDMs, ERPs or even from unstructured data sources. For example, when a CATIA model is accessed, the price, which may come from SAP, is visible as well.



OPEN, AND EASY TO OWN AND USE

The V6 PLM Enterprise Foundation is an open web-services architecture which embraces the SOA (Service Oriented Architecture) standards and generalizes the use of XML. On this foundation reside native Dassault Systèmes' applications - CATIA, DELMIA, SIMULIA and ENOVIA, as well as third party applications via the Design Data Management layer.

V6 integrates all product-related activities at the data and process level: it spans from all engineering disciplines to business users. The architecture is optimized to allow remote product authoring from anywhere using a web connection.

The 3D PLM User Experience, where users benefit from a common intuitive experience across all applications, brings IP to life in 3D. Anyone can search, find, navigate all PLM information easily, and connect and interact with others in a fun-to-use 3D environment. V6 also leverages the methodologies learned in V5 by users, and it does not require retraining. Simplicity of installation, maintenance and management, via a single server and database for all applications, dramatically reduces cost of ownership, and cuts PLM deployment time.

The flexible SOA architecture also allows easy integration with existing systems, and modeling of business process with no programming skills. Finally industry-specific solutions capture the value within each industry and provide the best and most tailored path to PLM.

EXPANDING EXISTING PLM ASSETS

Dassault Systèmes is also developing additional V5 releases and enabling smooth future transition paths to V6. As evidence of this, Dassault Systèmes released ENOVIA MatrixOne 10.8 which is compatible with V6, and supports hybrid V4, V5, V6 scenarios, allowing users to work on the same model with different CATIA versions.

Dassault Systèmes also continues its commitment to small and medium businesses, and is planning to deploy an ENOVIA SmarTeam solution on the V6 platform. Customers currently using SmarTeam Design Express will all have a smooth transition to V6's mid market offering.

First customers are already experiencing the value of V6; Dassault Systèmes is working with early customers across multiple industries with a focus – for CATIA - on industrial equipment, automotive and aerospace.

The V6 platform is scheduled for general availability in May 2008 with 180 CATIA, DELMIA, SIMULIA, ENOVIA, applications •

For more information:
www.3ds.com/products/v6/welcome/

Mark your calendar!

DELMIA European Customer Conference

- **Date: October 15-16, 2008**
- **Location: SI-Erlebnis-Centrum, Stuttgart, Germany**
- **Registration: www.delmia-cc.com/europe.htm**

European CATIA Forum

- **Date: November 26-27, 2008**
- **Location: Disneyland Paris, France**
- **Registration: www.3ds.com/news-events/ecforum**


ALEXANDER McQUEEN.


GUCCI.


GUCCI.

Gucci Group Streamlines Product Development and Engineering Process

Gucci Group confirms its competitive advantage by recently adopting ENOVIA MatrixOne for its product development and engineering processes thus improving collaboration and innovation. Contact Mag spoke with Mr Gianni Leone, CIO of Gucci Group, about the business challenges facing the company and why it has adopted a PLM approach.


Gianni Leone

Contact Mag: What specific challenges does Gucci Group face when designing and releasing its different collections?
Gianni Leone: There are two major challenges. One is the need to reduce costs by improving control over budgets and by eliminating inefficient tasks that have no added value. The other is to reduce time to market. This means improving the flow of information at all levels of the product development process, enabling collaboration between the different actors involved in a collection, improving synchronization between the different teams, and efficiently managing the timing when designing and producing a collection. Our ultimate goal is to be ready on time for each collection's fashion show date.

C.M.: How does a PLM approach help you meet these challenges?
G.L.: PLM helped us overcome the weaknesses we had in the way our employees shared information, which was essentially based on exchanging paper, emails, and other paper-based methods. We needed to modify our working environment and provide everyone access to a single information source so that they can find relevant, up to date information at any time from any place. This is essential to successful collaboration.

C.M.: Why have you chosen ENOVIA MatrixOne?
G.L.: We took, as you might say, a classic approach to comparing the different solutions on the market. We opted for ENOVIA MatrixOne because it satisfied our selection criteria such as user friendliness, ease of use, flexibility and scalability of the solution as well as the fact that the same platform can easily be deployed to our other product categories. The solution is also a widely tested and proven solution, a gage of reliability and robustness.

C.M.: What approach have you adopted for implementing ENOVIA MatrixOne?
G.L.: We have opted for a phased implementation where phase one covers all activities linked to product development and industrialization of brands such as Gucci, Yves Saint Laurent, Alexander McQueen and Bottega Veneta in our ready-to-wear and leather goods categories. The feedback from this initial implementation will pave the way for extending the PLM approach to other product categories such as jewelry and silk products.

This first phase is just part of a comprehensive program of improving our overall information system, organization and processes. ENOVIA MatrixOne has prompted us to take a look at our existing processes and make improvements that are in line with the possibilities offered by the solution. It was an opportunity for us to make our processes more efficient and not just implement this new tool on our existing processes. Only this comprehensive approach will yield the necessary improvements in lead time between design and industrialization that we require.

C.M.: What were the results of the first phase of implementation?
G.L.: One of the success factors during this first phase of ENOVIA MatrixOne implementation was the teamwork between Gucci Group and Dassault Systèmes. We are very satisfied with the support provided by Dassault Systèmes. We built a unified team of Gucci Group and Dassault Systèmes experts, with the right skills, working together for a common goal: to make implementation a success. There was no room for error and when we switched to ENOVIA MatrixOne for our production, we were up and running as planned.

Dassault Systèmes also provided us with customized applications, which match the way we work and that follow the processes that are an inherent part of what makes our company unique. The flexibility of ENOVIA MatrixOne enabled these specificities to become part of the solution that we have implemented here at Gucci Group.

C.M.: What is the feedback from users so far?
G.L.: Before answering this question, let me just say that we were aware that deciding to move away from the old way of working would require that users get accustomed to the new approach and the new tools. But as I mentioned before, the user friendliness of the solution and the advantages it offers made this transition fluid. Consequently, the feedback is good and it confirms that adopting ENOVIA MatrixOne was the right thing to do •)


BEDAT & CO.

More about Gucci Group

Gucci Group is one of the world's leading multi-brand luxury goods companies with revenue for 2007 of 3.9 billion euros.
The Group creates, produces and distributes high quality luxury goods including ready-to-wear, leather goods and silk products, shoes, watches, cosmetics, eyewear and jewelry with luxury brands such as Gucci, Bottega Veneta, Yves Saint-Laurent, Balenciaga, Bedat & Co, Alexander McQueen, Stella McCartney, Sergio Rossi and Boucheron.
Today, the Group directly operates 494 stores in major markets throughout the world and wholesales products through franchise stores, duty-free boutiques and leading department and speciality stores.
Gucci Group is owned by PPR, a global player in retail and luxury goods.
www.guccigroup.com

ENOVIA Accelerates Haglöfs' Growth

By Emmeli Häggström, Technia

To continue its profitable growth, Haglöfs realized they needed to be more efficient in bringing their world-class products to market – the solution was PLM and ENOVIA MatrixOne.

Haglöfs, the largest supplier of outdoor equipment in the Nordic region, has been achieving constant and fast growth over the past four years, doubling its turnover during this period. This has put a lot of pressure on the streamlined organization; especially when it came to managing the company's demanding workload.

MANAGING PRODUCT INFORMATION MORE EFFICIENTLY

Product data was stored in separate IT systems and Excel worksheets which led to an increased amount of manual labor and time consuming data transfer operations. Moreover, Haglöfs was faced with the challenges of managing international production partners and international collaboration.

As a result, Haglöfs invested in a PLM solution in 2006, based on ENOVIA MatrixOne, which enables the company to manage all aspects of product information more efficiently. The ENOVIA MatrixOne Apparel Accelerator for Design & Development provides Haglöfs with the ability to align its organization with various environmental and other regulatory requirements. Additionally, it promotes innovation through visibility, control, and collaboration. The new system manages projects, bills of materials (BOM), processes, items, samples, sketches, structures and related documents.

"We evaluated three different solutions but decided to adopt ENOVIA MatrixOne early on. This was due to the system's "horse-power", the fact that it is a well developed out-of-the-box solution for apparel manufacturers and because it is a flexible and expandable system that can grow with us. The solution is web-based and it is easy to attach external users and to adjust the interface. The layout is appealing and logical and there were good reference cases, such as GAP, which made our investment feel secure," says Johnny Claus, Product Director at Haglöfs.

DELIVERING THE RIGHT PRODUCT, AT THE RIGHT PRICE

Together with Haglöfs, Technia implemented ENOVIA MatrixOne and focused on using the product's standard functionalities. Technia Value Components was part of the implementation, increasing usability and user acceptance. The system was integrated with Haglöfs business system, GARP. The flexibility and architecture of this solution provides a critical foundation to support Haglöfs aggressive growth initiatives.

"The PLM system supports Haglöfs' aim for constant and aggressive growth by reducing manual work, enabling faster and high quality collaboration with our suppliers, and by improving the delivery of the right products to the market, at the right time and at the right price while maintaining profit margins. A PLM system "forces" everyone to solve the task in the same way. This strengthens the routines, which contributes to higher efficiency and quality," continues Johnny Claus.

ENOVIA MatrixOne is the right choice for a modern, global, scalable PLM backbone.

FUTURE PLANS AND INVESTMENTS

The PLM solution is not used globally yet, but the company plans to expand its use very soon. Technia's solution is used in Haglöfs' product development department and 25 users are currently involved. In the near future producers in Europe, as well as Asia, will have direct access to the system. In 2008 Haglöfs will develop the forecast management and the pre-costing processes along with Technia so that it can determine the best production parameters using the PLM system. Haglöfs also plans to integrate the PLM solution into their existing design and pattern production IT system. The company will continue to invest in its PLM solution by developing new functions and upgrading to new releases. The report system will be expanded in order to be able to produce the exact reports that are needed to continuously improve working routines and rationalize development work.

"We are confident that the Apparel Accelerator from ENOVIA MatrixOne is the right choice for a modern, global, scalable PLM backbone. From a competition perspective, we are very pleased to be at the forefront of our industry with PLM. We made the decision to invest in PLM in 2006 and expected to really start benefiting from it 15 months later. If we compare ourselves with competitors who make the investment this year, we will always be at least two years ahead. Whether we are talking fashion, sports or outdoor equipment, few businesses, if any, will be able to compete without a well functioning PLM system in the future. It is about being able to shorten development times and perfect the logistics in order to be able to respond to trends and be early to market with the latest products", concludes Johnny Claus •

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More about Haglöfs
Haglöfs is the largest supplier of outdoor equipment in the Nordic region. The company has 83 employees in Sweden and approximately 20 abroad. Haglöfs' net sales are forecast to reach SEK 450 million in 2007. Haglöfs distributes its products in 15 markets outside Sweden with affiliates and sales offices in Norway, Finland, Denmark, Germany and England. In other markets such as Switzerland, Italy, Spain, France and Benelux Haglöfs works via distributors or agents. Production is located in Estonia, Poland, Romania, China and Vietnam.
www.haglofs.se

More about Technia
Technia is the leading supplier of Product Lifecycle Management (PLM) Solutions for creating and managing product information throughout the entire product lifecycle to global industries. Technia, with more than 110 employees, is a strategic partner of more than 200 companies. It has offices in Stockholm, Gothenburg, Helsinki and Oslo. Technia's customer list includes: Ericsson, Elcoteq, ESAB, Danaher Motion, GE Healthcare, Marioff, Metso Paper, Mölnlycke Health Care, Nokia, Perkin Elmer LifeSciences, Proximion, Scania, Sectra Mamea, and Sony Ericsson.
www.technia.com

The Surgical Division offers peace of mind in the operating theatre by providing a range of outstanding products such as drapes, packs and staff clothing, customized procedure trays, surgical powder free gloves and skin antiseptics, along with various service solutions.

By Emmeli Häggström

Mölnlycke Health Care: a Global PDM Solution

Mölnlycke Health Care has created a consolidated global PDM solution from Technia and ENOVIA MatrixOne.

"The PDM-strategy originates from a central solution. When we decided to leave the paper-based system behind in 2001 it was extremely important for us to consolidate and create one single communications platform. Our R&D departments are situated in Gothenburg but our production units, internal and outsourced, are all spread out geographically which meant that a web-based solution was a matter of course", says Claes Göran Andersson, Project Manager DCS, System Owner PDM at Mölnlycke Health Care.

Mölnlycke Health Care (MHC) is one of the world's largest manufacturers of single-use surgical and wound care solutions for the health care sector. In the biotech industry there are high demands on product control, both when it comes to R&D and production. In 1995 Mölnlycke began scouting the market for a centralized product data management (PDM) solution. The aim was to ensure that all changes and upgrades were performed in accordance with current rules. There was also the obvious benefit of streamlining the organization, making it more effective. When Nordic Capital did the acquisition of Mölnlycke from SCA 1998, MHC decided to change all the old IT systems. The decision resulted in an IT project where all existing SCA systems were switched to SAP R/3. Following the large changes in the IT structure the implementation of a PDM system project was delayed and was not implemented until 2001-2002.

FOCUS ON R&D

In 2002 Mölnlycke's research and development department deployed a new PDM solution, based on ENOVIA MatrixOne. Mölnlycke's IT system is based on the outsourced hosting of data operations, servers and a global network. The PDM system works inside this global network which is open to everyone in the company.

"We chose to start the implementation of ENOVIA MatrixOne in the R&D department because they had the biggest need for structure when it came to documents and R&D projects. At that time they had a single database for all paper documents, making control and knowledge sharing difficult. Many times one single person had all the product-specific information and knowledge which made product development vulnerable," says Claes-Göran Andersson.

More about Mölnlycke Health Care
The Mölnlycke Health Care headquarters is located in Gothenburg Sweden. MHC employs 5500 people and has manufacturing facilities in Belgium, the Czech Republic, Finland, Malaysia, Thailand and the UK. In 2007 the company was bought by Investor.
www.molnlycke.com

The Wound Care Division offers gentle and effective wound healing with a range of unique products."

STRICT DEMANDS FOR CONTROL

The product process, as opposed to many other traditional PDM/PLM users, is a little different for Mölnlycke as a biotech company. For example the product is destroyed after use. In addition there are no spare parts and no need for repairs. However, the need for control is of utmost importance. Every production batch needs documentation. Every release of newly developed or changed products must be verified, validated and documented in accordance with the Medical Device Directives that Mölnlycke chose to follow in order to be CE-branded. "Two of the medical directives we adhere to are the Medical Device Directive (MDD) in Europe and the Food and Drug Administration (FDA) for the USA, to name a few. Products are classified in different levels depending on the directive. The traditional Mölnlycke range is class 1-2 but lately we have started developing higher classified products, class 3, which require higher control and comprehensive documentation. Class 3 products are usually used close to the body and close to body fluids, which can affect, for example, the blood system. In short we needed to develop our system and our documentation processes to be able to manage these types of products in a satisfactory way. With a PDM/PLM system we can handle the process much more effectively and ensure we don't miss anything," continues Claes-Göran Andersson.

GLOBAL SOLUTION WITH SPECIAL ADJUSTMENTS

Since 2002, PDM has been implemented in several areas in Mölnlycke, and is integrated with the SAP system. As a result many of the processes are shorter and more flexible. Since the PDM solution is centrally implemented in a global system, it is easy for employees to reach the product data from anywhere in the world.

Mölnlycke's PDM system currently has around 700 users, of which 150 are heavy users in R&D and manufacturing. The ENOVIA MatrixOne system development is made in close collaboration with Technia and today Mölnlycke has a relatively advanced solution with a couple of adjustments and improvements custom-made to fit their organisation, one example being a central solution for project-related work. "Mölnlycke and Technia have enjoyed a good partnership for PDM during the past six years and together they have developed an extensive PDM system which is globally used at Mölnlycke. The foundation of this complex project has been the mutual collaboration between Technia and Mölnlycke as well as both companies' ambitions to achieve good results," states Claes-Göran Andersson •

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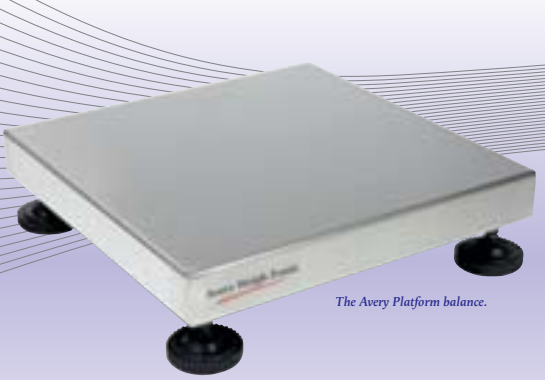
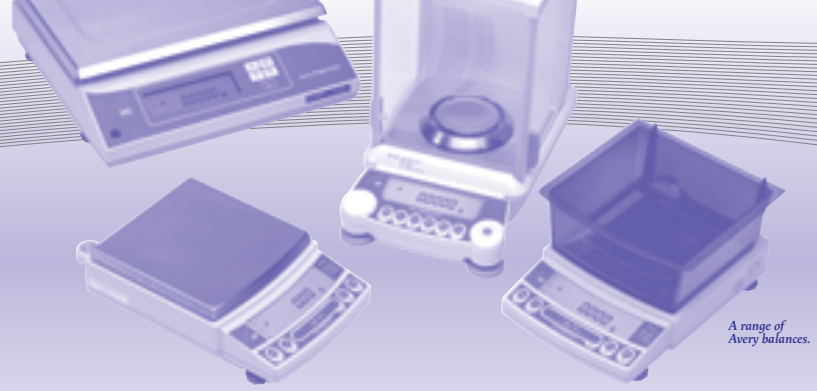
jg@technia.com

More about Technia
Technia is a world-class supplier of Product Lifecycle Management (PLM) solutions for the creation and management of product information throughout the entire product lifecycle.
www.technia.com



The Avery Platform balance.



