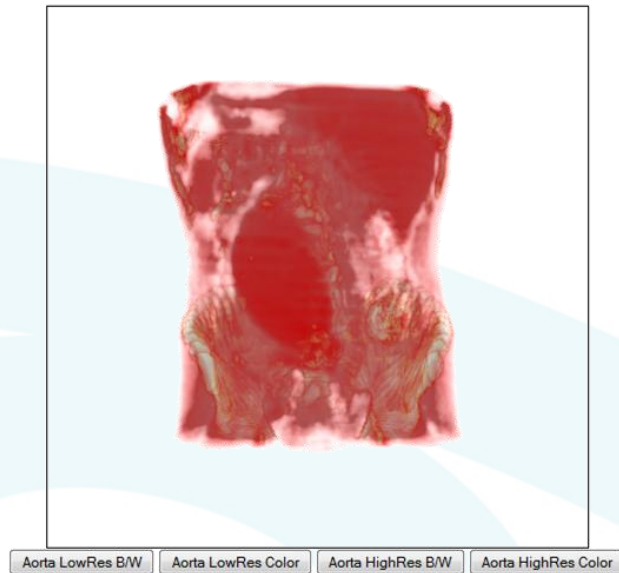


What we did last year... (Demo)

WebGL Volume Rendering

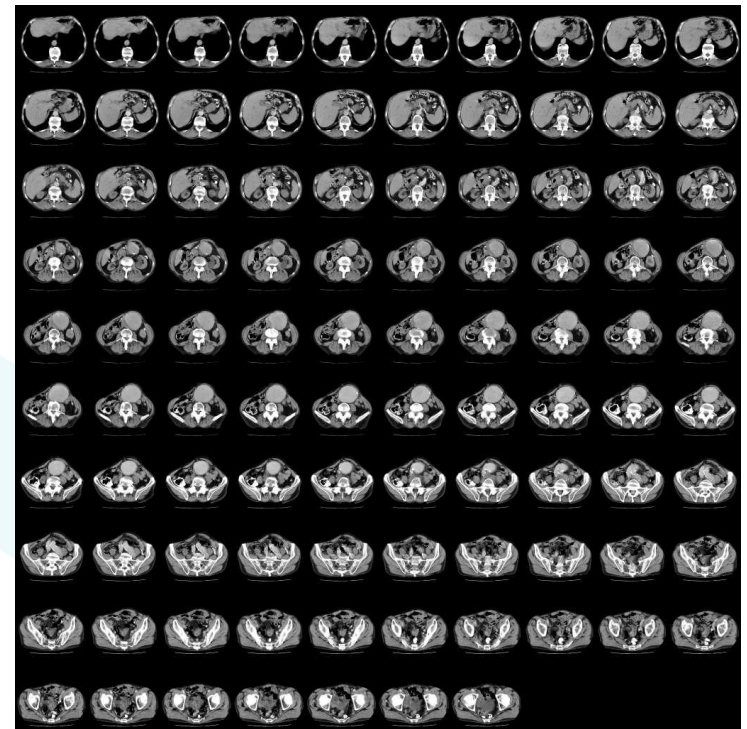
Real-Time Interactive Visualization of Volumetric Data with WebGL



Rotation with the mouse, and Alt+Mouse to Zoom

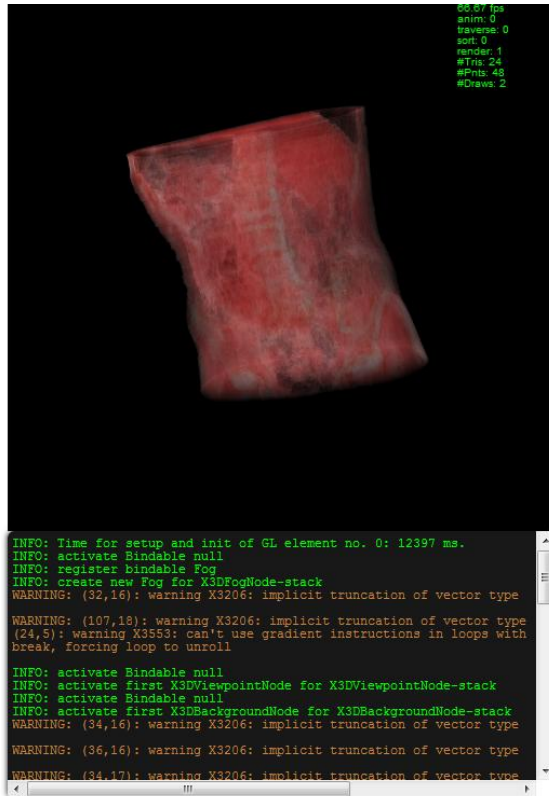
Abstract

The new WebGL standard may enable volume visualization on the Web. The Web is increasingly competing against desktop applications in many scenarios, but the graphical demands of some, such as interactive scientific visualization by volume rendering, have been a burden for their successful transition. Performance, scalability, accuracy, security are some of the many challenges that must be solved to see such visual Web applications emerge. In this publication, our intention is to demonstrate both performance and scalability of volume rendering by ray-casting based on the new WebGL standard in two different but challenging in different aspects fields: medical imaging and radar meteorology.



