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Other systems for real-time visualization



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1

Content

1. Viewpoint (Metastream)
2. Plant-4D
3. Java 3D
4. Virtual Reality Toolbox
5. Java - EAI – VRML
6. Links



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2

Part 1:Viewpoint (Metastream)

Rich media visualization technology for the Web

Viewpoint Experience Technology (VET)

- unique technology
- 3D streams
- rich media content (media atoms)
- on the Internet via Viewpoint Media Player (VMP), a Web browser plug-in.

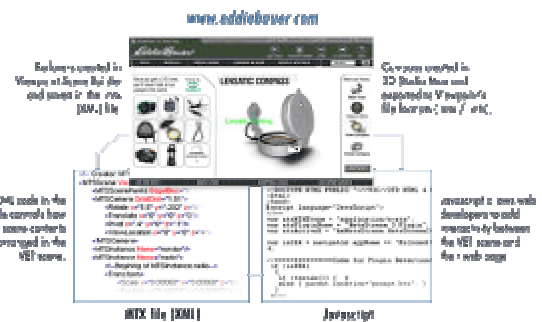


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3

Viewpoint



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4

Viewpoint - demo



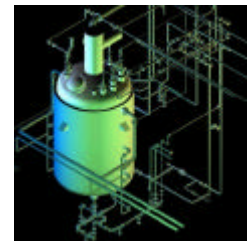
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Part 2:Plant-4D

- Plant Design Software tool
- Data-object oriented technology
- Compatible with AutoCAD and Microstation
- Plant-4D Virtual Reality Viewer

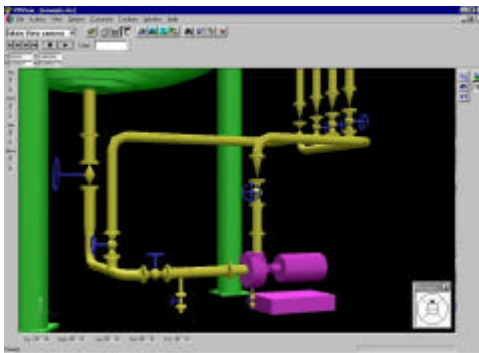


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Plant-4D



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7

Part 3:Java 3D

Java 3D – scene graph-based API

Benefits:

- Application portability
- Hardware independence
- Performance scalability

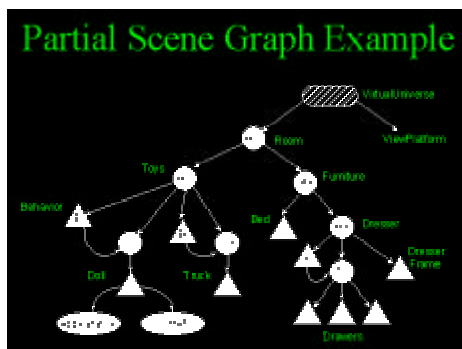


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Java 3D



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9

Java 3D

- Shape3D nodes
 - Lighwave3D
 - VRML
 - 3D Studio Max
- Appearance
 - Color, Texture, Fog, Lighting
- Behaviors
 - Animation, Collision detection, Interpolators, Morphing, Bounding regions



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Java 3D

The Future

- Input devices
 - Keyboard -> Mouse -> Joystick -> Head trackers -> ???
- Display devices
 - Screen -> Stereo -> Tessellation -> Portal -> Cave -> ???



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11

Part 4:Virtual Reality Toolbox

- Extends the capabilities of MATLAB
- Controls virtual reality object in VRML from MATLAB and Simulink
- Manipulates feedbacks
- Support for common hardware devices -joysticks and Magellan Space Mouse
- Client-server architecture for a single computer or network operation
- Enables interaction with a real-time simulation generated by Real-Time Workshop
- Supports VRML 97 standard nodes

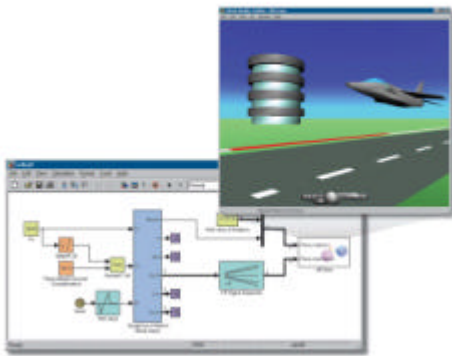


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12

Virtual Reality Toolbox -Demo



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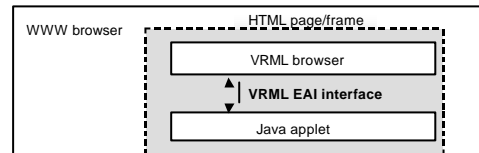
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13

Part 5:Java - EAI - VRML

EAI - External Authoring Interface

Controlling the Virtual environment



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14

Java - EAI - VRML

4 type for access

- a) Accessing the functionality of the Browser Script Interface .

```
Browser browser = getBrowser();  
Node test = browser.getNode("test");
```

- b) Sending events to eventIns of nodes inside the scene.

```
EventInSFfloat wChoice = (EventInSFfloat) test.getEventIn("whichChoice");  
wChoice.setValue(0.5)
```

- c) Reading the last value sent from eventOuts of nodes inside the scene.

```
float current = ((EventOutSFfloat) (test.getEventOut("whichChoice"))).getValue();
```



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Java - EAI - VRML

- d) Getting notified when events are sent from eventOuts of nodes inside the scene.

```
public class MyObserver implements EventOutObserver  
{  
    public void callback(EventOut value, double timeStamp, Object data)  
    {  
        // cast value into an EventOutSFVec3f and use it  
    }  
}
```

```
MyObserver observer = new MyObserver;  
test.getEventOut("whichChoice").advise(observer, null);
```



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16

Links

Viewpoint

– <http://www.viewpoint.com/>

Java3D

– <http://java.sun.com/products/java-media/3D>

Plant-4D

– <http://www.pidsusa.com>

VRML Reality Toolbox

– <http://www.humusoft.com/vr/>

EAI

– <http://www.web3d.org/WorkingGroups/vrml-eai/>



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17

The End

Thank you for your attention

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<http://www.cgg.cvut.cz/~xchludil/nautilus>



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18