

SOUTHERN POSITIONING AUGMENTATION NETWORK (SOUTH PAN)

November 2022



Geoscience Australia (GA) and Toitū Te Whenua Land Information New Zealand (LINZ) recently announced that the Southern Positioning Augmentation Network, known as SouthPAN, was live and delivering early Open Services. This is the operational implementation of the Satellite-Based Augmentation System (SBAS) Test-bed conducted from 2017-2020, which provides augmentation services for United States Global Positioning System (GPS) and European Union Galileo Global Navigation Satellite System (GNSS) constellations.

Lockheed Martin Australia has been contracted to deliver and operate SouthPAN, the first government-owned Satellite-Based Augmentation System in the Southern Hemisphere.

SouthPAN provides instant, accurate, and reliable positioning across all of Australia and New Zealand – including in regional and remote areas. Users will benefit from 10-centimetre accurate satellite positioning, up to 50 times more accurate than the 5-10 metres currently available from GPS and Galileo. SouthPAN allows industry in Australia and New Zealand to increase safety, boost productivity and drive innovation across utilities, construction, resources, agriculture, and many other industries. You are now able to integrate SouthPAN early Open Services with existing equipment to create and enhance positioning service offerings for end-users. SouthPAN services are open-access and are available throughout Australia and New Zealand's land and maritime zones, overcoming gaps in mobile and internet coverage.

The services now being delivered are:

- OS-L1: An L1 SBAS Open Service, providing augmentation of the GPS L1 C/A signal.
- OS-DFMC: A Dual Frequency Multi-Constellation (DFMC) SBAS Open Service, providing augmentation of the GPS L1 C/A, GPS L5, Galileo E1, and Galileo E5a signals.
- OS-PVS: Precise Point Positioning (PPP) via SouthPAN Open Service, providing augmentation of the GPS L1 C/A, GPS L5, Galileo E1, and Galileo E5a signals. Once converged, the PPP technique allows end-users to achieve a more accurate position compared to OS-L1 or OS-DFMC.

Detailed information about each of these services is now available, and can be found at the Geoscience Australia and Toitū Te Whenua Land Information New Zealand websites:

- https://www.ga.gov.au/__data/assets/pdf_file/0011/123320/SouthPAN-Service-Definition-Document-for-Open-Services.pdf

- https://www.linz.govt.nz/sites/default/files/doc/southpan_service-definition_20220916.pdf

With early Open Services now live, the GA and LINZ teams are now working towards full Open Service capability and certified Safety-of-Life Services by 2028. FrontierSI will continue to collaborate with GA and LINZ in the better use of positioning services across Australia and New Zealand, and we are ready to assist your organisation to fully realise the benefits of the open services. We invite you to contact SouthPAN@frontiersi.com.au for technical assistance, or to answer any questions you may have in relation to adopting the early services.

For more information about SouthPAN early Open Services and to stay connected to our latest updates on SouthPAN, visit Geoscience Australia, Toitū Te Whenua Land Information New Zealand, or subscribe to Geoscience Australia's public talks and events service updates.