Feature Based CAM with Synchronous Technology Improves Time-To-Market for Product Variants

Marc Bissell, Sr. Applications Engineer for CAMWorks®
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Who am I?
What will you learn?
Solid Edge added capabilities.
Product Demonstration.
Benefits of the product.
How can I learn more?

4th Generation VLC
courtesy of Edison2
Marc Bissell  
Sr. Applications Engineer, CAMWorks®

With more than 25 years of experience as a manufacturing engineer, global manufacturing consultant, operations manager, and CAD/CAM applications engineer… implementing state of the art manufacturing technology has become not only a career for Marc Bissell, but a way of life. His experience across a wide variety of industries brings a comprehensive perspective and innovative solutions to any manufacturing challenge.

Hobbies:
In his spare time he loves working on his cars, including the restoration of a 1971 Chevy Nova and programming his CNC desktop router for prototype machining.
What will you learn?

- How can synchronous technology and feature based CAM be leveraged to reduce time-to-market?
- The World’s first fully embedded CAM system for Solid Edge.
- Who developed this new embedded CAM system?
- What is parametric, feature based CAM?
- What is Automatic Feature Recognition, and why is it important?
- How does Knowledge Based Machining work, and how can it benefit me?
- How can we reduce cycle time and programming time?
- Live Demonstration - CAMWorks® for Solid Edge
- How can I learn more about this technology?
The key to faster time-to-market

**Synchronous Technology**

- **Identify Features**
  Using patented Automated Feature Recognition from CAMWorks

- **Automatically Adjust to Design Changes**
  Fully associative toolpaths update automatically to design changes

- **Apply Machining Best Practices**
  Use Knowledge Based Machining to leverage in-house machining knowledge
Fully Embedded - CAMWorks® for Solid Edge

Seamlessly embedded inside Solid Edge

CAD Compatible

CAD Models From:
- CATIA®
- Pro Engineer®
- NX/Unigraphics®
- Autodesk Inventor®
- SolidWorks®
- CADKEY®
- Rhino®

Industry Standard Support
Maximize the Value of Your Imported Parts
- STEP
- ACIS
- Parasolid
- VDAFS
- IGES
- STL
- DXF/DWG

CAMWorks® for Solid Edge®

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Who developed this new CAM system? Geometric - The Company Behind CAMWorks®

Global Presence

- Part of the Godrej group
- More than 4,600 employees worldwide
- $167.51 Million in FY’12
- Portfolio spread covers technology solutions, Engineering IT, product and manufacturing engineering and manufacturing operation services

Geometry Technology Solutions

- GeomCaliper®
- 3DSearchIT®
- Design
- DFMPRO™
- Feature Recognition
- CAMWorks®
- Manufacturing
- NestLib®
- Glovius
- eDrawings Publisher
- Visualization

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What is Parametric, Feature Based CAM?

**True 3D Machinable Features**
Not 2D chains or profiles

**Turned Features**
OD and ID Turned Features

**Multiple Setups Automatically**

**CAMWorks Feature Tree**
Manage 3D Machinable Features
What is Automatic Feature Recognition or AFR?

**CAMWorks® - AFR for Machinable Features**

- **Fully Automatic**
  Automatically recognizes over 20 machinable features

- **Fully Associative Features**
  Creates associative machinable features directly from the model

- **Machining Features**
  Machining Feature list is independent of Modeling feature list

**Faster programming** time as compared to traditional CAM Software **by up to 90%**
What is Knowledge Based Machining?

The World’s Most Advanced Knowledge Based Machining

- **Capture and Reuse Your Best Practices** - Improves efficiency and plant-wide consistency.

- **True Knowledge Based Machining** - Not just an add-on but the way CAMWorks works!

- **Store and Reuse Your Best Machining Strategies** - Expert knowledge is stored in the database and owned by the company.

- **Eliminate Repetition** - Eliminate repetition. Do it once and use it again, again, and again.

- **Fully Customizable** - Allows companies to develop a custom library of manufacturing processes.
How does Knowledge Based Machining Work?

Automatic Feature Recognition

CAMWorks Feature Tree

Final Toolpath

Knowledge Based Machining

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Synchronous Technology and Feature Based CAM
A Winning Combination!

CAD and CAM Model Become One-in-the-Same
• Stores all of the CAD and CAM data in a single file
• CAM data is stored automatically with the CAD model
• No extra files to manage and maintain
• No more geometry and translation errors

Changes to the Model Update Automatically
• Toolpaths update automatically when the model changes
• Accelerate R &D through automation
• Reduce scrap by eliminating costly errors
How can we reduce cycle time and programming time?

High Speed Machining (HSM) -
- Adaptive machining cycles
- Previously removed material tracking
- Smooth and continuous linking
- Improved surface finish

VoluMill - For Rough Milling
- The ultra-high performance toolpath generator
- Reduce your cycle time by up to 80%
- Increase the utilization by up to 85%
- Reduce tooling costs by as much as 90%
- Avoid broken tools and the resulting crashes
- Reduce your maintenance costs
- Increase the life of your machine
The key to faster time-to-market

**Identify Features**
Using patented Automated Feature Recognition from CAMWorks

**Synchronous Technology**

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Identify Features Using patented Automated Feature Recognition from CAMWorks
Benefits of Using CAMWorks® for Solid Edge

• **Reduce Your Time-to-Market by up to 80%**
  Leverage synchronous technology and feature based CAM to dramatically reduce your time-to-market!

• **Reduce Your Cycle Time and Programming Time**
  High performance toolpaths to reduce cycle time. Parts that used to take days or hours to program can be programmed in minutes!

• **Increase Quality**
  Improve consistency and quality by using the Best Practices of your best machinist and programmers.

• **Reduce Scrap**
  Associative machining insures the part machined is the same revision as the model.

• **Reduce Tooling Costs**
  Standardizing your tools and processes means parts will always be machined using the current, optimal methods.

• **Significantly Increase Capacity**
  Reduce your throughput time dramatically increases your efficiency and capacity!
How can I learn more?

www.camworks.com