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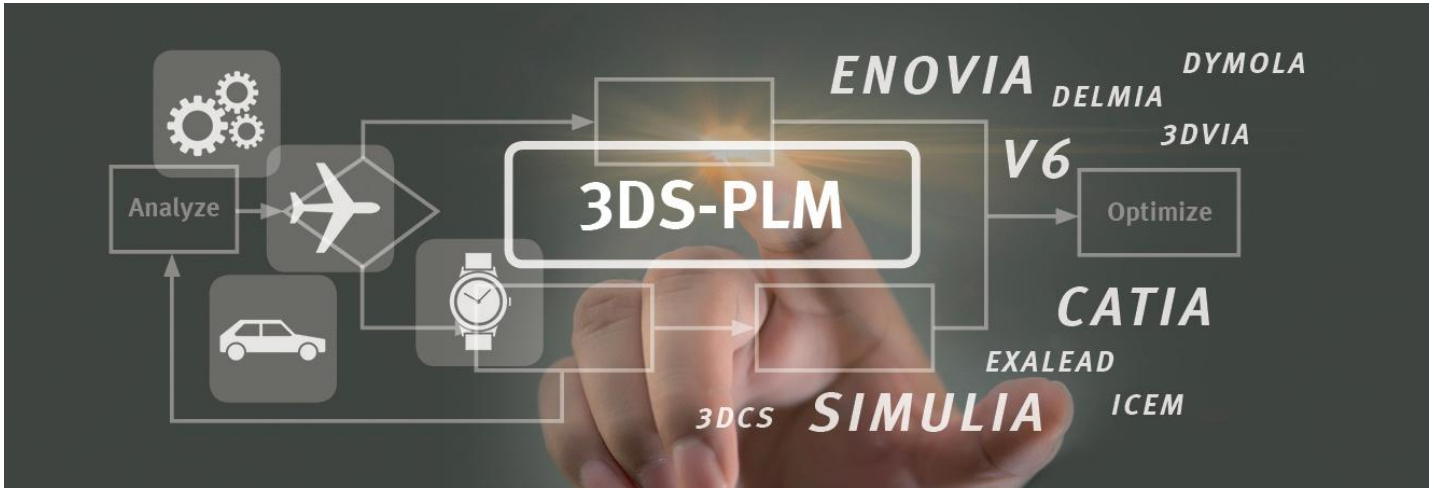

CENIT
Successful with 3DS-PLM

Alin POPESCU, Sales Manager

Machining User Day
01.04.2014 Bucuresti
03.04.2014 Arad

CENIT in a Nutshell

cenit
DRIVEN BY YOUR VISION.

