



PTC Product Focus: [Pro/MECHANICA Fatigue Advisor](#)

Tip(s) of the Week: [How to Create a Mapkey to Start an Application External to Pro/ENGINEER](#)

Announcements: [This Week's Announcements](#)

Upcoming Events & Training Schedule: [Events & Training Schedule](#)

PTC Product Focus

Pro/MECHANICA: Fatigue Advisor

When engineering components are subjected to repeated cycles of loading and unloading, failure can occur even if the stresses developed are below safe values for static, constant load levels. In these circumstances, the failure mechanism is known as fatigue, and the consideration of the fatigue performance of a design is commonly known as durability assessment.

Pro/MECHANICA Fatigue Advisor allows engineers to predict and improve the fatigue performance of their designs early in the product life-cycle. This can reduce design iteration and costly test programs on multiple prototypes. The fatigue technology used in Fatigue Advisor is supplied through a partnership with nCode International, world leaders in durability software.

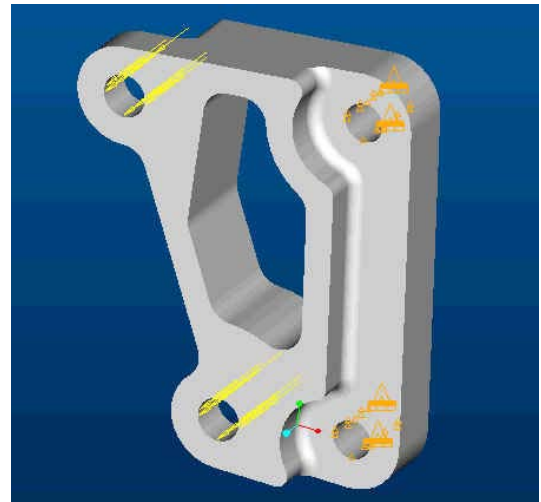
Pro/MECHANICA Fatigue Advisor is a tool which can be used early in the design process to assess the durability of a design subject to repeated loading, and to help design engineers to understand the effects of design changes on the fatigue life of the component.

Because Fatigue Advisor is a fully integrated module of Pro/MECHANICA, parametric associative design studies can be performed directly on the design geometry (CAD model) to investigate optimized design possibilities. For example, a user could perform a design study to minimize the weight of a design whilst maintaining the fatigue life within a predefined range. Multi-disciplinary design studies can also be performed using a combination of fatigue, static, vibration and thermal design goals or limits.

Capabilities:

Model Creation

Fatigue Advisor works entirely within the Pro/MECHANICA user interface - the user simply specifies an existing static analysis, and then defines the material properties and loading history along with the required design life for the study. A material library and load history generator is included in the software but the user can import this information if it is available. Geometry can be imported from all major CAD systems through PTC's Associative Topology Bus (ATB), standard file formats or direct database access.

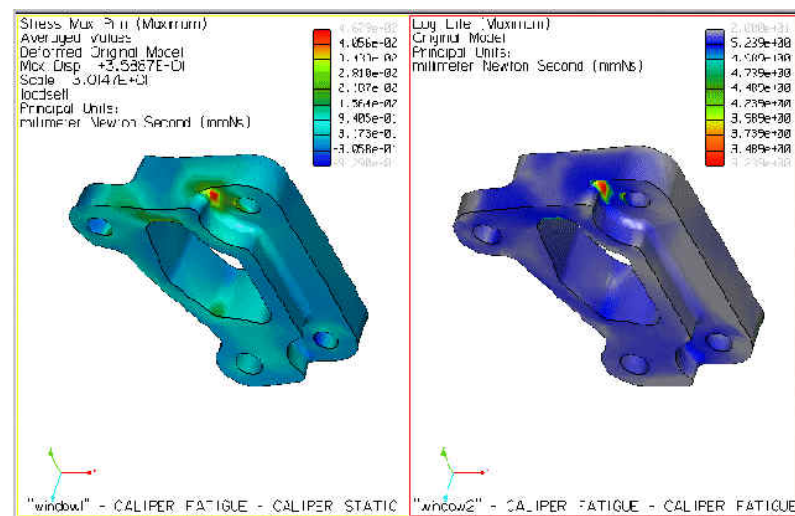


Fatigue Results

Fatigue Advisor calculates the following results quantities:

