PTC Technical Specialists E-Newsletter  
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PTC Product Focus:  
A) What’s New in Manufacturing for Wildfire 3.0  
B) ModelCHECK

Tips of the Week:  
A) Design for Manufacturing in Pro/ENGINEER Wildfire 3.0: Creating and Applying Manufacturing Annotation Features  
B) Configuring Windchill and ModelCHECK as a Gatekeeper

Announcements: Most Recent Announcements
Upcoming Events & Training Schedule: Events & Training Schedule

PTC Product Focus

What’s New in Manufacturing for Wildfire 3.0

Most customers are aware that the various state-of-the-art Machining Options within Pro/ENGINEER allow you to take a design “from art to part” saving time and money in the process. But did you know that with the Wildfire 3.0 release, several dozen enhancements add even more capability to the product? This article will highlight just a few.

Process Manager Enhancements

The Process Manager, introduced in Wildfire 2.0, made organizing and documenting NC milling processes a breeze, in addition to allowing full definition of several NC sequence types. This capability is extended – significantly – in Wildfire 3.0.

![Manufacturing Process Table](image)
• **Manufacturing Annotation Features:** Designers can apply design features which contain manufacturing information. This information can then be extracted by the NC programmer or manufacturing engineer to automate the creation of machining processes. A simple example of this capability is covered in Tip section of this newsletter.

• **Manufacturing Step Dependencies:** User-defined dependencies may be created between steps to help control reordering. For example, a pocket roughing step may be set to be dependent upon a start hole drilled in the deepest part of the pocket.

• **Time Analysis for the Manufacturing Process:** Time graphs are available for direct analysis of the process times. This can help with, among other things, workcell/operation equalization and cutting tool life estimation.

• **Grouping Steps for the Same Behavior:** Since steps across different operations often need to behave in the same way, it is now possible to create a “virtual” group of the steps, such that a change to the leader of the group (for example a cutting tool or a coolant setting) affects all other members.

**Cutting Tool Manager User Interface**
The interface of the Tool Manager has been modernized for more intuitive use and a streamlined flow, including column sorting for the tool table.

![Cutting Tool Manager User Interface](image)

**Automatic Filleting and Slowdown in Corners**
For high-speed roughing tool paths, it is now possible to automatically generate fillets in corners, and specify slowdown and acceleration going into and coming out of corners.

**3-D Equidistant Finishing**
A new Finishing scan type is added which computes the step over on the surface to be machined, resulting in a high surface quality and decreased cutter load even on steep surfaces.
User Interface Improvements
The interface continues to be improved as datum features now use the new interface and mill windows are now defined in a dashboard UI, saving significant mouse clicks.

Area Turning Step Depth Enhancements
The step depth in an area turn sequence can now be controlled more easily to ensure a constant depth:

More Information
These enhancements and many others add significant value to an already powerful CAM system. Find more information on the enhancements on ptc.com here.
Pro/Engineer Wildfire 3.0 gives you the ability to embed manufacturing information in design feature annotations, which then allows NC programmers or manufacturing engineers to extract the information to automatically create NC process steps. Here is a very simple example to get you started.

Create the template, annotation feature, and UDF:

1) First, create the manufacturing templates that you’ll use. Open a manufacturing model containing the desired NC sequence(s) (or create them). Then in the Process Manager, make sure you are in the Process Main View, select the step or steps to include in the template, pick the “Create Template” icon, add the extraction priority, notes, and other optional information, and save the template (it will be saved to the folder defined by the mfg_process_template_dir config option). For example, create a template that drills and taps a ¼-20 hole. The template is saved as an .xml file.

2) Next, open a part containing the desired geometry feature (for example, a ¼-20 hole). Insert an annotation feature with the “Manufacturing Template” element type.
Follow the prompts, selecting the .xml template file and any required references to place the template (in this example, just the hole axis). Select OK to finish the feature.

3) Finally, create a user-defined feature (UDF) containing the geometry feature, the annotation feature, and any other desired features such as datum planes, etc. In this example we’ll simply select the hole and annotation. Make it a stand-alone UDF that does not contain a reference part.
Apply the UDF:

The next time you create (for example) a ¼-20 hole, create it by applying the UDF. The annotation feature containing mfg template information is created along with it:

![UDF example](image)

Extract the NC process information in the mfg model:

Now the NC programmer or process engineer can easily create the necessary machining steps by extracting the information from the design model. This is done through the Process Manager by selecting the “Extract Manufacturing Information…” icon:

![Process Manager](image)

In the extraction dialog box, mark any options as desired (merging, etc.) and pick Extract.
The drilling and tapping sequences are extracted for every ¼-20 hole in the model.

