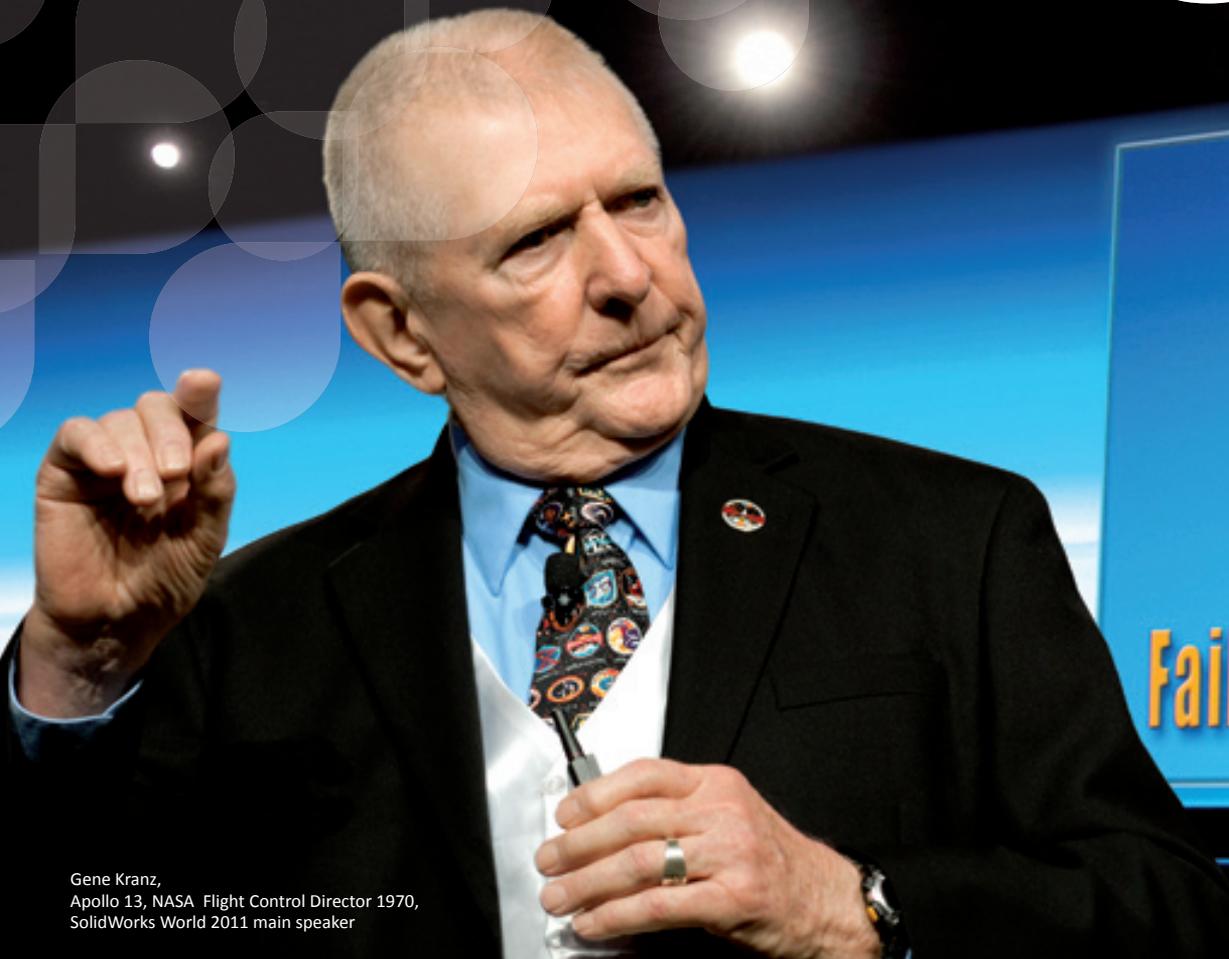


PLM Magazine

#01 2011



Failure Is Not An Option!

Gene Kranz,
Apollo 13, NASA Flight Control Director 1970,
SolidWorks World 2011 main speaker



PLM Group Cool Design
Contest 2011
www.plmgroup.eu/contest

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Sky-high IT solutions
opens up new opportunities
in the PLM world

PAGE 18

"SolidWorks Simulation results in lighter
and better truck trailers"
Robert Marklund, Hellgrens Truck Service

PAGE 20



PLM GROUP

“We’re just getting started!”



Dear reader

The headline above was the conclusion of SolidWorks founder Jon Hirschticks speech at SolidWorks World 2011, and it is not randomly chosen. Although Dassault Systèmes SolidWorks has been around for 15 years and is the market leader in PLM-tools for small, medium and large enterprises, the company’s PLM products and solutions are in constant and rapid development. The coming years will show significant innovations from Dassault Systèmes SolidWorks, both in the PLM solutions and in the way we work with them.

The way companies currently are supplied with IT-tools and solutions is subject to radical changes in the future. From the user perspective it is due to technologies like that of iPhone, Android, iPad and all the other mobile tools. But it is perhaps more important to recognize that the coming years will show a total restructuring of the basic IT infrastructure. This is called cloud computing. Dassault Systèmes SolidWorks showcased its first cloud-based tools at this year’s SolidWorks World and a lot more are just around the corner.

In the future IT-services will be delivered from “clouds of networked linked computer resources”. IT-services derived from cloud computing will be available in a manner very much like the way power stations are supplying electricity to businesses and consumers. The clouds will consist of an almost unlimited number of virtual servers and via high-speed connections that can supply all kinds of IT services including PLM-solutions. You can read more about both cloud computing and the cloud launches at SolidWorks World in this issue of PLMagazine.

Though Dassault Systèmes SolidWorks, along with other major suppliers of IT solutions, are reaching for the clouds, it does not mean we will let go of the surface of the earth. Bertrand Sicot, the new CEO of Dassault Systèmes SolidWorks guaranteed the 5,000 participants at SolidWorks World that cloud computing will never be the only available IT-platform. PLM tools from Dassault Systèmes SolidWorks will be based both on cloud computing, mobile platforms and on locally installed computers, as we know it today.

This means that companies have free choice between both the IT-platform and the PLM-tools that best fit their needs. PLM Group will always deliver the optimal solution based on products from Dassault Systèmes SolidWorks. That means you are 100 percent able to focus on the single most important issue: creating new and innovative products for a better future.

Enjoy reading

Jess G. Frandsen, CEO of PLM Group

A handwritten signature in black ink, appearing to be 'JGF', located at the bottom right of the page.

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News from SolidWorks World 2011, San Antonio, Texas

SolidWorks World 2011 was bursting with optimism for the future mixed with both small and large product announcements not least, the first samples of products based on cloud computing. Dassault Systèmes SolidWorks puts cloud products on top of the strategic agenda.

PLM Group's product manager Charles Nilsson received on behalf of PLM Group the price for "Best Service Performance" in Western Europe.

Read more on page 8

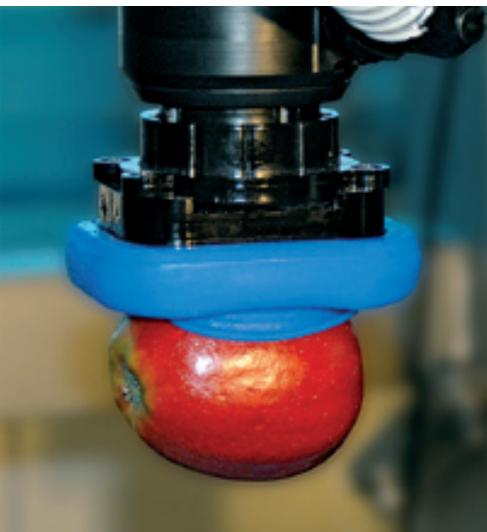
IN BRIEF InMoTx was established in Frederikshavn in 2006 by technology director Preben Hjørnet, Denmark. The goal for the company was to develop advanced robotic modular automation solutions for the food industry, based on a single product platform called Octomation.

