e-Viewer
User's Guide

NOTICE FOR USERS:

This User Guide is a general instruction for Open CASCADE study. It may be incomplete and even contain occasional mistakes, particularly in examples, samples, etc. Open CASCADE S.A.S. bears no responsibility for such mistakes. If you find any mistakes or imperfections in this document, or if you have suggestions for improving this document, please, contact us and contribute your share to the development of Open CASCADE Technology: bugmaster@opencascade.com

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1. Introduction

1.1. Overview

1.1.1. Manual

This manual provides technical documentation on the e-Viewer. It explains the Interface, including the differences between the Professional and Standard versions of the e-Viewer, and various display functions allowing custom viewing of shapes using web browsers and various operating systems.

1.1.2. Introducing the e-Viewer

The e-Viewer for Web Browsers is a dedicated application for interactive viewing of 3D CAD files.

As a plug-in for Netscape, Internet Explorer or Opera, the e-Viewer allows you to visualize the contents of standard CAD files in a 3D view.

The Shape Viewer plug-in is available in two different versions:

- A Professional version for corporate use available under license

- A free version (Standard version) available from our Web site.

1.1.3. What the e-Viewer does

The current version of this shape viewer offers the following features:

- Usable on Netscape Navigator, Internet Explorer, or Opera, the plug-in can access and visualize standard CAD format files on the Internet, local area network, or local computers.

- Visualization of one or more model into the same HTML page (useful for part libraries).

- Selectable display mode of the visualized part (wireframe or shaded).

- Dynamic modification of the 3D view into which the part is displayed (rotation, panning, zooming).

- Manual Selection of the view to display (Axonometric or XY/YZ/XZ planes)

- Selection of a part or a sub-shape of a part (for compound shapes).

- Ability to hide a selected part or a sub-shape.

- Ability to change the display properties of the selected part or subshape.

1.1.4. System Requirements

Operating Systems

The Professional and Standard e-Viewer plug-ins are available on the following Hardware and Operating Systems supported by Open CASCADE (see Open CASCADE 5.1 Release Notes):

Hardware	Operating System
Windows Intel	2000, NT 4.0 SP3 + Y2K Patches

Web Browsers

The Professional and Standard e-Viewer plug-ins are available for the following Web Browsers:

- Internet Explorer - from version 4.0 to 6.0,

- Netscape Navigator - from version 4.7 to 6.0

- Opera – from version 5.0 to 7.0

1.1.5. e-Viewer File Import and Export Abilities

For Data Exchange

Shape Viewer plug-in Professional - The Professional Shape Viewer plug-in allows visualization of the following file formats:

File Extension	Format	Import	Export
Brep	Brep	**YES**	**YES**
Igs, iges	IGES 5.3	**YES**	**YES**
Stp , step	STEP AP203/AP214	**YES**	**YES**
Stl	STL	**YES**	**YES**
Vrml	VRML	NO	**YES**

Shape Viewer plug-in Standard - The Standard Shape Viewer plug-in allows visualization of the following file formats:

File Extension	Format	Import	Export
Brep	Brep	**YES**	NO
Igs, iges	IGES 5.3	**YES**	NO
Stp , step	STEP AP203/AP214	**YES**	NO
Stl	STL	**YES**	NO
Vrml	VRML	NO	NO