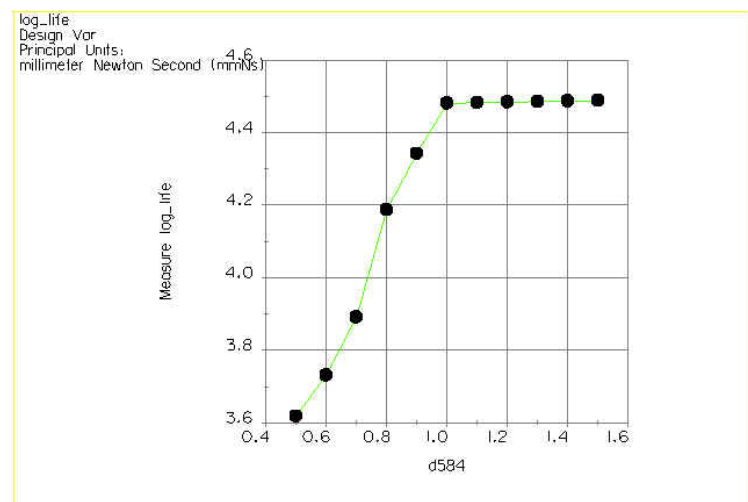
- Life - predicted cycles to failure
- Damage - percentage measure due to loading
- Factor of safety - based upon predicted failure
- Confidence of life - measure of results reliability

All these results can be processed using standard Pro/MECHANICA visualization tools including fringes, contours and graphs.



Optimization

In addition, local and global measures of the results quantities can be defined and tracked for sensitivity and optimization design studies. Users can create parametric geometry models even if the original data was imported, assign a permissible range to each variable parameter and specify design goals and performance limits.

