

## EMO 2011 – Siemens PLM Software

### Product Lifecycle Management Software Solutions (PLM)

Siemens offers a range of applications that support the lifecycle of a product from concept idea through to manufacture and in-service support. The well proven software covers CAD, CAM, CAE and multiple levels of engineering data and process management applicable to all sizes of discrete manufacturers, machine tool builders and users. By including PLM software, Siemens is able to offer complete process support for many industries including aerospace, machinery, automotive and medical devices.

The key topics to be presented at EMO 2011 by Siemens PLM Software include:

1. PLM software solutions for machine design and manufacture
2. The CAD/CAM/CNC Process Chain and software solutions for the medical device industry
3. NX CAM for machinery - featuring new capability in the latest release of NX
4. Shop Floor Connect for Teamcenter - a new capability to connect the virtual world of engineering to the real world of production.

### Software solutions for machine tool builders

The NX® and Solid Edge® systems, spanning CAD, CAM and CAE, are widely used in the design and manufacture of machine tools. Teamcenter® provides data and process management for all elements of engineering and the Tecnomatix® products add a wide range of digital manufacturing solutions for manufacturing planning and validation. Siemens PLM Software can also provide machine tool OEMs with software packages and tool kits that can be configured or used to offer extended CAD/CAM/CNC solutions or advanced machine tool simulation solutions such as the “Virtual Machine”.

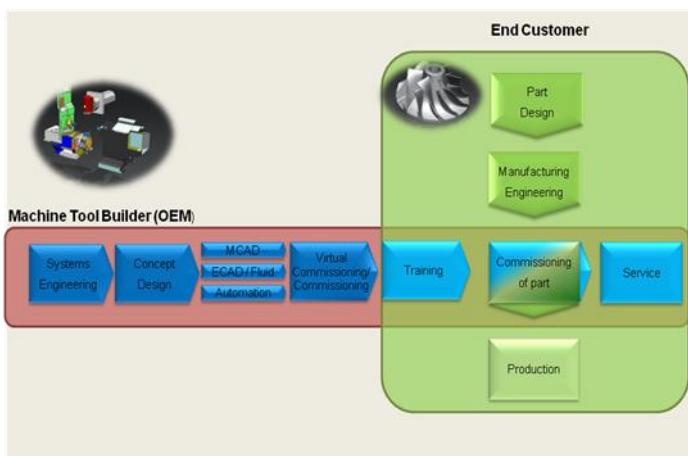
## Benefits

- A complete software solution for machine design and manufacture, all from one vendor
- Faster machine designs through integrated applications including design and analysis
- Easy interoperability with 3rd party data using Synchronous Technology
- Developed and supported by Siemens, a global leader in machinery systems and equipment

One of the key solutions Siemens PLM Software will be showcasing at EMO is “Mechatronics Concept Designer”. Mechatronics Concept Designer (MCD) is based on NX and is a new solution for concept design of mechatronics products. The software enables 3D modeling and simulation of concepts with multi-body physics and automation-related behavior typically found in mechatronics products. Supporting a functional design approach, MCD integrates upstream and downstream engineering domains, including requirements management, mechanical design, electrical design, and software/automation engineering.

## Benefits

- Faster time to market – reduces overall development time by 25 percent
- Lower engineering costs
- Rapid evaluation of concepts in a virtual environment
- Tighter integration and, collaboration among mechanical, electrical, automation designers
- Fewer physical prototypes
- Easy re-use of proven components



Process Chain for Machine Tool Builders and End Users

### **NX CAD/CAM/CNC Process Chain**

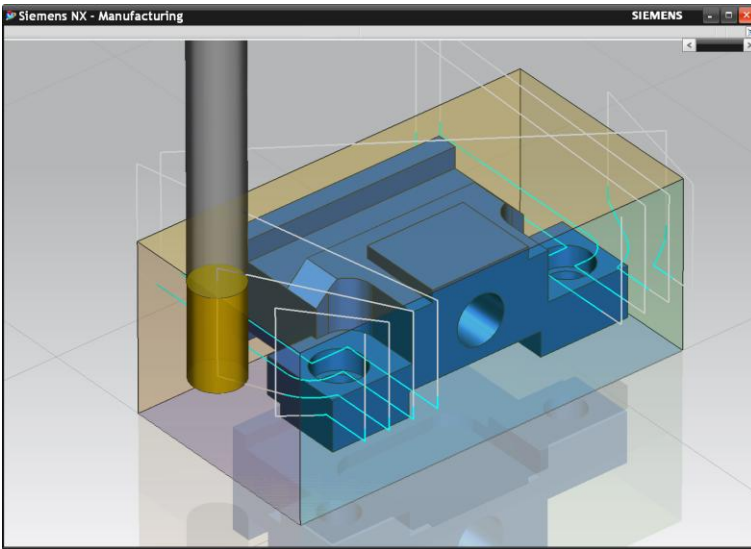
Siemens PLM Software is able to bring together a complete set of capabilities that connect part and tool design in 3D modeling, through tool, through NC programming and simulation to the CNC controller and machine tool. The result is the ability to be able to implement support for new machine tools faster and to help our customers deliver the maximum value from their investments in new shop floor equipment. Siemens PLM Software is partnering with a number key machine tool OEMs including DMG to help them develop CAD/CAM/CNC Process Chain solutions that fit their specific machine tools. This work includes the preparation of optimized post processors to connect NX CAM to a range of DMG machine tools that have Siemens controllers. The DMG Process Chain includes a Virtual Machine solution that uses advanced simulation software to validate the CNC output data.

