



Teamcenter Visualization 2007 Update

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Agenda



Teamcenter Visualization 2007 Release

- ▶ 2D
- ▶ 3D



WebCGM Authoring



- Allows reading and writing CGM version 4 (CGM,v4) and WebCGM documents in a limited capacity
- Use Case
 - Users create “hotspots” as part of the 3D outline capture process from 3D geometry
 - When viewing the outline capture, user can see the associated part highlight when mouse-over the anchored text or callout
 - Save 2D content containing Hotspots as a CGM, v4 document
 - Supports re-loading the CGM, v4 file containing Hotspot elements
 - Mouse-over on anchored text or callouts will cause associated part to highlighted



WebCGM Authoring – Outline Capture



Outline Capture Preferences

General | **Advanced**

Part Highlighting Preferences

Line Style: Solid

Line Color: [Black]

Thickness: 1

Highlight Only Silhouette Edges

Disable Highlighting Preferences

Enable Hotspot Creation (CGM Only)

Leader Lines Just Touch Silhouette Edges

Add Halos to Leader Lines

Halo Thickness: 2 Pixels

OK Cancel

Hotspot Highlight Creation Disabled by Default

lockup 2005 - Cobra_UGS.jt

File Edit View Application Actions Tools Publish Markup Web Concept Window Help

Item Name | User

- Models
- Cobra_UGS
- Markup Layers
 - Layer1
 - Text
 - Text

Click and drag on the 2D Image to Pan

04/12/06 07:05:25

Mem: 6.34M/200M

Start Microsoft... CVS Com... Xerces-C+... Test - Mic... Exceed xterm

Snagit/32 Microsoft... Y:\Users\d... Teamcen...