A range of Avery balances.

ENOVIA Lightens the Load at Avery Weigh-Tronix

By Nick Lerner

The MP 300 retail scale.

A range of gravity slicers.

Avery Weigh-Tronix produces some of the most accurate weighing equipment in the world. ENOVIA SmarTeam has played a major role in establishing a worldwide R&D operation following a number of company acquisitions. The first implementation phase has been operational for several months and is already providing more control and improved access to product data.

CREATING ORDER

The company employs 2600 people and operates multinational research and development (R&D) teams working principally in Birmingham, UK and Minnesota, USA, with software development in India. It is the R&D division that has been the first to benefit from the ENOVIA SmarTeam implementation.

Dr Roy Cann, the company's Worldwide Director of R&D, described the need for PLM. "The range of weighing systems that we manufacture, sell and service are based on more than 300,000 components. Each territory in which we sell has its own individual standards and local requirements for weighing accuracy. This requires a significant number of market variants in our product lines."

With the merger of Weigh-Tronix and Avery in 2000, the company was finding it increasingly difficult to monitor its part, assembly and R&D project data. This was exacerbated by having multiple part-numbering systems and no cogent method of enforcing workflow.

DEFINE ALL RELATED DATA

Roy Cann explains, "We recognised that a systematic workflow system needed to be introduced to integrate departments of the company across the world and enable channelling of engineering requests. We needed a standard method to encompass and control the generation of components, software, electrical systems, approval certification and technical documentation. In other words, we needed to be able to define all related data in a single enterprise-wide collaboration system, for use across our extended enterprise."

Heath Tipton, the company's PLM Project Manager provides some project background, "In early 2005 we investigated a range of PLM systems and, based on a 37-point functional weighting, selected ENOVIA SmarTeam to be supplied by our partner Design Rule. Full implementation is an ongoing process in several defined stages. Stage one has been completed, and for the first time the company has a unified R&D project system that encapsulates and defines all of our parts and project data."

The effect on the company has been immediate and profound, as Heath Tipton explained. "Going from virtually no system to one as comprehensive as ENOVIA SmarTeam has given us the ability to see exactly what is happening in R&D. We now define all projects using ENOVIA SmarTeam. The system helps engineers to prioritise projects better, and gives better visibility of where they are spending their time. This has immediately halved unplanned activity. ENOVIA SmarTeam now allows us to find data related to projects instantly. This gives us the confidence that we are working productively and saves time previously spent searching for project-related data".

The software has facilitated recognition of instances where part consolidation is possible. We expect this feature to help reduce part inventory, producing consequent financial savings over time.

CENTRAL CONTROL - LOCAL FLEXIBILITY

Data input is now in the hands of engineers. This has not only saved labour, but also increased accuracy and enabled real-time operation based on rapid UK/US data refreshes. This will lead, in the next phase, to concurrent engineering practice when ENOVIA SmarTeam is fully interfaced with the manufacturing side of the company.

"Once R&D has fully defined our product knowledge in the system," says Heath Tipton, "the potential for using and re-using this data across the organisation is enormous."

On the theme of manufacturing Heath Tipton comments, "The software has provided us with the ability to adapt to locally available tools and engineering environments, without losing design intent."

IMPRESSIVE METRICS

"At point of project completion we fully expect ENOVIA SmarTeam to deliver:

- A 54% improvement in the time spent to find records
- A 35% reduction in the time to fix BOM errors
- A 35% cost saving from better synchronisation between remote sites
- 300 fewer engineering changes per year
- Quicker time to market and improved engineering efficiency
- Reduced bid preparation time
- Reduced costs to administer and execute engineering changes."

Heath Tipton summed up his PLM ambitions for the company: "In phase one we have put the skeleton of a PLM strategy in place. In the next phases the flesh will be added and from what we have seen, as far as Avery Weigh-Tronix is concerned, – the system potential is huge."

Design Rule is the Dassault Systèmes Partner that is guiding Avery Weigh – Tronix through the installation, implementation and benefit maximisation of their PLM system. Concerning their services, Heath Tipton said, "Design Rule's experience fits our requirements very well. They understand and react to our needs and have quickly become an extension of our business. Their training is excellent in its scope and appropriateness, while their ability to transfer our million+ data-records to the new database is solid proof of their skills and overall competence" •

More about Avery Weigh-Tronix

A world-leader in weighing systems and technologies, the company supplies all parts of the market with an impressive range of products, systems and services. Avery Weigh-Tronix designs and manufactures weighing systems for supermarkets, airports, quarries, banks, and weighing components in thousands of other applications.

For Further information:
www.averyweigh-tronix.com
www.designrule.co.uk

Creative Architecture from Heatherwick Studio

By Darren Cairns

Image courtesy of Nicolas Koenig

La Maison Unique – flagship store for Longchamp, SoHo, New York (2006).

Heatherwick Studio exists to make unique design projects happen. The studio is recognised worldwide for its work in Architecture, Sculpture, Urban Infrastructure and Product Design. Working with Intrinsys, Heatherwick Studio is replacing its existing CAD and data management systems with Dassault Systèmes' state of the art Project Lifecycle Management (PLM) solution.

Established in 1994, Heatherwick Studio's business operates from a studio and workshop in Kings Cross, London and is renowned for its creative and innovative use of engineering principles and materials.

Beyond the area of creative design the company adopts a practical hands-on philosophy which includes model-making, prototyping, and experimentation with ideas, materials and manufacturing processes.

CREATIVE DIRECTION

Born in London, Thomas Heatherwick trained as a designer at Manchester Metropolitan University and at the Royal College of Art, London. He is a Royal Designer for Industry, a Senior Fellow of the Royal College of Art and was awarded an honorary doctorate by Sheffield Hallam University. The Heatherwick Studio team comprises architects, product designers and engineers.

Image courtesy of Steve Speller

Rolling Bridge – pedestrian bridge at Paddington Basin, London (2004).

CLIENTS

Heatherwick Studio work on commercial and residential building projects as well as works of public art and general product design. The studio has a strong list of prestigious clients including Guy's and St Thomas' Hospital, the Victoria and Albert Museum, Manchester City Council and Aberystwyth Arts Centre.

Projects include:

- B of the Bang, a 56-metre tall weathering steel structure made from 180 identical tapering tubes arranged in twenty-four elliptical groupings of between one and nine spikes. The project was developed as part of the regeneration strategy for Manchester's eastern quarter and is the same height as the Tower of Pisa - only it leans ten times as much.
- Another project is the 'Rolling Bridge' located within a new residential, office and retail quarter set around Paddington Basin. Rather than a conventional opening bridge mechanism, the Rolling Bridge opens by curling up until its two ends touch. While in its horizontal position, the bridge is a normal, inconspicuous steel and timber footbridge; fully open, it forms a circle on one bank of the water that bears little resemblance to its former flat self. The Rolling Bridge won the 2005 British Structural Steel Award.

PLM, THE FUTURE

Heatherwick Studio decided to deploy PLM in order to help expand the business through improved design performance. The requirements were for a single software product that could support mechanical and product design as well as providing a data management solution.

One of the reasons for selecting CATIA and ENOVIA SmarTeam to support the PLM infrastructure was that the products, developed by Dassault Systèmes, support a wide range of engineering disciplines. "It was important that we selected a software solution that could support the long-term growth of the business within a single product suite without the need to add additional tools at a later date," says Nader Mokhtari, Managing Director of Heatherwick Studio.

The company wanted to increase efficiency and knowledge capture was seen as a mechanism to reduce the amount of time spent on repetitive design tasks. This ensured that more time could be spent by designers on the creative aspects of the projects.

As the profile of the studio and its projects has grown, there has been an increasing need to be able to communicate in a more effective manner. Increasingly, collaboration with external suppliers and clients affects the success of a project and the deployment of ENOVIA SmarTeam is an important part of managing this collaboration successfully.

INTRINSYS, A VITAL PART OF THE PROCESS

The deployment of a PLM philosophy touches almost every aspect of the business. At Heatherwick Studio, Intrinsys have ensured that the implementation has been managed in a manner that has not adversely affected ongoing projects.

"To introduce a PLM philosophy successfully, we required support from a genuine partner that is itself a leading-edge user of the software, rather than just a supplier. With Intrinsys, their experience with the tools enabled them to help us to configure and deploy the solution in a way that was optimised to suit our business needs; and they have become an important part of our PLM deployment process.

The quality of the support has been excellent. They have shown that they care about our business and value the relationship," says Mokhtari.

Intrinsys helped to develop a strategy for moving towards a PLM deployment and, following a successful early relationship, Heatherwick Studio has asked Intrinsys to manage the specification, installation and deployment of the IT system at their new studio, which they plan to relocate to later this year.

Heatherwick Studio does not see PLM as simply a software product. Instead it sees an environment for capturing outstanding streamlined business process. This is considered vital in maintaining its position at the leading edge of design into the future.

Following its strong commitment in the deployment phase, the company looks forward to reaping the benefits over the coming years •

For more information:
www.heatherwick.com
www.intrinsys.co.uk

Image courtesy of Steve Speller

The Rolling Bridge open.

The Flymo Pac a Mow.

Designed with V5 PLM.

CATIA V5 representation.

Short Cut

Market leading garden tool company Husqvarna, owner of the Flymo brand, is benefiting from Dassault Systèmes V5 PLM by being able to bring innovative, attractive and efficient products to market while reducing cost and improving productivity.

By Nick Lerner

Upright and folded for storage.

GET TO WORK

Garden work can be a necessary chore or a matter for great pride but either way it has got to be done and a good set of tools certainly makes for a better result. The Flymo brand is often the gardeners' first choice - the company provides a full range of powered garden tools that rely on superior quality and innovative, feature-based aesthetics.

The achievement of successful product development and manufacturing targets is vital in a flooded market. The company was an early V5 PLM adopter, using PLM methodologies centred on 3D CATIA models to populate image-based parts lists, technical publications, and repair and service information.

The V5 PLM system is finding applications in other parts of this Co. Durham, UK business. Systems Controller Trevor Barkley explains how:"PLM is built on a foundation of company experience and it has become a vehicle for increasing amounts of data - often visual. That means it can be used by more people within and beyond the Husqvarna enterprise."

QUALITY RESULTS

Visual 3D data is applied, for example, in marketing, purchasing, quality and servicing as well as in more established applications, such as manufacturing mold making and passing design data to outsourced contractors.

"PLM offers choices", says Trevor. "It is possible to use 3D data in so many ways that we have introduced a strategic methodology to deal with its implementation. The benefits are easy to see, and demand for 3D data is growing exponentially as more people realise the productivity benefits and conveniences that it enables."

"One of the main benefits of using V5 PLM data is that it speeds our work", says Trevor. "This is especially so at the design stage where Generative Shape Design software (GSD) is used to iterate forms in compliance with corporate aesthetic parameters. In conjunction with rapid prototyping, we produce scale models that can be scanned, measured and tested while the design is still 'digital'. This methodology gives us new ways of thinking about the design-to-manufacturing process, and often produces advantages to us in both areas. We also use Kinematics both to develop and to verify mechanisms. Noise and vibration is an important measure of quality for the Flymo user and PLM is a very useful engineering tool to aid reduction of both."

TURF AND SURF

Trevor Barkley is keen to bring PLM to more parts of the company and believes that 3D PLM has a central place in the company's work. This is helped by Dassault Systèmes VAR, Applied, which installs, maintains and trains on the V5 PLM system. Shaun Clark, Applied MD, commented. "Our work with Husqvarna UK is very rewarding because they achieve direct business benefits by implementing PLM technology." For example, the company uses ENOVIA SmarTeam, and to get the best out of it, Applied showed how it could be used within and beyond the company to provide visual information not only for technical publications, but also to produce regular illustrated parts list bulletins. For the future, Shaun is keen to help implement a web-based browsing system using 3DXML to make even greater use of model-based technology at the company.

SPRING RUSH

As the gardening public see their outdoor spaces burgeon each Spring and Summer, they start buying electric garden equipment and Husqvarna UK experiences its highest sales period of the year. The company bulk manufactures from January and must judge which products will be the best sellers. Additionally, new products that the company launches each year must be introduced. One trend that Husqvarna UK must accommodate is for smaller equipment. Trevor explains: "Garden spaces are getting smaller and so must the equipment that owners use in them. Two more trends are for better cable management and advanced lawn clipping compression. We lead in both of these areas and are able to manage the design and PLM data that is generated through these innovations. A very useful tool in this respect is CATIA's ability to provide weight and, subsequently, balance information for components and assemblies which, when applied with clash detection and kinematics, allows the company to take days out of the design to manufacture process while producing better products as a result."

SMALLER ENVELOPES

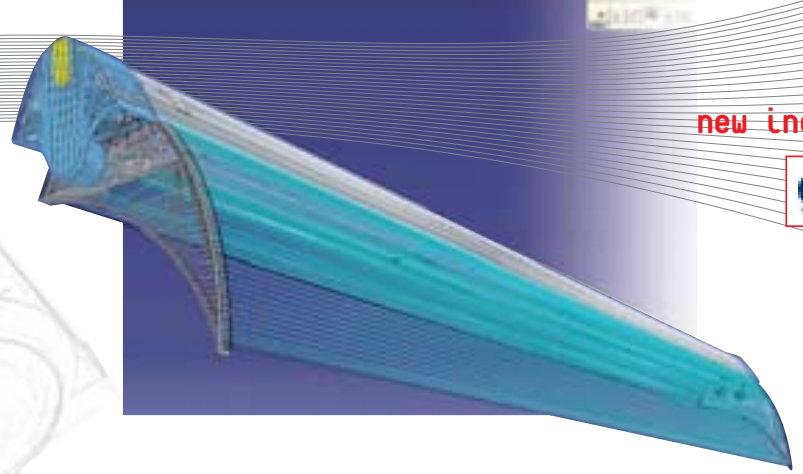
The ability to make well-balanced, easy to use, and highly efficient equipment, within ever-smaller design envelopes is further eased by introducing laboratory data related to heat distribution. These and other such test results are incorporated into the V5 PLM system and held in ENOVIA SmarTeam databases to help designers further improve future products.

As the company develops its PLM provision, the benefits are increasing. Tolerances are maintained, accuracy is absolute and quality is improving daily.

Trevor concludes, "V5 PLM is producing positive and measurable metrics at Husqvarna UK while the availability of 3D data across the enterprise is delivering many improvements that generate business benefits by driving down cost while helping to advance products and productivity" •

For more information:
www.husqvarna.com
www.flymo.com
www.appliedgroup.co.uk

Compact and lightweight.



By Dora Lainé

OMS: Move Your Vision

OMS manufactures lighting fixtures for interior and exterior lighting needs. It uses CATIA and ENOVIA SmarTeam for its design and manufacturing requirements as well as for managing its development processes and product data.

OMS first based its business on buying standard components and assembling them by hand. Due, though, to increasing customer requests for specialized lighting, OMS later decided to invest in an in-house design and styling office to create its own light fixtures.

Its development process begins by collecting customer requirements whether this relates to developing new lighting fixtures or designing fixtures based on special customer modifications of existing types. These requirements are carefully analyzed and detailed by the Design Department in cooperation with the Technology Department, which is responsible for preparing the technological processes for production in series. Once a project is defined, specification and design documentation is created and prototypes are manufactured. Testing and testing measurements (photometric characteristics, thermal and electrical tests) are performed on prototypes and modifications, if needed, are made to the initial design. OMS engineers in the Technology Department then prepare technical documentation, required to manufacture a test series. Finally, the finished products and their specifications are made available to the public via its website and its product catalogue.