1.1.6. e-Viewer Screen Backgrounds

Viewer plug-in Professional

For the Professional Plug-In, the shapes are displayed in a standard 3D View with a white background as default.
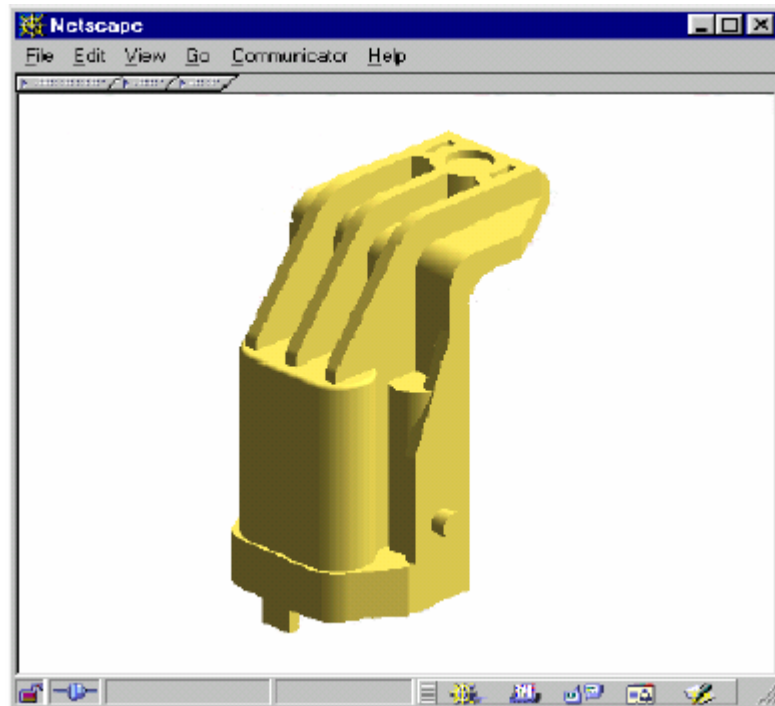
Viewer plug-in Standard

For the Standard Plug-in, the shapes are displayed in a 3D OpenGL View to display the part. Small OPEN CASCADE Logos are set as a background:

2. Installation

2.1. Common actions

- Run setup.exe. After that, standard "Welcome" dialog of the "Install Shield Wizard" appears.