The company currently supplies solutions for handling, loading and packing for a wide range of food industry products. In January this year, InMoTx was taken over by the U.S. robotics and vision-company Adept Technology and is now Adept's new headquarters for vertical solutions for handling. www.inmotx.com



Radical innovation behind building blocks for automated handling of food products

Using SolidWorks, SolidWorks Enterprise PDM and not least 3DVIA Composer in a very advanced manner, Danish company InMoTx has developed a new and groundbreaking automation concept for the food industry.



During the last five years Danish industrial automation company InMoTx has developed a radically new and innovative approach to the automation of handling, placing and packing of all sorts of products in the food industry. SolidWorks, SolidWorks Enterprise PDM, and 3DVIA Composer have played a key role throughout the development process and also constitutes a central component in both design and sales of new systems.

Octomation is the name of InMoTx overall robotized concept, which is a modular product platform for use in food products such as meat, poultry, fish, fruit and vegetables and also with processed foods such as baked, frozen and dairy products.

InMoTx's products have been so innovative that the leading U.S. robotics and vision company Adept Technology has just bought

the company. Upon the acquisition, InMoTx has been renamed Adept Technology Denmark and its headquarters in the city of Frederikshavn in Northern Jutland Frederikshavn has become the international headquarters for Adept's development of vertical handling solutions.

"When you have the vision to create such a sophisticated approach in both product development and the way you want to communicate with your dealers and end users, you have to be sure that you use both the right tools and technologies," explains CTO and founder of InMoTx, Preben Hjørnet.

Before InMoTx started the development of Octomation the company conducted a very thorough examination of the market for PLM-software to find the best supplier of CAD and PDM.

That resulted in the choice of PLM Group as future partner. "Our demand was that

our supplier should be able to cover all our needs from the very early development of prototypes to the communication concerning spare parts, maintenance manuals and sales work, where both our sales force sellers and customers will be able to configure our products themselves. Together with PLM Group, we found a consistent and maintenance-friendly concept, which presented light at both ends of the tunnel," says Preben Hjørnet.

Modules as building blocks

Octomation consists of several modules. Like building blocks the modules can be combined to a vast number of different solutions fitted for different handling tasks. That means that a food producer with simple tools will be able to rebuild one machine, which was designed to solve one type of task, to solve a very

different task.

As an example, Preben Hjørnet mentions that a solution built for packing boxed products easily can be converted to handle raw fish instead. The equipment basically consists of the same components and the same software, while functionality is just a question of how the modules are mounted in relation to each other.



3D CAD and PDM is crucial

“To have such a sophisticated approach to products, it is necessary that you are able to handle advanced 3D CAD, PDM and documentation tools. We use SolidWorks fully in our construction and we are also using SolidWorks Enterprise PDM to control variants of products. We have to be able to keep track of a vast number of different versions, and through the PDM system allows us to create several hundred thousand product variants out of our few different modules,” explains Preben Hjørnet.

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Advanced simulation

InMoTx is using SolidWorks Simulation for both mechanical and flow-related simulation of its products. “We simulate the mechanical deformation of rigid bodies and we also use simulation of fluid dynamics in a very sophisticated way to develop our special grip technology with soft silicone grippers that mimics the way gripping, holding and manipulating natural products has evolved in nature”.

To develop vision systems and ensure proper illumination of the natural products InMoTx is using the Breault Research’s Apex software, which is fully integrated with SolidWorks. Preben Hjørnet explains: “It means that whatever physical angle we approach our product development from, whether it is rigid mechanical parts, fluid mechanics, optics or mechanisms, we have one integrated design tool.”

3DVIA Composer is crucial

3DVIA Composer has a critically important role throughout the InMoTx business strategy. The system has made it possible to carry system level documentation a step further, both in the sales, service and support departments, says Preben Hjørnet.

The system ensures that all documentation is fully integrated with the 3D models in the CAD-system and automatically generates maintenance- and update-ready 3D visualizations.

“3DVIA Composer is a very effective tool to produce assembly instructions. We are getting documentation, which is both intuitive and highly informative with

regard to installation procedures for our equipment. This applies both to our own assembly department and if we want to place production with licensees.”

3DVIA Composer also works as a sales tool to create the layouts customers need as decision support for new projects. For producing this kind of documentation InMoTx today is making full use of the system, but the company’s ambitions go further, “explains Preben Hjørnet:

“In the future customers will be able to use the models from 3DVIA Composer through our website to configure our equipment based on their functional needs. An underlying expert system will then guide them in choosing which configuration that will best solve their task. This gives them a quite accurate picture at a very early stage of how the best practical solution might be.”

Help for decision makers

He points out that a lot of layout and design of production machinery in the food industry is still done using 2D-drawings. “That is limiting who can be involved in the assessment of solutions because many of the actual decision makers are not experts in design drawings. The very intuitive visualizations of 3DVIA with both animations

and 3D overview on the other hand makes it possible for non-technical people to participate in the decision process,” he says and adds: “The system also gives us a guarantee that our solutions are consistent not only on a flat 2D drawing, but in full 3D. That has been a big benefit for us in our projects and 3D VIA Composer has shown to be an extremely effective tool to get access to the right people and supporting them in making the right decisions.”



IN BRIEF Marinetek of Helsinki is the leading supplier of pontoons and accessories for ports and marinas.

The company was founded in 1994 and today has around 100 employees. Production of pontoons takes place in Finland, Latvia, Croatia, Portugal and

Dubai. Through a network, Marinetek is cooperating with its partners in 25 countries.

www.marinetekgroup.com

Design of leisure boat marinas gets a boost with SolidWorks

Finnish company Marinetek Group have achieved significant benefits by using SolidWorks to design the giant floating concrete elements that are part of marinas for leisure boats worldwide. The next step will be to manage the construction work with SolidWorks Enterprise PDM.



13 km of marina for 1200 leisure boats at Palm Jumeirah Island, Dubai.

Marinetek has found a creative use of SolidWorks 3D CAD to design the huge floating concrete pontoon elements that are key to their projects. The company, headquartered in Helsinki and with 17 subsidiaries all over the world is designing and producing pontoons and accessories for marinas in concrete, aluminum, steel and plastic.

Among the projects where SolidWorks has

been used fully, is the design and construction of a renewal project for Port Hercule in Monte Carlo in Monaco. The marina can be seen on television, if you follow the annual Formula 1 race that takes place in May in the streets of Monte Carlo.

The pontoons consist partly of up to 20 meters long, six meters wide concrete elements weighing up to 76 tons, which are modeled with SolidWorks. Marinetek is also using the CAD system to generate production

and installation drawings as well as sales and marketing materials. By using SolidWorks the Finnish company has managed to achieve significant savings in development work. The CAD system is also playing a crucial role both in the design of new projects and in the preparation of sales and marketing materials such as photo realistic 3D presentations.

The advanced design has in just a few years helped to bring the company into the world elite when it comes to design and

manufacturing of marinas. Marinetek is today a leader in its field in Europe and also among the world's largest suppliers in the area. Furthermore the company recently has entered into a joint venture with the Canadian company Technomarine, who is specializing in design and manufacturing of marinas based on aluminum structures.

Simulation of strength

"Today, all our concrete products are modeled in SolidWorks. Furthermore SolidWorks Simulation is used to perform FEM calculations on more complex parts. We use the FEM calculations both internally, in reports to clients and also in the documentation to subcontractors," explains Marinetek Design Director Valtteri Vauramo.

