

J. Hrivnac

# AGDD - VRML<sup>2.0</sup> - X3D

```
<box  
  name="Example"  
  material="Air"  
  X_Y_Z="1 2 3"/>  
<posXYZ  
  volume="Example"  
  X_Y_Z="5 6 7"/>
```

```
Transform {  
  translation 5 6 7  
  children [  
    Shape DEF Example {  
      geometry Box {size 1 2 3}  
      appearance Appearance {  
        material USE Air  
      }  
    }  
  ]  
}
```

```
<Transform translation="5 6 7">  
  <Shape DEF="Example">  
    <Box size = "1 2 3"/>  
    <Appearance>  
      <Material USE="Air"/>  
    <Appearance>  
  </Shape>  
</Transform>
```

Three ways to describe the same entity.

Air is DEFined somewhere

Example can be USEd



# Prototypes

```
<ProtoDeclare type="myBox">  
  <Field id="mySize" type="Vector3">  
    <Box size="mySize">  
  </Proto>
```

↓ instantiates

```
<ProtoInstance type="myBox" mySize="1 2 3"/>
```


Prototype can be external

```
<ExternProtoDeclare type="MyAtlas" url="http://atlas.cern.ch/Atlas.xml"/>
```

Prototypes,  
together with DEF/USE (see previous slide)  
and Script (see following slide),  
create very powerfull environment.

# Scripts

```
<Script
  url="java:
    if(Envelope.x > 5)
    {
      root.addChildren(new Box(anotherBox.x + 1, anotherBox.y + 1, anotherBox.z + 1));
    }"
</Script>
```



should be declared in anotherBox as ExposedField

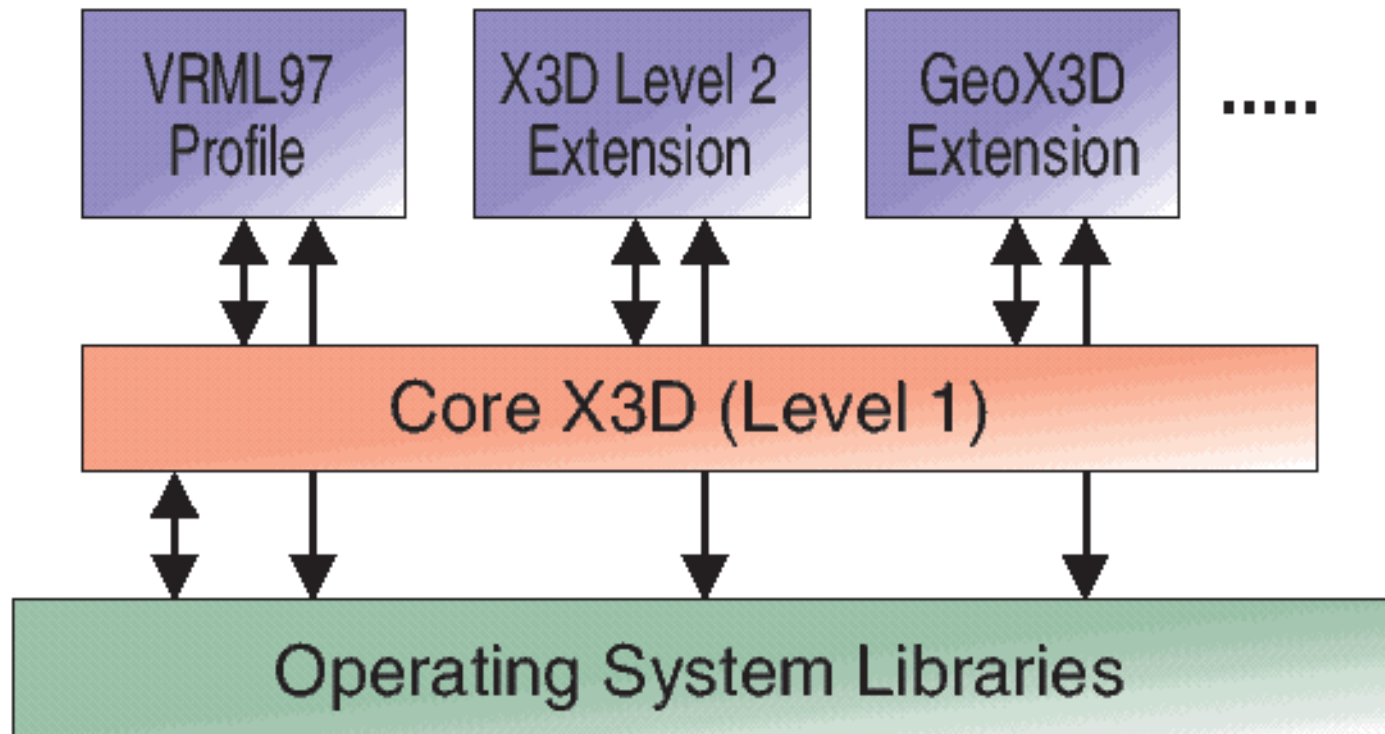
Any language is allowed in principle.