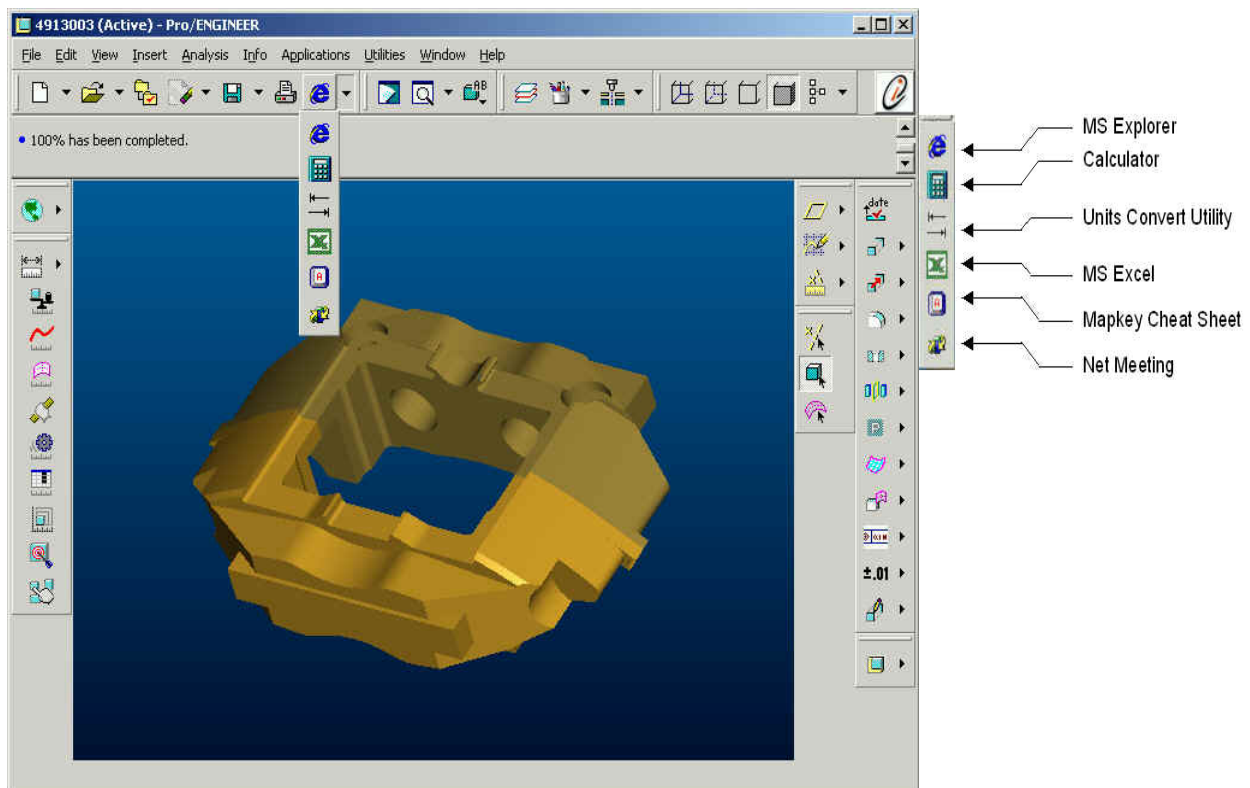


Tip(s) of the Week

How to Create a Mapkey to Start an Application External to Pro/ENGINEER

Keyboard macros, or "mapkeys", may be created to execute a sequence of frequently used commands. These mapkeys may be mapped to a keyboard key (or keys) which are used either in the current session or saved in your configuration file (usually the config.pro file) for use in future sessions. As of Release 20.0, these macros may be created using the Mapkey functionality in the Utilities menu. Button icons may also be created with mapkeys for easy selection and display in toolbars.