~ 700 committed employees

Established and steadily growing public company

Broad and comprehensive product porfolio

Strong partnerships

14 national and international locations

What we stand for

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Financial Strength

Financial independence

Sustainable increase in shareholder value through steady sales growth

Shareholders participate in the annual success of our enterprise

Customer Orientation

Customer oriented teams

Development of individual solutions

Reliable and long term partnerships

Motivated Staff

Skilled, well trained employees

High level of commitment

Entrepreneurial thinking

Trusted Partner

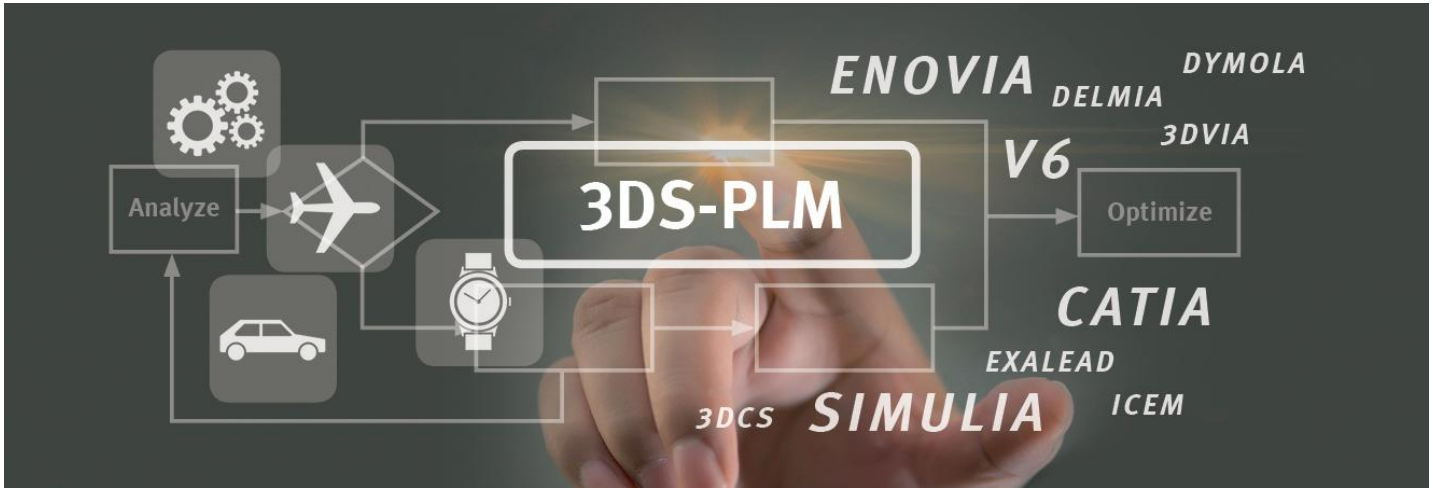
Excellent process and technology knowledge

Optimization of core business processes

High innovative power

Long term partnerships

Our 3DS-PLM Mission



As a leading, multi-national value-added reseller, CENIT AG has the world's broadest Dassault Systèmes PLM solutions portfolio. **Our experts combine decades of experience in 3DS standard solutions with industry-specific process and technology expertise.** We have the "know how" to help you succeed!

CENIT's industry and business process experts for the manufacturing, automotive, industrial equipment, aerospace and consumer goods industries support you to optimize your current product development processes.

3DS-PLM Skills

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Product Development Experts

Product Lifecycle Management Experts

Assembly & Production Experts

Process Analysis & Consulting	Workflow Analysis	Project Management
Methods development	Simulation / Training	Implementation
Software Development	User Help Desk	System Installation

Industry Portfolio Roadmap

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Mechanical Design	CATIA V5/V6
Electrical Solutions	CATIA V5/V6
Composite Design	CATIA V5/V6
Systems Eng.	DYMOLA 7
Virtual Simulation	SIMULIA
Tolerance Management	3DCS (V5)
Collaboration / REQ. Doc / Proj. Mgmt	ENOVIA ST
Config/ Program Change Mgmt.	ENOVIA V6
Search based Applications	EXALEAD
Documentation	3D Via Composer
Manufacturing	CATIA V5 - DELMIA V5/V6
Robotics	DELMIA V5
CENIT Solutions	FASTSUITE / / CENIT Industry Accelerator Suite

The Dassault Systèmes Brands

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CATIA	ENOVIA	SIMULIA	DELMIA	3DVIA	EXALEAD
Digital Product Experience	Collaborative Innovation	Realistic Simulation	Digital Manufacturing	3D Communication	Information Intelligence

One stop shopping with CENIT

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Solutions

Software

Industries

Service

3DS-PLM

Training

CATIA Machining
Some customer references

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DS PLM SUCCESS STORY
IR VISION.

ACT Aerospace (US)

ACT Aerospace engineers use the CATIA Advanced Machining module to create computerized numeric control (CNC) toolpaths for producing lay up tools on 5-axis CNC machines. “When we got our new 5-axis machines, we were concerned that we would have to pull the programming back to the engineering department. But CATIA Advanced Machining is so intuitive that operators were soon using it to generate programs for the new machines.”said *J.Mickelsen, Lead CATIA Designer*

ACT Aerospace
Cuts detailed design time 90% with CATIA for Composites

Overview

Challenge
When ACT Aerospace used manual methods for detailed composite design, issues such as wrinkling and warping during layup required design changes that lengthened cycle times.