CATIA ROBUSTNESS AND CUSTOMIZED SUPPORT

OMS started out by using a 2D CAD system but after creating the design department, chose the path of 3D in 2002 with CATIA. As business grew, so did their design department and the number of CATIA seats. Today, the Design and Technology departments have six CATIA seats for mechanical and sheet metal design. OMS also uses CATIA Photo Studio capabilities to create photo-realistic images for its product catalogues. "We needed a robust and efficient solution so that our Design Department can be more reactive as well as a strong partner that could provide us with professional and tailored support," said Peter Svoboda, R&D Director. Dytron, Dassault Systèmes' Value Added Reseller in Slovakia, was instrumental in the implementation of CATIA at OMS. It provided training and participated in the analysis of day to day design tasks and proposed procedures that would simplify OMS' design process. Dytron proposed a comprehensive solution that would cover OMS requirements and gradually implemented the solution, in cooperation with OMS, through pilot projects.

ENOVIA COLLABORATION ACROSS THE ENTERPRISE

In addition to its design activities, OMS needed to manage its product data and in 2006 chose ENOVIA SmarTeam to manage information and workflow between employees and the different departments at their main site. Peter Svoboda explains, "We use Component Management to communicate with our external suppliers and the Workflow module to monitor and archive processes that are related to the development of new products as well as to engineering changes." All end users have access to up to date data and everyone is sure to access the right information.

This has led to real time collaboration between users on the same CATIA model. Construction, technology and business personnel can evaluate, in a simple manner, the status of any particular project without having to personally contact the people responsible for each phase of a project. Here again, Dytron assisted OMS in a phased implementation of ENOVIA SmarTeam beginning with the implementation of all functionalities linked to PDM.

INCREASED PRODUCTIVITY AND COSTS REDUCED

OMS soon reaped the benefits of their transition to CATIA and ENOVIA SmarTeam. For example, using WorkFlow Manager to supervise maintenance operations and Flowchart Designer to define processes in flowchart format has helped OMS reengineer their key processes.

OMS has also simplified the management of individual projects and work orders in the pre-manufacturing stages. Its efficiency has increased since useless communication channels have been eliminated making it possible for it to work on more projects than before. OMS has also become more flexible when responding to market requirements and to specific customer modifications. It has been able to reduce routine work operations thanks to automatic procedures and design re-use. For example, even though individual types of lighting are produced with different power variations, their construction is not different. Power variants are not modeled individually; they are generated from the same basic model.

The ability for OMS engineers to access all necessary information across the different departments has significantly reduced costs and increased productivity. Errors have been reduced and communication with external suppliers has been simplified and become transparent.

In the coming months, OMS is planning to connect ENOVIA SmarTeam to the company's ERP system for manufacturing and system planning thereby completing the flow of information within the company. This means, for example, being able to export a part list created by the R&D department to the ERP system. It also plans to implement workflow management of the design and manufacturing processes within the company •

For more information:
www.dytron.sk

More about OMS

OMS, a privately owned Slovak company, is the largest producer of lighting fixtures in Central and Eastern Europe. Founded in 1992, its products range from interior lighting for offices, hotels, restaurants, residential areas, warehouses, hospitals, and banks to exterior lighting used in parking lots, highways, football stadiums, billboards, as well as historical monuments. In addition to its vast product line, OMS also boasts a team of specialized technicians, the latest in technology and a dedicated R&D center providing customers with the best in lighting products. OMS' customer policy is to deliver top quality products to its customers quickly at attractive prices.
www.oms.sk

8,000 square meters of production and administration space for the whole bicycle accessory production process chain.

The very best in road lighting with only one LED.

The first approved gas emitting headlight for bicycles - as bright as a car headlight.

By **Birgit Hummler**

Data Flow in the Cold Light of Day

The latest in light and sensor technology.

Data consistency, from design through to distribution, is a key issue for Busch & Müller, manufacturer of bicycle lights and motorbike rear mirrors. For exactly this reason, it has invested in the integrated solution, Styled Plastic & Packaging.

Busch & Müller KG, Meinerzhagen, is a manufacturer of products for the bicycle industry. It manufactures around 500 products, ranging from reflectors and dynamos to chain guards, with its main focus being on motorbike mirrors and lights for bicycles. The company has 125 employees who design, produce and distribute the products. Busch & Müller is seen as a trendsetter for new product ideas and pioneering production technology.
www.bumm.de

When Busch & Müller KG, Meinerzhagen (Germany), made the decision to acquire and implement Styled Plastic & Packaging (SP&P) at the end of 2005, the software package, created by Dassault Systèmes, still did not even have a name. The integrated solution, which essentially combines CATIA V5 and ENOVIA SmarTeam, was developed principally for medium-sized enterprises manufacturing design products for consumer goods and packaging materials. Where appealing design, short development cycles, complex free-form surfaces and a broad product range are needed, the SP&P solution offers continuous Product Lifecycle Management (PLM), that ensures data is consistent and accessible from the first design through to manufacture and distribution.

DATA FLOW CONSISTENCY

For its design and production, Busch & Müller had relied up to that point on a CAD/CAM system, eventually needing to migrate to a new system. Since migration was inevitable, the company looked for a way to tackle a major matter of concern - how to simplify data exchange - at the same time.
"The decision to acquire Dassault Systèmes' solution, and the ensuing transferring and training of staff meant a considerable investment on our part", says Managing Director Guido Müller, "but we were determined to solve known interface problems when communicating with external designers and with customers from the automotive industry where CATIA is the software of choice." Just as important as communication with external partners was the consistency of internal data flow. Busch & Müller manufacture in an integrated process chain. New product ideas are developed in-house. All development from first design to prototype production and evaluation through to component design and production should be supported by a continuous software solution. The same is true of all production stages - from tool construction for plastic injection moulding and metal working through to the derivation of milling and electrode software for tool production and on to component production and assembly. "Data consistency plays an integral part in this", says Manfred Mohr, plant manager at Busch & Müller, "for example, when changes are made because of optimization in functionality or production. In this instance it is important that the modified data is easily available in all the previous and following stages."

Thanks to SP&P, our process is much smoother.

USEFUL TOOL

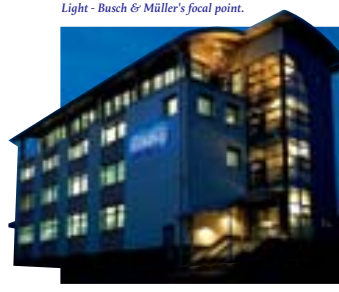
The efficiency of individual modules such as the design tools Imagine & Shape (IMA) and Functional Moulded Parts (FMP), was also of prime importance. IMA, the 3D-interface modelling software, is already being used in new projects at Busch & Müller. Data can seamlessly be transferred over to FMP where the functional specification of components is then defined. An important next step is the use of CUTit's electrode derivation in CATIA V5. Electrode geometries can be derived relatively easily from tool design data, something that is necessary for the spark-erosive processing of injection mould tools. The company is already using ENOVIA SmarTeam's PLM system. This system ensures that every participant in a development project is on the same footing and has at their disposal all the necessary information at every stage of the development process.

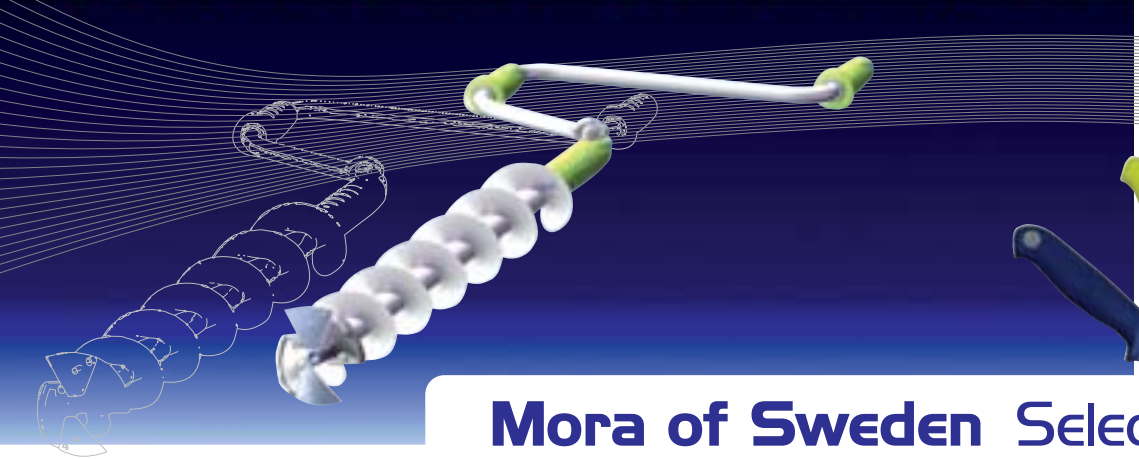
INITIAL RESULTS

A conclusive evaluation of the investment is not yet possible. It has not even been one year since the start of the implementation and not everything is incorporated and under full control. As with every new software project, there have been problems to be solved and customizations to be made. The company has been supported closely along the way by CUTit!, a partner of Dassault Systèmes. "We have learnt a lot from each other", confirms Mohr, emphasising that they received comprehensive help quickly with matters that arose. Even though it is early days, Mohr is of the following opinion: "While we cannot express the benefits of the new solution in concrete figures, the signs are already there that the process is much smoother. The fact of being able to communicate directly is hard to quantify but just this alone lightens the workload considerably" •

For more information:
www.cutit.de

Light - Busch & Müller's focal point.

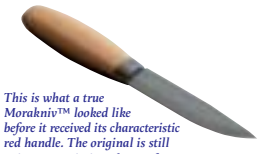




Mora of Sweden Selects SmarTeam Design Express

Carin Nises

Mora of Sweden, a small traditional company, recently adopted SmarTeam Design Express from ENOVIA to streamline its product development processes. Contact Mag spoke with Carin Nises, CEO of Mora of Sweden and Olov Larsson, R&D manager about the new business challenges facing the company.



This is what a true Morakniv™ looked like before it received its characteristic red handle. The original is still going strong in its role as a functional utility knife. It has also become a collector's item and an exclusive souvenir.

More about Mora of Sweden

Mora of Sweden is a family owned company created in 2005 through the fusion of two well-established and renowned Swedish knife manufacturers, KJ Eriksson and Frost's Knife factory, founded in 1912 and 1891 respectively. This association has made Mora of Sweden one of the world's leading designers and manufacturers of knives. It reported a 2005 annual turnover of approximately 120 million SEK (17 M US$) and employs 120 people.
www.moraofsweden.se

Contact Mag: Your company made the switch from a production oriented to a sales oriented strategy. What business challenges have prompted this change?
Carin Nises: The Mora knife has been famous in the Nordic countries for over 100 years so we did not feel the need to market ourselves; we simply waited for orders to come in. But in recent years we noticed a change in the knife business and we found ourselves in a situation where we no longer could ignore emerging competition from other countries. Globalization has not only forced us to assess the way we work but to transform ourselves from a company that "produces knives and sells them" to a company that "produces knives that take into consideration the needs of the market and then sells them to this market". This means that the turnaround time between collecting these needs and providing the customer with the finished product must be shorter than that of the competition. One way to shorten development time is to re-use previous designs so that we do not have to start from the beginning every time we launch a new knife.
Olov Larsson: What we often do is reuse the knowledge we have accumulated over the years to produce new blades. We have hundreds of different blade designs which represent an invaluable asset to the company. Plus, with SmarTeam Design Express, we can leverage ENOVIA SmarTeam's powerful embedded integration to optimally manage our SolidWorks 3D CAD data.

Contact Mag: What is the role of PLM at small companies such as Mora of Sweden and what do you hope to achieve by making this transition?
C.N.: Our ambition is to be big in terms of the way we think. PLM is the right solution for small companies like us because it allows us to grow and accompanies us as we evolve. For example, in the ice fishing segment Mora is the world's market leader and our ambition is to enhance our product offering for this segment and remain market leader. Only a robust PLM system can help us achieve this goal.

Contact Mag: Have you experienced the need to re-examine your existing processes since adopting PLM?
O.L.: Yes absolutely. We are currently re-engineering all our processes because we firmly believe that there is no point in investing in a PLM solution and applying this solution to existing, and to some extent, inefficient processes. So we started from scratch, defined new processes for engineering and product development and then applied the PLM tools to these processes.

Contact Mag: What changes in your development processes will a PLM oriented approach have?
O.L.: The ability to have time to innovate instead of spending this time searching for information, which very often was "stored" in people's minds and therefore, not easily accessible to others. Plus, we need a secure way to capitalize information for future projects or new employees.

Contact Mag: Why have you decided to adopt the Dassault Systèmes' PLM solutions?
C.N.: We compared the Dassault Systèmes solutions to those of the competition and we chose Dassault Systèmes because they are committed to helping us implement our new strategy. Deploying a new solution is hard work in the beginning because we have to convince people who, for many years, have been used to working a certain way that the new way is more efficient and in the best interest of the company as a whole. Dassault Systèmes is helping us establish the appropriate methodologies that will help our users during the transition period thanks to a pilot project whose goal is to illustrate the efficiency of the PLM solutions in our development processes.

Contact Mag: Why did you choose SmarTeam Design Express?
O.L.: We believe that ENOVIA SmarTeam is the only system that can help us extend our product line. By working with 3D models we are able to offer our customers many product variations thereby giving them the possibility to choose between several thousands of combinations of knives. Plus, in addition to using the Dassault Systèmes solutions for drawings and product modeling, we will also use PLM to manage company knowledge and documentation.

Contact Mag: What other advantages do you expect with respect to the way you work?
O.L.: We expect big improvements in quality assurance since the products and all related information are stored, managed and easily made available to all. A PLM oriented approach has also helped us reengineer inefficient processes and streamline our operations.

Contact Mag: Today you have 6 SmarTeam Design Express seats in the design department. Do you have any plans for expanding your installation?
O.L.: We expect to expand to the manufacturing department so that technicians may also have access to ENOVIA SmarTeam £documentation containing information such as NC programs and manufacturing instructions. This will streamline production •)

For more information:
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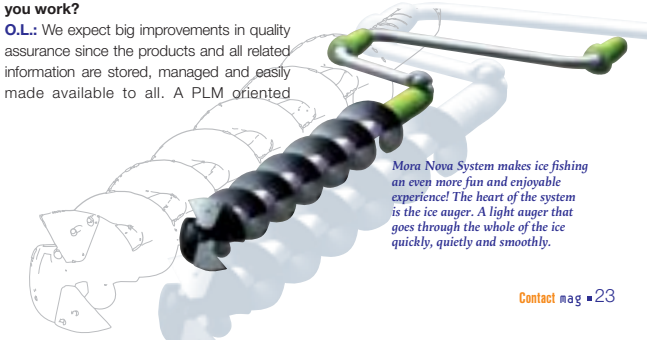
www.moraofsweden.se



Mora Nova System makes ice fishing an even more fun and enjoyable experience! The heart of the system is the ice auger. A light auger that goes through the whole of the ice quickly, quietly and smoothly.

DAIMLER

End to End Process Cooperation at Daimler

Daimler and Dassault Systèmes work hand in hand to provide powertrain engineers with the most efficient and intuitive solutions through a strategic cooperation project.

By **Luc Feuvrier**
(Dassault Systèmes assignee at Daimler Stuttgart)

Rapid Product Creation (RPC) is a strategic cooperation project between Daimler Stuttgart, Germany, Daimler Auburn Hills in the USA and Dassault Systèmes. The RPC objectives are to define, optimize and harmonize the methodologies and functionalities for CATIA V5 in the powertrain area. It is comprised of 16 work sharing projects in the design and manufacturing domains. Daimler wanted to have one voice and one strategy, synchronized with its strategic software vendor Dassault Systèmes, to define the tools that will cover the end to end powertrain PLM process.

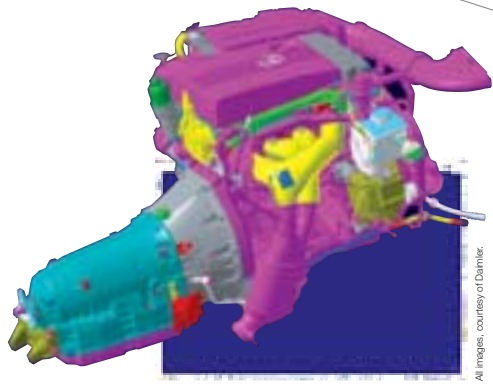
WORK SHARING PROJECTS THAT ADDRESS POWERTRAIN NEEDS

The projects included in the RPC cover many areas of the powertrain process. One of them is the Advanced Part Design Project. The idea is to enable designers to develop a complex part like a cylinder head in a multi model structure by using the full added value of CATIA V5 links. This makes the entire process more consistent than before and more productive for Daimler's engineers. They use ENOVIA VPM to work in concurrent engineering and to manage the many links in complex casting parts. And for users working on the XP operating system, they can use ENOVIA 3DCom to go from XP to the VPM system on UNIX.