Only Java and JavaScript are used as they allow

- 1) easy interaction of the 3D Scene with the Browser (Java+Java3D) and external software (Moving Worlds),
- 2) interpreted mode.

Any attribute is accessible (if declared as Exposed).  
Attributes in different Elements can be directly connected by ROUTES - Elements can interact.

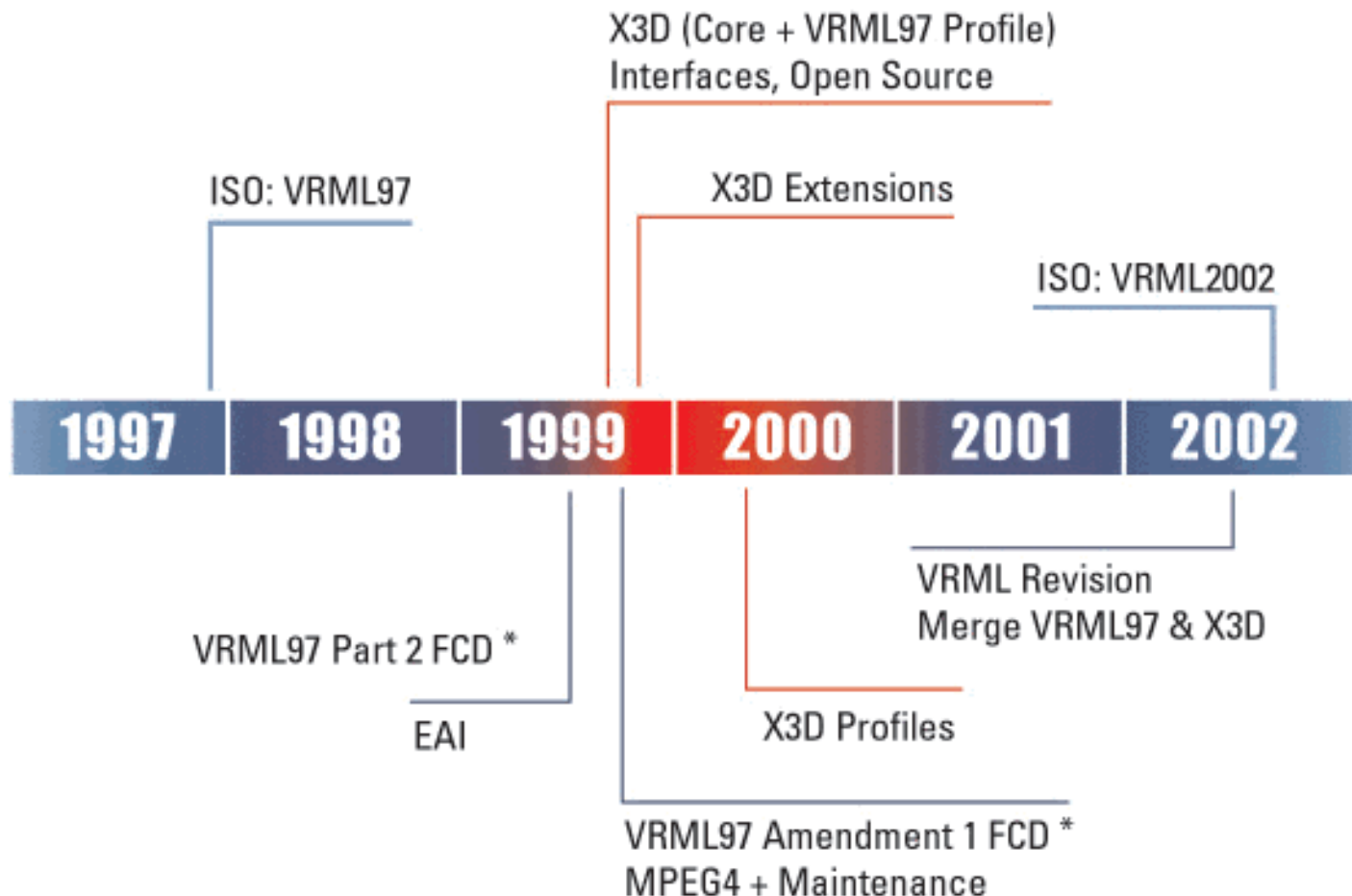
# X3D Architecture



Why not AGDD Profile ?