What we've been working on...

Integrating Volume Rendering in declarative X3DOM

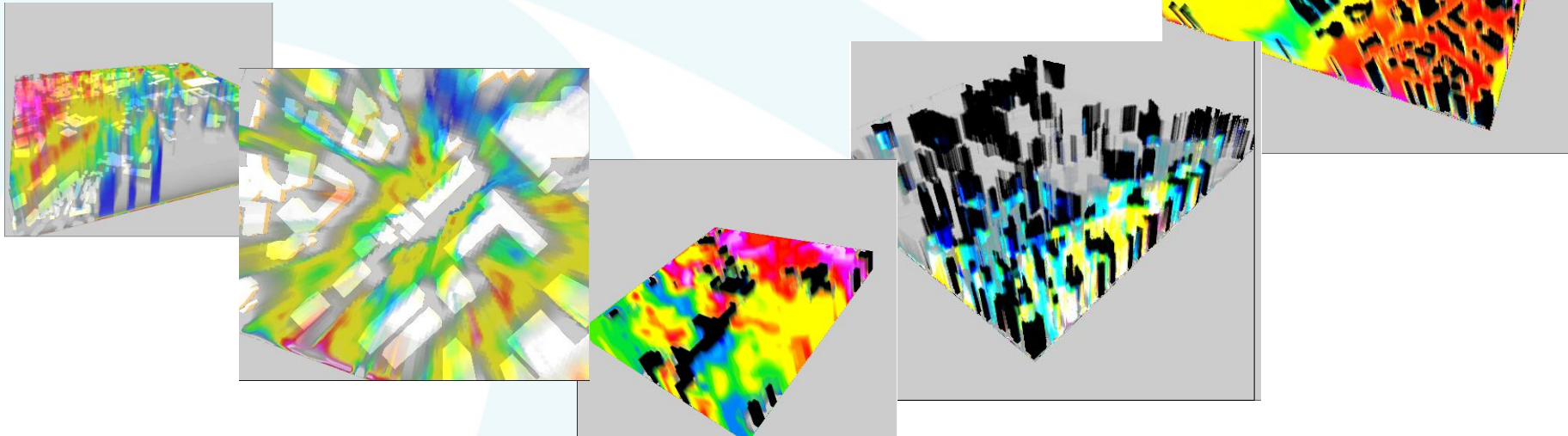


```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="X-UA-Compatible" content="chrome=1" />
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hello World</title>
<link rel="stylesheet" type="text/css" href="x3dom.css" />
<script type="text/javascript" src="x3dom.js"></script>
</head>
<body>
<X3D xmlns='http://www.web3d.org/specifications/x3d-namespace'
  showStat='true' showLog='true' width='500px' height='500px'>
  <Scene>
    <Background skyColor='0.0 0.3 0.65' />
    <Viewpoint description='Default' zNear='0.0001' zFar='100' />
    <Transform>
      <VolumeData id='volume' dimensions='4.0 4.0 4.0'>
        <ImageTextureAtlas containerField='voxels' url='media/volume/aorta4096.png'
          numberOfSlices='96' slicesOverX='10' slicesOverY='10' />
        <OpacityMapVolumeStyle lightFactor='0.01'>
          <ImageTexture containerField='transferFunction' url='transfer.png' />
        </OpacityMapVolumeStyle>
      </VolumeData>
    </Transform>
  </Scene>
</X3D>
</body>
</html>
```

What we've been working on... (no demo yet)

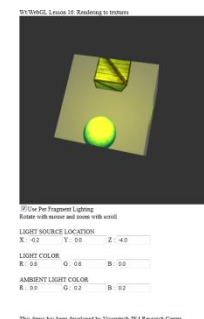
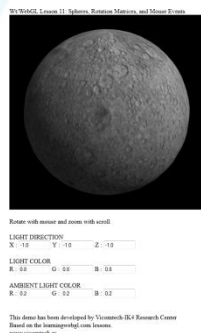
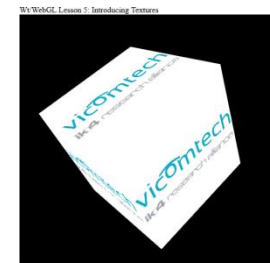
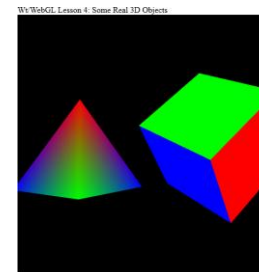
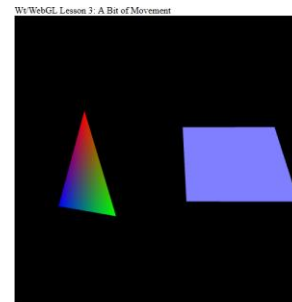
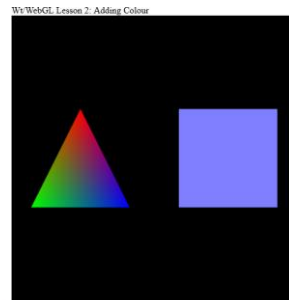
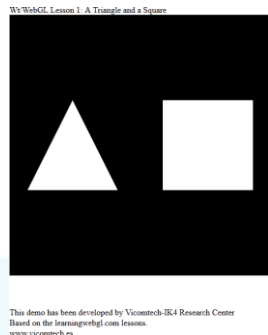
And extending capabilities...