Another project concerns drafts and fillets for casting and forging in tooling that has produced very positive results. Thanks to the cooperation with Dassault Systèmes, Daimler engineers use CATIA V5 to design water jackets and the associated complex tooling. The end to end process is entirely covered by CATIA V5 in an efficient manner.

The 3D Master project aims at bringing all the part information previously found in drawing annotations, such as dimensions and tolerances, directly into the 3D model, which then becomes the master or the reference model. The split of information between the drawings and the 3D model requires maintaining both sources in order to manufacture a part. When modifications are made to the 3D model, all necessary changes have to be generated in the drawing so that both are up to date. This is very time consuming and the reason why Daimler wants to integrate all part information in the 3D model. Only then are all downstream applications able to trace back to a single source thereby eliminating problems with information that is not fully synchronized.

Another major project of the Rapid Product Creation cooperation between Daimler and Dassault Systèmes is the PowerFeature. PowerFeature is a full feature-based part design offering that covers all powertrain processes from design to manufacturing (see "PowerFeature – a PLM accelerator for powertrain").



All images, courtesy of Daimler.

INCORPORATING BEST PRACTICES AND TEMPLATE-BASED TECHNOLOGY

Combining Daimler and Dassault Systèmes' powertrain methodologies and best practices is essential to the RPC because it ensures that engineers and designers will use the full potential of CATIA V5. Working with Dassault Systèmes also ensures that future releases of CATIA will support these methodologies and it also helps improve best practices as these functionalities get more and more efficient. Overall this provides continuous improvements for designers without driving up costs and spending additional time retraining engineers.

On the other hand, with CATIA V5 and Daimler's best practices, engineers and designers expect more assistance from CATIA V5. They now obtain this thanks to the template project. Since engineers have so many possibilities when designing a part with CATIA V5, using templates ensures that they use the company-approved best practices. It is also possible to improve the templates by adding the power of the CATIA V5 knowledge workbench and to incorporate iterations with downstream processes such as meshing and manufacturing. This is one of Daimler's powertrain major topics for 2007 and the future of part design here in Stuttgart.

Thanks to the RPC cooperation, since March 2007 all Daimler users are working with CATIA V5. Daimler intends to further expand on this RPC cooperation with Dassault Systèmes in the future and believes that this will contribute towards helping Daimler innovate, design and produce the best engines while keeping costs under control •

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PowerFeature – a PLM Accelerator for Powertrain

The PowerFeature project deals with powerful features made with CATIA V5 that embed geometrical elements and manufacturing information. Links are automatically generated to the manufacturing process where the latter recognizes holes in parts and creates the associated NC-program.

Through a catalog of PowerFeatures, engineers or designers access a predifined set of standardized geometry, which is in accordance with design and manufacturing requirements. Information can be digitally exported to the NC code by accessing the 3D model and extracting the data for the hole. The tool path is then automatically generated. This paperless flow of information drastically reduces errors and increases productivity in the overall process.

Since Daimler helped to define the ergonomics of the user interface, there is a familiar look and feel to PowerFeature making it possible for the user to implement complex geometry in a very effective and intuitive way. Plus, designers and engineers have a predefined set of parameters for any particular feature at their disposal that ensures that only Daimler-approved standards can be used for their design work.

The reaction of designers within Daimler to PowerFeature is very positive. As for their suppliers, Daimler's objective is now to optimize their common processes and they encourage them to adopt this powerful new industry solution as well. Transcat PLM Germany distributes PowerFeature to Daimler Powertrain suppliers.

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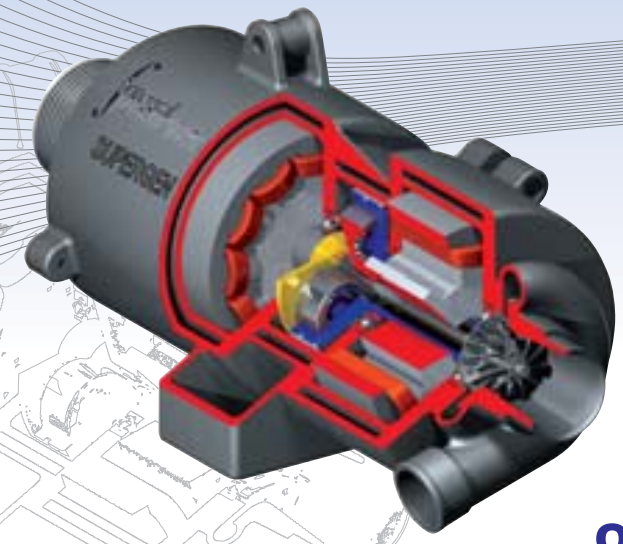
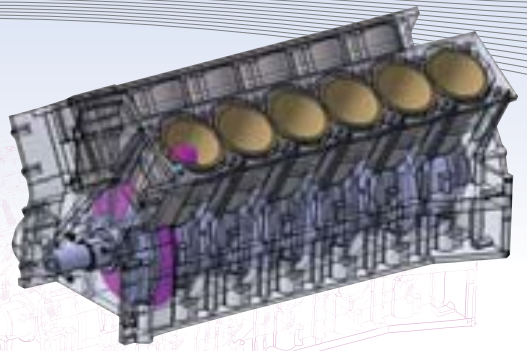
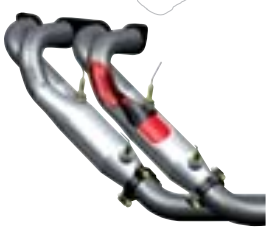




Integral Powertrain is a leading automotive powertrain engineering consultancy which has successfully deployed CATIA V5, ENOVIA VPLM and ENOVIA SmarTeam to reduce program time and costs and improve supplier-client collaboration.

Driving Down the Time and Cost of Powertrain Engineering



More about Integral Powertrain

Integral Powertrain Ltd. is an automotive powertrain engineering consultancy based in Milton Keynes, UK. Founded in 1998, Integral Powertrain's core business units include Powertrain Engineering, Tooling Design, Motorsport and a specialist PLM division named Intrinsys.

Today, Integral Powertrain has prestigious customers among OEMs, engine manufactures, and Tier 1 suppliers including Aston Martin, Bentley Motors Ltd., Daimler AG, General Motors, Jaguar Cars, MG Rover Group, Nissan Motor Co., JCB, Harley Davidson, Ford and Cummins Engines.

Increasing globalization and aggressive OEM purchasing strategies are driving intense competition in the automotive powertrain market. Therefore, in order to win business, Integral Powertrain must offer benefits to OEMs whilst maintaining the product quality levels now required across the industry.

A full powertrain engineering program can cost as much as €300 million, and may take up to 48 months to complete. In this context, reducing the cost and time of powertrain engineering development programs becomes a necessity to gain competitive advantage.

REDUCED POWERTRAIN ENGINEERING TIME

Integral Powertrain has reduced development lead-times for concept design by up to 40% thanks to V5 PLM solutions from Dassault Systèmes. By encouraging design reuse, exploring more design alternatives and providing early-validation tools, CATIA V5, ENOVIA SmarTeam and ENOVIA VPLM help Integral Powertrain designers to make better decisions and reach optimal, error-free designs in a shorter amount of time.

Thanks to ENOVIA SmarTeam and ENOVIA VPLM solutions, design changes, workflow mechanisms (Smartflow) and multi-model links (in ENOVIA VPLM) can be easily managed enabling multiple users to gain simultaneous access to a full and up-to-date representations of data. Also, the flow of information around the business is controlled and data management is automated, ensuring that designs adhere to defined rules.

Other benefits have also been realized. For example, engineers can find information approximately 70% faster through the use of data management, and Engineering Changes (EC) cycle times have been reduced by about 25%. In fact, overall, the manufacturing engineering cycle time has been shortened by 25%.

LOWER POWERTRAIN ENGINEERING COSTS

Costs for powertrain engineering programs have been significantly reduced thanks to Dassault Systèmes V5 PLM solutions. This has been achieved through improved concept design, where CATIA V5 has been able to automate repetitive design tasks through the application of intelligent design templates. Also greater engineering validation has been possible by using digital mock-up and other verification tools, such as finite element analysis.

IMPROVED COMPETITIVE ADVANTAGE

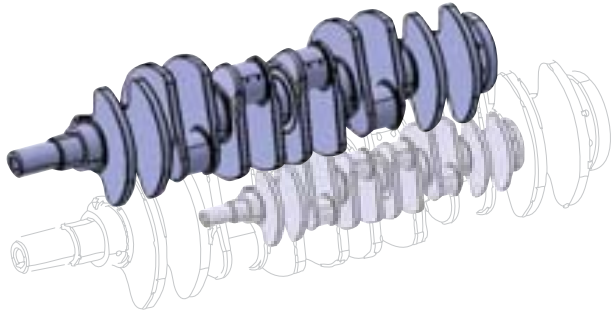
Based on CATIA V5 template-based design, Integral Powertrain has been able to capture its powertrain engineering knowledge. These templates, called "Automated Intelligent Engine Design" (AIED), are used for many significant engine design investigations. Even if a customer's project is not developed within CATIA, the time savings and engineering robustness far outweigh the additional time spent translating models to and from CATIA. Early-validated designs also mean less costly downstream design modifications and fewer physical prototypes. "The more virtual simulations that can be conducted mean less physical prototype testing, and therefore save time and money," says Roger Duckworth, Engineering Director, Integral Powertrain. Finally, faster design enables Integral Powertrain engineers to be more productive. Application of template-based design, design in context, digital mock-up and other features has reduced overall concept design leadtime by more than 40%.

> The manufacturing engineering cycle time has been shortened by 25%.

DEPLOYMENT

The benefits achieved through the successful deployment of the Dassault Systèmes V5 PLM solutions is significant and has enabled Integral Powertrain to win projects by offering a unique advantage over it's competitors.

Dassault Systèmes' partner Intrinsys brought Integral Powertrain his expertise to deploy and customize the solutions to suit the needs of the business and more importantly to define working methodologies to optimize the value of the tools. Consequently, Intrinsys are now involved in helping other businesses to deploy Dassault Systèmes solutions, across a wide range of industries.



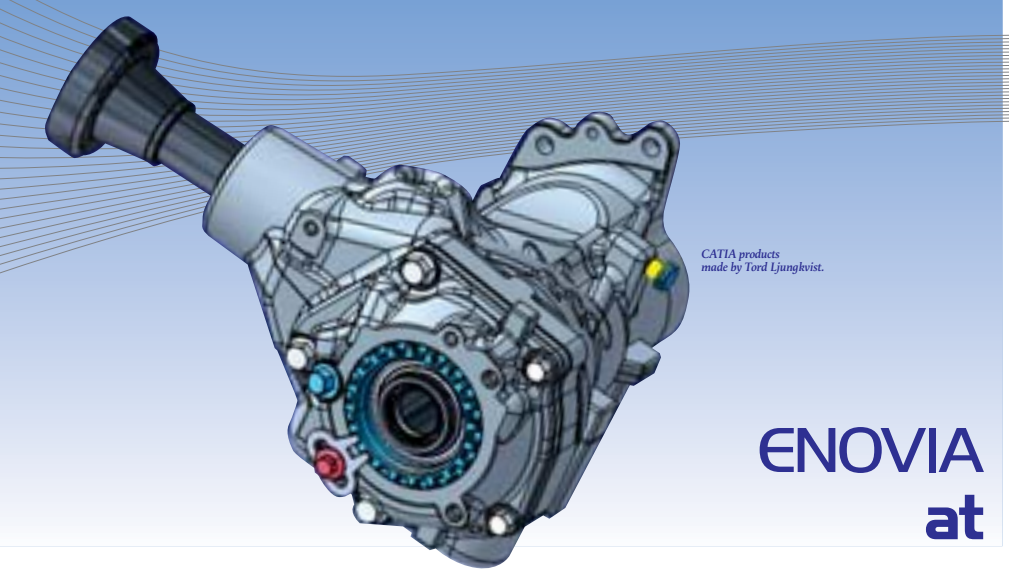
FUTURE

One of Integral Powertrain's mid-term objectives is to accelerate concurrent and collaborative engineering to their supplier base with ENOVIA SmarTeam solutions.

"Our aim is to have all of our suppliers either using ENOVIA SmarTeam, or having access to ENOVIA SmarTeam, so that we can collaborate more effectively by giving our suppliers greater accessibility to our live database, rather than a copy of the data," said Darren Cairns.

Finally, Integral Powertrain would like to expand their use of CATIA V5 templates into the area of tooling design and business processes, not only for the automotive industry but also in the aerospace market •)

For more information:
www.integralp.com
www.intrinsys.co.uk



CATIA products made by Tord Ljungkvist.

Tord Ljungkvist (in red sweater), CAD Specialist at GETRAG with Christopher Stewart (in striped sweater), Transcat PLM Application Engineer who is working as a consultant for GETRAG.

automotive

GETRAG

ENOVIA SmarTeam and MultiCAD at GETRAG AWD

By Johan Rudh

GETRAG All Wheel Drive AB, an automotive supplier in Sweden developing transmissions with CATIA V5, selected ENOVIA SmarTeam to organize their multi-CAD environment.

What used to be Volvo Cars' transmission factory in Köping, Sweden is, since 2004, GETRAG All Wheel Drive (AWD). The company specializes in the development and manufacturing of transmission units for four wheel drive vehicles and to some extent chassis systems and components. GETRAG AWD has manufactured parts for several of the more recent Volvo models, such as the S80, XC70, V50 and XC90. Other customers include car manufacturers such as Land Rover, Fiat and Ford.

As early as 1983 Volvo Cars decided to use CADAM mainly because of CADAM's powerful 2D capabilities. Later on, CATIA was introduced to empower the CAD environment. When GETRAG AWD was founded it was of utmost importance to be able to handle the legacy data from these systems. Within the group, several different CAD systems are used. Tord Ljungkvist, responsible for CAD systems at GETRAG AWD, says: "Today we use CCD (CATIA CADAM Drafting) for tasks such as 2D drawings and instructions. From CCD it is also possible to transfer geometries directly to NC (Numerical Control) machines. CCD works in perfect harmony with CATIA V5. The company has 25 CATIA V5 users and 50 people working with CCD. All data delivered to our main customer, the Ford Group, is created with CATIA V5. For customers requiring other formats there are two people working on other CAD systems."

DOCUMENT MANAGEMENT FOR A COMPLEX ENVIRONMENT

GETRAG AWD had to find a document management system that was able to handle documentation related to product development and production. There were already some 75 000 documents stored in Volvo Cars' system called PM. Since PM is "purely" a document management system, unable to keep track of articles and such, a more suitable solution had to be found; a system able to manage documents, drawings and multi-CAD models.

WHEN FLEXIBILITY AND A MULTI-CAD ENVIRONMENT MATTERS

GETRAG AWD compared the systems available on the market and finally chose ENOVIA SmarTeam. The top reason was the system's flexibility and its ability to manage their multi-CAD environment, with both 2D and 3D data. ENOVIA SmarTeam is also tailored for medium-sized companies, which is just right for GETRAG AWD. Equally important was the scalability. Since ENOVIA SmarTeam is modular with separate as well as floating licenses, it is highly adaptable; you buy the functionality you need at the moment you need it, and you have every possibility to expand the installation whenever needed in the future. The web-based interface was also appealing as it minimizes the need to install software separately on each client that needs access to information. Thanks to ENOVIA SmarTeam's use of market standards it is possible to communicate with the rest of the company's information system.

IMPLEMENTATION IN SIX MONTHS

As supplier of the ENOVIA SmarTeam solution, GETRAG AWD selected Transcat PLM, because they possessed knowledge about both ENOVIA SmarTeam and CATIA as well as other CAD systems used throughout the company. The implementation team consisted of two employees at GETRAG AWD, one consultant from Transcat PLM and a project leader from product development. "Using a project leader from our own operations instead of a person from the IT department facilitated many things. The cooperation with Transcat PLM's consultant went very well. He showed a lot of commitment in his work and was very active in contributing towards successfully finishing the project", Tord praises.

Once ENOVIA SmarTeam and a supplier was chosen it took only six months to establish a fully functioning CAD and PDM environment with all documents from the PM system imported. It then took an additional six months to perform some fine-tuning, train the end-users and to add extra functionality. After extensive end-user training, GETRAG AWD is now using 50 ENOVIA SmarTeam Issuers and 150 multi-CAD ENOVIA SmarTeam Viewers licenses.

It took only six months to establish a fully functioning CAD and PDM environment.