Experiment with this technique; there are many more options to explore.

Watch for more information on this and other techniques in the online Tips and Techniques sessions and the Resource Library at http://www.ptc.com/appserver/wcms/events/series.jsp?&im_dbkey=11442&icg_dbkey=141

Tips of the Week

Configuring Windchill and ModelCHECK as a Gatekeeper

Click Here To View
Educational Resource Library

Learn things you always wanted to do - but didn't know you could.
This one stop educational resource library will help you learn more about PTC Solutions and provide you with technical materials developed by the product experts to help you become more productive.

Get tutorials, how-to videos and expert advice for:

- Pro/ENGINEER
  - Conceptual and Industrial Design
  - Detailed Design
  - Simulation/Analysis
  - Production
  - Design Collaboration
- Windchill PDMLink
- Windchill ProjectLink
- Pro/INTRALINK
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PTC Tips & Techniques Newsletter Archives

Miss an issue! Can’t find that awesome technique you read about? Fear not, you can click on the link below and go through our Customer PTC E-Newsletter archives.

Click Here To Access

It’s better than finding the Covenant of the Ark!


Click below to see regularly scheduled Tips & Techniques technical Webcasts that are designed to provide you with the most popular time-saving tricks that Pro/ENGINEER users of all skill levels will find useful. Get more out of your maintenance dollars!

Tips & Techniques: Work Smarter Not Harder!

E-PROFILES IS HERE!!
We have been eagerly anticipating the debut of the new electronic version of Profiles Magazine and now it is here! This new web site will supplement the print edition of the magazine and will
provide new useful features not feasible with paper media. e-Profiles will provide you with 24x7, worldwide access to key information previously available exclusively in the print version. "Tips & Tricks," a popular feature pioneered by Pro/USER, has also moved to the web and will be expanded as the site matures. Please take a few minutes to check out this new web site. We don't think you will be disappointed.

http://profiles magazine.com/

Back To Top
Upcoming Events & Training Class Schedules

Upcoming, 2006
Your local Pro/Engineer User Groups
http://www.ptcuser.org/rugs/

June 4 - 7, 2006
Dallas, Texas
PTC/USER International Conference
http://www.ptcuser.org/

Events

Our seminars and conferences seek to provide you with relevant information regarding product development trends in your industry as well as innovative software learning experiences. Think of them as a constructive day off where you can share experiences and swap ideas with your peers.

If you can't manage to get away, we'll bring it to you. Check back often for regularly scheduled live webcast events.

You're Invited to Attend…

Please visit the PTC Education Services website for the latest training information including course descriptions, schedules, locations, and pricing.

- Attend a course at any PTC Center and receive a free copy of Pro/ENGINEER Wildfire Student Edition!

http://www.ptc.com/services/edserv/index.htm

Live Instructor-Lead Virtual PTC Training Courses

Virtual Classrooms provide interactive learning with a trained PTC instructor in convenient and manageable sessions that last approximately 4 hours over a series of days. It's easy to join a class right from your desk using a phone or voice-over IP technology.

Sessions are performed just like a traditional ILT (including interactive exercises where you and the instructor can work on lab exercises together) and feature some of our most popular ILT courses. These sessions cover the exact same material as the traditional ILT in-center courses. Also look for some of our most frequently requested mini-topics delivered in the same format that are only an hour - two hours in duration.

If you have any questions about these sessions or would like to see getting other courses, not on this list, on the schedule please feel free to contact me for more details. They are a great way to bring training to you without you having to worry about location or being out from work for long stretches.
You can register for these sessions just as you would for any normal ILT class either by:

1. calling order admin at [http://www.ptc.com/services/edserv/training/registra.htm](http://www.ptc.com/services/edserv/training/registra.htm) or

2. you can go to PTC University directly at [http://www.ptc.com/learning](http://www.ptc.com/learning) and submit a registration request directly. All you have to do is search the catalog by typing in “virtual” in the search field and you will see a listing.

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Note: This PTC E-Newsletter will continue to be used for the following:

1) Inform you on events related to PTC products (user groups, conferences, training schedules, etc.)

2) Educate you on solutions that are available at PTC

3) Tips & Techniques using PTC Products

Note: These messages are compiled in the local PTC office and will be distributed via e-mail.

[Back To Top](#)