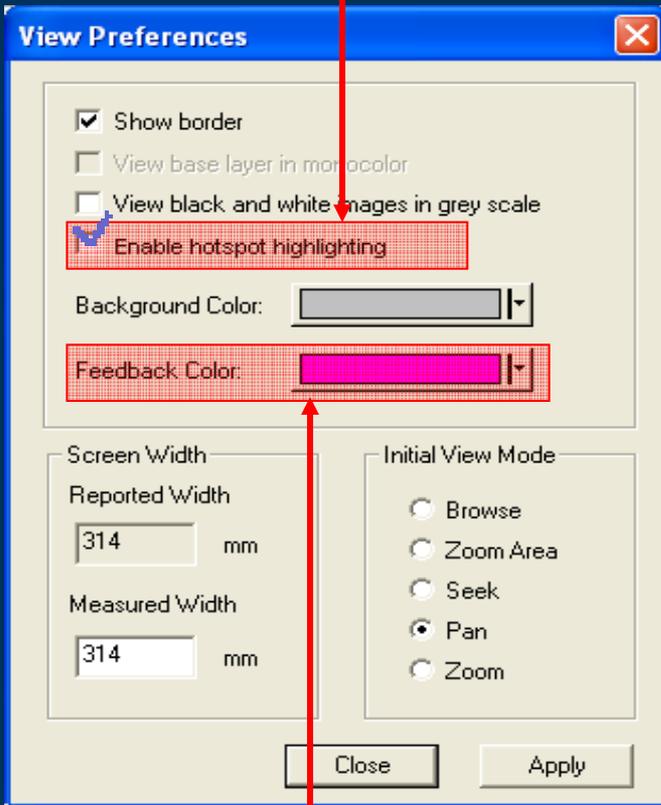
Google 9:05 AM Wednesday



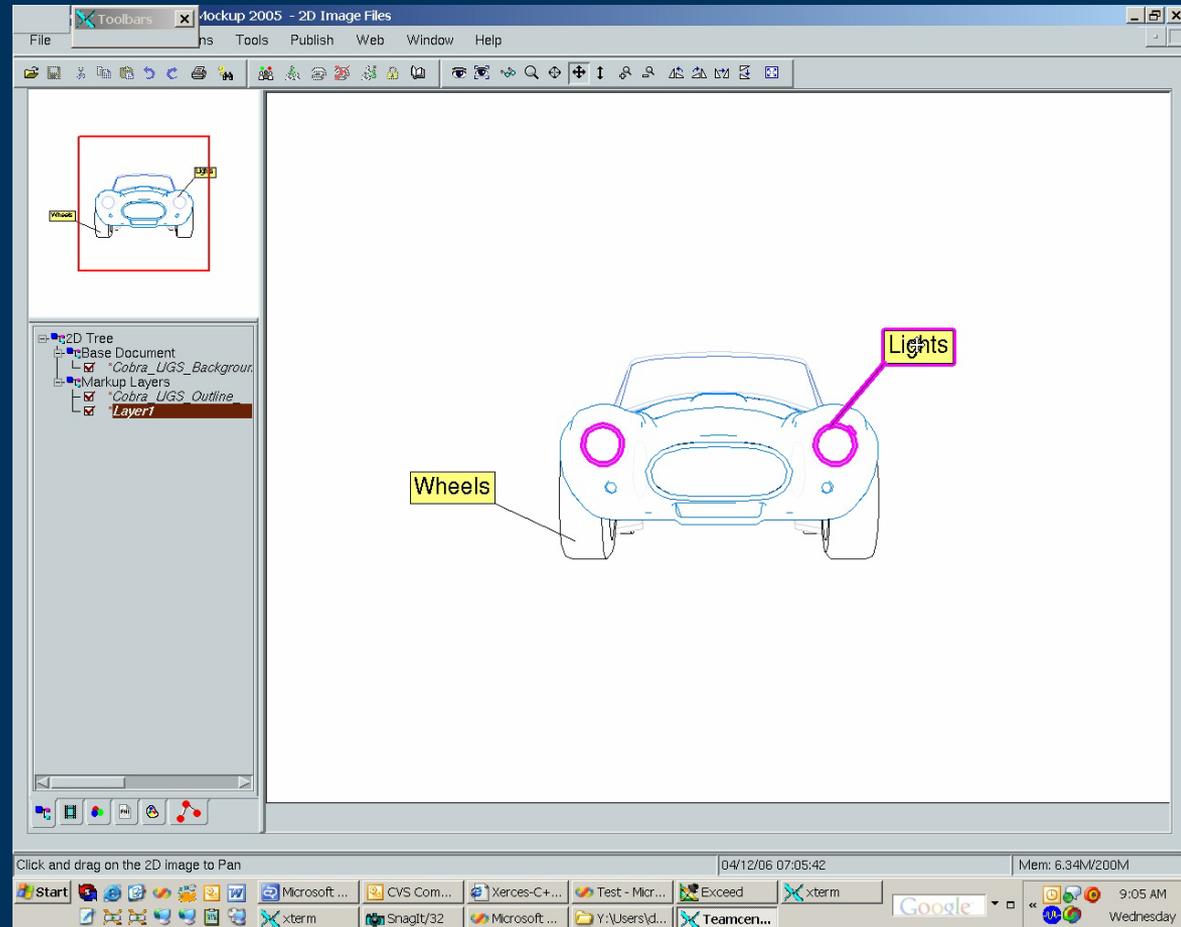
WebCGM Authoring – 2D Viewing



Hotspot Highlighting
(Disabled by Default)



Choose Highlight
Color





WebCGM Authoring – AVI





Integrated Convert



- Integrates the Teamcenter Visualization Convert application into the Teamcenter Translation Services Toolkit (TSTK)
- Allows TSTK users to process all 2D file formats supported by Vis View Convert
- Convert will provide controls to TSTK to support image manipulation tasks such as stamping, output size changes, and rotation
- Updates to Convert to run in a non-UI mode and to report errors
- Supports all Teamcenter platforms