Looking back at more than a year of working in a fully functional ENOVIA SmarTeam environment, Tord points out that ENOVIA SmarTeam is the most important part of the entire solution. Tord looks to the future and plans to implement ENOVIA SmarTeam R16. "This system offers more possibilities", he says, "since you can start the project and immediately staff it in order for everyone involved to be automatically notified on the project's progress and when there are changes made somewhere" •

More about GETRAG All Wheel Drive

GETRAG All Wheel Drive AB is a center of excellence for four wheel drive system and chassis components. The company is part of the GETRAG Group, a privately owned German company, specialized in transmission and drive train systems and has 16 plants employing more than 9 000 people around the world. 10 construction engineers work either in Köping or in the development facility in Gothenburg, Sweden. In order to live up to the group's vision, "We do it better", GETRAG AWD strives to put the customer in focus. The company aims at being the leading supplier in design and development as well as in quality by offering competitive products at competitive prices.
www.getrag.de

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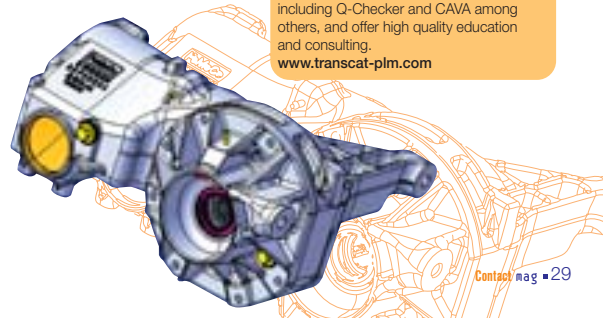
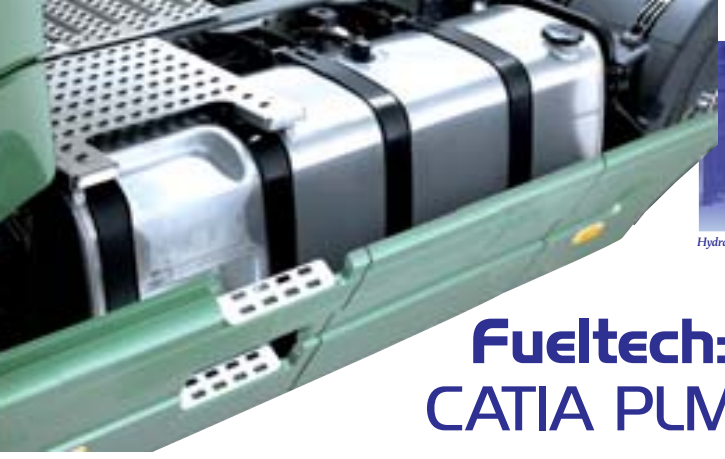
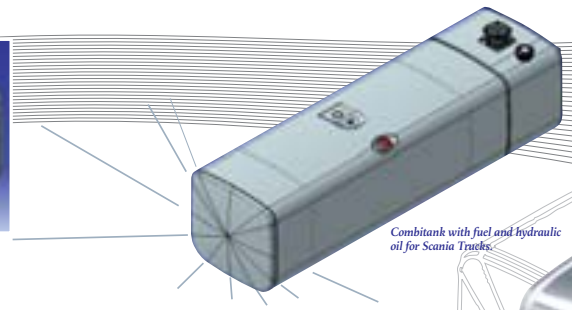
More about Transcat PLM

Transcat PLM, founded in 1987, is a wholly-owned subsidiary of Dassault Systèmes and one of Europe's leading suppliers of Dassault Systèmes V5 PLM solutions. Today, Transcat PLM has 230 employees and 12 offices in Europe. Transcat also develop their own software products, including Q-Checker and CAVA among others, and offer high quality education and consulting.
www.transcat-plm.com





Hydraulic oil tank for Scania trucks.



Combitank with fuel and hydraulic oil for Scania Trucks.

Fueltech: the First CATIA PLM Express User in Sweden

By Mattias Nedfors, Fueltech Sweden and Sabrina Peng, Semcon

Hydraulic oil tank for Scania Trucks.

Fueltech is the first company in Sweden to choose CATIA PLM Express and to be part of a common CATIA V5 working platform in the automotive industry. Fueltech joins this working platform together with Semcon.

Fueltech Sweden AB, a member of SAG Group, is a high-end player in its niche market as a fuel, oil and urea tank supplier to the automotive industry where Semcon has considerable expertise. By deploying CATIA PLM Express, Fueltech Sweden has already recorded significant improvements in their product development processes thereby reinforcing their already strong position in this market.

CATIA PLM EXPRESS – A COMMON WORKING PLATFORM

Fueltech Sweden AB chose CATIA PLM Express to be part of the common working platform in the automotive industry. CATIA PLM Express is a scalable solution which provides CATIA design excellence at an affordable price for companies of all sizes. It also delivers core collaborative PDM functionality via ENOVIA SmarTeam, for optimized CATIA design management and collaboration. Fueltech works closer and more efficiently with the SAG Group, which already uses CATIA V5. Matthias Nedfors, Product Manager of Fueltech Sweden R&D department, has complete confidence in CATIA V5. He says "CATIA V5 is the Rolls-Royce of 3D! Its good reputation and continuous new updates will make it the leading player in the future".

Fueltech Sweden AB is active in two areas. The first is as a tank specialist in the Customer Aftermarket Sales (CAS) for special vehicles and other smaller customers with specific design demands. The second concerns tanks for Original Equipment Manufacture (OEM) companies such as Volvo and Scania. Given the very different dynamics of these two segments, each imposes different supplier requirements.

THE CAS MARKET: "TIME IS MONEY"

"There are often several rounds of discussions with customers with respect to a design before reaching an agreement. This is why shortening the product design preparation time becomes crucial", Matthias says. That is exactly where CATIA PLM Express comes into play. During the design stage, a fuel and hydraulic oil tank have the same section cut, whereas the end product varies in length, size or positions of holes etc. "This is an ideal situation for using the parametric model", states Matthias.

Now by just simply clicking on the buttons or dragging arrows in the drawings, this tedious process is reduced from several days to only one or a few hours. This dramatically shortens construction lead time with not only a more effective product design process but also a much higher level of customer satisfaction.

Casing for hydraulic oil tank for Volvo trucks.

THE OEM MARKET: "IT'S ALL ABOUT MATCHING UP WITH THE CUSTOMER"

"Many projects from our big OEM customers are quite large in terms of breadth and depth, which means that communication can be time consuming. This is why it is crucial to match the customers' PLM working environment", comments Matthias. Fueltech Sweden was determined to switch to CATIA PLM Express in the early stages because both Volvo and Scania were also moving towards CATIA V5.

With the same working environment as their strategic customers as well as with SAG's R&D headquarters in Austria, all the product development verifications are under the same design program. This shortens the total product development lifecycle from 12 to 16 weeks to 4 to 6 weeks!

INTO THE FUTURE

Fueltech Sweden AB's vision is to increase the production volume by over 30 % and hire another engineer by the end of 2007. With such an effective product design program in place using CATIA V5, Matthias is convinced that his department is well prepared to grow and to meet the challenges of the future.

"Maybe one year from now we will be able to show you more of the impact CATIA PLM Express will have not only on the product development process, but also on the entire production chain", comments Matthias. Fueltech is looking forward to an exciting future with CATIA V5 and the implementation of ENOVIA SmarTeam together with Semcon.

The total product development lifecycle has been reduced from 12 to 16 weeks to 4 to 6 weeks!

The first challenge for CATIA PLM Express came up almost immediately. Fueltech Sweden AB made a joint commitment with Parker Hannifin for the manufacture of complete hydraulic oil tanks. Previously, Parker produced these tanks in Finland, whereas now Parker decided to move the manufacturing to the joint-venture, where Fueltech Sweden AB makes the tanks in Sweden and equips them with Parker products, such as return filters, etc. "The challenge here is due to the fact that we receive 54 new products that have to be implemented into our system. We have great hopes that CATIA PLM Express will allow us to improve this process considerably," says Matthias.

"This investment will position Fueltech Sweden AB as an international tank supplier by enabling them to work more interactively with their major customers", says Daniel Wigren at Semcon •

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Production of fuel tanks at Fueltech Sweden AB in Ronneby Sweden.

More about Fueltech Sweden

Fueltech Sweden AB is situated in Ronneby and has been a member of the Salzburger Aluminium Group in Austria since 2002. SAG Group is a strong player in the aluminium industry. Fueltech Sweden has approximately 65 employees and sales in 2005 of SEK 160 million. They provide fuel, oil and urea tanks for trucks and buses.
www.sag.at

More about Semcon Engineering Solutions

Semcon Engineering Solutions assists customers and prospects to better design and develop their products and improve their PLM processes. Semcon Engineering Solutions offers everything from software, installations, education, and on-site support as well as methodology development for CATIA V5 and ENOVIA SmarTeam. Semcon has approximately 1,700 employees and sales of SEK 1.5 billion in 2005.
www.semcon.se

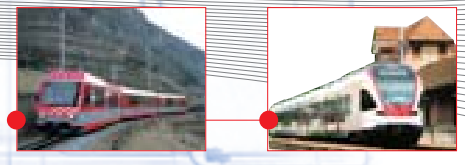
Stadler: Smart Solutions on Track

By Manuela Wanner

As a swiftly expanding manufacturer of customer-specific trains and rail tracks, the Stadler Rail Group depends on stable and transparent development environments. With the deployment of the CATIA V5 and ENOVIA SmarTeam – Multisite, the rail specialist has introduced a flexible solution for Product Lifecycle Management. For close cooperation, wherever the development locations happen to be, the designers can always access the latest component data.

The Stadler Rail Group is driving full throttle down the road to success. Many international rail companies are, after a phase of harmonisation, once again strongly focusing on specifically custom-made trains. This is precisely what Stadler is offering. The Swiss company, with headquarters in Bussnang, delivers its customers regional and suburban trains as well as trams and rack-railways, which are all tailored to their specific needs. Only Stadler Rail was able, for example, to offer a local traffic company a tramway with tight successive 40 metre radius curves. Thanks not least to such expertise, turnover grew since 1990 from 4.5 million to an estimated 740 million Swiss francs in 2006. At the same time Stadler opened new sites in Altenrhein, Winterthur (both in Switzerland) in Pankow and Weiden (both in Germany) and Budapest, employing an overall total of almost 1,700 people.

Such considerable growth has led however to new organisational requirements: it emerged that the development sites of Bussnang, Altenrhein and Pankow, were not, as originally planned, able to implement design projects independently of each other. There was too strong a need to exchange development components. At the same time, the number of all the assemblies grew strongly, so that a reliable product data management system (PDM) became necessary. This should manage in as transparent manner as possible all versions of the 3D-CAD models. For their design, Stadler has been since 2001 relying on CATIA V5, amongst other things because this system can also reliably handle very large assemblies. Since Dassault-Systèmes through ENOVIA SmarTeam also offers a Product Lifecycle Management solution, the choice of a PDM-system was an easy one for Stadler: "No other application provides comparably effective integration with CATIA V5 than ENOVIA SmarTeam", says Nino Stuber, the CAD Administrator at Stadler.



automotive

STADLER

TRANSPARENCY IN DESIGN

The deployment of ENOVIA SmarTeam has today enabled Stadler to reuse existing component assemblies, to a considerable degree, in new developments. With this, simply by calling for information, developers monitor precisely where and how a specific component number is used. Since moreover Stadler has no ERP-system, ENOVIA SmarTeam has taken on the role of the central company system and as, for example with new contracts, it establishes the assembly group structure. Effective monitoring has finally led to the reduction in potential sources of error in production. "Previously amongst our designers, there tended to be an attitude of 'it's every man for himself". The rules of allocation and the number conventions of ENOVIA SmarTeam required an initial rethink and possible clashes between parts are identified much earlier on", explains Stuber.

The individual configuration of ENOVIA SmarTeam is handled by Transcat, the CAD service provider. In so doing, experts for example developed a script, which using freely-given CATIA-Models and Office-DATA which automatically generates a PDF. This is forwarded by the project manager electronically to the purchasing department for example. As a consequence, not only have the release and procurement process been considerably sped up, but access of production departments and suppliers to design information is easily facilitated.

THE LATEST DESIGN DATA AVAILABLE EVERYWHERE

A considerable challenge for cooperation between the development sites emerged due to the exchange of large assembly groups creating incredibly long loading times. Thus for example a copy of 200 megabyte super-structure took more than ten minutes. Interruptions on the direct line due to the large amount of data led partly to CATIA crashing. Transcat therefore worked on a solution which required the deployment of ENOVIA SmarTeam-Multisite. The module compresses all CATIA data, speeds up their transmission and moreover makes it possible to reproduce all component data for all three sites on an ongoing basis.

For the developers, all current data is available at every site. For each local network there is a meta-databank as well as a vault, which safeguards the actual 3D-models. Both databanks are, in parallel to work operations, synchronised by a three-way connection with sites. The stable environment configured by Transcat provides a high degree of availability and speed: "Our measurements show that, thanks to the ENOVIA SmarTeam-Multisite, the monitoring and opening of two whole five megabyte assembly groups no longer lasts 52 seconds but only 11", confirms Stuber. No further investment in new lines was required. Whereas in Bussnang and Altenrhein, an existing direct line is still used, Pankow is linked by a VPN. 350 PC users can surf here on the Internet, while the reproduction is being transmitted on the same line.

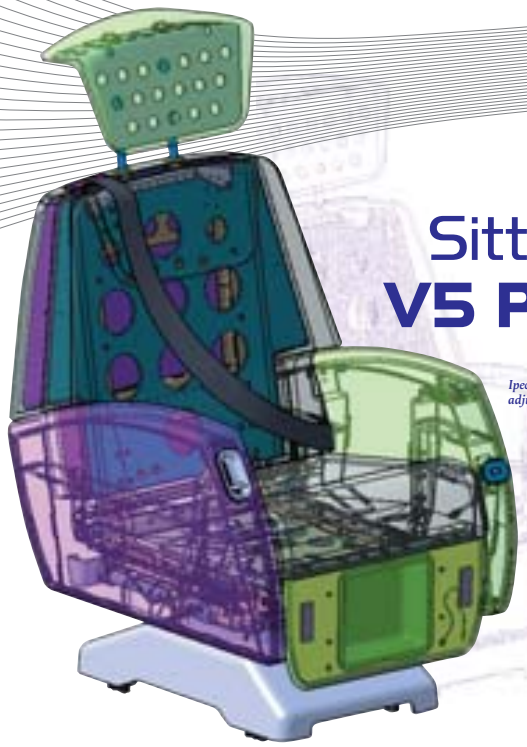
"No other application provides comparably effective integration with CATIA V5 than ENOVIA SmarTeam".

"Cooperation with Transcat is going very well", summed up Nino Stuber. The CAD-service provided has created a stable environment for Stadler Rail, in which many users can jointly and in a simple manner design customer-specific trains. Stuber is also satisfied with the PDM-system. "The great advantage of ENOVIA SmarTeam is the great flexibility of the system which, with our fast growth, is decisive. The administration is indeed somewhat more expensive since the application provides many functionalities. Only this guarantees however that we can adapt it at any time to our needs". In the future ENOVIA SmarTeam is to function even more actively as a planning system for production. The pilot projects are already showing positive results •

For more information:
www.stadlerrail.com

By David Treacher

Sitting Pretty with V5 PLM Solutions



Ipeco's latest generation highly adjustable executive seat.

Built on 35 years of seat design expertise - Ipeco's latest electrically powered flight deck equipment. Consisting of over 4000 CATIA 'Instances'.

Developing aircraft seats is a highly specialized and regulated environment. Leading Tier I supplier Ipeco is convinced that V5 PLM Solutions enable it to meet the needs of its customers.

LEADING SUPPLIER

Based on the east coast of England in Southend-on-Sea, Ipeco has been designing and building crew seats for the aviation industry since 1972. The company's seats can be found on executive aircraft, commuter aircraft, commercial jets, and military transporters. It offers more than 100 different models and its crew seats are now the preferred choice for over 300 airlines and operators.

Today, around 40,000 of its crew seats are in service and a new range of flight-attendant seats has recently been introduced. Its expertise in this field is invaluable when integrating the latest seating technology into the modern flight deck environment. It has contributed to minimizing program risk for airframe manufacturers whilst providing maximum benefits of safety, reliability and maintainability for airline operators.

Ipeco's crew seats must provide comfort and performance for any occupant irrespective of size or weight, and incorporate adjustable vertical and horizontal lumbar support, specially contoured cushions and angled seat-backs. This means managing high volumes of anthropometric and ergonomic data to ensure that each seat is comfortable and easy to operate. All new seats are developed using V5 PLM Solutions, and today there are 15 projects being simultaneously development using CATIA V5. All data is managed within ENOVIA SmarTeam.

Dummy and seat on dynamic test sled.