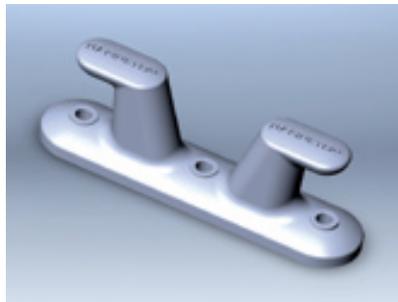
"When we introduced SolidWorks, I must admit I was somewhat nervous, because I was not convinced that the system could handle the issues of size, but it proved to be no problem. Our layouts often consists of more than ten big concrete elements, represented by very large datasets in the CAD system but SolidWorks quite easily handles these assemblies," says Vauramo.

Two development methods

A typical Marinetek project around a new marina is normally carried out in two different ways.

When a marina has to be designed from scratch, it starts with the company's product developers and designers making hand sketches.

The next step is to build a 3D model of the project. The elements of the model are fine-tuned while concurrently the necessary analysis is performed using simulation tools contained in SolidWorks. When the 3D model of the project is ready, the CAD system is used for preparing presentation materials for the customer including 3D visualization and layout drawings.



The second type of development is based on reuse of existing designs. Here, existing 3D models of components are used to produce a layout for the customer, who can propose changes. The process goes back and forth until agreement on the project's final design is reached. Production drawings are then created with SolidWorks and BOM's generated to the company's ERP system where sales and purchasing departments have access to them.

Precision and documentation

Marinetek has previously used 2D CAD. 18 months ago it chose to introduce SolidWorks, and that decision immediately gave the company a number of significant advantages. "We have managed to achieve significant time savings in our development work through extensive reuse of existing 3D models, which are now combined in a model library, where they can be retrieved when the need arises. The CAD system has also helped to increase the precision in the design of the concrete elements that are now constructed with a precision of one millimeter. Moreover, it is also much easier to handle design changes," explains Valtteri Vauramo.

Together with the much-improved documentation, which is created by the 3D CAD system, these factors are extremely important for ensuring quality in the production of components. The importance of precision in construction work, change management, and proper documentation for production becomes even more important because the weight and size of the concrete elements in most cases makes it necessary to have them produced locally from changing suppliers.

Desire for PDM

SolidWorks Enterprise PDM is on top of the wish list at Marinetek. The reasons for implementing a PDM system include the collaboration with Technomarine. The Canadian company also is using SolidWorks in the design of its aluminum constructions. Furthermore, some of Marinetek's 3D

modeling work is placed with a subcontractor in India, who is also using SolidWorks. The PDM system will make the daily cross border cooperation much easier.

"We will probably implement SolidWorks Enterprise PDM in the near future. At the moment the exchange of design information with our partners is taking place with FTP servers or by email, and that is both cumbersome and complex. The PDM system will really be a help to us because it completely eliminates the need for this kind of file exchange," points out Valtteri Vauramo and adds: "We are also currently running the risk that multiple and non-consistent entries of design data for the same parts are made by us, our subcontractors or partners. This applies for example when our subcontractor is doing assembly construction. Using PDM and versioning control with the system, we will avoid this while the PDM system also ensures full control with our production drawings."

"Today, all our concrete products are modeled in SolidWorks. Furthermore SolidWorks Simulation is used to perform FEM calculations on more complex parts. We use the FEM calculations both internally, in reports to clients and also in the documentation to subcontractors," explains Marinetek Design Director Valtteri Vauramo.



3D sales and marketing

SolidWorks also plays a significant role in the sales and marketing activities at Marinetek. The company now produces drawings and photo-realistic 3D visualizations using PhotoView 360th. "From time to time we use models of our marinas created with PhotoView 360 and we can drop our models into existing 3D models of urban environments, so customers can get a realistic picture of how the marinas will fit into the surrounding environment. With SolidWorks and Photo View 360 we can produce much nicer and highly realistic models of our marinas."

He adds that the use of SolidWorks has also made it very easy to import 3D models from the industrial designers Marinetek work with directly into the CAD system: "Today we are getting the full benefits from using the models directly. That was not possible before," Valtteri Vauramo emphasizes.



Dassault Systèmes SolidWorks new CEO

In the beginning of January, Bertrand Sicot took over from Jeff Ray as CEO of Dassault Systèmes SolidWorks. Bertrand Sicot is French and has been employed with SolidWorks since 1997. Sicot has held numerous executive positions, including regional sales manager for Dassault Systèmes SolidWorks in Western Europe and Scandinavia, and was also the second European employee of Dassault Systèmes SolidWorks.

Prior to assuming the responsibility of CEO, Bertrand Sicot was in charge of Dassault Systèmes SolidWorks' North American sales organization. He holds an engineering degree from Ecole Nationale Supérieure des Arts et Métiers in Paris.

DS SolidWorks puts Cloud products on top of the strategic agenda

SolidWorks World 2011 was bursting with optimism for the future mixed with both small and large product announcements including not least, the first samples of products based on cloud computing.

This year's SolidWorks World in San Antonio Texas was in every way a powerful demonstration of the position, Dassault Systèmes SolidWorks has achieved after only 15-years in the PLM-arena. With nearly 5.000 guests from all over the globe, the number of participants at the 13th edition of SolidWorks World set a new record. The partner exhibition also saw a record number of exhibitors with no fewer than 115 partners displaying their solutions.

Naturally, Dassault Systèmes SolidWorks' new CEO Bertrand Sicot was at the center stage of the comprehensive arrangement. Bertrand Sicot took over as CEO shortly after New Year replacing Jeff Ray. SolidWorks World 2011 also meant saying goodbye to Jeff Ray, who has been being promoted to a management position in the parent company Dassault Systemes. Jeff Ray was opening the event officially on the first day's General Session.

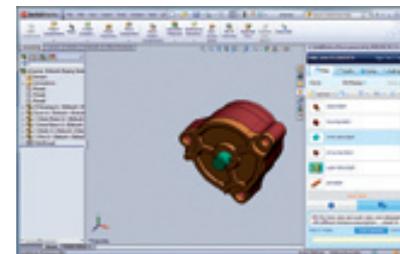
Even beforehand it was clear that Cloud Computing would play a key role at the user meeting. That turned out to be true, but Bertrand Sicot started out by promising participants that despite Cloud launches, DS Solidworks will now and forever be delivering

its products on three computing platforms: "We will always supply our systems as online products, products for mobile platforms and locally installed applications," he underlined very strongly in his keynote speech at SolidWorks World.

Product development collaboration

The main product introduction of the conference was the Cloud Computing-based system SolidWorks n!Fuze, which is facilitating cooperation between small and medium enterprises with one to three SolidWorks licenses. SolidWorks n!Fuze makes it possible to share 3D models and other design details, between companies and their partners, subcontractors and customers via a common virtual "meeting room" located in "the cloud". The meeting room also allows for commenting on specific content in development projects. The design and layout of the meeting space has a vague resemblance to both playlists in Apple's iTunes and the file-sharing tool DropBox.

Although SolidWorks n!Fuze draws on elements from the PDM technology, product manager John Ellsworth who heads the nFuze



initiative emphasizes that it is not a PDM system but merely should be seen as a tool for online collaboration. SolidWorks n!Fuze so far only exists in a version which does not contain a 3D viewer with the possibility of redlining, but John Ellsworth promise that this will be part of a later version of the product.

Sneak preview of SolidWorks 2012

In a skit to illustrate some potential coming features in SolidWorks 2012, the CAD Cops under the leadership of Chief of Police Jeff Ray, set out to catch some poor CAD users who were criminally enslaved by their bad development habits. The cops confronted the users with their lack of good development

procedures and the users were lectured on how the upcoming SolidWorks 2012 can make things much smarter.

This sneak preview of the next version of SolidWorks revealed that the CAD system among many other things contains improved tools for the unfolding of sheet metal, improved layout tools for drawing creation, a new module to assess the production costs, tools for optimization of mechanical motion simulation, photorealistic visualization during the initial design phase and not least of all, much easier handling of large assembly designs.