PDF Viewing and Authoring



- Simplifies the UI since multiple PDF open paths can be eliminated
- Simplifies the view and markup scenario as all PDF file markups will be saved as CGM, just like all other 2D file types
- Allows the user to **generate PDF files** on Windows 32-bit platforms
 - Makes use of the Adobe PDF Libraries (PDF-L) for output
 - PDF output using PDF-L provided for both Teamcenter Visualization 2007 and Vis View Convert/Print
 - Supports both raster and **vector output** to PDF



Application Level



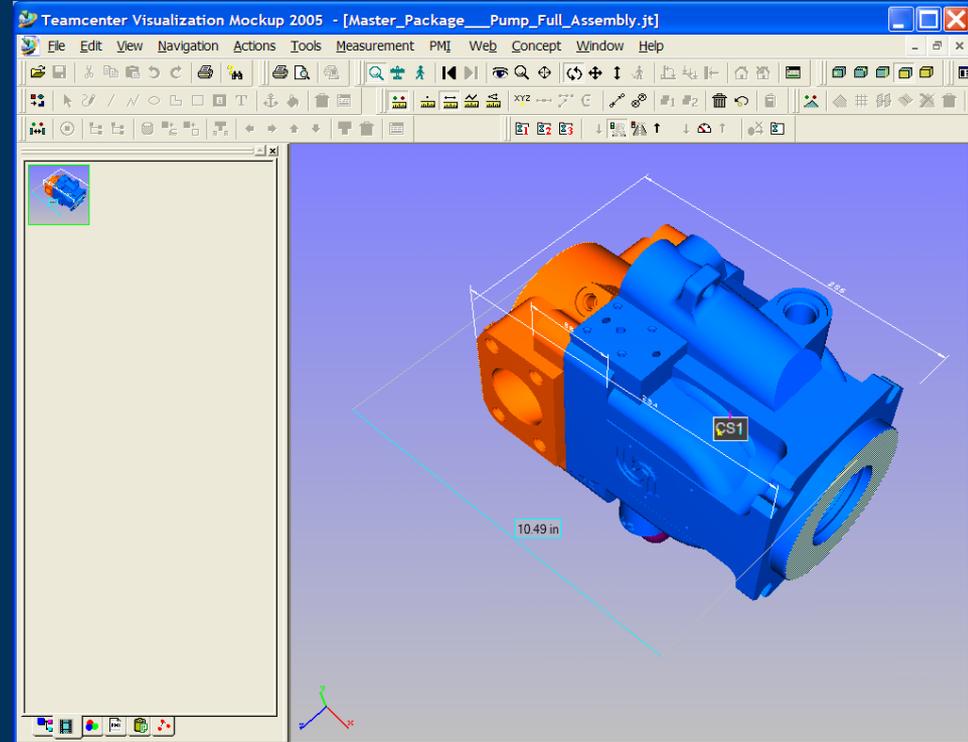
- Russian Localization
 - ▶ For consistency with other Teamcenter products we will be localizing to the Russian language



Snapshot Enhancements



- Additional Visualization authored content will now be persisted in snapshots
 - PMI
 - Measurements
 - Coordinate Systems
 - Exploded Views
- These features will be added to the PLMXML based Snapshots





View Grid



- Interactively enable a grid of horizontal and vertical drawn lines in the 3D view.
- Grid is only visible when camera is in orthographic mode and axis-aligned view.
- Grid is positioned relative to the world coordinate system (WCS).
- The grid will be labeled
- Label text will indicate distance along the grid
- Benefits to the user:
 - This type of grid will scale when zooming in and out to constantly give the user an **idea of the scale** of the geometry they are viewing

