

GNSS Analysis at Geoscience Australia

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ABSTRACT

Geoscience Australia (GA) is responsible for the operation, improvement and development of Global Navigation Satellite System (GNSS) positioning for Australia, including geospatial reference systems in the Australian region, Continuously Operating Reference Stations (CORS) and the GNSS data archive. The GNSS Analysis section is responsible for high-quality GNSS data processing and analysis. Currently, this includes the provision of Regulation 13 (Reg 13) certificates, GNSS antenna calibrations and the AUSPOS online service. Through Positioning Australia, the team is also delivering Ginan, a multi-GNSS analysis centre software that GA is developing as an open-source software to operate a real-time positioning correction service enabling Precise Point Positioning (PPP) for the surveying industry and other users. Ginan version 1.0 alpha is currently available, with a planned beta release in early 2022 and the highly anticipated operational release of Ginan version 1.0 planned for June 2022. Moreover, the GNSS Analysis team is the International GNSS Service (IGS) Analysis Center Coordinator (ACC) for the delivery of combined IGS products including three different accuracy levels of GNSS satellite orbits and clocks (ultra-rapid, rapid, final). These delivered IGS products are used worldwide for comprehensive purposes of research and applications. The near-real-time (NRT) hourly Zenith Total Delay (ZTD) retrieved from GNSS signals is also provided by the GNSS Analysis team to the Bureau of Meteorology in Australia and the Met Office in the UK for the weather forecasting, now being part of operational weather forecasting. This presentation outlines how the GNSS Analysis team continues to enhance the accuracy and reliability of positioning through innovative technology and services.

KEYWORDS: GNSS, Reg 13, Ginan, AUSPOS, IGSACC.