- Clicks next to continue installation. Installation program looks for browsers installed on your computer and folders for their plug-ins. Only supported browsers - Netscape Navigator, Microsoft Internet Explore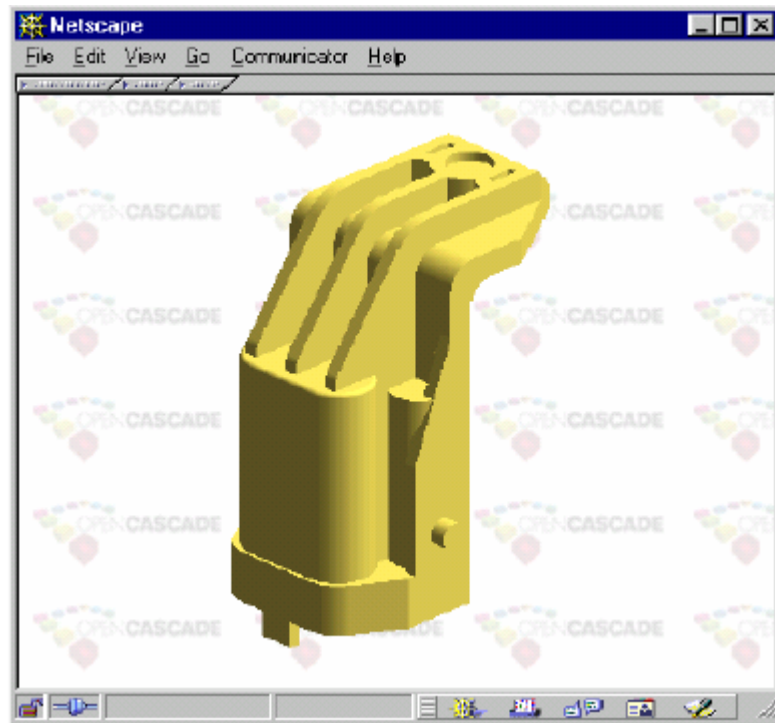r and Opera can be detected. Dialog "Custom Setup" appears and shows browsers. By default all detected browsers are enabled in the dialog.
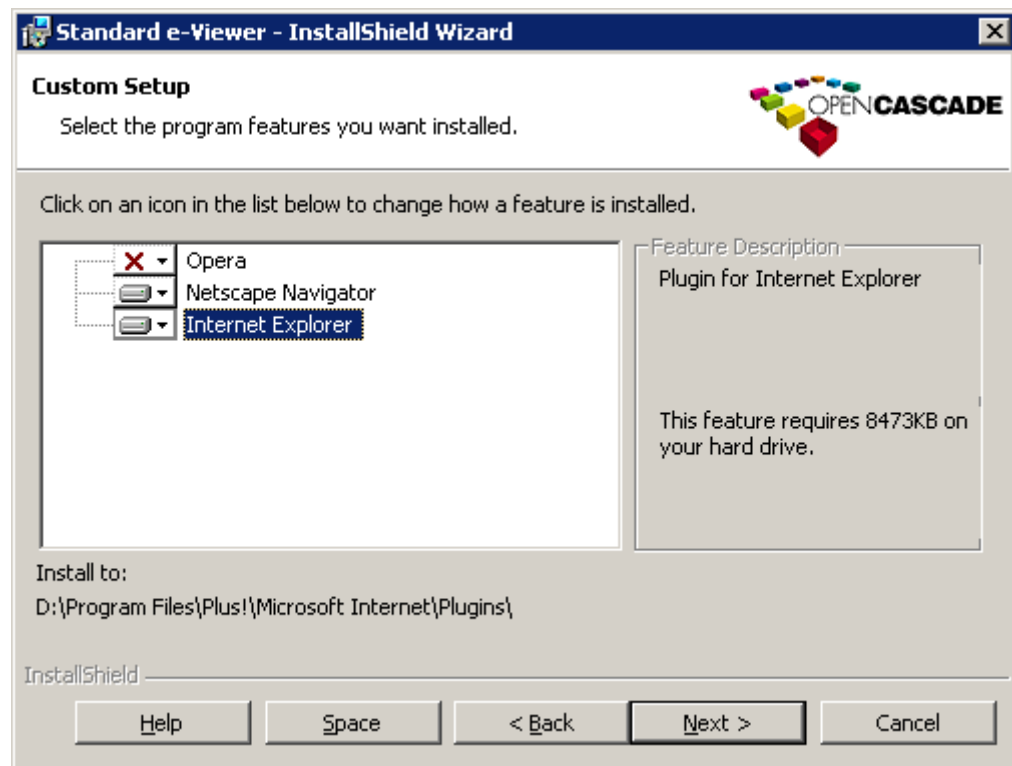
- If the installation program has detected your browser properly, click "Next" to continue installation. In this case the plug-in is installed to the "Plugins" folder of detected browsers.

- If your browser is compatible with Netscape-style plug-ins technology and you don't have the three listed browsers, please enable any of the disabled icons, and click "Next". In this case the plug-in is installed to the "Program Files\OpenCASCADE\ E-Viewer-Std\" folder.

- Follow the instructions of Install Shield Wizard till the end of installation.

2.2. Tuning the Opera browser

If you have Opera 5 browser or one of early versions installed on your computer it is necessary to tune the "File types" preference. User should insert new records with extensions and corresponding MIME types. To do this, please perform the following steps:

- Open Opera browser

- Chose the "File\Preferences" menu item.