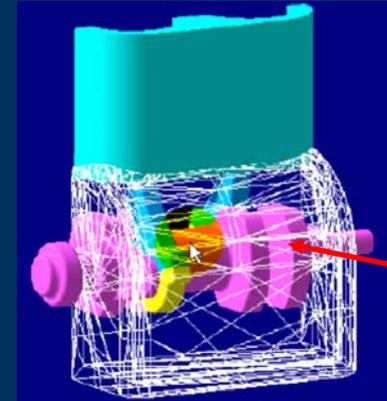




Display Shaded



- Display Mode:
 - Can be set on a per-occurrence basis.
 - Three different display modes are supported:
 - Shaded
 - Tessellation Lines
 - Feature Lines.
 - Preference for drawing Hidden Lines (Visible, Ghosted or Invisible) will remain global
- Pick-thru Parts:
 - Ability to pick through parts shown in the “Tessellation Lines” or “Feature Lines” mode.
 - Shaded parts cannot be picked thru, even if transparent.



pick parts
behind
other parts



Single Embedded Viewer



- Single Embedded Viewer (SEV) is a project to “standardize” all the embedded visualization solutions (Portal Viewer, iSeries, etc.) on one common framework.
- SEV eliminates the one off framework pieces currently used to provide embedded visualization
- SEV leverages the core Teamcenter Visualization executable and binaries to provide a consistent embedded viewing solution
- This project will **eliminate functionality differences** in the embedded viewers



Section Cut Properties



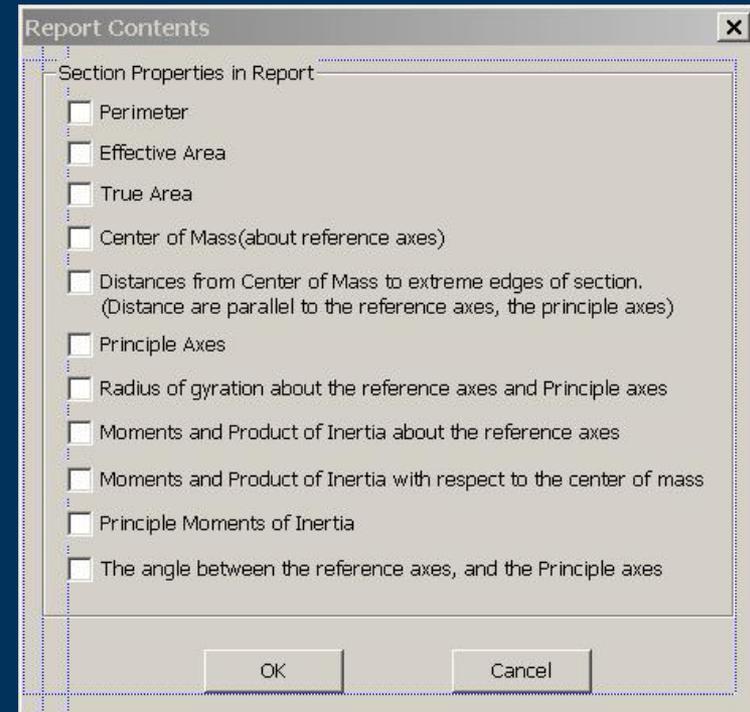
Analysis of section properties of a single section or a section series

- Area and Perimeter (No BRep data required)
- Effective Area
- Moment and Product of Inertia
- Principle Axes of Inertia
- Center of Gravity
- Radius of Gyration (BRep data is required)
- Distance from Centroid to Section Extremities

One-click analysis via extensive user preferences

Highlighting of the section area subject to analysis

Reporting





Section Cut Properties (continued)



The screenshot displays the 'Coordinate System Properties' dialog box and a 'Create Report - Message' dialog box over a 3D CAD model. The 'Coordinate System Properties' dialog is open to the 'Section Report: Default ref. axes' section. The 'Position' fields are X: 81.8984, Y: 19.8181, and Z: 3.19133. The 'Orientation' fields are X: 90, Y: -87.7686, and Z: 0. The 'Create Report - Message' dialog contains the text 'Adjust reference axes if you want' and 'Next >' and 'Cancel' buttons. The background shows a 3D model of a part with a section cut, a coordinate system with X, Y, and Z axes, and a yellow rectangular selection box.