Solution
ACT Aerospace chose CATIA Composites Engineering to generate ply patterns, simulate lay up, evaluate producibility, and optimize design and material usage. CATIA also generates computerized numeric control (CNC) programs for creating layup tools.

Benefits
ACT Aerospace has reduced the time required for detailed design and prototyping by 90% and reduced material usage more than 18% through increased precision.

"We have reduced the lead time required to produce the detailed design and lay up the first prototype from a month or two to three to five days, depending on the complexity of the part."

Andy Hill, General Manager, ACT Aerospace

Composite detailed design presents challenges
ACT Aerospace of Gunnison, Utah, USA, is a leading provider of composite parts for aerospace and medical applications. After 24 years in business, ACT Aerospace has more than 50 employees and serves about 50 customers.

ACT Aerospace's customers typically provide 3D geometry of the tool surface and a 2D ply layout that has been engineered to meet structural requirements at critical cross-sections. ACT Aerospace's engineers then define the detailed 3D ply layout, build the tool, cut the plies and lay up the parts to meet the customer's requirements.

In the past, ACT Aerospace's engineers used the trial-and-error or "paper doll" method to develop the detailed design. They generated an initial design in their CAD system and then went out on the manufacturing floor and tried to build it. The complexity of the composite lay up process made it difficult to predict how the materials would conform to the tool's complex surfaces and the shape of the resultant flat patterns.

Lay up of the first prototype often brought to light a number of challenges. Sometimes distortion caused the material to draw away from the mold, resulting in geometrical errors and air bubbles. In other cases, a ply sequence imbalance across a 3D shape generated stresses that caused wrinkling or warping. When faced with these and other issues, ACT Aerospace engineers would re-cut the material and try again. The prototyping process took large amounts of time, consumed substantial amounts of expensive composite materials and sometimes even required modification of the tool shape.

Investing in leading-edge technology
ACT Aerospace management made the decision to invest in leading-edge technology to simulate the lay up process on the computer. "Our current customers and other leading aerospace

DASSAULT SYSTEMES

List Components (Austria)

“The CATIA V5 NC module covers the entire machining sequence from roughing to finishing. Through the integrated simulation of material removal and the visualization of remaining material, process safety increases and machining costs are reduced.”

V5 PLM SUCCESS STORY

List Components & Furniture GmbH
Responding to client needs faster with CATIA V5 and Intel processors

Overview

Challenge
List Components & Furniture GmbH designs and produces custom luxury interiors based on client specifications that may change at the last minute and must be implemented rapidly.

Solution
The process-oriented solution based on CATIA V5 and its integrated NC module provides a consistent model that starts with the client's requirements and extends all the way to the production data.

Benefits
List Components & Furniture GmbH has reduced development times, makes changes quickly, and avoids the production of incorrect parts.

"The advantage in using a PLM solution based on CATIA V5 and Intel Xeon Processors is that all parties involved in the development process work with the same data. This accelerates project execution and makes it possible to incorporate changes late in the process."

Bernhard Strobl, IT-Manager, List Components & Furniture GmbH

Customized equipment for business jets
What do the luxury private yacht Lady Lola, the Austrian Cultural Institute in New York and the Bombardier Learjet 45 XR have in common? Their interior furnishings have all been manufactured by the Austrian-based List group.

List Components & Furniture GmbH is synonymous with high quality performance in process-oriented production management. Evolving from cabinet making to the design of specialized interior furnishings, the company uses the synergies between man and furniture efficiently. This results in 'intelligent components and furniture' that are not only decorative, but that serve a purpose for the client. The 270-employee company provides furnishings for various uses such as business jets whose luxurious interiors often vary from one jet to another.

Using OEM CATIA V5 data
Since 2005, List has been using CATIA V5, Dassault Systèmes' collaborative solution for virtual 3D product definition. With CATIA V5 being the industry standard for 3D aircraft design, the List team receives the aircraft structure from the client as a 3D CATIA V5 data model. From this, they design custom layouts such as kitchens. The digital mock-up is then sent to the client for approval. This process satisfies the OEM's objective to receive, from all its suppliers, parts as digital models so that they may be fitted in a virtual environment with other components.

