



SPATIAL INFORMATION DAY 2010

Adelaide Convention Centre | FRIDAY 13 AUGUST 2010

Spatial Information Day 2010 Abstract

Title: The status of the National GNSS Networks and their Impact on National Geodesy

Session: 7 – Surveying & Measurement

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Abstract:

In Australia the national network of GNSS Continuously Operating Reference Stations (CORS) provide the fundamental framework for all spatial activities and the linkage to the International Terrestrial Reference Frame (ITRF). Importantly, this national network also contributes data and products to the Global Geodetic Observing System (GGOS) for use in a variety of science applications.

The Geocentric Datum of Australia 1994 (GDA94) was based on observations (1992 – 1994) from a sparse network of CORS called the Australian Fiducial Network. The resultant coordinate datum was estimated to have an uncertainty of 3cm horizontally and 5cm vertically at the AFN stations. Since that time the demand for higher accuracies has resulted in GDA94 no longer adequately serving user demand. The ITRF has continued to evolve in accuracy and distribution to the extent that it now allows very accurate measurement of linear and non-linear crustal deformation. Even the Australian Plate, which for GDA94's implementation was considered rigid, is now known to be deforming at levels detectable by modern geodesy.

Consequently, national infrastructure development programs, such as AuScope, have been implemented to ensure that crustal deformation can be better measured. The AuScope program also aims to improve the accuracy of the ITRF by contributing to the next generation of the GGOS in our region. This approach will ensure that the ITRF continues to evolve and that Australia's National datum is integrally connected to it with equivalent accuracies. This paper reviews the status of National CORS networks and their contribution to GGOS and its impact on positioning in Australia.

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