Coordinate System Properties

Name: Section Report: Default ref. axes

Associated part:

Associate coordinate system with part

Position:

X:	Y:	Z:
81.8984	19.8181	3.19133

Orientation:

X:	Y:	Z:
90	-87.7686	0

Buttons: OK, Cancel, Apply

Create Report - Message

Adjust reference axes if you want

Buttons: Next >, Cancel

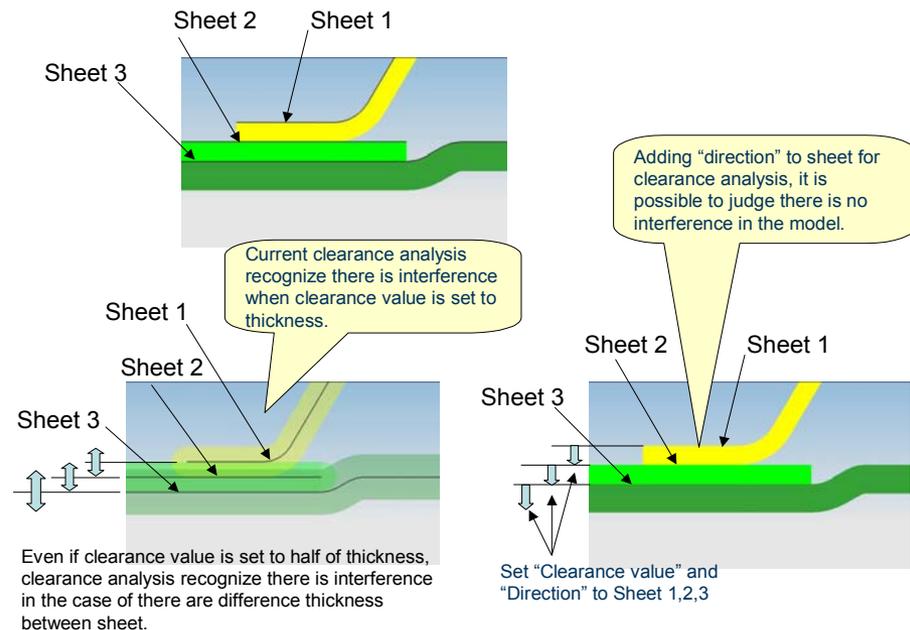


Thicken Sheet Clearance



- Clearance analysis of sheet parts to take into account sheet thicknesses
- Thickness is applied to sheets asymmetrically – either in the face normal direction or opposite to the face normal direction
- There is **no part authoring involved**, only the analysis is modified
- The thickness is defined via part metadata or via user interface
- Analysis on tessellated data

General Clearance Results			
Type	Part Number1	Part Number2	Result
P	G01S71-F109A68-A_...	G01S71-F6337...	~-0.0576
P	G01S71-F109A68-A_...	W520721-S_NU...	~-0.2961
P	G01S71-F109A68-A_...	W520721-S_NU...	~-0.2537
T	G01S71-F109A68-A_...	W700121-S_ST...	~3.1429
P	G01S71-F109A68-A_...	W700121-S_ST...	~-0.3698
P	G01S71-F10127-A_P...	LD1S71-F10127...	~-0.1789
T	G01S71-F63377-A_P...	W700121-S_ST...	~0.0000
P	G01S71-F63376-A_P...	W700121-S_ST...	~-0.3869





Next Generation Identifiers



- Next Generation Identifiers (NGID) for Product Structure
 - Common persistent references within PLMXML and Teamcenter Visualization session data based on the source Product Structure management system
 - Better reference data interoperability across applications.
 - Current reference identifiers (CADID) are not resilient to changes in name, revisions, etc.
 - NGID's are robust and resilient to change due to multi-tier encoding:
 - Absolute Occurrence ID's obtained from Teamcenter
 - Flexible path-based identifiers obtained from Teamcenter and CAD systems
- **Reconciliation Improvements**
 - Single point validation of all Product Structure references used within a user session.
 - Session Reload capability to allow for a efficient post-reconciliation reload of session data without reloading the Product Structure.



