

Enhancing Usability of Public Data: 3D for Free

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Pre-competitive data are an immensely valuable and often under-utilised resource in Australia. A variety of initiatives have made wireline petrophysics, drillhole assays, hyperspectral data and a range of surface and airborne geophysical data available, coupled with value-added products including geological interpretations, geophysical inversions, and multidisciplinary data compilations. All are downloadable from online portal systems, without cost, however some improvements could be made to simplify accessibility, visualisation and utilisation.

This work takes the recently-released AusAEM data for NE Queensland from the GSQ data portal and compiles it into a Geoscience ANALYST workspace; making it more accessible by removing the need for expensive proprietary software whilst increasing the usability of data and interpretations by accurately representing them in 3D space.

The workflow involves 'drag and drop' importation of the AusAEM TEMPEST airborne electromagnetic data with direct import of grids (including coordinate system metadata attribution). The Geoscience ANALYST import functionality allows creation of both line objects and draped meshes from the database deliverables. Geoscience Australia layered earth inversion conductivity model outputs require minor editing before import; then they can be visualised as 3D draped sections conforming to flight paths and the data displayed with different colour stretches. Acquisition and processing reports are attached to data objects to ensure metadata is retained.

In only a few steps, free data is made freely accessible in free 3D software, and the GEOH5 open format ensures it will continue to be available to future users. Multidisciplinary applications include:

- Geological Mapping of basement lithology and structure, and regolith thickness and character

- Mineral Exploration via mapping and quantification of discrete conductors, alteration zones, and host and stratigraphic lithologies

- Hydrogeological Investigations of groundwater resources

Additional value can be gained from further data integration through simple import of other GEOH5 datasets available from the GSQ data portal into Geoscience ANALYST.