- Correct four record as showed on figure bellow
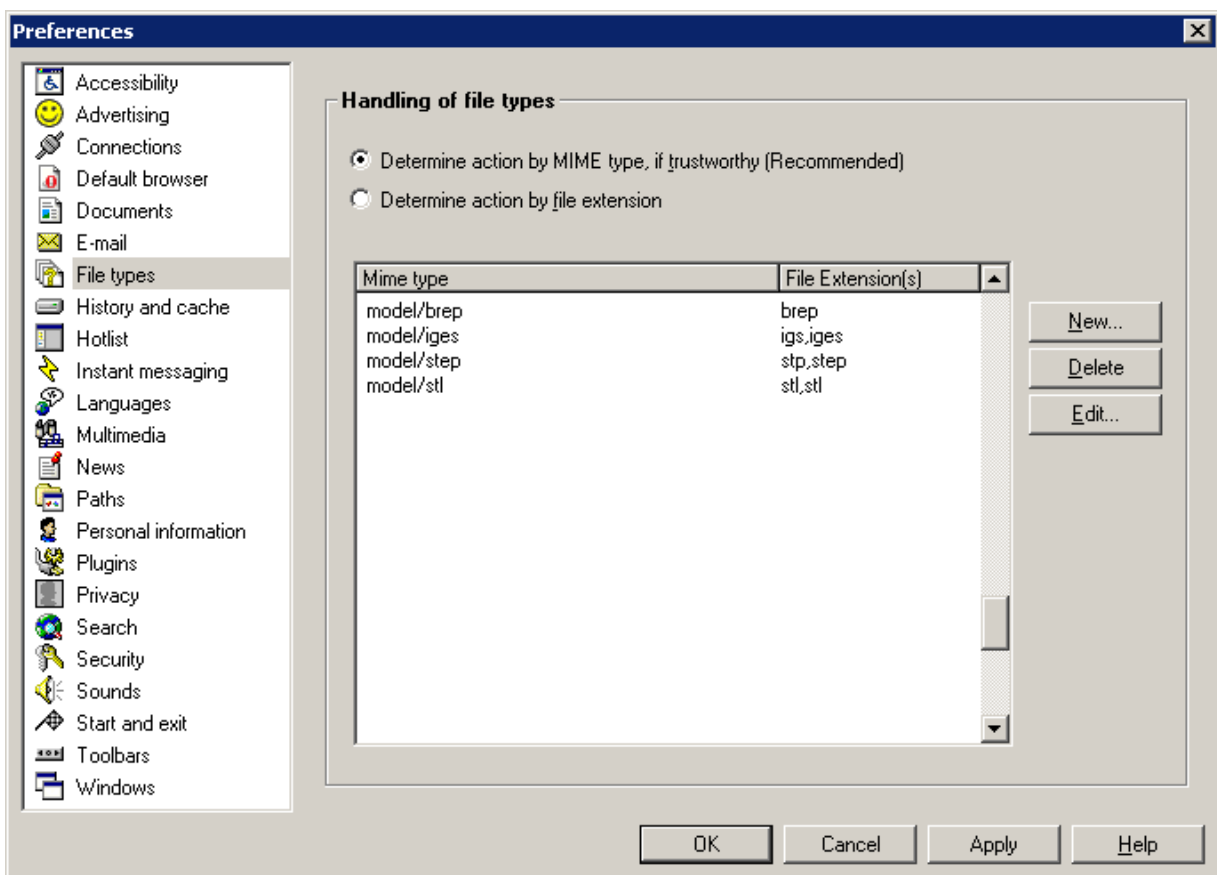
Opera supports mouse gestures for basic browser's operations. Some of the operations are the same with plug-in's ones for dynamic modification of 3D view. To avoid conflicts between these operations it is necessary to disable browser's reaction to mouse gestures inside the viewer. To do this, please choose the "File\Preferences" menu item and uncheck the "Enable mouse gestures" flag as showed on figure bellow.

Preferences   ☒

♿ Accessibility
☺ Advertising
⚡ Connections
ⓞ Default browser
📄 Documents
✉ E-mail
📑 File types
🖴 History and cache
🗐 Hotlist
⚡ Instant messaging
🎨 Languages
👥 Multimedia
📝 News
📂 Paths
👤 Personal information
👥 Plugins
🖼 Privacy
🌐 Search
🔑 Security
🔊 Sounds
✈ Start and exit
▬▬ Toolbars
🗗 Windows

┌─ **Mouse** ──┐
│ ☐ <u>E</u>nable mouse gestures   │
│   │
│ ☐ Adjust mouse <u>b</u>utton navigation for left-handed configuration │
│   │
│ ☐ <u>U</u>nderline mouse hovered list items   │
└──┘

