

Approaches to building and accessing geological models

A.C. Osborne

^A GeoScience Victoria, Department of Primary Industries, 1 Spring Street, Melbourne 3000

Geology is inherently a 3D science and as geologists investigate a new area they will generally have a 3D model in mind. With advances in software and desktop computing power it is now becoming reasonably simple and commonplace to convert this into a digital 3D geological model.

GeoScience Victoria has been the custodian of the states geological data for over 150 years. This has traditionally been integrated, interpreted and released as 2D geological maps and cross sections. GeoScience Victoria is now applying the same fundamental approach to building 3D geological models as it has used to build 2D geological maps. Historic data and new data digitally captured in the field continues to be used to produce 2D maps. It is also used in reasonably intuitive model building software to construct 3D models at the same time. These models can then be tested and further refined.

While building these models is now easier than ever, sharing them has many challenges. The underlying geology is the major factors controlling the shape of the landscape but much of the current visualisation technology is focussed on surface and above surface visualisation of data which is inappropriate for 3D geological models which are concerned with the surface and subsurface. This means that much of the current technology such as Google Earth is not yet an appropriate way to share model outputs. GeoScience Victoria is the custodian of many 3D geological models and has a responsibility ensure that 3D models are 3D viewable and useable by companies and other users.

GeoScience Victoria is undertaking a 3 year project to address the management of 3D geological models including improved visualisation approaches.