3D-sales network

Dassault Systèmes CEO Bernard Charles was on the podium during the first day of the conference to unveil a new 3D presentation and sales tool called POST3D. The system is a new member of Dassault Systèmes SolidWorks 3DVIA family of authoring and presentation tools.

The internet-based virtual reality solution allows companies to invite clients who are on a different physical location into a virtual space for a lifelike presentation of new products. Participants in the demonstration can "walk around" inside the room and view a product such as a complex machine from all the desired angles. "Post 3D will change the way businesses are able to perform their sales work. It gives them completely new opportunities in the presentation of their products," stated Bernard Charles.

PLM Group will offer ready-made POST3D design and sales presentations on behalf of companies that need this type of sophisticated 3D presentations, explains PLM Group CEO, Jess G. Frandsen.

New AEC system

At SolidWorks World, Dassault Systèmes SolidWorks also took a major step in a new direction for the company. The attendees were presented with a Cloud-based AEC-system (Architect, Engineering and Construction) called SolidWorks Live Building. The system is still in the development phase

and is not yet ready to hit the market.

AEC is an object-based, highly automated 3D system, which is likely to cause a lot of concern for competitors. In a short demonstration participants could see how it is extremely fast to build intelligent 3D models of buildings and their interiors. PLMagazine will present SolidWorks Live Building in more detail, when the launch gets closer.

Houston – we have a problem

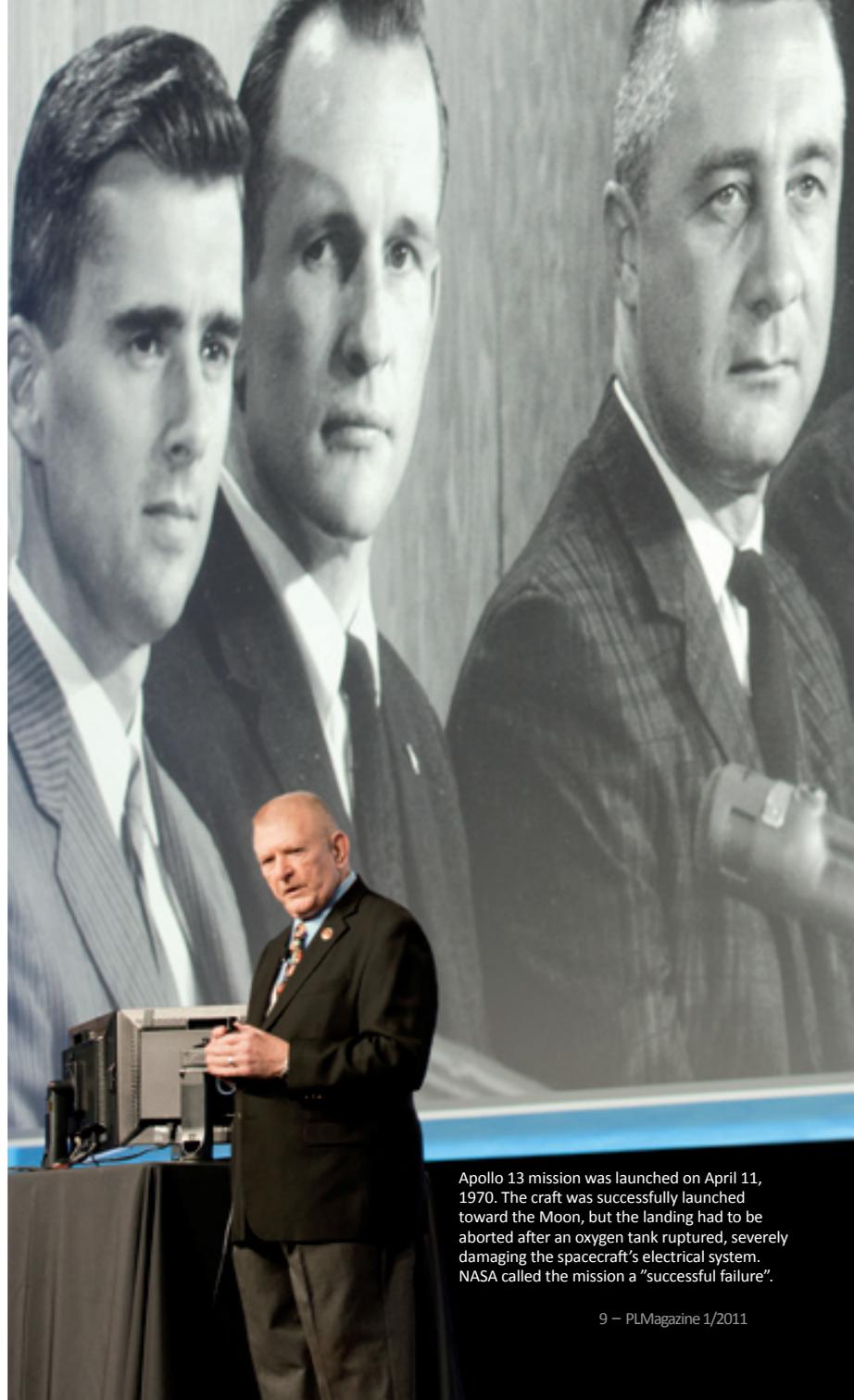
The attendees at SolidWorks World was presented with the one of the ultimate examples of how bravery combined with technical skill can turn a critical situation into success. Dassault Systèmes SolidWorks had invited the astronaut Jim Lovell, captain of Apollo 13 and Gene Kranz, who was leading the third lunar mission from the control center in Texas on the day in April, 1970 when the famous message "Houston - we have a problem" was sent from the three astronauts in the crippled space capsule.

The two elderly men in a thrilling show described how a series of almost impossible technical challenges under the motto "failure is not an option," were solved to bring the astronauts Jim Lovell, Jack Swigert and Fred Haise safely back to Earth.

During the rescue the technical skills and creativity of both astronauts and the engineers in the control center were stretched to the limit to make improvised solutions that could secure the supply of clean air, electricity and not least, rocket power to steer the capsule onto the correct course back towards Earth.

Next year in San Diego

Attendees of the three days had been taking part in a broad program of technical training sessions, meetings and social events. As is the tradition on the final day, Bertrand Sicot announced the location for the next edition of SolidWorks World. The 14th edition of SolidWorks World will be taking place February 12th-15th, 2012 in San Diego, California.



Apollo 13 mission was launched on April 11, 1970. The craft was successfully launched toward the Moon, but the landing had to be aborted after an oxygen tank ruptured, severely damaging the spacecraft's electrical system. NASA called the mission a "successful failure".

IN BRIEF The Tallinn based development company was started in 2003 by Raoul Renser and Jaan Meikup. The company currently has 12 employees. The main product is snowplows, but Meiren Snow also develops equipment for road maintenance and performs development projects for other companies as well. www.meiren.ee

Small innovative company fights the snow on Scandinavian roads.



Toomas Uibo,
CEO Meiren Snow

The rapidly growing Estonian company Meiren Snow is utilizing SolidWorks intensively in the design and simulation of its advanced snowplows.

The small Estonian development company Meiren Snow and its creative use of SolidWorks is entitled to a lot of credit in the fight against this winter's heavy snowfalls in Scandinavia.

The company's snowplows have been hard at work ensuring that Scandinavian roads and airports have been cleared of the huge amounts of snow, allowing travelers to continue uninterrupted.

SolidWorks plays a key role in the development of the company's innovative solutions and is part of the reason that in only a few years, Meiren Snow has managed to become an important and rapidly growing player in the Scandinavian market for snowplows.

The Tallinn based company was founded in

2003 and has developed a broad portfolio of different types of snowplows for various uses from highways to city streets and airports. The plows are available in many versions, which can be mounted in several different ways on various types of vehicles such as vans, trucks, wheel loaders and tractors.