Once approved by the client, the List design team sends the model with the related assembly groups and data to the production department. The latter enters the necessary processes for the manufacturing phase such as milling, drilling and cutting into the NC module and then begins production.

DASSAULT SYSTEMES
intel

CATIA Machining
Some customer references

cenit

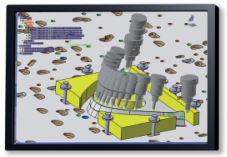
SION.

IBM Product Lifecycle Management

IBM

Kaji Metal Industries

Forges ahead with a three-fold increase in productivity with CATIA V5



"When expert NC programmers use CATIA V5, more ingenuity can drive more capability from the machining equipment."

Ryuichi Ogawa, Executive Director in charge of production technology, Kaji Metal Industries.

Overview

- ***The Challenge***
  With an increase in the volume and complexity of parts and a simultaneous shift to component production, reducing production time was critical for Kaji Metal Industries
- ***The Solution***
  CATIA V5 achieves fixture design and 5-axis machining at higher speeds and accuracy to meet increasing customer demands
- ***The Benefit***
  Compared to conventional methods, Kaji has achieved a three- to four-fold increase in machining productivity with CATIA V5.

More parts, faster production times required

Kaji Metal Industries does high speed, high accuracy machining for aeroplane bodies and main wing components, from the design and production of fixtures necessary for part production to surface treatments and protective coating (painting) of machine products. Kaji is one of the few plants certified by Boeing in Japan and its technology, reliability, high quality and short delivery times are highly valued internationally and domestically.

The company is well-known for large scale machining, for example, both large and complex three-dimensional shapes. To ensure light-weight, uniformity, high strength and reliability, Kaji cuts parts one-by-one from aluminium alloy blocks instead of mass producing parts with die casting using sand or metal molds.

Production within the industry, however, is shifting from independent parts to component production or part assemblies of multiple parts, while the numbers and kinds of parts produced is increasing and companies are under ever-increasing pressure to reduce production time.

Aerospace

Kaji Metal Industries (Japan)

"When expert NC programmers use CATIA V5, more ingenuity can drive more capability from the machining equipment." - *Ryuichi Ogawa, Executive Director in charge of production technology*

V5 PLM SUCCESS STORY

Bombardier Aerospace

Driving collaborative innovation across the extended enterprise with V5 PLM

DASSAULT SYSTEMES

Aerospace

Bombardier Aerospace (Canada)

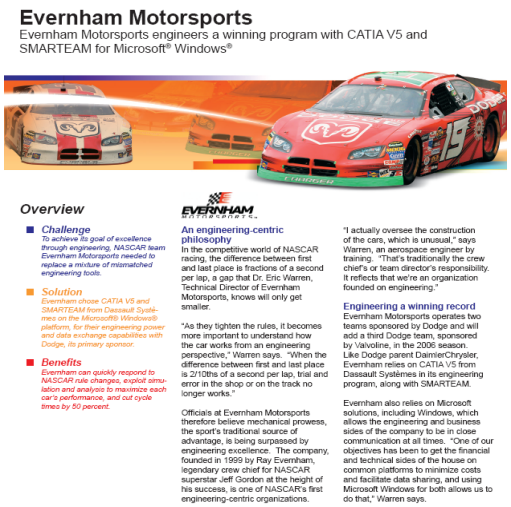
NC Programming time and costs have been reduced by 30%

Engineers need to be able to re-use parts and assemblies from other aircraft programs to jump-start projects, reducing cycle times and cost. Downstream processes such as manufacturing and after-sales require access to detailed design information so they can quickly analyze the impact of design changes on shop floor automation and design

CATIA Machining
Some customer references

Evernham Motorsports (US)