MANAGING DATA

Dave Scott, Ipeco Technical Director explains, "We first purchased CATIA in 2001 and now have 21 seats of CATIA V5 in use. I am convinced that going with V5 was the best decision in order to be able to meet the needs of our customers. Since January 2006 we have been using ENOVIA SmarTeam to manage all our data. It was important for us to have a system which can grow in the future and not need re-writing with each release."

Paul Marchant is Ipeco's Design Systems Engineer and has been responsible for overseeing the implementation of V5 PLM Solutions. He adds, "We use ENOVIA SmarTeam to manage all the parts of which there can be up to 2,500 in a single seat. In the past 9 months alone we have designed 780 different parts in CATIA V5. Using ENOVIA SmarTeam we are promoting the standardization of parts, ensuring adherence to our naming conventions and managing symmetrical components efficiently."

For us, a big part of the V5 PLM solutions capability is the ease in which macros and productivity tools can be developed, even in house. With the V5 PLM philosophy of openness within the applications programming interface we are able to continually improve our design process.

RIGS AND FIXTURES

During the development stage extensive testing ensures that the product will meet the stringent safety standards demanded by the aviation industry. The final phase of development is the dynamic certification testing. In this area, Ipeco has unrivalled experience and has invested heavily in extensive testing facilities where tests conducted at up to 26g are not uncommon.

All the test rigs and fixtures are designed using CATIA V5 and have to represent the crew member's environment. For example, a rig for dynamically testing a pilot's seat must include representations of items such as the head-up display system and glare shield with which the pilot's body might impact during a crash.

DESIGN REVIEWS WITH 3DXML

With Ipeco's design engineers travelling to OEMs and conducting regular design reviews, having a 'light' image of a proposed seat design within its immediate environment is invaluable. For this purpose Ipeco use 3DXML, of which Mr Marchant is a real advocate, "It enables us to quickly prepare impressive views of complete seats for our customers and prospects. We can dynamically show them around the seat, switch on and off different levels such as the trim, the adjustment mechanisms, and structure. On top of that we can embed all this in a presentation and it's so easy to use. For us it's a fantastic tool."

SUPPORT FROM INTRINSYS

Ipeco has been supported by Dassault Systèmes Partner Intrinsys since 2004. Dave Scott is very positive about the relationship with Intrinsys, "They provide us with excellent service and support. Intrinsys really know what it means to be a design house, and therefore have a good understanding of our environment. In fact, in addition to the training and consultancy they deliver, we are also now using them as a subcontractor to help on design and detailing for a new 3-piece 'divan' style seat for a new executive business jet. So far, I honestly can't think of any occasion when they have disappointed us."

Mr Marchant is equally enthusiastic and adds, "They helped us to plan our implementation and provided any customization we needed to meet our specific requirements. Because we are working together on a seat project they even drop data straight into our ENOVIA SmarTeam database. Intrinsys make us feel as if we are their only customer and we can't ask for more than that."

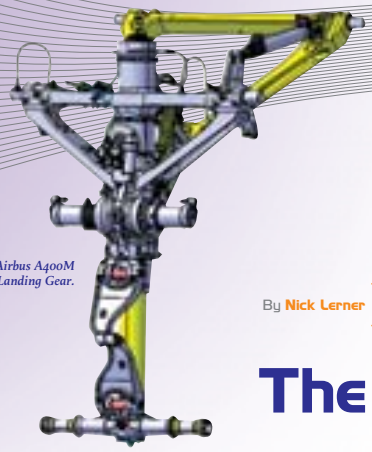
For the future Ipeco is looking to further exploit the capabilities of V5 PLM Solutions, using for example the Workflow and Web access of ENOVIA Smarteam. The intention is to widen the exposure of ENOVIA SmarTeam across the company in order to increase collaboration between internal departments. It is also keen to evaluate the Human Builder module to represent various percentile mannequins during the seat design process.

Concludes Mr Scott, "We have achieved a great deal with V5 PLM solutions in a very short time. If you had asked me 3 years ago if we would now have 21 seats of V5 PLM in 2006, I would have said that is not even remotely possible. Fortunately for us we are extremely busy, so it is good to know that we have the right PLM system and that Intrinsys are behind us" •

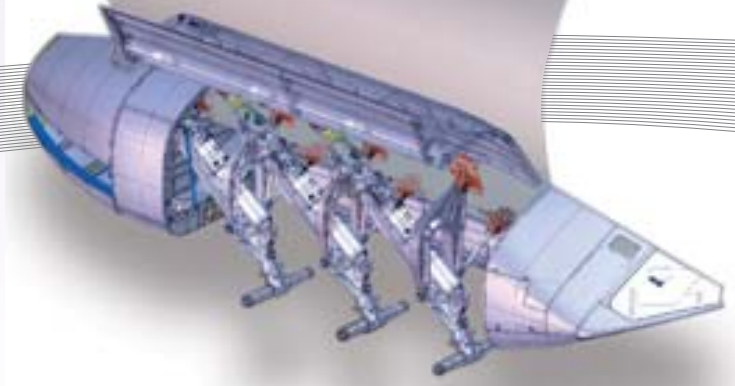
I am convinced that going with V5 PLM was the best decision in order to be able to meet the needs of our customers.

For more information:
Sales Director, TimBell@Ipeco.co.uk
www.intrinsys.co.uk

V5 PLM technology has enabled us to realise our designs in remarkable resolution.



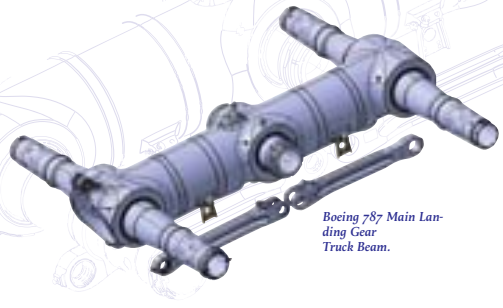
Airbus A400M Nose Landing Gear.



By Nick Lerner

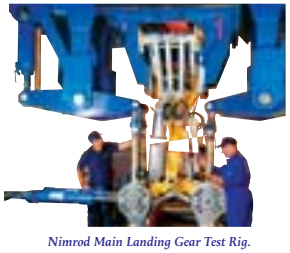
The Ups and Downs of PLM

Switching to V5 PLM has increased productivity by more than 25%.



Boeing 787 Main Landing Gear Truck Beam.

Messier-Dowty, is achieving significant productivity increases though concurrent engineering driven by Dassault Systèmes Product Lifecycle Management (PLM). Today all areas of design and manufacture are reaping the benefits of V5 PLM.



Nimrod Main Landing Gear Test Rig.

CHOCKS AWAY

Messier-Dowty, a SAFRAN group company, makes landing gear for more than 30 airframe builders in the aerospace Industry. Such is their volume of output that a set of their landing gear touches down somewhere in the world every 3 seconds.

The company is truly multinational with specialist sites in France, Canada, the US, Singapore and China. At its UK facility in Gloucester the company handles all aspects of production including product design, production engineering and final assembly.

SMOOTH ASCENT

Messier-Dowty have been using CATIA since 1988 and by 2007 will have completed the transfer to V5 PLM.

Dave Smith, Messier-Dowty's Principle Engineer, explained how V5 PLM is integrated into the company. "Our system covers design and manufacture, test and inspection and is based on the latest 'Model Based Definition' for virtual aerospace design."

He continues, "One of our objectives in using V5 PLM is to move further toward concurrent engineering. This already saves time and increases productivity in the areas of Design, Testing, Manufacture and Inspection. This is because several departments can start their activities, in parallel, by working on the same assembly or component before any individual department has completed its work."

In practice, a designer using CATIA does not have to complete a design before other work related its manufacture, starts. Through the use of ENOVIA SmarTeam, data is available to production engineers so that they can start work well in advance of the final design being made available. Therefore production engineers can prepare for future manufacturing work and produce more precise advance schedules. This concurrency achieves increased productivity.

Dave Smith pointed out other areas where V5 PLM has integrated the company's processes. "Messier-Dowty assembles landing gear sets in Gloucester where Dassault Systèmes V5 PLM is used to develop assembly instructions and specialised tooling that we need for operations. Another recent development has seen process planning engineers using images from CATIA to identify potential difficulties digitally before they can occur on the shop floor."

ON BOARD SERVICE

This intensive and long-term use of V5 PLM has given Messier-Dowty considerable expertise in extending the use of PLM software. Dave Smith pointed to one example. "Thanks to CATIA and ENOVIA SmarTeam we produce manufacturing stage models linked to the engineering master data. This is very useful in calculating and programming tool paths.

This simple technique saves hours of programming and is a great boost to our concurrent manufacturing."

Another place where V5 PLM has had an impact on productivity is through the use of Human Builder software. As designs are being developed, serviceability and the physical handling of components and assemblies must be considered. Best practice is in these disciplines is developed using Human Builder to ensure that assembly and subsequent servicing of landing gear is optimised for efficiency, safety and ease.

To keep Messier-Dowty at the very forefront of PLM usage the company works with their Dassault Systèmes' partner INCAT, which provides training and support services as well as helping to get the best out of the 80 V5 PLM licences at Gloucester.

Dave Smith spoke about INCAT's role. "They have helped us to develop methodologies that get the best out of our PLM software as well as from the people using it. Switching to V5 from V4 can be quite daunting for some users so INCAT has delivered PLM training that is based on our own needs and methodologies. They have also been a great help in recognising areas where our software functionality could be improved - and then improving it."

Because Messier-Dowty is in a constant process of innovation driven both by its own needs and those of its customers, INCAT is on hand to assist with PLM processes at several levels. Recent requirements have seen them working together on developing methods for enhanced communication with OEM's digital models and on integrating disparate software programmes into a completely seamless whole.

PROFITABLE JOURNEY

Dave Smith and his colleagues have not only to meet and overcome technical challenges but must also find ways to increase productivity and lower costs in times when material and other prices are rising fast. "The savings throughout the production process that have become available to us by switching from V4 to V5 PLM are in the order of 25%", says Dave Smith. "These savings derive from introducing truly concurrent engineering practice and by devising ways to automate processes that were formerly manual. By streaming data through the system to effect changes where they are needed, savings of up to 50% have been measured. Hours can be taken out of some processes using PLM methodology and by integrating different software programmes into the PLM system." Examples of this can be seen where aircraft geometry held in Microsoft Excel can be changed in that programme to affect the CATIA model or where kinematics, for functional tollerancing and clash detection, are driven from SIMULIA and ABAQUS FE test data.

SAFE LANDINGS

Messier-Dowty aims for perfection of its design and manufacturing processes and methodologies and, as the engineering challenges develop, so does the company's PLM infrastructure. "We have developed systems at Messier-Dowty that allow us to take full control over the business of making aircraft landing gear" says Dave Smith. "Dassault Systèmes V5 PLM is the key to our engineering innovation and control because it allows us to use our engineering skills to maximum effect through concurrent engineering" •)

For further information:
www.messier-dowty.com
www.incat.com

Aircraft seating developed by Aerosud.

Flying High in South Africa

By **Nick Lerner**

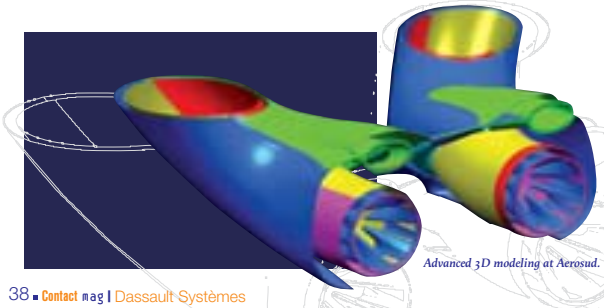
Aerosud Aviation Pty (Ltd) is a South African aerospace company that has achieved significant business growth in international markets coupled with major companywide productivity gains through the adoption and advanced use of Dassault Systèmes PLM technology.

PREPARED FOR TAKE OFF

With a growing demand for its services as both a design and manufacturing contractor to the international aerospace industry Aerosud adopted Dassault Systèmes PLM technology in 2001. Since that time the company has grown as a supplier of its own product designs and as a supply chain partner in the Airbus A400 manufacturing programme. The Aerosud Group employs 600 people across its enterprise with 20-30 PLM operators.

Presently Aerosud designs and manufactures acoustic liners for cargo holds, seat dividers, cockpit liners, complete galleys and an extensive range of sheet metal and machined parts including manufacture of 2.4m wing tips. They also produce geometrically complex composite assemblies and ancillary systems including fuel tanks, radar assemblies and FLIR installations. Johan Steyn MD of Aerosud Aviation described the company's work, "We conduct multiple aviation related programmes which comprise making our own products, designing and manufacture for aerospace OEMs and operating as a production house for externally developed designs. We realised in 2001 that to develop as a company it was important to invest in a design-to-manufacture system able to handle the work that we had at that time but also grow with us and be future proof.

"Our investment in DS PLM technology was a major step for us and to a certain extent a leap of faith, but one that has been completely vindicated by subsequent events. When the A400 programme came to South Africa we were able to join the design and manufacturing supply chain because we were prepared and equipped. We were also able to run a truly efficient business by extending our PLM infrastructure to include ENOVIA SmarTeam."

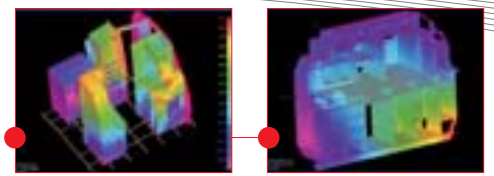


Advanced 3D modeling at Aerosud.

CONTROLLED ASCENT

The incorporation of ENOVIA SmarTeam has brought significant benefits to the company in areas including configuration management, version control and re-use of multiple parts. Johan Steyn explained, "Dassault Systèmes PLM has helped us to participate in the Airbus manufacturing programme and deal with the complexities and demands that this entails. It has been a steep learning curve but one in which DS and its South African VAR, CDC, have been instrumental in helping us to achieve the best possible results both for us and our customers."

AEROSUD



Analysis of aerospace assemblies developed using PLM.

> We are now able to integrate fully with the Airbus design and manufacturing programme.

Johan continued, "The DMU (digital mock up) that we work with for Airbus changes constantly during the design phase and we are able to communicate directly via a secure data link, in conjunction with other suppliers around the world, in a truly collaborative engineering environment. Once the design has been finalised we manufacture both tooling and components directly from the 3D design data. This ensures absolute accuracy and allows for tolerance veracity checks using CMM (coordinate measuring machinery).

"Our PLM system produces a BOM (bill of materials) which can integrate with our Enterprise Resource Planning (ERP) system to give us very high levels of control over shop floor management, standards and the entire design to build process. By using PLM, we have been able to make considerable savings in our stock holding and are also able to re-use and transfer designs to produce similar but different variations."

UPGRADE

By restricting the variability of designs and creating a central library of parts, Aerosud has been able to offer its customers better designs and services, which are now more speedily executed. The company has also been helped to meet its own requirement for higher quality and increased productivity at decreased cost.

Aerosud's current 18 PLM seats have produced a positive influence throughout the company because the advanced methodology that they engender within Airbus programme, has led to other, enterprise-wide benefits. Johan Steyn explained, "We have developed a strong competitive advantage with Dassault Systèmes PLM by introducing common processes. Quality has improved through a rationalisation of BOMs which now contain only the best options and variants. Costs have been cut through this technique largely through having fewer stock parts and extending the use of those that we do hold. Delivery times have shortened because, by using ENOVIA we have reduced design times and can often re-use or make changes to existing designs rather than constantly producing wholly new ones.

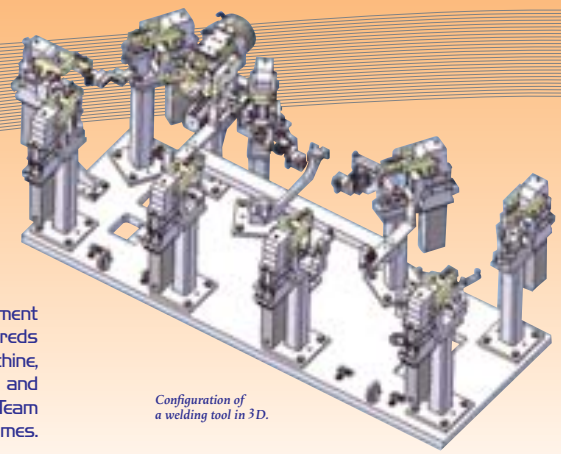
"Sourcing is now much quicker because we are able to use the PLM system as repository for our accumulated knowledge. In practice this allows us to know which are our best suppliers and which of those meet our stringent quality, cost and delivery criteria. When new staff join Aerosud, they are able to benefit from this knowledge and make better decisions based on the experience that others have gathered over the years. We have effectively turned knowledge from something that that could be easily lost into a valuable company asset that helps us to improve everything we do."