┌─ **Keyboard** ───┐
│ ☑ Enable <u>a</u>uto completion dropdown   │
│   │
│ ☐ <u>M</u>enu style item selection in Hotlist window   │
│   │
│ ☐ <u>S</u>creen reader compatible menus   │
└──┘

[OK]   [Cancel]   [Apply]   [Help]

3. Display Functions

3.1. e-Viewer Display Functions

Both the Professional and Standard e-Viewer offer the same display functions affecting the view of displayed shapes. Three standard Open CASCADE operations are possible to display the image for your requirements:

ZOOMING	Ctrl Key & MB1
PANNING	Ctrl Key & MB2
ROTATING	Ctrl Key & MB3

The image can also be displayed for the dynamic selection (MB1). Like in the existing plug-in demonstration, this dynamic selection can be applied on the:

- Entire displayed shape

- Displayed sub-shapes for a compound of shapes

Other display functions of the 3D View are accessible from a single popup menu, displayed by right-clicking the mouse.
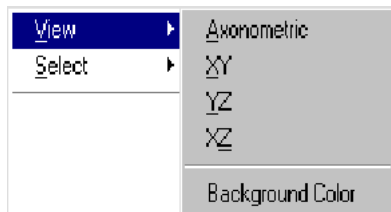

This popup provides access to the:

- *View* sub-menu for 3D view modifications (see the next section).

- *Select* sub-menu to select all shapes or sub-shapes (see the next section).

- Display the mode group of display functions for a shape (Shading or wireframe, color, transparency, and more).

- Hide sub-shapes and display all shapes.

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3.1.1. View Sub-menu
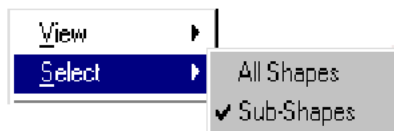
The *View* sub-menu appears as follows:

It provides access to the following display functions:

- User selection of view orientation (Axonometric or XY/XZ/YZ planes).

- User selection, through a dialog box, of the background color of a view.

3.1.2. Select Sub-menu

The *Select* sub-menu appears as follows:

It provides access to the following display selection functions for the model:

- Selecting all shapes - when selected, the display mode modifications will be applied to all these shapes.

- Selecting only sub-shapes - this is used when viewing a compound. When selected, the display mode modifications will only be applied to the dynamically selected shapes.

3.1.3. About

You can find out if your current version of the e-Viewer is either Professional or Standard by selecting this option. Please contact Open CASCADE for purchasing information on the Professional version.

4. Information for advanced users

4.1. Tuning the HTTP server

For correct work with the plug-in, it is necessary to tune Internet media types, which must be sent to the clients by an HTTP server for given file extension(s). Sending the correct media type to the browsers is important so they know how to handle the content of the file and load the plug-in immediately. For example, Apache server may be configured with adding following strings to "mime.types" configuration file:

