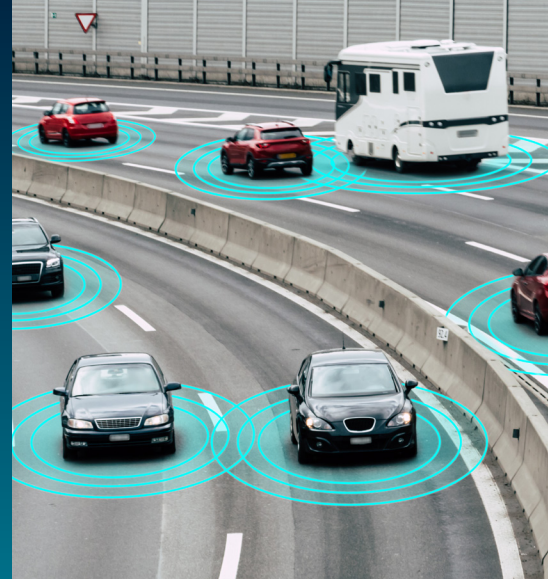




Australian Government
Geoscience Australia

Ginan Beta release

A GNSS software toolkit and service



Geoscience Australia is excited to announce the release of Ginan's Beta version, available through the [Ginan GitHub repository](#).

This Ginan Beta release improves on the previous Alpha version in a significant number of ways, including:

- A new ambiguity resolution algorithm implemented in the Parameter Estimation Algorithm (PEA) which improves position accuracy and reduces solution convergence time.
- Earth Orientation Parameter (EOP) rate estimation has been implemented in the PEA. This improves the precision of EOP estimates and enables making better predictions of EOP in the future.
- The MongoDash visualisation tool has been renamed the Ginan Exploratory Data Analysis tool (GinanEDA), with numerous performance and analytical features added. Better visualisation allows a Ginan user a better view of the internal workings (internal state and metrics) of Ginan.
- The processing of L1/L5 ionosphere free combination data has been enabled for L1/L5 only receivers. This change allows Ginan users to process data from the European Galileo constellation.
- The calculation of PEA Kalman filter Chi Square and W-test statistics. These statistics provide a measure of overall filter performance, including how well it can predict future states and observations.
- A generalised First Order Gauss Markov (FOGM) process noise model has been implemented in PEA Kalman Filter. This allows a Ginan user to model state processes in a way that is more physically meaningful, i.e. not simply as random noise. For example, the way the Troposphere changes is not completely random from one epoch to the next.
- Several PEA Kalman filter performance and stability improvements, including the Rauch-Tung-Striebel (RTS) smoothing filter algorithm implemented in PEA. The filter now runs more efficiently forwards and backwards, improving processing speed and filter precision.

For a complete list of changes between Ginan versions 1.2 and 1.3 please refer to the [CHANGELOG.md](#)

To accompany the Beta release, Geoscience Australia have also released an improved Ginan support site that contains links to supporting videos on how to install Ginan, as well as documentation on how to use the software and material on the science behind precise point positioning (PPP).