“With CATIA V5, it’s one click to move from design to analysis and then another click to move to NC programming. That’s invaluable because each one of our engineers performs all three tasks, and they only have to learn one user interface. A lot of packages are really good at only one or two. CATIA V5 is great at all three. It has cut at least 50 percent off our development times”, said *Steve Oliver, Deputy Director of Design Services*



V5 PLM SUCCESS STORY

Evernham Motorsports

Evernham Motorsports engineers a winning program with CATIA V5 and SMARTEAM for Microsoft® Windows®

Overview

- *Challenge* — *To achieve its goal of excellence through engineering, NASCAR team Evernham Motorsports needed to replace a mixture of mismatched engineering tools.*
- *Solution* — *Evernham chose CATIA V5 and SMARTEAM from Dassault Systèmes on the Microsoft® Windows® platform, for their engineering power and data exchange capabilities with Dodge, its primary sponsor.*
- *Benefits* — *Evernham can quickly respond to NASCAR rule changes, exploit simulation and analysis to maximize each car’s performance, and cut cycle times by 50 percent.*

An engineering-centric philosophy

In the competitive world of NASCAR racing, the difference between first and last place is fractions of a second per lap, a gap that Dr. Eric Warren, Technical Director of Evernham Motorsports, knows will only get smaller.

“As they tighten the rules, it becomes more important to understand how the car works from an engineering perspective,” Warren says. “When the difference between first and last place is 2/10ths of a second per lap, trial and error in the shop or on the track no longer works.”

Officials at Evernham Motorsports therefore believe mechanical prowess, the sport’s traditional source of advantage, is being surpassed by engineering excellence. The company, founded in 1999 by Ray Evernham, legendary crew chief for NASCAR superstar Jeff Gordon at the height of his success, is one of NASCAR’s first engineering-centric organizations.

“I actually oversee the construction of the cars, which is unusual,” says Warren, an aerospace engineer by training. “That’s traditionally the crew chief’s or team director’s responsibility. It reflects that we’re an organization founded on engineering.”

Engineering a winning record

Evernham Motorsports operates two teams sponsored by Dodge and will add a third Dodge team, sponsored by Valvoline, in the 2006 season. Like Dodge parent DaimlerChrysler, Evernham relies on CATIA V5 from Dassault Systèmes in its engineering program, along with SMARTEAM.

Evernham also relies on Microsoft solutions, including Windows, which allows the engineering and business sides of the company to be in close communication at all times. “One of our objectives has been to get the financial and technical sides of the house on common platforms to minimize costs and facilitate data sharing, and using Microsoft Windows for both allows us to do that,” Warren says.

TH-Tools (Finland)

More than 20 Years of experience in tool Manufacturing

“TH-Tools uses CATIA’s Multi-axis Surface Machining to define the NC program that is then post processed using tailor-made post processors from CENIT for its Heidenhain and Fanuc CNC-controls. “We chose to take advantage of CENIT’s postprocessor experience and strong integration between these postprocessors and CATIA NC code rather than create the postprocessors ourselves”, said *K.Söderling, leader of the Design Department*

DS PLM SUCCESS STORY

TH-Tools

Competing with low-cost competitors with CATIA

Overview

- *Challenge* — *Choosing to focus on high quality and precision products, TH-Tools must remain competitive against mass-production global suppliers and companies offering less expensive products and services*
- *Solution* — *TH-Tools adopted CATIA to reduce production costs while maintaining superior product quality*
- *Benefits* — *TH-Tools increased design precision and reduced downstream assembly problems thanks to CATIA’s design-in-context and early interference checking capabilities*

“The ability to design-in-context of the full digital mock-up and perform virtual interference testing in the design stage prevents downstream assembly problems, which can compromise delivery dates.”

Jari Saaranen
CEO
TH-Tools

More than 20 Years of experience in tool manufacturing

Finland-based TH-Tools manufactures machines, equipment and parts for the technology industry around the world. In addition to Finland and nearby Sweden, A nationally renowned expert in metal processing, TH-Tools has a staff of over 100 professionals working at its different sites in Tampere, Akaa, Vaasa and Lahti.