TIME TRAVEL

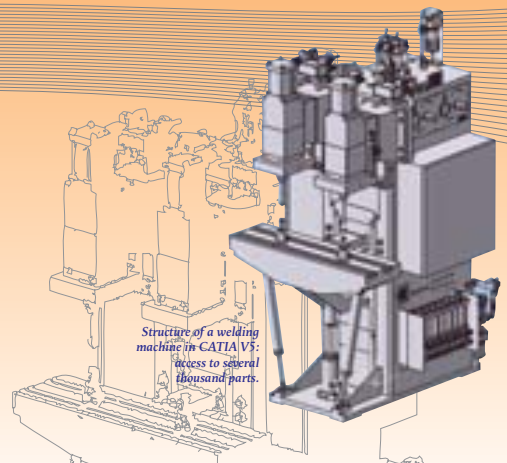
Johan concludes, "Dassault Systèmes PLM technology has brought us the benefits of being able to integrate fully with the Airbus design and manufacturing programme twinned with an ability to introduce world class methodology to the rest of our business. It is a major decision for any company to initiate and develop a PLM infrastructure and the challenges that it presents are not insignificant but having been through the process I can attest that the benefits are there for the taking. We have seen our company grow 5 fold in as many years and generate a level of productivity and improvement that I believe could not be achieved by any other means. As Aerosud progresses, our PLM system will develop accordingly enabling us to capitalise on opportunities as they present themselves •

For more information:
www.cdcza.co.za
www.aerosud.co.za

Aircraft galley.



Configuration of a welding tool in 3D.



Structure of a welding machine in CATIA V5: access to several thousand parts.

The welding machinery and welding equipment manufacturer NIMAK GmbH can build hundreds of variants of one single type of machine, including special purpose machinery and equipment. CATIA V5 and ENOVIA SmarTeam help to manage the data volumes.

Managing a Multitude of Variants with ENOVIA

NIMAK series welding machines.

It was a company reorganisation which raised the question as to which CAD system NIMAK GmbH should build on for the future. Two of the company's sites manufacture welding equipment with the product portfolio ranging from hand welding equipment to welding machines and robotic welding guns through to welding lines. Around 200 staff generate an annual turnover of approximately 50 million euros in this area. In 2006, the business divisions were restructured and streamlined, where previously they had not been clearly separated according to site.

A CAD SYSTEM SPANNING THE PLANTS

With the reorganisation came the decision to implement a standardized CAD system. Experiences with CATIA V4 and the requirements of the automobile industry, one of the most important industries for NIMAK, led to the decision for CATIA V5. In addition, the ENOVIA SmarTeam PDM system was implemented in both plants. At the end of 2006, the implementation started, supported by Dassault Systèmes' partner, DESYS GmbH. "Every user should be able to access the right data at any time without spending a lot of time searching", explained Thomas Roll from the DESYS sales department by way of illustrating an important objective of the project. The result should be the possibility of working with standard data and of using component data easily in a multitude of ways which a design engineer can access when reconfiguring the machines.

NIMAK robotic welding arms in action.

The decision to go with CATIA V5 also meant greater consideration of how to manage the product data. Andreas Kipp, project manager and ENOVIA SmarTeam administrator at the NIMAK plant in Nisterberg, notes "We needed ENOVIA SmarTeam for the management of the CATIA data, as the complexity and considerable variation in our products means that the data is quite unmanageable, especially when several design engineers work on one assignment." A whole range of modules already enable extensive automation of standard processes and thus facilitate the work of the design engineers considerably.

> Through the work with CATIA V5 in connection with ENOVIA SmarTeam, a standardized procedure is created for all design engineers.

MULTITUDE OF VARIANTS: A REAL CHALLENGE

In effect, the multitude of variants is a central topic for the welding equipment manufacturer. Thus, equipment and machinery for different welding types are developed which each require different machine types and welding guns. The machines are often built for a specific welding function in series production. The manufacturer operates in all the industries in which metals need to be joined, but particularly in the automobile industry and for nearly all its OEMs and their suppliers. Each welding job is discussed with the customer and the appropriate welding arm, machine or welding line is configured. In series production alone there exists huge variation. So, for example, a machine type can be equipped with four different transformers and can operate with capacitor discharge technology, medium frequency or alternating current technology. The nosing, i.e. the distance between the machine body and the welding cylinder, can amount to 250, 350 or 550 millimetres. Moreover, there are different types of welding cylinders which can also have different pressures and strokes.

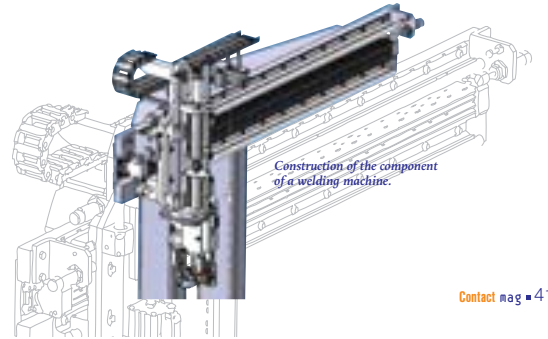
TEAMWORK IS SUPPORTED

ENOVIA SmarTeam offers the user tangible benefits for teamwork. Once set up in ENOVIA SmarTeam by the PartManager directly from CATIA, every part and component can be located quickly and incorporated into construction. Duplicate work or wrongly stored data are a thing of the past. Change management is intrinsically safer as it is handled automatically via ENOVIA SmarTeam. Errors caused by manual changes do not occur today. Andreas Kipp emphasises: "The benefits of ENOVIA SmarTeam are particularly evident, however, in the configuration and construction of special purpose machines." Components can be reused much more easily from series production or from special solutions that have already been developed. He considers a further positive effect to be teamwork. The current data for a given project is now available to every participant at any time. And "through the work with CATIA V5 in connection with ENOVIA SmarTeam, a standardized procedure is created for all design engineers. It is no longer 'each to his own design engineering office'."

POTENTIAL FOR CROSS-DISCIPLINARY DATA FLOWS

The project to introduce CATIA V5 and ENOVIA SmarTeam in NIMAK is not yet over, and the integration of the two systems still requires some effort. Andreas Kipp: "One should not underestimate the adaptation work that is needed." Yet, benefits such as efficient product data management for the many different types of machines and equipment or the consistent work across the team are already visible. Moreover, other potential is coming to the fore: on the basis of the parts list generated by ENOVIA SmarTeam, the new construction data can be uploaded back into the ERP system in the future as the existing parts list has already been integrated fully in ENOVIA SmarTeam. In addition, plans are afoot to be able to view the planning process and the purchase-related data over a web server and for design engineers to use this for their own work. So, the data worlds of NIMAK GmbH can grow together more and more, not only from one plant to another in terms of construction, but also across disciplines in the whole company •)

For more information:
www.nimak.de



Construction of the component of a welding machine.

ESAB Improves Information Quality

ESAB is a leading manufacturer of consumables and equipment for virtually every welding and cutting process and application. With over 100 years of experience, ESAB is also an internationally-renowned supplier of products, know-how and services in their field.

Since its inception, ESAB has heavily invested in R&D as well as manufacturing and quality assurance. Its objectives are to increase productivity by continually improving its welding and cutting processes, offer high quality products, improve the work environment, and reduce the impact its products have on the environment. These objectives, ESAB believes, can only be done by addressing the entire lifecycle of its products. This is why ESAB pays particular attention to the way natural resources for their production are extracted, the way these resources are converted to raw materials or components, the way its production environment functions when manufacturing its products, the way materials and products are transported and finally, the way its products are used by customers.

Each product that comes off the production line is accompanied by a certificate, that is in compliance with ISO 10204, guaranteeing that a specific batch manufactured in one of ESAB's factories fulfills its product performance criteria. These certificates are a gage of quality and safety since without them a customer may not be authorized to use a certain product. Producing these certificates was once a manual task, which was done differently depending on the country in which the product was produced.

A ROBUST SOLUTION TO MANAGE DATA AND DOCUMENTATION

As a global company with production and engineering centers all over the world, ESAB needed a way to efficiently manage the product data and documentation that accompanies each of its products. Information such as types of raw materials used, suppliers and vendors as well as product specifications and production instructions, needed to be stored and made easily accessible to all its employees worldwide.

As ESAB increased the number of its production plants to other countries, it had trouble guaranteeing the quality of the information associated to its products. "The same product information was saved in different sites, while similar information was documented differently from one site to another," said Christer Hidesjö, PLM manager at ESAB AB. "ESAB's products also have the particularity of having long lifecycles (several decades) placing tough demands on traceability, he added."

IMPROVING QUALITY WITH ENOVIA MATRIXONE

After considerable research, ESAB chose ENOVIA MatrixOne to standardize and store all the information related to a product, all the way to the batch level. "The transition from a document approach to an object-oriented approach reduced information redundancy, increased consistency and improved the quality of the information provided to the customer," said Stefan Larsson, Director of Sustainable Development at ESAB AB. "ESAB users now have access to only the latest up-to-date data and not obsolete information, which used to exist in our information system before," he added.

ENOVIA MatrixOne is used to communicate to ESAB's thousands of employees worldwide a product's Safety Data Sheet as well as to manage the environmental, health and safety information of its 40 different sites worldwide. ENOVIA MatrixOne is also used for EHS incidence (accidents and injuries) reporting. All information is made available through the web to ESAB employees around the world.

ESAB was assisted during the transition period to ENOVIA MatrixOne by Technia, a leading supplier of Product Lifecycle Management (PLM) Solutions in the Nordic countries. Technia was involved from the very beginning, starting from the sale of ENOVIA MatrixOne to providing consulting services to help ESAB organize and transfer its data to the new platform as well as structure the information.

As ESAB expands its production sites and sales organization to countries outside Europe and Asia, where it is already well established, it soon plans to extend the use of ENOVIA MatrixOne to manage information in its South American facilities. "Our major challenge now is to forego manual methods and use ENOVIA MatrixOne to automatically feed information to our ERP systems around the world," said Stefan Larsson. "ENOVIA MatrixOne's open platform is our assurance that we will be able to grow when we are ready," he concludes •

More about ESAB

ESAB is one of the world's leading manufacturers of consumables. It created the world's first welding electrode and today has a product range that includes covered electrodes, cored wires, solid wires, TIG rods, strips and fluxes, covering every type of welding need. Since it was founded in Sweden in 1904 ESAB has become a global leader with sales exceeding $1.7 billion annually. It has 22 production sites across Europe, North and South America, Russia, India, SE Asia and China. Some key markets where ESAB products are used include Shipbuilding & Offshore, Automotive, Power Generation, and Civil Construction.
www.esab.se

More about ENOVIA MatrixOne

The ENOVIA MatrixOne offering helps companies accelerate product innovation to achieve top line revenue growth and improve bottom line profitability. ENOVIA MatrixOne provides best in class Collaborative Product Development business processes for enterprises across a wide range of industries, including Synchronicity for Semiconductor Design Data Management. More than 1000 companies use ENOVIA MatrixOne solutions to drive business value and gain a competitive advantage, including industry leaders such as BAE Systems, Bosch, Comau, Faurecia, General Electric, Honda, Johnson Controls, Linde AG, NCR, New Balance, Nokia, Philips, Porsche, Procter & Gamble, REI, Scania, Sony Ericsson, STMicroelectronics, Toshiba and Valéo.

The brand BT is one of the worlds leading brand in the forklift truck industry and has been in that same business for over 60 years.

By **Emmeli Häggström,**
Technia AB

Since 2000, BT has been a part of Toyota Industries Corporation (TICO), and is the world's leading supplier of electric powered warehouse trucks and services. BT Products exist in more than 70 countries around the world. The company is about to merge the different organizations into one single entity, Toyota Material Handling Group (TMHG), with sub-organizations in Japan, Europe and North America.

BT Products Coordinates CAD-data with ENOVIA MatrixOne

More about Technia

Technia is the leading supplier of Product Lifecycle Management (PLM) Solutions for creating and managing product information throughout the entire product lifecycle to global industries. Technia, with more than 110 employees, is a strategic partner to more than 200 companies. It has offices in Stockholm, Gothenburg, Helsinki and Oslo. Technia's customer list includes: Ericsson, Elcoteq, ESAB, Danaher Motion, GE Healthcare, Haglöfs, Marioff, Metso Paper, Mölnlycke Health Care, Nokia, Perkin Elmer LifeSciences, Proximion, Scania, Sectra Mamea, and Sony Ericsson. Technia is part of the Addnode group and is the largest Nordic PLM supplier together with its sister company CAD-Q.
www.technia.com

V5 PLM COORDINATES CAD-DATA

With today's technology, paper blueprints are not the best way for the automotive industry to design future products. Electronic 3D blueprints enable companies to better describe products and make it possible to make complex changes and amendments. For a long time, all of BT Products' blueprints have been produced in 3D, putting high demands on coordinating and structuring the CAD data. BT Products chose to solve the problem by implementing ENOVIA MatrixOne with the support of Technia. "The more 3D models we started using, the more we needed one uniform solution with the capacity to handle the CAD-files. For BT Products, it was a pre-requisite to have a system that could manage CAD blueprints", said Per-Ola Post, Head of Development, Powered Trucks, BT Products.
It is important for BT to be completely sure of a product's construction before actually starting production. Thanks to 3D models it is possible to model solids and test whether or not a planned feature is going to work in a satisfactory way. For example, it is possible to test lifting and lowering to see how it will affect the final product. "3D models are used for FEM-calculations, which we perform to calculate endurance, product life span and the most crucial trait; stability. When you have elevated one metric ton of cargo 10 meters you don't want it to swing like a fishing rod. And if the truck were to tip over it could result in serious accidents and injuries", said Per Ola Post.

INTEGRATION AND EASY ADMINISTRATION

BT Products have about 400 employees using the PLM system, which also interacts with the company's MRP and ERP systems. The V5 PLM system enables users to adjust 3D data according to the client's bill of materials (BOM), the structured list which contains all components for a semi-ready or ready product such as name, quantity and reference number. Each product has a unique reference number which makes it easy for users to fit the right 3D solids with the right product. "This year, we will also start using ENOVIA MatrixOne or complete handling of Engineering Change Order and Engineering Change Request together with EBOM and MBOM-management", said Per Ola Post.

BT Products chose to solve the problem of coordinating and structuring their CAD data by implementing ENOVIA MatrixOne.

GLOBAL SOLUTION

Today the organization uses different systems in different countries to handle CAD data and the product development process, but strives to find synergies and common systems. "Historically, Toyota has grown organically. Now Toyota Material Handling Group has grown through acquisitions, which Toyota's Japanese management is not accustomed to. This means that we now have a number of different CAD and PLM solutions that are not integrated. It makes it hard to merge the companies and forces us to make new purchases instead of expanding existing systems. We have chosen CATIA V5 as a CAD solution. The plan is to use one joint solution within the group in the future", said Per-Ola Post •

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More about BT Products

BT is, since 2000, a part of Toyota Industries Corporation (TICO), and the world's leading supplier of electric powered warehouse trucks and services with sales totalling SEK 13 billion. The trademarks within TICO, i.e. BT, Raymond, Cesab and Toyota, together have 25 percent of the global market share for fork lifts, making them the world's largest manufacturer. Today BT products exist in more than 70 countries around the world. The company is about to merge the different organizations into one single entity, Toyota Material Handling Group (TMHG), with sub-organizations in Japan, Europe and North America.
BT is strongly positioned in Europe with a fully owned subsidiary in each country. International clients include, for example, IKEA. BT Products is TICO's European production company for warehouse trucks and is located in Mjölby, Sweden. By the end of 2006 more than 40,000 trucks have been developed, manufactured and shipped, mainly to the European market, which represents approximately a 20 percent market share. BT Products is comprised of three different divisions: Powered Trucks - manufacturing electric trucks for indoor use, also including the Special Product department which handles special needs; Hand Trucks - Europe's largest manufacturer of hand pallet trucks; and Distribution Products and Parts – which manufactures and distributes spare parts as well as distributing trucks to resellers.
www.bt-industries.com

AGME Optimises Machine Design with V5 PLM

By Corinne Hirzel
and Fernando Garcia Madrigal

AGME, leader in the machinery sector, has always followed a policy of innovation and continuous improvement in order to satisfy its clients. The quality of construction needed to guarantee the reliability of its machines led AGME to select CATIA V5 and ENOVIA SmarTeam as the best solutions.

> The advantage of this is that we can reduce design time by 30%.

AGME'S CHALLENGE

"PLM, Product Life-cycle Management, is second nature to product and process engineering. At the present time, with all companies under market pressure, the pressure is also on us for our product to be the first to market, the most innovative and the best, not only in terms of quality but also in terms of price", states Pedro Aguirregomezcorta Gorostola, AGME's Managing Director.