The company concentrates primarily on product development with snowplows being their main products. Meiren Snow also works with product and project development for other companies as well as with the development of road maintenance equipment. The production of the company's products is entrusted to other affiliates of the mother company allowing Meiren Snow to focus on its core competency of product development with SolidWorks as their key tool.



“We are an innovation company and SolidWorks plays a decisive role in our development efforts. The 3D CAD system combined with FEM-analysis and motion simulation in SolidWorks Simulation is crucial in both design and engineering of our products,” Toomas Uiibo explains.

Focus on development

The development company is an intensive user of SolidWorks. During the first five years of the company's life, its focus was mainly on product development, which took place in close cooperation with customers. The sales activities at that time had less attention but that has changed drastically over the last two years, explains CEO Toomas Uiibo.

In 2009, the Estonian company got its first commercial breakthrough in Norway and last year the company also managed to make a breakthrough in Sweden, where its market share is rapidly growing. The last two years have clearly been the turning point when the company has managed to triple its turnover.

Toomas Uiibo describes Meiren Snow as “a relatively small company with a great potential”:

“We are an innovation company and SolidWorks plays a decisive role in our development efforts. The 3D CAD system combined with FEM-analysis and motion simulation in SolidWorks Simulation is crucial in both design and engineering of our

products,” he explains. The Company employs 12 people of whom 10 are engineers.

Design and simulation

Tõnis Ots is a mechanical designer in the development department and a daily user of SolidWorks. He said the company today has a great number of different models of snowplows that are developed with SolidWorks. As an example he points to the entire product family of high speed diagonal snowplows for mounting on trucks. Tõnis Ots explains: “An assembly construction of a snowplow contains more than 1,000 individual parts, and many of these are designed as sheet metal parts. We use a lot of different configurations of our assemblies to show different levels of detail and the kinematic positions of the snowplow.”

Toomas Uiibo explains that simulation with SolidWorks Simulation plays a key role in product development. This applies to both calculations of strength via FEM analysis and simulation of mechanisms and movements. “We have made a large number of strength

calculations. FEM analysis helps us to optimize the design of the individual parts of our snowplows and gives us an early overview in the development process of engineering properties, for example stiffness and the overall strength of the plows.”

He adds that the company has also performed FEM analysis for the development of other products such as conveyors, crane box girders, wind turbine foundations, platforms and stairs etc. Toomas Uiibo says:

“We see a growing interest from Scandinavian companies to use our services in this area. Firstly we have the right tools, secondly we possess knowledge and skills and last but not least we can offer low project costs.”

He tells that the company has in some cases experimented with SolidWorks Sustainability

to make assessments of the sustainability of its products, but this kind of analysis is not yet a part of everyday life with the company.

Reflections on PDM

The development company is not currently using a PDM system, but Toomas Uiibo reveals that PDM is among the subjects included in the considerations for the future path of the company. “We have discussed PDM. Our product portfolio is growing rapidly and so does the number of 3D-assemblies and parts as well as 2D-drawings, so it may be necessary for us on a longer term to implement a PDM system to keep track of all our technical information,” he says.



PLM Group Cool Design

- Do you think the designs you created with SolidWorks are really cool?
- Have you created rendered images for your product marketing?
- Enter them into the contest using the online form and could win an Apple iPad, AR.Drone or SpacePilot!
- www.plmgroup.eu/contest



Contest 2011

15 March - 31 May 2011

Challenge your colleagues from Sweden,
Denmark, Finland, Estonia and Latvia!



How to Enter the contest...

→ TAKE A PICUTRE OR CREATE AN ANIMATION

Capture a screenshot or create a rendering of your design using PhotoView360 or PhotoWorks e.g. 1000px JPG file or record an animation of your design in action or create a fly-by or walkthrough of your model.

ZIP THE ENTRY FILE

→ Compress your screenshot, rendering, or animation file[s] to make it easier to submit online.

SUBMIT USING THE FORM

→ WWW.PLMGROUP.EU/CONTEST

Using the form tell us about your design and how SolidWorks helped you, attach the file and submit your entry.

IN BRIEF Norma Precision AB hunting and sport shooting. The company has 160 employees and annual turnover is around 215 million dollars. Norma is now part of Swiss Ruag group with headquarters in the Swedish town Åmotsfors. www.norma.cc

Ammunition company overtakes rivals with 3D CAD and PDM from SolidWorks

SolidWorks and SolidWorks Enterprise PDM has enabled munitions manufacturer Norma Precision AB to gain a clear competitive advantage by facilitating production of specialized ammunition in small quantities.

Munitions manufacturer Norma Precision AB has made it their niche to develop and manufacture small quantities of custom ammunition for hunting and sports shooting. SolidWorks and Solidworks Enterprise PDM has been the enabling factor with Norma Precision's success in establishing their market position and have created steady growth in both revenue and profits.

Norma Precision's production of specialized products in relatively small numbers is unique in the munitions industry and is a result of strong demand from customers for more specialized products.

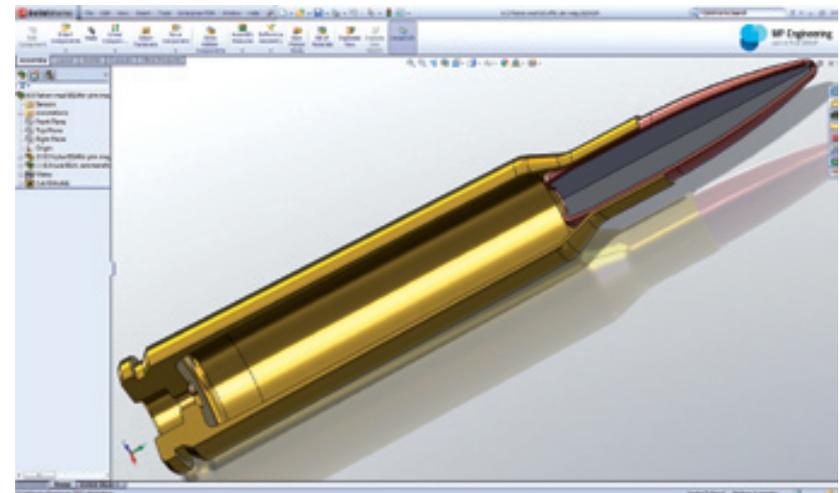
Norma Precision's technical department is working on developing both products

and production technologies. Investing in SolidWorks Professional has allowed the department to change from working with a 2D CAD system to designing exclusively in 3D with SolidWorks.

The 3D CAD system has resulted in a significant improvement in the productivity of the technical department. The development time for new cartridges has been cut by half while also reducing the possibility of errors during the development process.

Additional Benefits

"One of the major improvements we have achieved with SolidWorks is that we can make collision tests when we design new production machinery. Already in the development phase we can ensure the



machines will work properly in real life. It saves us a lot of precious time when a machine design is correct the first time," explains production manager Stellan Johansson.

"Bullets consist of lead and brass and a

proper placement of the center of gravity ensure that the bullet moves in a straight line and does not tumble through the air uncontrolled," adds Johansson. SolidWorks plays a vital role in simulating the center of gravity to create the optimum projectile.

Stellan Johansson also points out that Norma Precision is now saving considerable development time because SolidWorks has enabled the company to import 3D parts from subcontractors directly into its own 3D models.

Construction re-use

Norma Precision now produces small batches in numbers from 5,000 to 10,000 bullets. The company is unique in this regard and

dominates this marketplace completely. Since the sale of cartridges in small series represents a growing proportion of the turnover on the ammunition market, this has contributed to the steady growth of the company's revenue and earnings every year.