In addition to the manufacture of versatile components and tools, TH-Tools also makes production machinery and production lines for several industrial sectors. Over the years, TH-Tools has earned a reputation for its versatility and craftsmanship in the production of large, complicated tools for pressing automotive sheet metal parts. The company also has a diverse range of efficient machinery for highly accurate wire cutting, die-casting molds for aluminium and zinc parts, welding and machining fasteners, lifting tools and assembly equipment, and robotic grippers to name a few.

As TH-Tools turns its attention to conquering new markets, it faces global competition from companies that propose less expensive equipment and services. The company believes that differentiating itself from competitors by focusing on quality, precision and unbeatable craftsmanship is a sure way to emerge a winner in the race for machining technology leadership. But all this should not translate into higher costs for the customer; which is why TH-Tools needs to keep its production costs down while providing its customers with the right solution in a timely fashion.

CATIA for design and manufacturing

A CATIA user since 1997, TH-Tools moved to CATIA V5 in 2001 for the design and manufacture of its sheet metal tools. Since 2006, the company started using CATIA for all its production tool needs with particular focus on PLM in the area of production automation. “Our customers come to us for the design, production and on-site installation of one-of-a-kind high-precision machines,” said Jari Saaranen, CEO.

CATIA Machining
Some customer references

JSC ‘Tyazhmash (Russia)

In order to improve processing quality, JSC ‘Tyazhmash’ purchased 5X high-speed milling machines and digital equipment controlled by CATIA. All parts manufactured by this equipment require no additional finishing. Furthermore, current equipment is being upgraded, thereby significantly improving the quality of the final product. The company was able to undertake complicated projects under extremely tight deadlines and thus increase the number of contracts signed with customers

A-dec (US)

Fully automated manufacturing code generation

“In the past, every job on the floor required some intervention by our NC programmers, this has been eliminated by building the NC output into the models parametrically”, said *W. Snyder, Furniture Engineering Manager*

CATIA Machining
Some customer references

Guy Degrenne (France)

« Today, CATIA manages the entire design-to-manufacturing process for cutlery, from initial studies all the way to the machining of stamping matrices for our most delicate pieces or the forging of thicker pieces or knife blades», said *C.Van Boxsom, Director Cutlery Division.*

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DS PLM SUCCESS STORY

SION.

Guy Degrenne Group

Pushes the limits of creativity and innovation with CATIA and ENOVIA SmarTeam

Consumer Goods

Overview

Challenge

Guy Degrenne Group needed a solution that would cover its entire production process for metal and porcelain products

Solution

The company chose CATIA to manage its design-to-manufacturing process for cutlery and ENOVIA SmarTeam to manage and secure its technical documentation

Benefits

Guy Degrenne reduced the time required to produce the first cutlery stamping matrix from eight to two weeks

"DS PLM has become an essential part of our development strategy. CATIA and ENOVIA SmarTeam are configured to meet the needs of our profession. They help us push the limits of creativity and innovation thanks to the flexibility of each solution."

Christian Van Boxsom,
Director Cutlery Division, Guy Degrenne

Leader in the art of entertaining

Founded in 1948, Guy Degrenne Group is a leading manufacturer of cutlery and tableware with annual sales of 100 million Euros. The company has 1,400 employees, 25 boutiques and four production sites worldwide including Vire and Limoges, France (cutlery, industrial subcontracting, and porcelain) Thailand (cutlery) and Hungary (porcelain).

The Vire site employs 600 people and produces more than 14 million items per year. The design and manufacturing office, equipped with five CATIA seats since 2004, creates all digital models and designs the tooling for each production site.

Master the product launch process

"We installed CATIA V3 in 1998 and V4 in 1995, before moving to CATIA V5," said Christian Van Boxsom, Director Cutlery Division, Guy Degrenne. "It was a wise choice since CATIA covers all our production processes for metal as well as porcelain. Today, CATIA manages the entire design-to-manufacturing process for cutlery, from initial studies all the way to the machining of stamping matrices for our most delicate pieces or the forging of thicker pieces or knife blades."