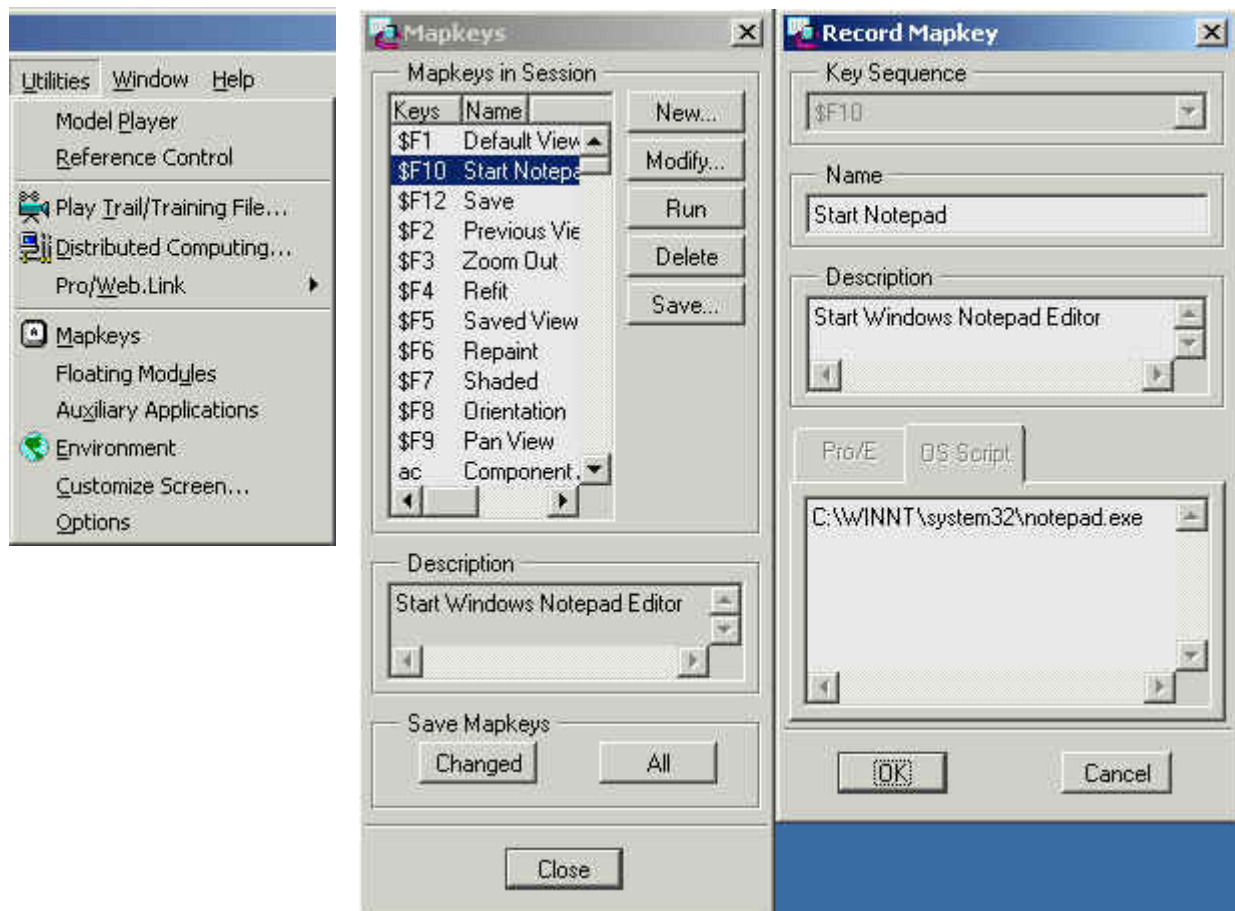
Many people don't realize the power of using mapkeys. Not only can they be used to execute a series of commands in Pro/Engineer, but they can also be used to launch external applications such as Microsoft Explorer, Windows Calculator, Custom Applications, Microsoft Office products, Net Meeting, Mapkey Cheat Sheets, and more.



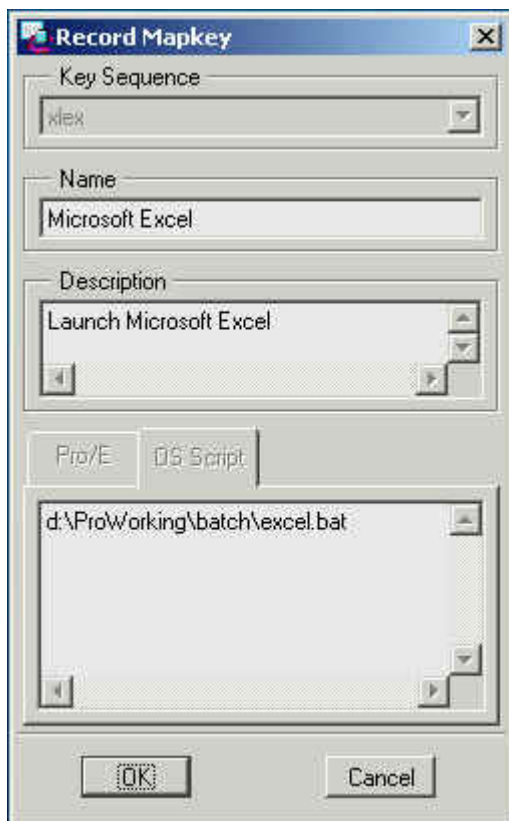
Suggested Technique

Inside of a Pro/Engineer Session:

1. Select Utilities, Mapkey, New
2. In the "Record Mapkey" dialog box complete the mapkey Key Sequence, Name and Description fields.
3. Select the OS Script tab and enter the full operating system path and script to start the desired application.
e.g. (%SystemRoot%\system32\notepad.exe).
4. Select OK and close the mapkey dialog box.
5. Now press the mapkey and the application will start.