The foundation that makes Norma Precision able to produce ammunition in small series by doing variants of existing designs has been significantly improved both thanks to SolidWorks and not least through the company's investment in SolidWorks

Enterprise PDM. "When we develop new cartridges, the PDM system lets us quickly and easily retrieve existing 3D models, which are close to the customers' specifications. We reference a few strategic measurements from the customer's specification and PDM system presents us with a number of existing 3D models that will be possible to reuse with just a few modifications," explains Stellan Johansson. "A product like a cartridge with a casing and casing may seem a fairly simple product, but the fact is that the design of

the tools used in production, requires about 170 3D models, if we have to design a new cartridge from the very bottom."

Broad product portfolio

Norma now has 3D models of over 100 different calibers of cartridges between 5.6 and 12.8 millimeters stored in the PDM system. Stellan Johansson points out that this is a very broad product portfolio relative to that of the competitors: "We have about 43,000 different types of files, including 3D models from the CAD-system residing in SolidWorks Enterprise PDM. We currently use approximately 9,000 of the files as the basis for our development," he says.

Requirements for traceability

Manufacture of ammunition is surrounded by very strict international safety standards and very high standards for quality that requires full traceability of product information. This applies not least to measurement of length, diameter and projectile alignment with the casing.

"SolidWorks has allowed us to achieve a precision of one hundredth of a millimeter in our production machines. The full documentation has to be filed in the PDM-system forever, among other things because it may be needed if one of our cartridges, somewhere in the world, can be suspected for causing an accident," Stellan Johansson points out.

Close and constructive cooperation

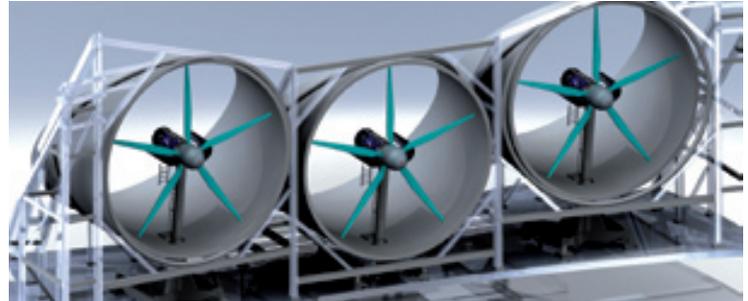
"We have had first-rate support from PLM Group teams in Sweden both in regard to the replacement of our 2D CAD system and implementation of the PDM system, which went very easily and smoothly. I am very happy to say that over the years we have developed a close and friendly relationship with the PLM Group teams," says Stellan Johansson.

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IN BRIEF Norwin A/S was founded in 1992 as a development company dealing with wind turbine technology. The main products are a 225 kW and a 750 kW wind turbines. Today, the company's main focus is innovation in the windturbine area combined with license sales and technology transfer to a number of licensees who are basing their products on Norwins proprietary technology. www.norwin.dk

SolidWorks 3D CAD and PDM ensures quality in development of wind turbines



Norwin A/S develops customized wind turbines manufactured by licensees. The company has made the strategic decision that all future development will be done in 3D in SolidWorks combined with SolidWorks Enterprise PDM.

The Danish developer of windmills Norwin has put 3D CAD and PDM on top of its strategic agenda for the future. Previously the entire development of the firm's wind turbines had been done using a 2D CAD system, but this is coming to an end now explains development manager Niels Peter Kofoed: "We have taken a strategic decision that all our future development and major modifications to our existing models shall be done in 3D with SolidWorks. In addition, the management of all our product information will be done with SolidWorks Enterprise PDM."

Norwin has specialized in developing

wind turbine technology while the mills are produced by four licensees based in amongst other places U.S., China, India and Brazil. The licensees also take care of sales. The wind turbines engineered by Norwin are smaller turbines for specific purposes and locations. The company's core business is centered on the development of 225 and 750 kW turbines.

One of the company's recent assignments where SolidWorks has been applied in full has been the development of three 20 kW wind turbines that are mounted on a new high-rise in London.

"Building integrated mills is somewhat of an oddity for us and it is not a future area of strong focus, but gives us great marketing

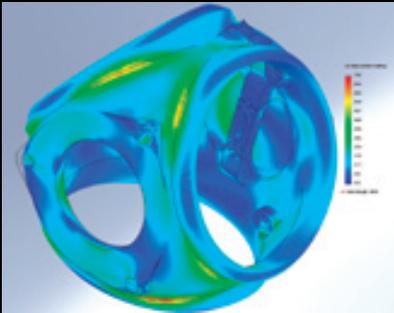
value," explains Niels Peter Kofoed. Despite the rarity of such projects, it does illustrate the power of their SolidWorks fueled design capabilities.

According to Niels Peter Kofoed Norwin goes all the way in supporting its licensees and spends a lot of time to train them on how to produce, assemble and raise the turbines as well as how to maintain them. "Much of our work is spent on the production of technical drawings plus some pretty comprehensive manuals with descriptions, instructions and pictures that are technically adapted to the local conditions in the countries where the turbines are produced," he explains.

New opportunities with 3D CAD

The introduction of SolidWorks opens up numerous new opportunities for Norwin. "We have high hopes that in the future we can make our designs based on configurations and variant construction in the 3D CAD system. This way we can both serve our customers needs faster and at the same time keep better tabs internally on our designs," explains Niels Peter Kofoed.

For Norwin it is crucial to ensure the full control of the development work, so any changes in a design are immediately updated with all licensees: "If we today make a change in design to one of our licensees, there is no IT system, forcing us to update the same



information to our other licensees. It is only our internal discipline and quality control that can do that. With 3D CAD models controlled by the PDM system, all of the updates will take place automatically," says Niels Peter Kofoed.

Increasing the competitive power

The development company currently has a number of constructions that are a few years old: "If you really dig into them, there are many areas where they can be considerably optimized with 3D CAD," assesses Niels Peter Kofoed.

As an example he mentions the mill houses. Should there be room made for new facilities

such as hoses, pipes or extra cabinets and it is hard to grasp the three dimensional reality inside the turbine housing from a 2D drawing. With 3D CAD Norwin with much greater accuracy and will be able to create solutions where licensees do not have to make major last minute changes on the factory floor," explains Niels Peter Kofoed.

"Our main interest is to make them even more competitive. We earn money through the payments we receive from them on delivery of the technology plus the subsequent royalties. In that respect we are sharing the same boat. The more mills our licensees can sell, the more money we earn. We can only support their sales by ensuring that our designs are of high quality, correct and constantly updated," he says.

High hopes for PDM

Today there is not necessarily consistency between the various licensees' versions of drawings of the same wind turbine. The manual updating of information can result in differences in the information found in the BOM's that they are currently keeping in Excel spreadsheets as well as the information found in the 2D CAD drawings. Therefore the expectations to the effects of implementing SolidWorks Enterprise PDM are high. The PDM system will ensure complete control

of both versions of BOM's, 3D models and manufacturing drawings and the history about other types of information to licensees.

Closer cooperation

The licensees will ultimately be linked more closely to the PDM system, so information from them can also be controlled via the system. For example, the questions about changes that are currently handled through emails will be easily handled with the PDM system.

The web interface in SolidWorks Enterprise PDM will make it possible to integrate the licensees more closely with Norwin. Among other things, the integration will make it possible to exchange drawings and parts lists with the system. "But first we will use PDM to create more order in our own house," says Niels Peter Kofoed.

FEM-analysis

In addition to 3D CAD and PDM Norwin has also taken SolidWorks Simulation in use for FEM analysis doing strength calculations

and also to a lesser degree, simulation of movements.

Norwin is also considering in the longer term to implement 3DVIA Composer: Niels Peter Kofoed explains: "I can easily see the potential for us in using 3DVIA Composer. We could for example use the system to produce more interactive types of technical documentation and manuals. But we have to take one step at a time, and first we must be ready to implement 3D CAD and PDM fully."