# TimeLine

## Web3D ISO Road Map



### Current status:

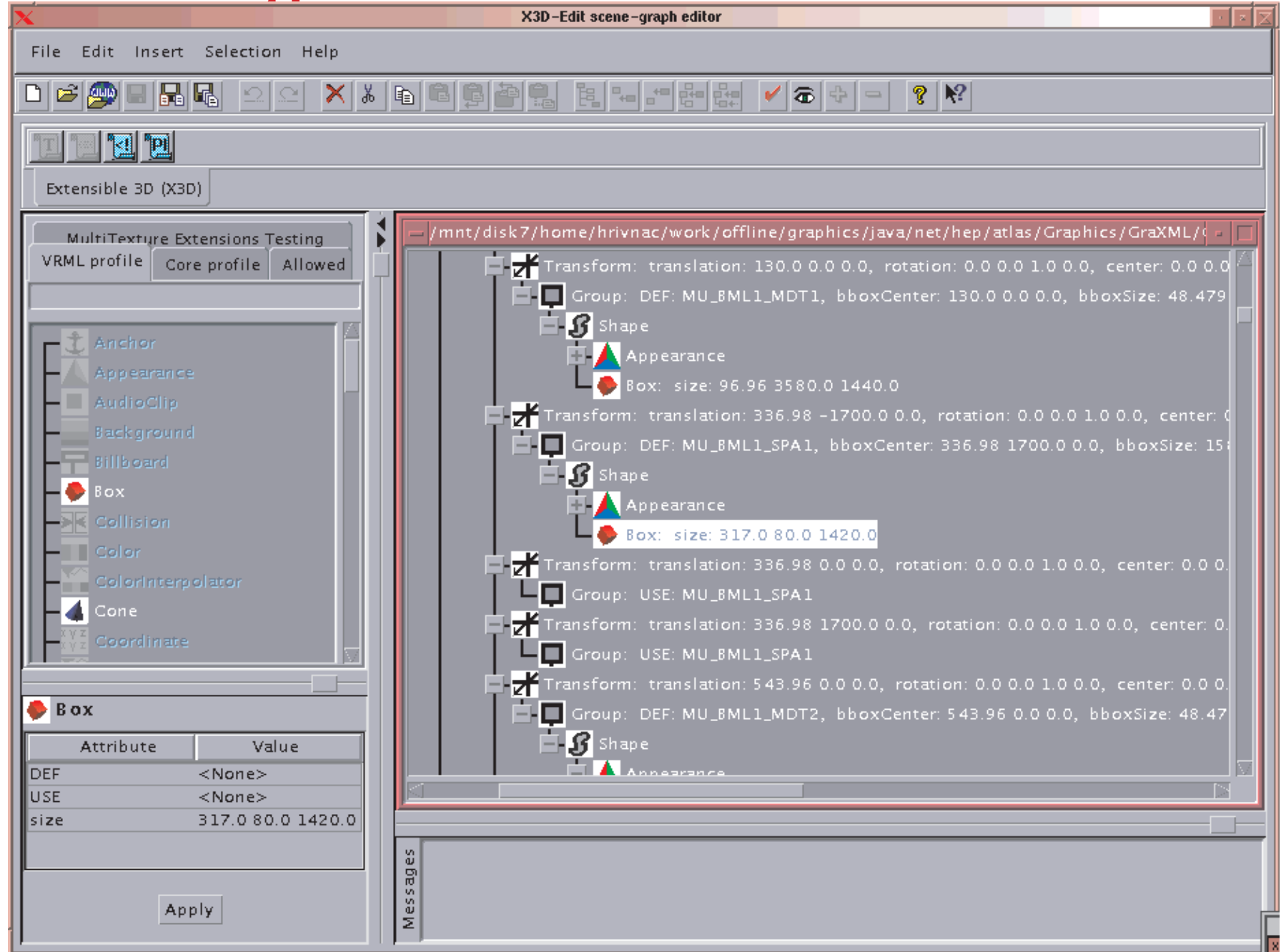
- 1) draft DTD
- 2) XSL for VRML
- 3) X3D Editor
- 4) API libraries in Java and C++
- 5) prototype appl. in Java