Motion Data Management



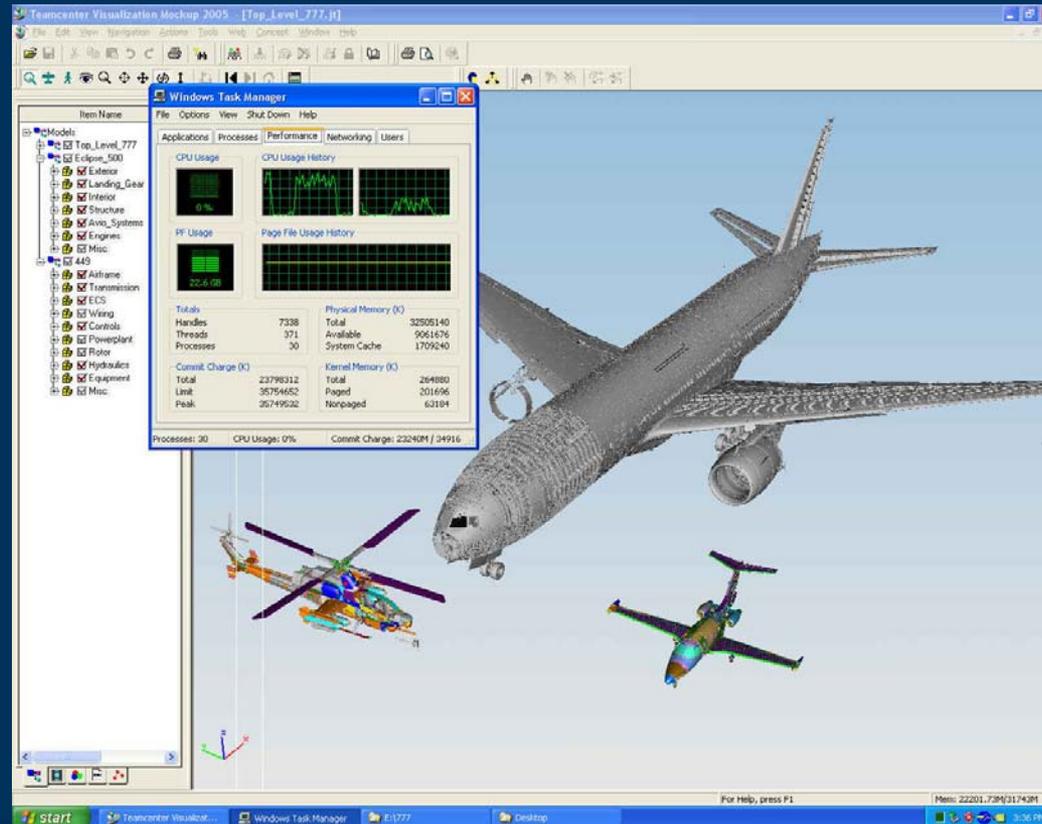
- ▶ Improved reliability for **motion data authored in NX**
- ▶ Author motion data that can be **replayed against managed product structure** in Teamcenter
- ▶ Vault and manage the motion data in Teamcenter with the associated product structure
- ▶ Author motion files that are **more robust** and able to withstand events like revisions & renaming
- ▶ Improved usability for replaying motion in Teamcenter Visualization
- ▶ Improved motion file **reconciliation**
- ▶ Additional detailed error reporting
- ▶ Ground-work for motion data management integration with other CAD systems



Visualization Performance Improvements



- **Drastic improvement** in interactivity navigation – especially on very large datasets
- *All* multi-CPU systems will see a *significant* increase in interactivity