Once a new product launch has been validated at Guy Degrenne, it is managed by the design office where designers define the 3D representation of the object. They then design the tooling for pre-series production using the shape of the objects and manufacture, on site, a prototype, which will be reviewed before the final decision. "Any modifications at this stage can easily be taken into account with CATIA, thanks to parametric geometry," explained Charly Herbert, Design Office Manager. "And since we can make changes quickly, we are able to test many possibilities."

DASSAULT SYSTEMES

V5 PLM SUCCESS STORY

ISCAR Hartmetall GmbH

Precision tool specialist cuts product development time with CATIA V5

Consumer Goods

Overview

Challenge

To respond to ever-growing industry demand for more precision tools, ISCAR Hartmetall needed to further cut product development time.

Solution

ISCAR Hartmetall uses an on-line catalogue of 25,000 tools designed in CATIA V5 by its parent company in Israel, and the CATIA NC module

Benefits

With CATIA V5, company has drastically reduced errors, avoided the production of test pieces, and accelerated the entire development process.

"With the CATIA V5 NC module and 5-axis simultaneous post-processor, 40% of programming time can be saved compared to manual programming."

Kurt Brenner, Head of Technology and Manufacturing, ISCAR Hartmetall GmbH

In just 50 years, ISCAR has developed from being an unknown newcomer to an internationally renowned precision tool manufacturer. The parent company in Israel develops standard tools while German subsidiary ISCAR Hartmetall develops precision tools.

ISCAR Hartmetall's product portfolio covers the whole range of test piece, drilling, milling, and finishing tools, as well as chipformers and accompanying services for the machine-building, automotive and aerospace industries, and its suppliers.

Going global with CATIA V5

Today, ISCAR Hartmetall is an innovation leader and ranked number two in the world in its market. ISCAR takes a centralized approach to CAD software and makes the same release available to its technical designers who can learn from one another. Its engineers have worked with CATIA for 13 years in all locations.

In Germany, the company moved from CATIA V4 to V5 in 2003. The reason for change was a desire for faster, simpler 3D design, solid surface modeling, and time-saving on smaller jobs. Another positive aspect was lower hardware expenses using Windows rather than the UNIX platform.

Since mid-2005, ISCAR Hartmetall has used the CATIA V5 NC module with a 5-axis simultaneous post-processor. The aim is to reduce errors, avoid production of test pieces, and accelerate the entire process. The CATIA V5 NC module covers the entire machining process from roughing to finishing.

Access to standard data

The demand from industry to develop precision tools is rising constantly. The major bottle-neck is shrinking cycle times. ISCAR Israel provides an electronic catalogue which contains approximately 25,000 standard tools

DASSAULT SYSTEMES

ISCAR Hartmetall GmbH (Germany)

The CATIA V5 NC module covers the entire machining process from roughing to finishing. “With the CATIA V5 NC module and 5-axis simultaneous postprocessor, 40% of programming time can be saved compared to manual programming”, said *Kurt Brenner, Head of Technology & Manufacturing*.

Customer Statements

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„CENIT has a large and versatile PLM team and makes it available for us to quickly solve many different ENOVIA V6 related challenges.“

Jürgen Staab, Engineering Administration, Takata AG

“Overall a large gain in security and traceability- without V6 we wouldn’t have been able to manage the multitude of variants for the ISH 2013.”

H. Hecker, Leiter Konstruktion, HANSA Metallwerke

“CENIT’s consultants where always available for us every step of the way. The training and support services allowed us to quickly migrate from V5 to V6.”

Octavian Stancu, Head of Product Design, Trafo Proiect

“The experts of the PLM consulting firm were our trusted partners and advisors. Emphasis was always put on the flexible, global use of the V6 technology.”

Bernd Göllnitz, Director IT Technology & Operations, Webasto AG

“We have been working with CENIT for many years and are highly satisfied with their services. Our relationship has developed into that of friends.

Daniel Reutimann, Digital Design and Development, Mecaplex

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Thank You!

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