The Australian Regional GNSS Network (ARGN) consists of concrete pillars anchored into geologically stable ground, running dual-frequency GNSS receivers all throughout Australia and its territories. The network was initiated in 1992 with 8 sites (the Australian Fiducial Network) being observed during the International GPS Service’s (IGS) Epoch02 pilot project. The data collected during this campaign was used to compute International Terrestrial Reference Frame (ITRF) positions which were then adopted for Australia’s new coordinated systems – the Geodetic Datum of Australia 1994 (GDA94).

The ARGN became fully operational in 1998 with data from 15 sites contributing to the IGS through the Crustal Dynamics Data Information System (CDDIS). Currently the network contains 25 sites located in all States and Territories of Australia, including sites on the Indian Ocean Territories of Australia, Antarctic Bases and on the Sub-Antarctic Island of Macquarie. The ARGN contributes to the IGS fundamental GNSS network, which is used for the definition of ITRF, the Real-Time IGS pilot project and the currently contributes to the IGS fundamental GNSS network, which is used for the definition of ITRF, the Real-Time IGS pilot project and the

The ARGN is operated and maintained by staff from National Geospatial Reference Systems at Geoscience Australia. The data is continuously being collected and uploaded to IGS data centres as well as specific IGS analysis centres, the data can also be downloaded from the Geoscience Australia ftp server. Currently all of the programs used to control the data flows from the remote site through to the distribution of multiple data centres around the world is operated under Linux/Solaris environment.

Typical Argn Station Equipment and Setup

The sites in the ARGN use Ashtech Micro-Z, Leica GRX1200GG or Trimble NetR5 receivers connected to a choke ring style antenna. All sites use concrete pillars monuments that are anchored to bedrock. The concrete pillars are found in two sizes, with the first being 0.5m high and 600mm in diameter and the most recent monuments being 1.8m high and 400mm in diameter.

The Primary Objectives of the ARGN are to:
• Provide the fundamental framework for spatial data in Australia
• Provide legal traceability for GPS measurements in Australia
• Act as Australia’s contribution to global geodesy programs and the study of Earth processes, such as crustal dynamics and sea level monitoring
• Contribute data to Australia’s Online GPS Processing System (AUSPOS)

Future Plans
• Transition of control centre to commercial GNSS management software. This will enable use to combine the management of our different GNSS networks (AuScope and South Pacific Sea Regional GPS Network)
• Continue installation of sites
• Upgrade receiver hardware to stay compatible with NCRS sites.

Issues to Resolve
• Communications
• Ensure non-proprietary formats and protocols are used without losing any functionality.

Services
• 30 seconds 1 hour products
• 1 seconds near real time
• RTCM3 stream
• RTIGS stream from some sites
• Meteorological data from some sites.

Users
• Geodetic and Scientific Research Community
• Surveyors using GPS (photo control, etc)
• Oil and Mineral Exploration surveyors
• Daily RINEX files are all freely available via the internet for all sites.

For further information contact:
Michael Moore  Ph: 02 6249 9052
Email: michael.moore@ga.gov.au
Ryan Ruddick  Ph: 02 6249 9426
Email: ryan.ruddick@ga.gov.au
www.ga.gov.au