- 4D (timesteps volumes)
- Adding 3D models
- Realtime transfer function tuning with JQuery



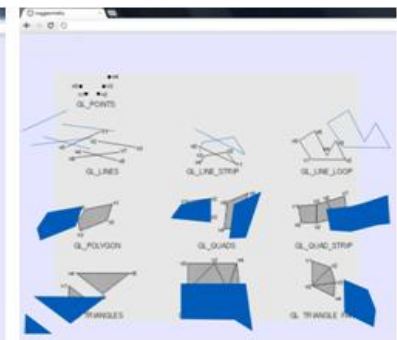
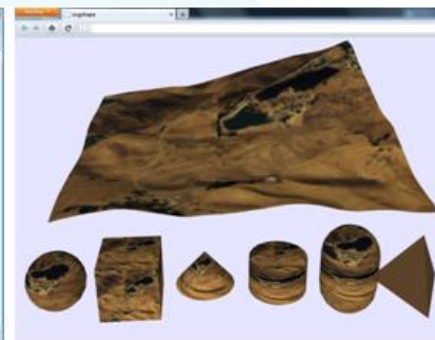
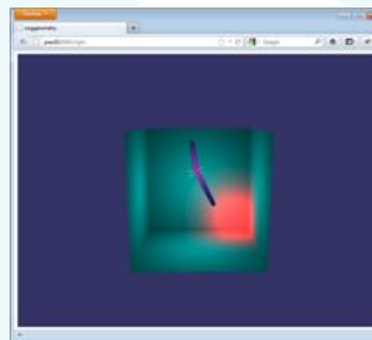
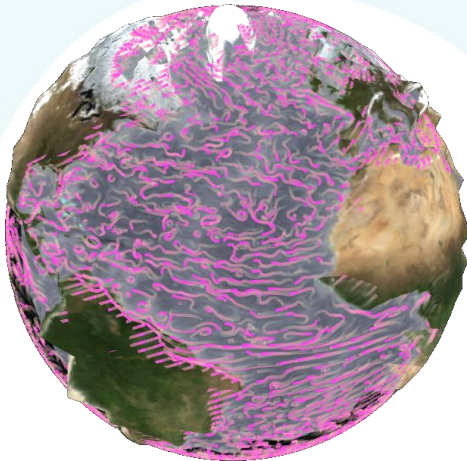
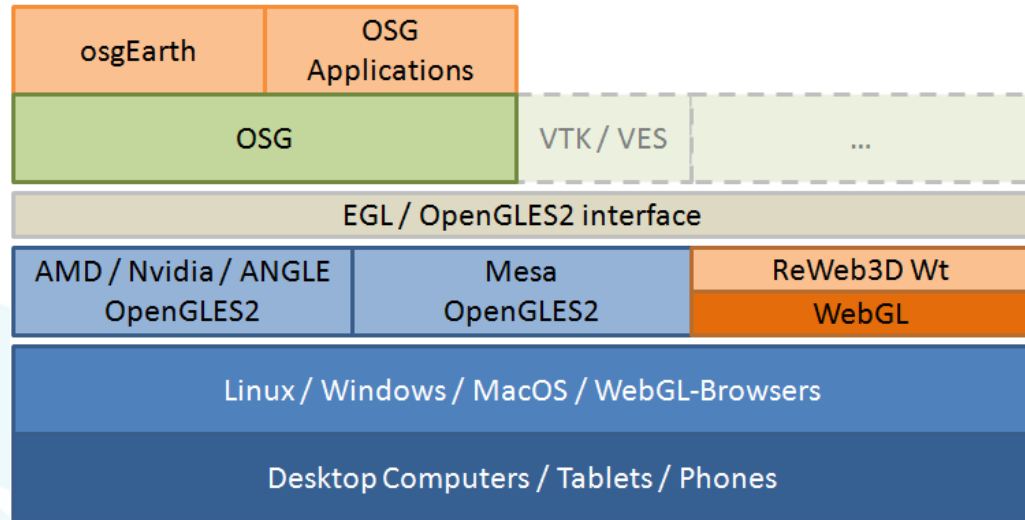
What we've been working on...

WebGL Tutorials from C/C++ code



How it works? + Demo

OpenGL ES 2.0 to WebGL/OSG (ReWeb3D)



Keep updated!

<http://demos.vicomtech.org>

<http://www.volumerc.org>

The team: John Congote, Aitor Moreno, Tassilo
Glander, Esther Novo,...

Myself: Luis Kabongo