"We have taken a strategic decision that all our future development and major modifications to our existing models shall be done in 3D with SolidWorks. In addition, the management of all our product information will be done with SolidWorks Enterprise PDM." explains development manager Niels Peter Kofoed, Norwin A/S

Sky-high IT solutions opens up new opportunities in the PLM world

Cloud computing facilitates IT solutions where and when you need them. Cloud solutions are independent of time and place and delivered a bit like electricity. Dassault Systèmes SolidWorks is in the forefront of the cloud revolution.

Imagine that you can use your CAD or PDM system anywhere, whenever you need it and with almost unlimited computing power available. That is precisely the point of cloud computing.

A program used on the other side of the world run on the “cloud” may be run on another computer at the other side of the world and access the same services if you have a suitable Internet connection.

“The cloud” consists of a number of interrelated physical servers gathered in giant installations known as server farms. These farms are using a so-called “virtualization” technology to create a myriad of software based virtual servers that run application software to solve a vast number of business and consumer tasks. Cloud is an evolutionary development of Service Oriented Architecture (SOA) and so-called utility computing, where the Internet is the link that provides for the deployment of IT

services from the server farms to millions of users around the globe. The deployment of software through services is also known as SaaS (Software as a Service).

Paradigm Shift

Cloud computing basically means that users can draw on both programs and very large computing resources via the Internet and broadband connections. According to the renowned American writer Nicholas G. Carr, who specializes in describing how IT is reshaping the world, cloud computing means a paradigm shift in the whole way we use IT.

He points out that the change of IT infrastructure is very similar to what occurred in parts of the utilities sector at the beginning of the last century. At that time, electricity was typically produced locally for use locally. Now electricity is distributed via powerful cables from big power plants at different locations. With cloud computing the same

thing is happening to computer programs. The programs are located on a network of geographically dispersed powerful servers linked together and made accessible to users via cables and / or wireless connections.

Cloud computing also increases the independence of platforms. Programs can be run on specific clients or via web clients using virtually all types of computers, whether they are PCs, Macs or mobile platforms like Android, iPhone, iPad and other similar Tablet PCs.

Existing concept

Despite the recent surge in cloud computing popularity and use, it has been in existence for a long time without much attention. Widely used examples of solutions that use cloud technology is for example Gmail, Google Apps, and Hotmail and other similar web-based services. But it will take years before the majority of the applications that

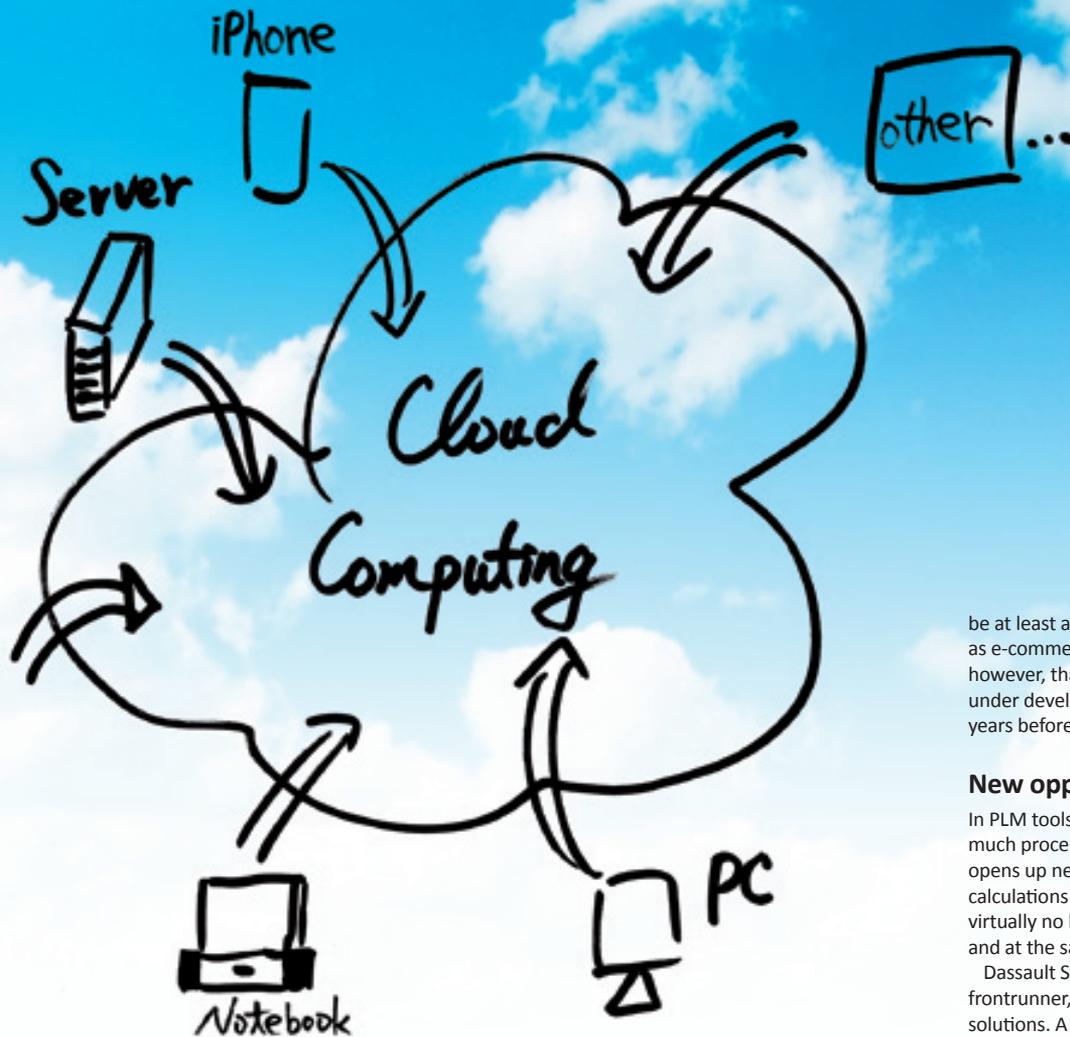
currently run on “desktop” move “up” to the cloud.

Reasons for this slow adoption of cloud-based applications include concerns over security and accessibility. However, the major providers of IT infrastructure are working feverishly to resolve these issues. Business critical cloud solutions are typically delivered containing various guarantees of service, security and quality of services.

Payment for cloud solutions is another outstanding issue. The preferred payment model right now seems which is quickly gaining momentum is subscription based, but also payment based on the time users spend using a given software solution is being used by some suppliers as a payment model.

With the IT research companies there seems to be little doubt that cloud computing is the future. Gartner Inc. predicts that the prevalence of cloud computing will





be at least as influential on the way we use IT as e-commerce has been. Gartner stresses, however, that cloud computing is a concept under development and that it will take many years before the technology is fully matured.

New opportunities for PLM

In PLM tools, which traditionally requires much processing power, cloud computing opens up new possibilities to execute calculations on computer systems with virtually no limitations in computing power and at the same time plenty of storage space.

Dassault Systèmes SolidWorks is a frontrunner, when it comes to cloud-based solutions. A good example is the brand new engineering collaboration system N!Fuze, which was launched at SolidWorks World 2011 in San Antonio, Texas. Utilizing technologies from Dassault Systèmes' cloud-based PDM system ENOVIA V6, Dassault Systèmes SolidWorks has created a system for

collaboration between SMEs, their partners, suppliers and customers. Through the cloud, N!Fuze users are able to share design files and also exchange other kinds of information.

Another example of a cloud-based system to emerge later from Dassault Systèmes SolidWorks is LiveBuildings, which is an advanced 3D CAD system for building design.

Simulation

Dassault Systèmes SolidWorks is also considering how to implement simulations through the cloud. This seems quite natural, since tasks like flow simulations or simulations with the Finite Element Method to examine the strength of designs, have been straining the processing power of desktop computers and local servers to the utmost.

"With the computational power of cloud solutions this would no longer constitute a problem," explains Stephen Endersby, product manager for SolidWorks Simulation.