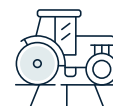
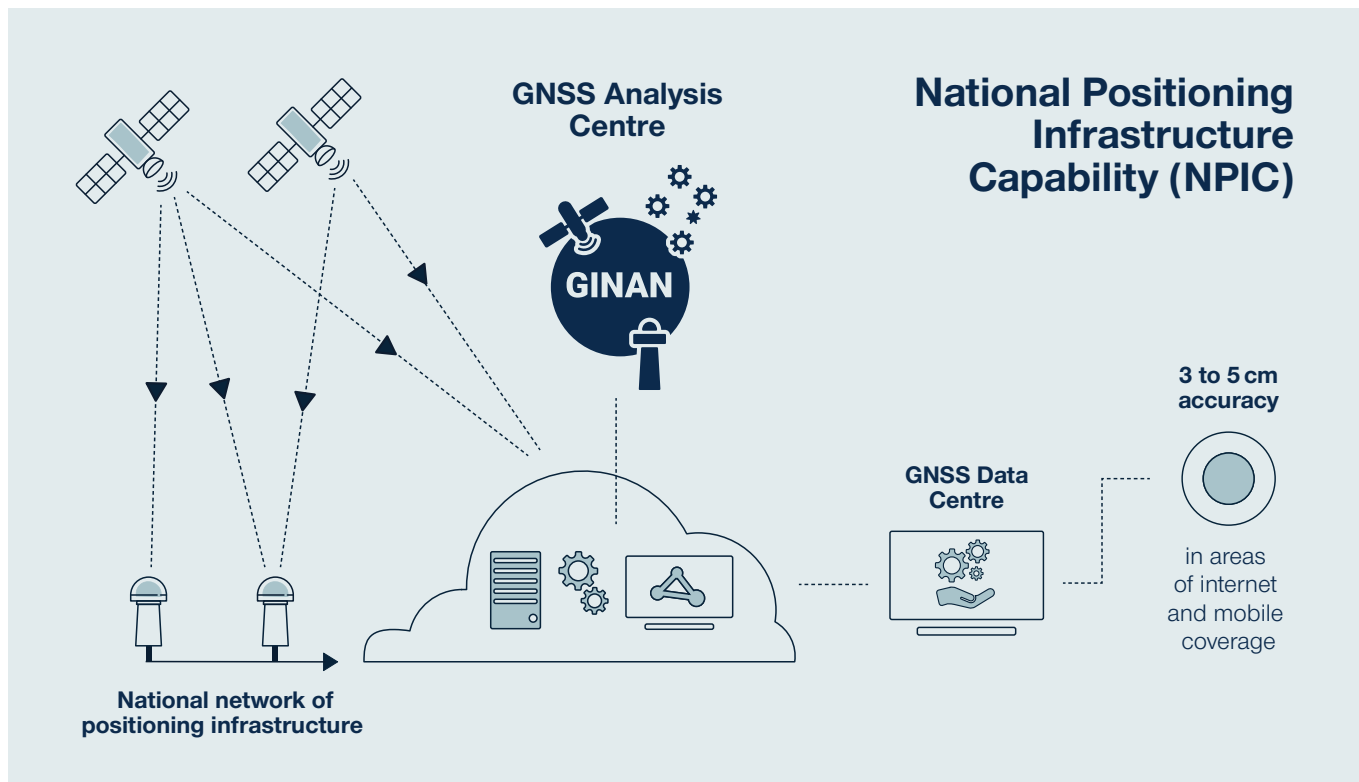
Also available for the first time, on a trial basis only, are Ginan PPP correction products created by a Beta deployment of Ginan. The products include orbit and clock corrections in file formats (SP3 and CLK) and RTCM v3 positioning correction streams. These products can be accessed through Geoscience Australia's GNSS portal. More information available by accessing the instructions flyer.

Ginan webpage

Scan the QR code

Find more information about Ginan on the Geoscience Australia website





How you can provide your feedback

Geoscience Australia is here to support your use of the software and products, and welcomes any feedback you may have to enhance our Ginan product.

Please submit your feedback by raising an issue through the Ginan GitHub page or emailing us directly at positioningaustralia@ga.gov.au.

How to share your case studies

Geoscience Australia through its Positioning Australia program is actively looking for case studies on the applications and use of Ginan. If you would like to share your case study, you are able to do so by emailing us at positioningaustralia@ga.gov.au.

About Ginan

Ginan is Geoscience Australia's Global Navigation Satellite System (GNSS) analysis centre software that delivers a real-time positioning correction service through open-source software, and additional positioning products to enable precise point positioning for Australian industry and users.

Ginan is a key component of the National Positioning Infrastructure Capability (NPIC) and has the potential to deliver positioning accuracy to 3 to 5 centimetres (from 5 to 10 metres) across Australia.

The name Ginan comes from the Wardaman people, traditionally living in the region south-west of Katherine in the Northern Territory. Ginan is a Wardaman word for a red dilly-bag filled with songs of knowledge and the fifth-brightest star in the Southern Cross.

Just as the Southern Cross helped the First Australians to navigate this land, the positioning capability developed by Geoscience Australia will provide information on exactly where we are and where we are going.

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