When executing this mapkey it will launch the external application, but sometimes it will also launch a DOS window in the background. Most people don't like this because it clutters their display and opens one more window that they do not need. To get around this, have the mapkey launch a Window's batch file that launches the mapkey.



See the following batch files for examples. Notice the batch file that launches Internet Explorer, its starts IE at a particular address whether it is a website or an internal drive location.

1. Internet Explorer

```
@echo off
REM ***** START INTERNET EXPLORER
set C:\Program Files\Internet Explorer
start iexplore.exe %www.ptc.com/support/support.htm
exit
```

2. Windows Calculator

```
@echo off
REM ***** START CALCULATOR
set C:\WINNT\SYSTEM32
start calc.exe
exit
```

3. Microsoft Excel

@echo off

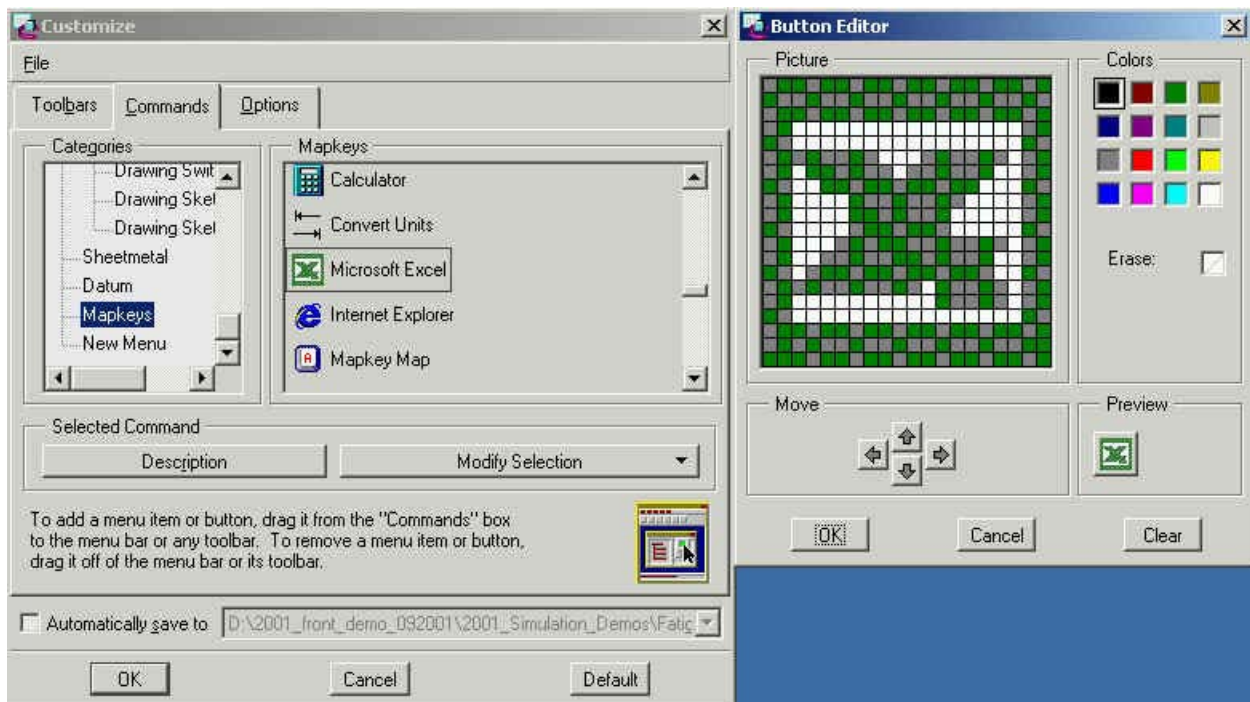
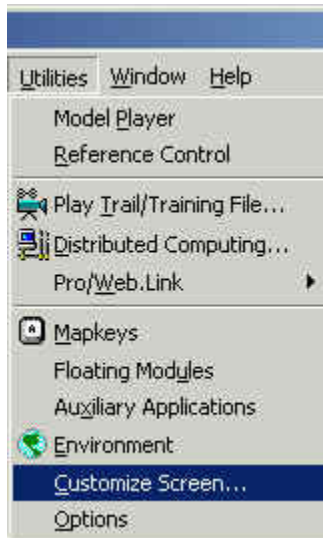
REM ***** START MICROSOFT EXCEL