IN BRIEF Since the 1950s Hellgrens Truck Service has produced trailers and accessories for the haulage industry. In the early 1980s the group merged its two companies Skellefteå Lastvagnscenter and Bureå Verkstad and changed its name to the present. The company is now

divided into three business segments: Servicing of trucks, warehousing of spare parts and development of trailers under the product name Hellgren/Bure. www.hellgrens.se

SolidWorks Simulation results in lighter and better truck trailers

Better products and increased productivity are just a few of the benefits Hellgrens truck service has gained using the simulation and welding tools in SolidWorks in a smart and simple way.



The Swedish company Hellgrens truck service produces trailers for use with heavy vehicles such as tractor trailers. The company has been able to increase its productivity remarkably by using SolidWorks Simulation and SolidWorks as a tool in an unusually creative development process for welded plate structures.

The company has managed to reduce the weight of a standard trailer by a ton, increased the precision of design work and also significantly reduced the amount of scrap from production, reducing the environmental impact. There is almost no end to the benefits the company has achieved with the investment in SolidWorks Professional.

“Haulage companies want lighter trailers that at the same time can carry as much as possible. For a designer of trailers, it means that it is necessary to optimize the relationship between weight and strength. We do this partly by using the right materials, partly by developing smarter solutions, and this has become much easier with SolidWorks. We also have had very strong support

from the PLM Group team in creating new development processes,” says mechanical designer Robert Marklund.

Sheet metal replaces beams

“Before we based our chassis on H-beams, but because the beam structures are unnecessarily heavy, we have substituted them with a sheet metal construction. The metal plates are cut with a laser cutting machine, and the structures are much lighter. By using SolidWorks Simulation for FEM analysis, we ensure that the welded plate structures can carry the weight load of the cargo they are designed to transport. The simulation tools in SolidWorks are very graphically oriented and thus easy to understand,” explains Robert Marklund

The designers are analyzing the trailers load capacity by stepwise removing material from the CAD models until the critical point is reached. We then take a couple of steps backwards to get a sufficient margin. Through these iterations, they work their way to the optimum proportions of the construction,

weighing as little as possible while sufficient strength is still upheld.

A reduction of the weight of a trailer by one ton, combined with the fact that it has retained its original strength means it can carry a ton more, and it has great economic importance to a hauler. Furthermore, there is a ton less to transport, when a trailer returns empty. This also means less impact on the environment with CO2 from the truck exhaust and less wear on roads.

Fast design of variants

Robert Marklund highlights more advantages Hellgrens truck service has gained from using SolidWorks Professional:

“We have been able to cut development time by 50 percent, because we can now work with variant structure at the part level. If one imagines that a customer wants a 14 meter long trailer instead of a standard 12.5-meter model, we only need to change the length measure in the existing 3D CAD model.”

SolidWorks automatically calculates then the consequences for the chassis, fittings and holes. And the CAD program always calculates correctly and remembers all the details.

“It also means that the laminated plates that serve as trailer sides, floors and ceilings are cut so they fit exactly to the dimensions of the trailer when they subsequently are mounted. It reduces waste in production, because we avoid discarding the plates because of trivial measurement errors,” says Robert Marklund.

The time the company has gained in the design process is used to develop its designs of trailers further. Design is something that plays an increasingly important role in the haulage industry.

“We simply can develop nicer trailers. The next step will be that we use eDrawings to communicate with our customers so we can engage in a dialogue with them already at the design stage,” explains Robert Marklund.

In this way the company



expects to get even more satisfied customers because they have been able to assess a new design from a simple-to-understand 3D model instead of 2D drawings which can be pretty difficult for them to understand.

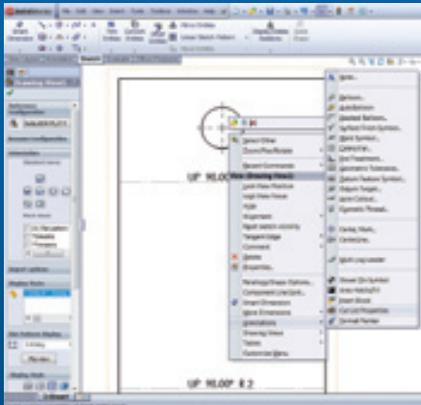
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Tips & Tricks

01 Sheetmetal 2011

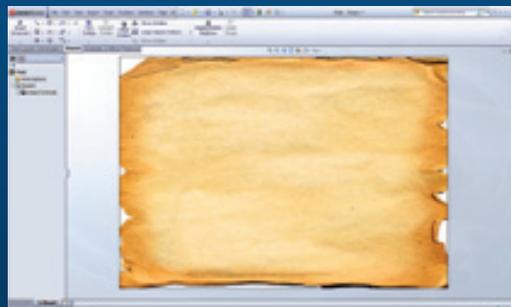
In sheetmetal 2011 version you can insert a textblock in the drawing with automatically calculated Sheetmetal parameters. Right mouse click on an empty area in Flat Pattern view and choose Annotation/CutList Properties and place text block with parameters into the drawing. PS! Do not click on geometry in view!



```
Bounding Box Length: 201.42mm
Bounding Box Width: 100mm
Sheet Metal Thickness: 2mm
Bounding Box Area: 20142.48mm^2
Bounding Box Area-Blank: 19314.16mm^2
Cutting Length-Outer: 602.85mm
Cutting Length-Inner: 125.66mm
Cut Outs: 2
Bends: 2
Bend Allowance: 0.5
Material: Material (not specified)
Weight: 39.02 g
Description:
Bend Radius: 2mm
```

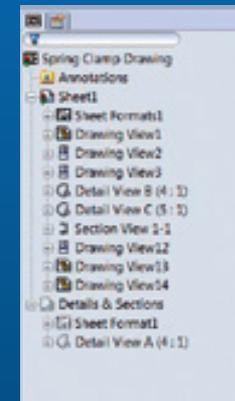
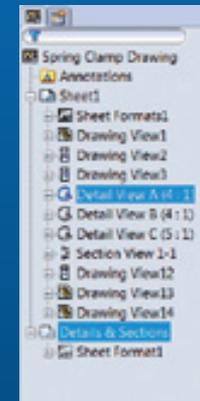
02 Paper color

You can change your drawing paper background picture. Go to Tools/Options/Colors and uncheck „Use specified color for drawings paper color (disable image in sheet background)“. Go to you SolidWorks installation folder and data/Images\drawings Drawing background picture is sheetbackground1.bmp Rename exiting pic and copy a new bmp with old name. Restart SolidWorks.



03 Moving Drawing View

Sometimes you need to move some detail views to another drawing sheet? Just drag and drop view to another sheet. But take it from tree, see pics.



04 Close context toolbar

How to close or avoid context toolbar temporary during a mouse click on a feature? Just press ALT key and the toolbar will be closed. To disable Context Toolbar, go to Tools/Customize... and uncheck „Show on selection“.

“better than new, better than you.”

Casey Pieretti and Bill Spracher from the new Discovery Channel show Bionic Builders participated on SolidWorks World 2011. Their cool designs are made using SolidWorks software.

Casey, a Hollywood stuntman and amputee, and Bill, an engineer/Inventor, related how they push the envelope to build appendages that make their amputee clients not just perform usual tasks, but rock climb, scuba dive, run faster and jump higher.

At the age of 19, Pieretti lost the lower portion of his leg. Since then, he has been looking for ways to allow amputees to transition from being disabled to not only fully enabled, but more enabled than they had ever been... hence the program's catchphrase “better than new, better than you.”

Additionally, Pieretti and Spracher are trying to make prosthetic limbs that as inexpensive as possible. Medical

insurance wouldn't even apply to the types of prosthetics they produce, nor would it need to if the cost is in the right price range. One thing that has helped reduce costs is the standardization of the pyramid fitting. The standard connection also makes marketing prosthetic limbs easier.



 www.ampdgear.com



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