

MASWUG Meeting

October 3, 2002

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President's Introduction

Kevin Honaker, the newly elected MASWUG President and employee of Geiger Handling USA, began the meeting by announcing last minute changes to the agenda:

Lynn Brother was not able to give her presentation due to laryngitis, so extra time would be available for the SolidWorks 2003 Preview. In addition, Greg Jankowski would be giving a presentation on "Assembly Performance" rather than "Top-Down Assembly Design."

Kevin then gave a quick Power Point presentation with slides that were pictures of websites. The links to other websites that he talked about were highlighted. The sites shown included:

<i>Company / Organization</i>	<i>Website</i>	<i>Links Highlighted</i>
MASWUG	www.maswug.org	Solid Solutions magazine, SolidWorks
Solid Solutions magazine	www.solidmag.com	Employment
SolidWorks	www.solidworks.com	Careers, Retraining Program
3D ContentCentral	www.3dcontentcentral.com	
3D PartStream.NET	www.3dpartstream.net	

Top 5 MASWUG Tips & Tricks

Brooks Vrooman, employee of Springs Window Fashions, gave his first presentation on 5 useful Tips & Tricks:

1. Using macros and the feature palette to create a slot.
2. Manually sketching a slot with one command: Click line, left click, draw line at 45° (I can't get it to work).
3. Quickly fixing dangling dimensions in 2D drawing mode.
4. Right-Click functionality.
5. Large Assembly Mode.

Reference Planes, Axis, and Why You Would Use Them

Travis Curtis, MASWUG's webmaster and employee of Sub-Zero Freezer Co., demonstrated the many methods of creating both planes and axis, giving examples of how each method could be used.

Break

20 minute break, soda and cookies were provided

SolidWorks 2003 "Sneak Peak"

Keynote Speaker Jeff Osman, employee of SolidWorks Corporation, presented some of the highlights of the newest version of SolidWorks:

Disjoint bodies, 100 macros assignable, macro feature, bi-directional design tables, pattern component patterns, shared sketches, CosmosXpress design analysis add-in included, and intelligent incremental rebuilds that give large increases in performance

Assembly Performance

Keynote Speaker Greg Jankowski, employee of SolidWorks Corporation, gave a presentation on assembly (and computer) performance in these key areas: hardware, parts, assemblies, drawings, general settings:

Hardware

When it comes to computers, like cars, “There is no replacement for cubic inch displacement.” – In other words, it is most important to have a fast, well-configured computer with plenty of RAM. The following are listed in order of importance from a performance standpoint, more important first.

RAM

- Minimum of 1 GB for engineering applications

Video Card

- #1 cause of problems in SolidWorks
- get the latest drivers
- get a good commercial card with Open GL, not a gaming card

CPU

- SolidWorks is P4 optimized
- Buy dual CPU capable

Data Transfer Speed

- Faster front side bus is helpful, but not all-important

Hard Drive Speed

- Faster is better

Network

- Should all be T100
- Should be separated from other departments, fully dedicated to engineering

Service Packs

- Have the same service packs on all computers

Swap Space

- At least 2x RAM
- Set both limits the same to limit swap file fragmentation
- If possible, put swap file on separate volume or disk (never on a network)

General Performance

Prior to saving files to a CD or transferring them via other means, use the 3rd party utility “Unfrag” (<ftp://ftp.zdnet.com/pcmag/1997/1216/unfrag.zip>). This temporarily reduces file size by 50%. Size reduction disappears when re-saved.

Always save SolidWorks journal files on the local hard drive. This location can be specified in SolidWorks 2003.

Use templates to store document option settings.

Do not “Save eDrawings data in SolidWorks document” (adds 20% to file size).

Use fully defined sketches when possible.

Combine features sensibly (do all commonly sized fillets with one command).

Always resolve rebuild errors.

Do not model threads (or any other helix application), instead represent these.

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Avoid using text for features (it is okay to have just a sketch).

Minimize unnecessary detail.

Do drafts & fillets last.

Part Performance

Minimize the use of lofts & sweeps (loft uses memory intensively – use only when necessary).

Don't featurize imported geometry: if it is a part that does not change, save it as an IGES file, then re-open it and save it in SolidWorks format.

Facetize as much as you can stand; turn down "image quality."

If possible, model assemblies as parts.

Try "geometry pattern" first.

Make sure all imported geometry knits!

Delete un-needed external references.

Configurations

Configurations are the most powerful tool in assemblies. Use part configurations to define levels of detail.

Create standard configuration names for part & assembly templates (example: Default, Simple).

Assemblies

Mate as high as possible as you can in the feature tree.

Sensibly minimize "In Context" features. If you need to use them, use them for things that make sense.

Minimize mating to "In Context" features.

Don't mate to faces that don't exist in other configurations.

Avoid excessive, non-critical mates (don't fully constrain bolts – who cares).

Avoid excessive patterns.

Speed Tips

Open the assembly with the correct configuration active.

Assembly Configurations – Unsuppress only what you need.

Reference only the level of detail that you need.

Use skeleton (simplified part configurations).

Use sub-assemblies.

Use sub-assemblies to:

- Easily control multiple part configurations simultaneously.
- Provide a way to move numerous parts with one mate modification.

Minimize the use of "Flexible" sub-assemblies. Use only when it is really needed.

Use lightweight components to improve assembly level performance by resolving only what is needed.

Microsoft Windows Options

Show window contents while dragging

System Options

Automatically load parts lightweight

If you use HLR edges, add an icon to toggle them on & off.

Auto update of BOM

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- Show contents while dragging view
- Smooth dynamic motion
- Open existing drawing with auto view update off
- Auto hiding of hidden components
- Auto view update

Drawings

Use shaded views in drawing layouts (with HLR off).

Default display Shaded HLR

Use configurations to minimize un-necessary detail in drawings.

Use multiple sheets or separate drawings (rather than many views on one page).

Only update individual views.

Use alternate position view rather than overlay.

Use section and detail views sensibly (not excessively).

General Modeling Techniques

Set out a strategy before you begin to model the parts and assembling them.

Plan ahead...don't wait until you have a large assembly to start thinking about performance considerations.