


Australian Government
Geoscience Australia

Geoscience Australia Requirements


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X3D Earth Requirements Workshop



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GA's Understanding of X3D Earth


- Use X3D and 3D data interoperability standards
- Enable distributed serving & display of geospatial 3D data
- Global and non-global projections
- Truly 3D (sub- and super-surface data)



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GA's Experience


- VRML – 3D geoscience information shared via the Web, since 2001
- X3D – currently building a prototype X3D model
- 2D geospatial XML standards – experience helping to develop XMML and GeoSciML



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GA's Data

- 3D models (VRML) – flat file storage
- 2D geospatial data – database & flat file
- Satellite imagery – flat file storage
- *Caution: GA currently lacks the capacity to contribute substantially to X3DE development*



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X3DE Technical Requirement	Current Status
Open and standard 3D file format	X3D meets this need.
Streaming of data	Not yet available in X3D.
Binary encoding	X3D binary encoding should meet this need.
On-the-fly reprojection	Not yet available in X3D and X3D browsers.
Querying of 3D data for attributes	Currently available in X3D.
Extensible Stylesheet Language Transformations (XSLT)	Do these XSLT's need to be written?

X3DE Technical Requirement	Current Status
Open and standard protocols to request X3D data from Web servers	The OGC published a Web 3D Service discussion paper in 2005.
Send requests to Web servers from within X3D using open and standard protocols (such as WMS, WFS and WCS) and to convert the returned data to X3D.	Current support for WMS via http requests. Interchange parsers needed to support data returned from WFS and WCS requests
Support from multiple X3D browsers.	How quickly will the browsers pick-up the above requirements?
Easy X3DE interface authoring.	Currently available.
Digital libraries of X3D Earth datasets, with comprehensive metadata.	Is the X3D metadata sufficient? Who will collate and manage digital libraries?

X3DE Challenges

- X3D browser support
- Larger scale commercial support
- Native Web browser support
- Interoperability standards for 3D
- Global <> non-global reprojection

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X3DE Challenges (2)

- Operating in the same space as Google Earth
- Who's the target audience?
- Marketing to data providers
- Developing & managing libraries of X3DE datasets

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Strategic partnerships

- OGC
- X3D browser companies
- Database and geospatial software companies
- Web browser companies
- Data providers

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Next Steps

- Discussions with OGC
- X3D browser support for X3DE
- Discussions with data suppliers
- Making the required X3D amendments

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Key Points

- Handle geospatial data well
- 3D interoperability standards
- Stream data well
- Who's the target audience?
- X3DE dataset libraries

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