PLMXML Interoperability

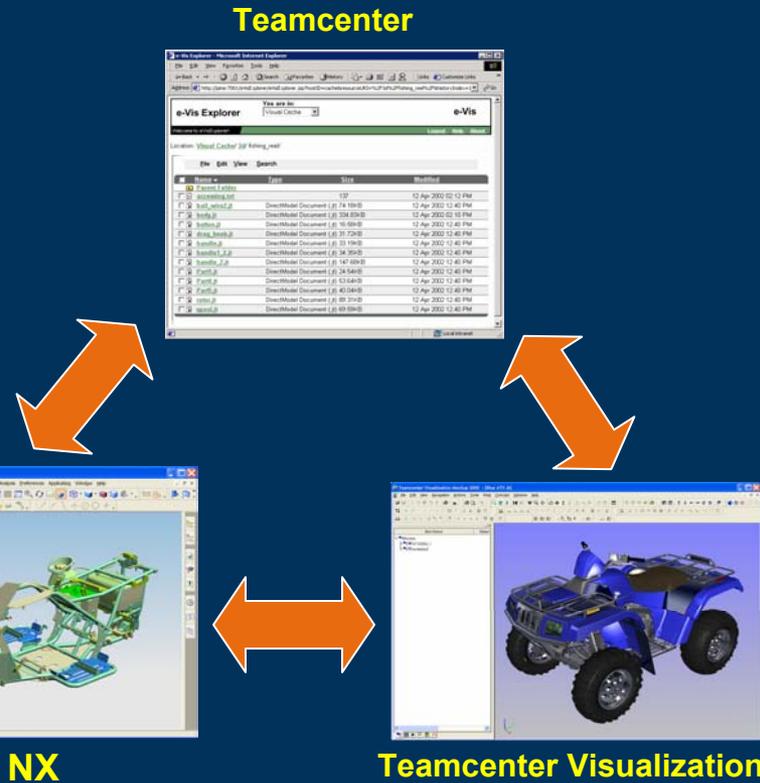


Improved interaction between Teamcenter, Visualization and NX

- Interoperation of Teamcenter Manufacturing process and plant objects
- Publish 3D snapshots to Teamcenter for consumption by other apps
- Support for visualizing Assembly Arrangements created in NX

Single Button Save

Provides support for viewing of assembly level PMI and metadata from Teamcenter through PLMXML interoperation

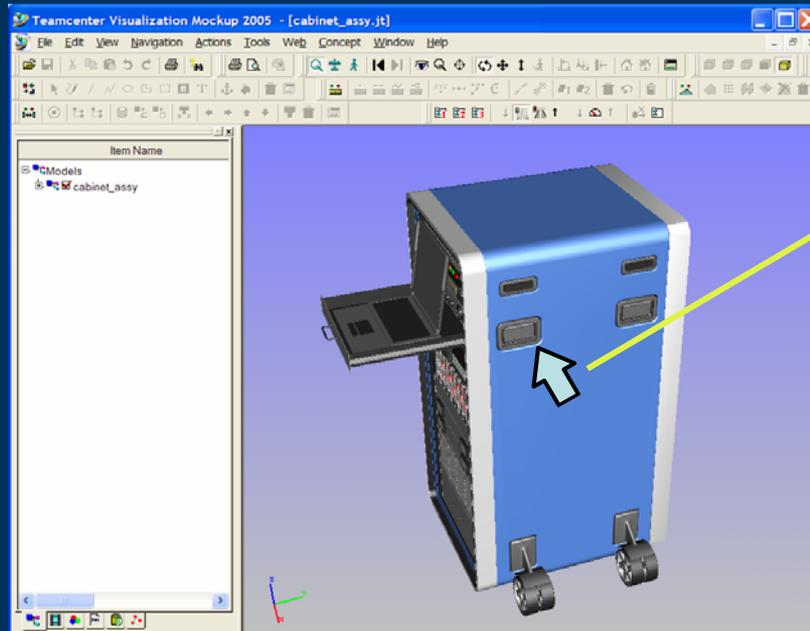




Conferencing Usability Improvements



- Provide a “**reference pointer**” that can be used to point to areas of interest on 3D and 2D views.
 - Analogous to a mouse pointer that is supported by conferencing
- **Display IP address** in conference user profile window.



Conferenced Pointer



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