

Working Group 3: Storage and Delivery

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Input Suggestions from attendees (Could be final sum up?)

Post it notes

- What are the measures of uncertainty in 3D
 - Spatial sampling
 - Properties of units/layers/structures
- People
 - We need 3D able geologists taught at Uni's
 - How do we lobby Universities to produce properly trained geo's?
- Accounting for changing business rules in long term data building plans
- Stimulus to develop a simple 3D viewing platform – who?

Input Suggestions from attendees

- Sharable secure repository
 - Long term
 - Project vs corporate
- What needs to be stored and how
- Integration of storage with applications, processing and visualisation
 - (Integration more as exchange)
- Exchange Standards
- Standard storage format
- Model history and component metadata
- The point data used to create the 3D map of Australia should be easily accessible by other disciplines
- Storage ideas from gaming technology
 - Medical
 - Meteorology
 - Pharaohs
 - Earth systems (protocol driven)
- Web delivery
 - Generic viewer for industry
- How do we link the 3D geometries to the complex relation geophysical property data?
- Think about using a CVS style system to track the evolution of the data
 - Therefore data types must be easy to append to/merge with
- What “Type and Format” of data do explorers want from Government Geological Surveys?
- Are there relevant examples from Non Earth Science Fields to draw from?

- Are we heading for dynamic models/maps that update automatically when data sources are updated?
 - More issues!!
- If we have, or aim for dynamically updated models will we be obviating the need for storing the model? ie would we just reference the 'model' and build it on the fly?

2. Workshop Working Sheets

Storage

- (1) Attributed to voxels
- (3) Monitor evolution and all changes
 - What
 - When
- (1) Geometry
- (5) Database
- (2) Software versioning
- Append extra model info
- (4) Interchangeability
 - May depend on requirements
- (2) Multiple formats
- (2) Original formats and old formats
- Media submission
- (5) Files size and long term footprint
- (1) Complete model for surfaces volumes and footprint
- (5) Be able to retrieve with reasonable speed
- (3) Concurrent updates
- (3) Regime for managing updates and including new information on attributes with updates
- (←) Fit for purpose
- (1) Store algorithm instead for delivery
- (5) Generic format
 - May loose data on conversion
- (5) Standard generic format
- (5) Binary/human readable
- (2) Store proprietary format
 - legislative requirement
- (2) Store original datasets?
 - Snapshot of model data

- (6) NCRIS storage/access
- (←) Overlaps - 3D not special
- (6) Each state does its own or only one for Australia
- (3) Metadata
- (3) Update History
- (5) Can it live in corporate database or does it need a specific database?
 - Indexing
- (5) Complex queries expected
- (5) Spatial context and naming
- (1) Store built models
- (3) Feedback comment on use
- (5) Security
- (5) Confidentiality
- (1) $x + y + z + n$ attributes (raster)
- (1) Quality – data or model quality
- (6) Funding

Delivery

- (1) Viewer for either a range of formats or a generic format
- (1) Not relying on original software
- (2) Exchange standard(s)
- (3) Delivery model?
 - Cross sections?
 - Maps?
- (3) Web delivery + others
- (3) delivery original format
- (1) Licence?
 - Register user who delivered it to
- (3) Generalise model/disseminate/ discretize
- (3) tool to generate specific meshes
- (5) Speed of delivery
- (3) What development internationally
- (1) Buy viewer/develop own/open source
- (2) Web services access
- (2) Web service query e.g. synthetic bore
- Is there a need to convert?

Storage and delivery

- What to store?
 - Completed models
 - Original data to generate models
 - Store proprietary formats
 - Complete models, surfaces, volumes and points
 - Detailed metadata
 - Generic vs proprietary format
 - Update history
 - Generic may be X Y Z + attributes
 - Geometry, voxels
 - Feedback comments on usefulness
- How would it be stored?
 - Corporate database vs the need for a specific database
 - Need to consider confidentiality
 - Binary vs human readable
 - Opportunities in NCRIS
- Store
- Access
 - Australia/own States

Delivery requirements

- Simple viewer required
 - By open / source / develop one
 - View generic format
- Web delivery required
 - Web services
 - Web service query
 - Speed of delivery
- Exchange Standard
 - International driven
- Delivery of Model, Cross Sections. Maps
 - Original format
 - Generic format

3. Final Wrap up Session Summaries

General comments

- 3D storage not that special
- Storage from ideas
 - gaming technology
 - medical
 - meteorology
 - earth systems

- pharaohs
- Funding for development

1. Final Recommendations

1. We need to consider both in-house and contributed 3D maps
2. Some agencies have a requirement to store contributed maps in their original format
3. No consensus on a generic storage format
4. Access controls are required to manage confidentiality (GeoDRM can do this)
5. GeoSciML is being developed as an interchange standard
 1. Geometric aspects of the maps would be included as GML
 1. *This is an ASCII format and data volumes could be prohibitive for delivery*
 2. *Fast INFOSET could be used to make delivery faster*
6. We could benefit from observations of best practice in other industries
 2. Medicine, meteorology, etc