set C:\Program Files\Microsoft Office\Office

start excel.exe

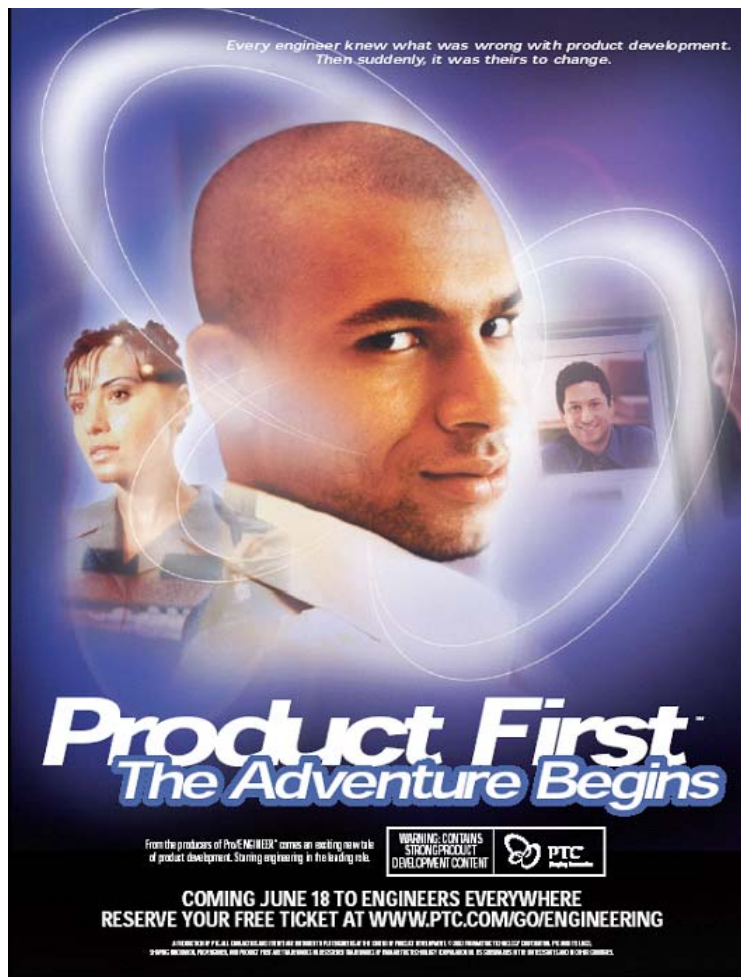
exit

Don't forget to customize an icon for your mapkey, it's EASY and it's FUN!



Announcements

Click on the poster to reserve your ticket now to the Product First Virtual Event!!



Quality Function and Development (QFD) is a consulting engineering company. Using the Pro/ENGINEER software suite, we provide comprehensive, quality-conscious product development and engineering design services to clients whose needs include 3D digital modelling, engineering, design and rapid prototyping.

QFD is looking for new team members. We offer a competitive compensation package; exciting projects; excellent support services. We are looking for skilled mechanical designers with substantial experience with Pro/ENGINEER software.