"To meet our objective of maintaining market leadership, we needed to have complete control over machinery design, to be able to reuse on a daily basis the enormous quantity of drawings that we have, to reduce the errors in understanding these same plans and to have precision in assembly. We decided to go 3D with CATIA V5 to put our products at the top of the market", added Mr Aguirregomezcorta.

NEW MANAGEMENT AND DESIGN

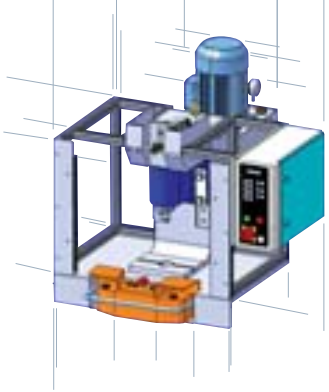
As centralised information can be reused efficiently and rapidly thanks to CATIA and ENOVIA SmarTeam, errors usually detected at a late stage in the production or assembly phases are reduced. "The advantage of this is that we can reduce design time by 30%, fine-tuning time by 10%, and purchase costs by 10%. V5 PLM Solutions facilitate interdepartmental collaboration between all the staff involved in one project", emphasises Mr Ariznabarreta, Manager of AGME's Standard Machinery Research and Development Department.

AGME, as a leader in technology and in the implementation of workflow methodologies, completed a study that drew out its operational processes. ENOVIA SmarTeam's "Workflow" module notifies individuals of the tasks to complete at each step and of how those tasks affect other members of the company.

OPTIMUM PROJECT MANAGEMENT

In combination, CATIA and ENOVIA SmarTeam simplify the work of designers enormously, facilitating access to desired information and the examination of a machine's history. Integration of the V5 PLM Solutions means that a project can be managed fully, from the offer generation stage through to the stage where manufacturing plans are consulted. "ENOVIA SmarTeam helps us manage all the information pertaining to the new machines that we are developing, enabling us to excel in their geometry or associated documentation", acknowledges Oscar Ariznabarreta, manager of the Research and Development Department.

The V5 PLM Solutions allow AGME to manage all the designs and their revisions, and they facilitate searches and the reuse of product designs. Thanks to CATIA and ENOVIA SmarTeam, AGME is well on its way to reaching its competitive objectives.



A HIGHLY QUALIFIED SERVICE

"The leap from 2D to 3D involved a change in the way AGME worked, a technological change which meant creating more information more quickly and more reliably thanks to V5 PLM", adds Fernando Garcia, ABGAM's PLM Director. "The tool's main objective is not only to manage documentation but to be the heart of the technical office and the main access point for project information for all the company".

"To deal with what was essentially a great challenge for our entire organisation, we were looking for a technology partner in our area and one with whom we could identify strongly; a partner with experience in our sector who also offered powerful solutions. ABGAM's solution was that which most closely matched our objectives", notes Pedro Agirregomezkorta, AGME's Managing Director.

"We are becoming more and more skilled by the day, as we implement V5 PLM Solutions and as we face up to the new dilemmas that the challenge presents and for which ABGAM provides a highly qualified technical service with quick response times", concludes Eduardo Barandalla, AGME's Systems Manager •

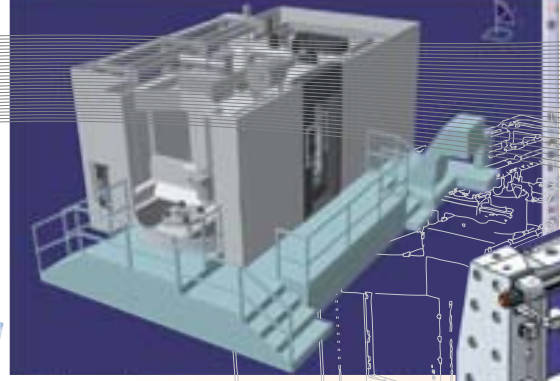
For more information:
marketing@abgam.es

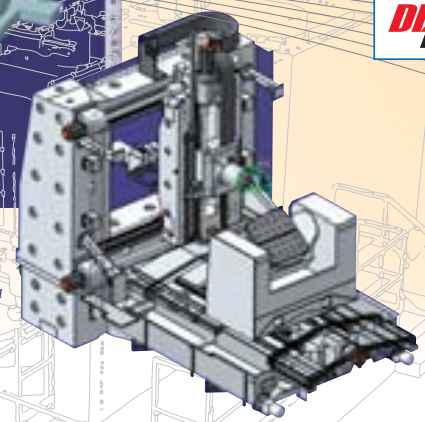
About AGME
Industrias AGME develops products such as pneumatic, manual and hydraulic presses, radial riveters and multipoint markers for metal forming, marking and assembly processes. It has more than 50 years of experience in the machine tool sector. Faurecia, Yamaha, Gamesa, Bosch, Valeo and Johnson Controls are just a few of their loyal customers.
www.agme.net

ABGAM: a technology partner
As partner of Dassault Systèmes, ABGAM, a member of SEGULA TECHNOLOGIES Group, specialises in PLM solutions for CAD/CAM/CAE/PDM market leaders. It supplies solutions for engineering, design, machining, systems and digital production. Companies such as DaimlerChrysler Spain, EADS-Airbus, MTorres, BATZ, AGME, Renault, Citroën-PSA and Alstom have all relied on the quality of its services.
As part of ABGAM's commitment to service and proximity to its clients, it is located in several areas, strengthening ABGAM's reputation as a high quality supplier with offices in Vitoria, Madrid, Barecelona, Bilbao, Vigo, Valladolid, Seville, Valencia and Zaragoza.
www.abgam.es

DIXI machines

DHP-80 Machine.





Numerical control simulation.

Dixi Machines Raises the Bar with PLM

Swiss machine tool manufacturer Dixi Machines aims at quadrupling production within five years from one machine per month to four per month with CATIA and ENOVIA SmarTeam.

Established in 1904 as a manufacturer of machine tools for the Swiss watch making industry, Switzerland-based Dixi Machines is today one of the world's leading manufacturers of high precision machine tools. Recently acquired by Mori Seiki International, Dixi Machines S.A. and its 110 employees will continue to design and produce its signature product line of machines, as well as integrate new activities such as assembling Mori Seiki 5-axis machines for the European market.

The company's strength lies in its ability to deliver ultra-precise machines. "But increasing precision should not mean increasing costs," said Christian Cochand, Technical Director, Dixi Machines. "If we want to increase the precision of a machine by 50 percent, it is obvious that we cannot increase the price by 50 percent. To remain competitive, we needed efficient technical solutions to design and produce our machines, keep our development costs as low as possible, and not sacrifice machining quality."

INCREASE MACHINE ROLLOUT

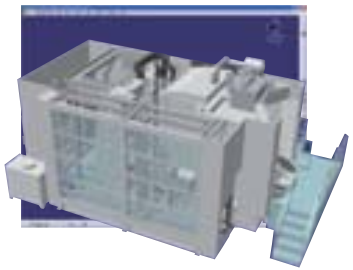
Dixi Machines has set ambitious goals for itself – increase machine production fourfold within the next five years. "Today we produce, on the average, one machine per month. By 2011 we would like to increase that number to four machines per month," said Cochand.

To help it achieve these objectives, Dixi Machines selected CATIA and ENOVIA SmarTeam, Dassault Systèmes Product Lifecycle Management (PLM) solutions in 2006 to develop its new machines. "We originally thought that PLM was only for large companies. We had every reason to believe, though, that the products we produce would benefit greatly if we could manage their entire lifecycle, from the preliminary design phase all the way to production and maintenance," said Cochand. Dixi Machines uses CATIA for mechanical design activities as well as its static and dynamic analysis studies and ENOVIA SmarTeam to centralize and manage all component data in a collaborative database.

A MARKET DRIVEN APPROACH

Dixi Machines' approach to development begins with a detailed analysis of market demand. This in turn is used to define the type of machine required by potential customers. Combined with information on what its competition is proposing, Dixi Machines determines the price customers are willing to pay for a high precision machine.
With this information, it defines the fundamental characteristics of a machine. Engineers then create a CATIA model that contains the main strategic points of the machine such as the position of the pallet with respect to the floor, maximum length, and overall size. They then design all of the machine's components in 3D. The engineers also define the machine's desired rigidity which ensures a machine's precision and behavior when in operation. From the 3D model, Dixi Machines designers produce all the drawings and documents that will be used to produce every component in the machine.

Complete digital mock-up of DHP-80 machine.



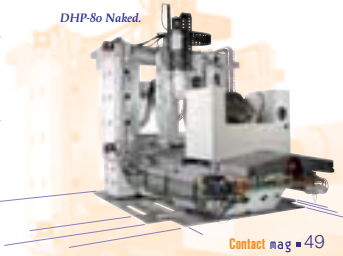
» With CATIA, we can now perform our analysis work in-house instead of relying on subcontractors. This saves us time and money." Christian Cochand, Technical Director, Dixi Machines.

DETECTING PROBLEMS EARLY REDUCES COSTS

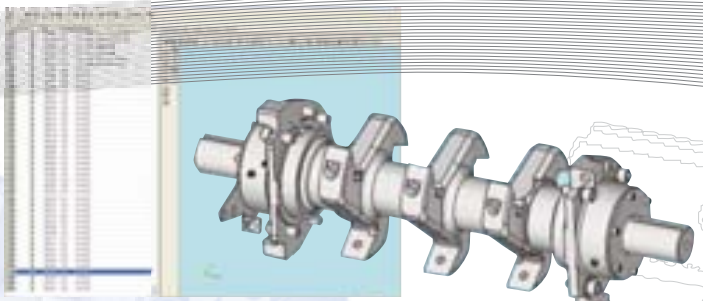
An immediate benefit of CATIA was the newfound independence Dixi Machines gained in the area of complex analyses. "Instead of subcontracting our analysis work to a third party, we can now perform our studies in-house thereby saving time and money," said Christian Cochand. Strength of materials for each machine component as well as finite element analyses results can rapidly be used to make adjustments to the design very early on thereby avoiding costs that arise when problems are detected downstream during production, or worse, during machine operation.

"One of the ways to reduce development costs is to make sure that the first version of a machine is as error-free as possible. Simulating the machine in operation and performing interference checking in a virtual environment has considerably reduced the risk and stress of detecting collisions after the machine has actually been built," adds Cochand.
Dixi Machines chose ENOVIA SmarTeam to manage the lifecycle of each machine – right down to the item level. Managing the data for the approximately 4000 to 5000 components in each machine, ENOVIA SmarTeam has provided clarity and coherence. "Even if we delivered three identical machines to a customer, we could not always guarantee that all interchangeable parts were identical since a vendor may have changed the part number or its color, for example. Whether components are manufactured by Dixi, its subcontractors or bought from a catalogue, we need to be able to keep track of each component so that ten years from now, maintenance can be performed smoothly," said Mr Cochand. With ENOVIA SmarTeam, Dixi Machines intends to deliver with every machine a complete list of up to date parts, drawings, and specification documents, as well as where the parts can be found. With ENOVIA SmarTeam, every item is easily traceable, a considerable advantage when servicing Dixi Machines equipment that has a 20-year lifespan.
Engineers at Dixi Machines benefited from support and educational programs provided by Dassault Systèmes' partners in the Swiss Romandy region. Transcat PLM provided all logistics, implementation industrial Best Practices such as SPIN Express for ENOVIA SmarTeam, and day to day support. Dixi Machines employees also received CATIA and ENOVIA SmarTeam training from Dassault Systèmes certified training partners such as the Haute Ecole Arc Ingénierie. Dixi Machines also defined specific methodologies as a way to enhance user productivity, thereby channeling the power of the PLM Solutions to the specific needs of its engineers •

DHP-80 Naked.



Openhearted design for easy access.



SmarTeam G26030 Rotor Configuration.

Magnus Titusson, R&D Manager, Rapid Granulator, Kurt Sjöberg, CAD/PDM Manager, Rapid Granulator.

Rapid Granulator's Journey to Efficiency

By **Annika Lagerqvist**, SYSteam Engineering

Rapid Granulator is now on a development journey that will lead to structure, order and a common work method that focuses on increasing efficiency.

Rapid Granulator, the world leader in granulation increases the profitability of companies producing plastic goods by developing and manufacturing granulators for in-house recycling of plastic waste. Machines with crusher blades (rotors), break up the plastic waste fed into the granulator into small granulation parts, thus eliminating the distribution and storage of waste and regrind. The company's reputation for building machines that satisfy the diverse needs of the plastic industry has made it the world's leading exporter of granulators. "Expansion is ongoing in all branches, but we believe that future demand will increase, primarily in recycling," says Magnus Titusson, R&D Manager, Rapid Granulator.

HIGH STANDARD SOLUTIONS

Rapid Granulator machines are built according to high-standards to give customers the assurance of optimal lifecycle economy, better granule quality, easier access to machine components and a safer working environment. "We supply solutions, not products, which means we provide unique product information for each object. Requirements for the availability of product data are considerable," says Titusson. These factors mean that granulator development goes hand-in-hand with production improvements, thus resulting in the need for structure, order and a common work method. Rapid Granulator chose ENOVIA SmarTeam to be its platform for enhancing efficiency, thereby enabling the company to rapidly respond to customer demands and maintain its position as a world leader.

Rollerfeed solution for film and packaging applications.

ORGANIZING THE PDM ENVIRONMENT WITH ENOVIA SMARTEAM

Rapid Granulator uses Solid Edge as its CAD solution, supported by ENOVIA SmarTeam. There have been great advances in the management of CAD information and product data. "We started with an Informix database. We then realized the potential of managing CAD data globally, but the environment was much more isolated then. ENOVIA SmarTeam offered us unlimited possibilities. The decision regarding the transition to ENOVIA SmarTeam was easy," says Kurt Sjöberg, CAD/PDM Manager, Rapid Granulator. Rapid Granulator is now in a phase that focuses on securing all product data. Old drawings are being scanned and stored in ENOVIA SmarTeam. Today, all EMS files are managed by ENOVIA SmarTeam and converted to Solid Edge when necessary.

COMMON FUTURE PLM PLATFORM

Rapid Granulator's way of managing product data from development and design departments differed in all their global units. Considerable time was spent processing drawing documents and producing the appropriate product data. Rapid Granulator focuses on product development since all of the solutions it supplies are based on customer requirements. Today, the company is at the forefront of granulator technology and is a leader in the development of granulator machines. "ENOVIA SmarTeam provides us with a future, common PLM platform for our global product development process. It will also improve other business processes in the company. "The next step will entail including subsidiaries in the system to enable us to accumulate knowledge, which will help save time. Our units will work in the same manner, using the same structure and the same information. Today, approximately 15 people work with ENOVIA SmarTeam, primarily to ensure access to a product's history", says Sjöberg. Rapid Granulator also believes that other parts of the operation will benefit from the gains generated by ENOVIA SmarTeam.

COLLABORATION

SYSteam works as an IT partner of Rapid Granulator. In addition to consulting services in their PLM environment, SYSteam also supports Rapid Granulator in their ERP, operations, hardware and case systems. SYSteam Engineering has worked with Rapid since 2000 and, in cooperation with the customer, is developing the ENOVIA SmarTeam environment and corresponding integration with ERP. "SYSteam supports us with operational knowledge and specialist expertise in PLM. Today, our design engineers have their hands full.

SYSteam is helping us define a smarter way of working, which will enhance the efficiency of the product development process. We are now working on the implementation of ENOVIA SmarTeam Web Editor so that our company in Germany will have access to all product data in ENOVIA SmarTeam. We are also working on a portal solution in which ENOVIA SmarTeam also plays an important role," says Titusson •

More about Rapid Granulator

Rapid Granulator's headquarters and main manufacturing plant employs 140 people in Bredaryd, Sweden. Their subsidiaries in the US, Italy, Germany, Singapore and China employ another 60 people. They supply approximately 150 countries with their products with the help of more than 60 agents and distributors. Rapid Granulators' turnover is 300 million SEK. More than 60,000 Rapid Granulators have been delivered to customers worldwide over the past 40 years. Rapid Granulator's customers include those in the injection molding, packaging industry and recycling sectors.
www.rapidgranulator.se

More about SYSteam

SYSteam is a leading VAR supplier of Dassault Systèmes' products for PLM (CATIA and ENOVIA SmarTeam) in Sweden. SYSteam offers overall responsibility, licenses and expertise in CATIA and ENOVIA SmarTeam and creates measurable business value. Its 3800 customers and local offices in more than 50 locations make it one of the leading IT consulting companies in the Nordic countries.
www.systeam.se

For more information:
Dick.Nystrom@systeam.se

Rotors break up the plastic waste fed into the granulator into small granulation parts.

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