# The Importance of Geodetic Infrastructure

**Prof. Chris RIZOS, President Elect, IAG, Australia**

**Key words:** geodesy, GNSS, infrastructure

## SUMMARY

Geodesy is the science of measuring and mapping the geometry, orientation and gravity field of the Earth including the associated variations with time. One of the missions of Geodesy has been the foundation for high accuracy surveying and mapping. Modern Geodesy involves a range of measurement technologies, from which the analysis of data contributes to our knowledge of the solid earth, atmosphere and oceans through earth observation of a wide range of parameters associated with Global Change, both natural and anthropogenic. The space technologies include: Global Positioning System/Global Navigation Satellite Systems (GPS/GNSS), Satellite Laser Ranging (SLR), Very Long Baseline Interferometry (VLBI), Satellite Altimetry, Gravity Mapping Missions such as GRACE, CHAMP & GOCE, and Differential Interferometric Synthetic Aperture Radar (DInSAR). Many of these geodetic technologies require ground and space infrastructure in the form of stable observatories and advanced satellite missions. Furthermore, a variety of 'services' have been established in recent years to ensure high accuracy and reliable 'geodetic products' to all users. This paper describes the multi-faceted nature of this infrastructure and reaffirms the value of the geodesy for not only traditional tasks such as surveying and mapping, but also the contributions being made to the geosciences.

## BIOGRAPHICAL NOTES

Chris Rizos is a graduate of The University of New South Wales (UNSW), Sydney, Australia; obtaining a Doctor of Philosophy in Satellite Geodesy in 1980. Chris is currently the Head of the School of Surveying & Spatial Information Systems at UNSW. Chris has been researching the technology and applications of GPS since 1985, published over 450 journal and conference papers, and established over a decade ago the Satellite Navigation and Positioning group at UNSW, which is today the largest and best known academic GNSS and wireless positioning technology research laboratory in Australia. Chris is the Vice President of the International Association of Geodesy, a member of the Executive and Governing Board of the International GNSS Service (the IGS), and a member of the IAG's Global Geodetic Observing

System Steering Committee. Chris is also a Fellow of the IAG, a Fellow of the Australian Institute of Navigation, is a member of a number of Australian geodesy and GNSS committees, and is an Honorary Professor of Wuhan University, China.

## CONTACTS

Prof. Chris Rizos, Head
School of Surveying & Spatial Information Systems
The University of New South Wales
Sydney NSW 2052
AUSTRALIA
Tel. + 61 2 93854205
Fax + 61 2 93137493
Email: c.rizos@unsw.edu.au
www: http://www.gmat.unsw.edu.au/snap