### Plans:

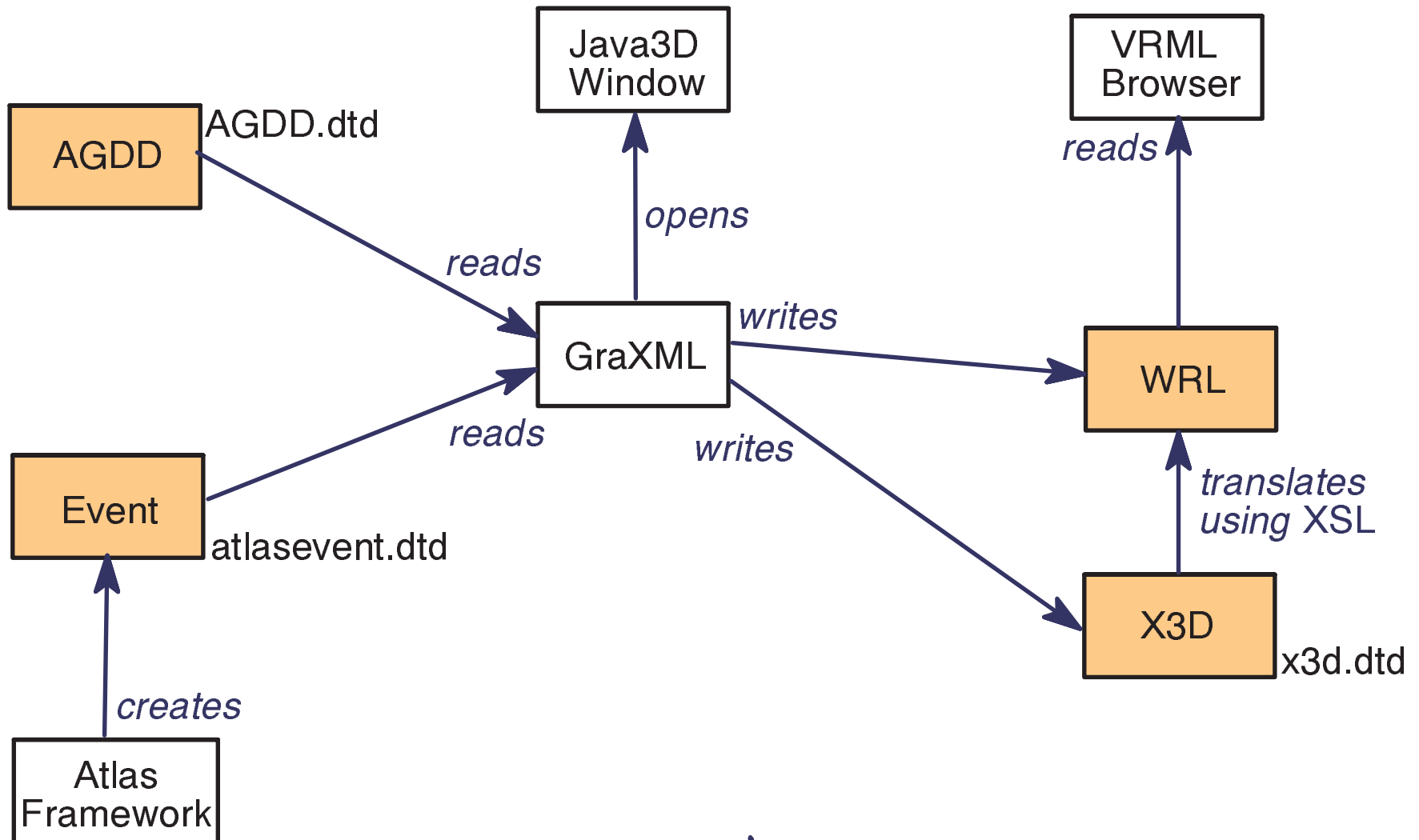
- 1) direct support in WWW browsers
- 2) 3D WYSIWYG modellers
- 3) Profiles and Extensions

# Editing GUI

Based on Xeena XML editor.



# Current Use in Atlas



Used for Visualization.