model/iges   **igs iges**

model/step   **stp step**

model/stl   **stl**

model/brep   **brep**

4.2. Use of HTML tag "embed" for building on-line catalogues

The plug-in can be used for building on-line catalogues or lists of models. Example of a catalogue is shown on the figure below.
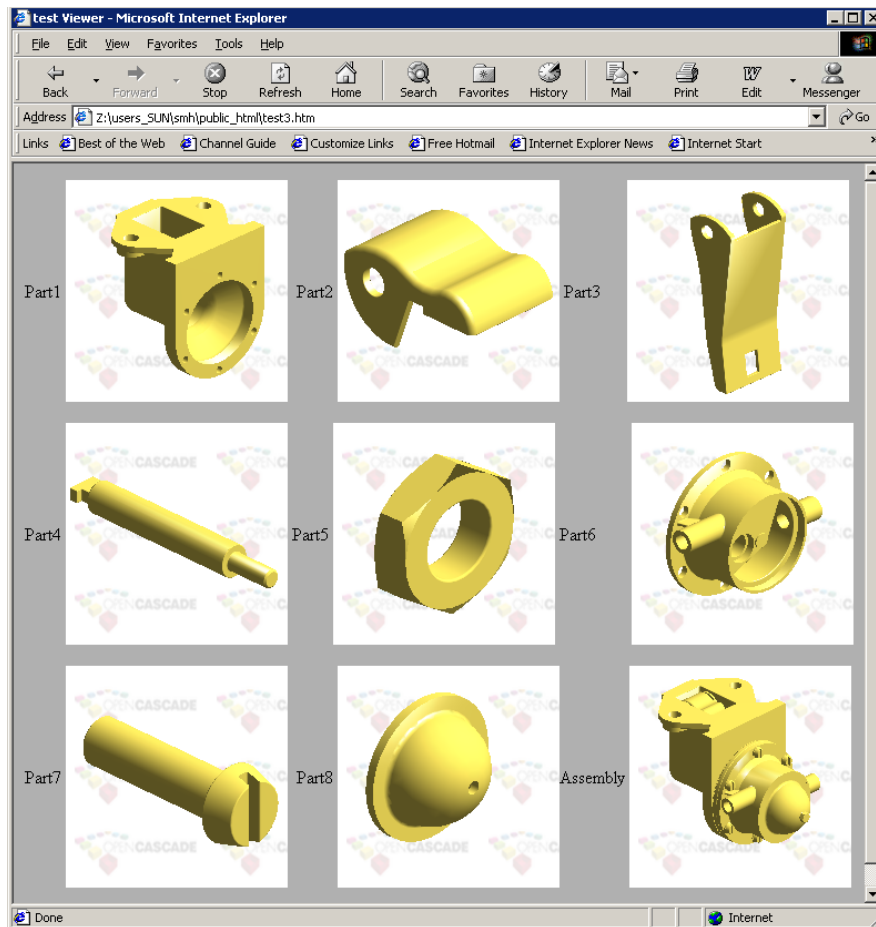
Code of the corresponding HTML page:

```
<!doctype html public "-//w3c//dtd html 4.0 transitional//en">

<html>

<head>

    <meta http-equiv="Content-Type" content="text/html;
charset=iso-8859-1">

    <meta name="GENERATOR" content="Mozilla/4.79 [en] (X11; U;
SunOS 5.6 sun4u) [Netscape]">

    <title>test Viewer</title>

</head>

<body bgcolor="#B0B0B0">

Part1 <embed type=model/brep src="./brep/pump1.brep"
width="200" height="200" align="absmiddle"> 

Part2 <embed type=model/brep src="./brep/pump2.brep"
width="200" height="200" align="absmiddle">

Part3      <embed
type=model/brep src="./brep/pump3.brep" width="200"
height="200" align="absmiddle">

<p>Part4 <embed type=model/brep src="./brep/pump4.brep"
width="200" height="200" align="absmiddle">

Part5 <embed type=model/brep src="./brep/pump5.brep"
width="200" height="200" align="absmiddle">

Part6        <embed
type=model/brep src="./brep/pump6.brep" width="200"
height="200" align="absmiddle">

<p>Part7 <embed type=model/brep src="./brep/pump7.brep"
width="200" height="200" align="absmiddle"> 

Part8 <embed type=model/brep src="./brep/pump8.brep"
width="200" height="200"
align="absmiddle">Assembly <embed type=model/brep
src="./brep/pump9.brep" width="200" height="200"
align="absmiddle">

<br><!--   <p>Test step file --><!-- <embed type=model/step
src="./step/as1-ec-214.stp" width="300" height="300"
align="absmiddle"> --><!--   </p> --><!--   <p>Test iges file
--><!-- <embed type=model/iges src="./iges/bigs.igs"
width="300" height="300" align="absmiddle"> --><!--   </p> -->

</body>

</html>
```