You are:

- A mechanical designer, mechanical engineer, or an EIT
- Innovative, self-disciplined
- Looking for constant challenges

You have:

- Well-developed mechanical design and 3-D modelling skills
- Design experience including plastics or castings, and complex assemblies
- Experience designing for both prototype and manufacturing
- A genuine interest in problem solving and cost saving processes
- And eye for detail and the ability to produce unambiguous drawings

You can:

- Work independently in a fast-paced environment
- Think on your feet: interacting, creating, problem-solving

You want:

- To expand an already impressive skill set through formal and on-the-job training
- To work for a young, rapidly-growing company on the leading edge of mechanical design

Our clients are local and international corporate leaders in technological innovation—dynamic, progressive, and successful hi-tech, research, and manufacturing companies.

Visit our website: www.qfd.bc.ca

Response Information:

Snail Mail:

David Mochuk
General Manager
QFD Consultants Inc.
#703-402 West Pender Street
Vancouver, BC
V6B 1T6

Fax: 604-684-8151

Email: quality@qfd.bc.ca (send either as an attachment, or as an ASCII text file, please)



Sigma S⁴ Consulting
Simulation·Service·Support·Solutions
What's product development without Simulation?

Kurt L. Werner
Owner

Phone (425) 427-0104
E-Fax (707) 220-0273

wernerkl@asme.org
Think Simulation!

Here is what Sigma S4 can provide:

- Training in PTC's Simulation tools including static, thermal, kinematics and dynamics products.
- Mentoring in PTC™s Pro/MECHANICA: Structure, Thermal, Motion, Design Animation Option (DAO), Mechanism Design Extension (MDX) and Mechanism Dynamics Option (MDO).
- Engineering consulting results - from concept through manufacturing of a product's development process.
- Virtual prototype results - to make sound engineering judgments on product validation as it's being developed.
- Robust product development via optimization of parts and/or assemblies that meet engineering and/or marketing requirements.
- Products faster time to market with better quality and in less time.

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. Future plans include several foreign-language editions of Profiles for our many international readers. Currently, Profiles is printed in English and Japanese.

Please take a few minutes to check out this new web site. We don't think you will be disappointed.

<http://profilesmagazine.com/>

CAD-BASED Solutions Inc. Web-site

Please click on the following link to see CAD-Based Solutions new web-site:

<http://www.cad-based.com/>

Upcoming Events & Training Class Schedules

| | |
|-----------------|--|
| June 9-12, 2002 | Atlanta Pro/USER International Conference http://www.prouser.org/ |
| June 18, 2002 | Product First Virtual Event |
| Upcoming, 2002 | Portland, OR, USA Pro/E Users Group Meeting |
| Upcoming, 2002 | Seattle, WA, USA Pro/E Users Group Meeting |
| Upcoming, 2002 | Vancouver, BC, Canada Pro/E Users Group Meeting |

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/E 2001 Student Edition!

| | | |
|---|---------------------------------------|---|
| Call Richard Buckius @ 408-953-8500 | San Jose, CA, USA | Click Here for Course Schedules & Description |
| Call Richard Buckius @ 408-953-8500 | Vancouver, BC, Canada | Click Here for Course Schedules & Description |
| Call Terri Kartonchik @ 905-602-4660 x256 | Oakville, ON, Canada | Click Here for Course Schedules & Description |
| Call Richard Buckius @ 408-953-8500 | Bellevue, WA, USA | Click Here for Course Schedules & Description |
| Call Richard Buckius @ 408-953-8500 | Portland, OR, USA | Click Here for Course Schedules & Description |

PTC

Suite 200

1311 Howe Street

Vancouver, BC

V6Z-2P3

Phone: 604-691-1758, 888-791-5511 (in Canada)

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

- 1) Inform you on events in Western Canada, CA, OR, WA State related to PTC products (user groups, conferences, training schedules, etc.)
- 2) Educate you on products that are available at PTC
- 3) Tips & Techniques using PTC Products

Note: These messages are compiled in the Vancouver, BC office and will be distributed via e-mail. If you wish to subscribe, send an e-mail to jpeng@ptc.com and type SUBSCRIBE in the subject line. If you wish to be removed from future mailings, type REMOVE in the subject line.