### **Software Solutions for the Medical Device Industry**

Siemens PLM Software provides the most holistic and integrated cross discipline solution for end-to-end management of the medical devices industry's product lifecycle. By combining a robust set of design solutions, data and compliance management, traceability and reporting capabilities, Siemens PLM Software can offer a wide ranging solution for medical devices manufacturers. The Siemens solution set can help these companies significantly reduce the time it takes to design their machines and prove compliance with regulations established by national agencies that regulate, such as the U.S. Food and Drug Administration (FDA).

### **NX CAM for machinery**

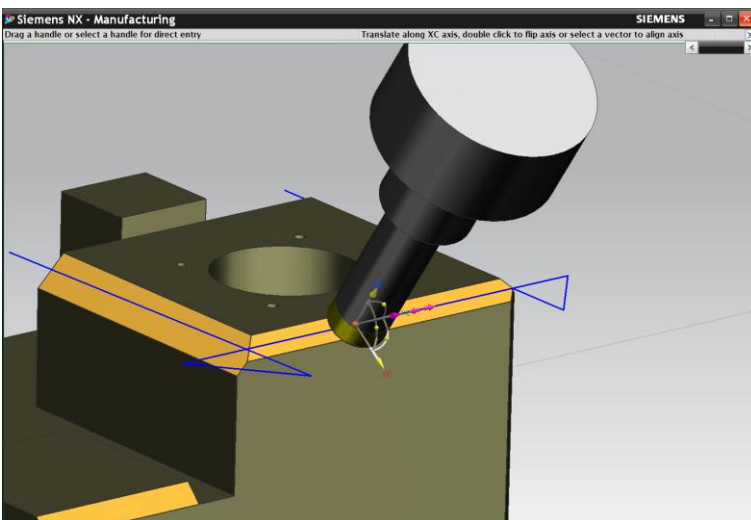
This solution includes new solids based machining and NC programming automation capabilities added in NX8 to extend the use of NX within the machinery market. With NX8 Siemens introduces new functions including new 2 ½ D Volume Based Milling, extended use of the solids based In-Process Model (IPW), and a new set of functions for programming multi-part set-ups and for assembly based programming.



*Volume Based Milling in NX CAM*

The prismatic geometry of machinery components is ideal for NC programming automation. With NX8 Siemens adds a new Feature Teacher to allow users to interactively define custom model features that can be recognized automatically by NX. The matching Operation Teacher enables programmers to define machining operations to be applied to specific types of feature. In each case there is no need to use any kind of “rule building” making it easy to use for the everyday programmer.

The Graphical Driven programming functions allow NX CAM users to directly control the cutting tool using interactive on-screen “grab and drag” functions on the 3D solid model. This is particularly useful for creating or editing simple toolpaths on prismatic parts.



*Graphical Driven Programming in NX CAM*

## **Shop Floor Connect for Teamcenter**

This highly effective solution makes the manufacturing plan managed in Teamcenter accessible to users and equipment in production using easy to deploy, web based software technology on any networked device with a standard browser, including mobile devices such as the Apple iPad. SFC for Teamcenter allows shop floor users to access key data that's stored in Teamcenter such as work instructions, setup sheets, drawings, tool lists, or CNC output data files.

Using SFC for Teamcenter a shop floor user can select this centrally managed information and direct the data to the target machine tools or tool pre-setters. If the machine tool controller can be used to run a network connected web browser then the CNC files can be accessed directly from Teamcenter via the SFC connection.

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**Siemens PLM Software**, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services with 6.7 million licensed seats and more than 69,500 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products. For more information on Siemens PLM Software products and services, visit [www.siemens.com/plm](http://www.siemens.com/plm)

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