

# Surveying Alert



Surveying submission changes, Submitting GNSS data, Distribution of Forms 6, Datum connection, Surveying in Qld Globe, Land Titles Regulation

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Issue 32

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## Changes to submitting surveying data & enquiries

The Department is undertaking a review into some of the administrative aspects of survey plan submission and processing. In seeking efficiency gains, the paths for submitting surveying information (such as deposited plans, identification plans, Form 6, PSM maintenance forms and GNSS data) have been consolidated.

The format and type of data being submitted remains the same, as is the centre to which the data is normally submitted. However, the wfsurv email groups are now no longer available, instead three new email addresses have been established based on the department's three regions. Whilst the northern and central regions' email addresses are now different, their existing addresses will still be valid for a period of time. The new email addresses are:

### Email Address

[Surveys.South.Region@dnrme.qld.gov.au](mailto:Surveys.South.Region@dnrme.qld.gov.au)

[Surveys.Central.Region@dnrme.qld.gov.au](mailto:Surveys.Central.Region@dnrme.qld.gov.au)

### Surveying centre

Beenleigh, Brisbane,  
Bundaberg, Caboolture,  
Ipswich, Maryborough,  
Nambour, Robina, Toowoomba

Mackay, Rockhampton

[Surveys.North.Region@dnrme.qld.gov.au](mailto:Surveys.North.Region@dnrme.qld.gov.au)

Cairns, Townsville

[CadastralAdminDataHelp@dnrme.qld.gov.au](mailto:CadastralAdminDataHelp@dnrme.qld.gov.au)

All centres (Form 6 and PSM maintenance forms not associated with a plan submission)

[GeodeticSupport@dnrme.qld.gov.au](mailto:GeodeticSupport@dnrme.qld.gov.au)

All centres (GNSS data)

The three new regional email addresses are also to be utilised for surveying advice or enquiries. Any titling specific enquiries can continue to be directed to [Titlesinfo@dnrme.qld.gov.au](mailto:Titlesinfo@dnrme.qld.gov.au).

### **Submitting GNSS data**

The Department of Natural Resources Mines and Energy has published a new Guideline for Submitting GNSS Data to the Department. The new guideline, along with the introduction of AUSGeoid2020 in the latest version of Geoscience Australia's AUSPOS GNSS Processing Service, has also required amendments to the Specification for Permanent Survey Mark Plans and associated templates.

#### *Guideline for Submitting GNSS Data for Inclusion into the State-wide Datum Adjustment Network*

This new guideline has been developed to cover the submission of GNSS data for inclusion in the Department's ANJ Adjustment, which is used to compute GDA94 coordinates with a lineage of "Datum". The guideline outlines how the ANJ adjustment is created and covers requirements for Observations (dual occupations of at least 6 hours), Antenna Height Measurement, Metadata and Transferring Data. The guideline also has a section on Frequently Asked Questions.

These changes have also led to some information about GNSS data submission being removed from the Specification for the Completion of Permanent Survey Mark Plans (see below).

The new Guideline for Submitting GNSS Data is available [here](#).

#### *Amendments to the Specification for the Completion of Permanent Survey Mark Plans*

As well as removing information now covered in the Guidelines for Submitting GNSS Data (mentioned above), the document also covers the introduction of AUSGeoid2020 in the latest version of the AUSPOS GNSS Processing Service.

It should be noted that the information shown on a permanent survey mark plan is required to be suitable for imaging and reproduction. The inclusion of pictorial images (e.g. photographs, aerial imagery) does not meet this requirement.

The latest version of the Specification for the Completion of Permanent Survey Mark Plans and associated templates are available [here](#).

#### *Changes between AUSPOS Versions 2.2 and 2.3*

Starting with AUSPOS version 2.3, there are now 3 solutions shown in the AUSPOS processing report, one based on GDA94, another based on GDA2020 and another based on ITRF2014.

Processing the same RINEX file through AUSPOS Versions 2.2 and 2.3 will result in slightly different GDA94 coordinates. This is due to a difference in the way the two versions of AUSPOS determine the GDA94 coordinates.

In AUSPOS version 2.2 all calculations are performed in ITRF2008 at the epoch of observation, and transformed in the final stage to GDA94 using the Dawson-Woods parameters.

In AUSPOS version 2.3 all calculations are performed in ITRF2014 at the epoch of observation, transformed to GDA2020 using the tectonic plate model parameters and then transformed from GDA2020 to GDA94. Both of those sets of transformation parameters are shown in the GDA2020 Technical Manual.

The uncertainties attributed to the GDA94 coordinates in an AUSPOS version 2.3 report can be slightly larger than those in AUSPOS version 2.2. This is a reflection of the two step transformation process used in AUSPOS version 2.3.

Surveyors may note that there is also a difference of approximately 10cm between ellipsoidal heights in the GDA94 and GDA2020 sections of the AUSPOS Report. This is due to improvements in ITRF since GDA94 was adopted. As such, AUSGeoid2020 should only be applied to GDA2020 ellipsoidal heights and AUSGeoid09 should only be applied to GDA94 ellipsoidal heights.

The AHD height in an AUSPOS report is now based on the application of AUSGeoid2020 to the GDA2020 ellipsoidal heights. That AHD height is quoted in both the GDA2020 and GDA94 sections of the AUSPOS report.

While the Department has not yet adopted GDA2020 for horizontal coordinates, an AHD height based on applying AUSGeoid2020 to a GDA2020 ellipsoidal height should result in a superior AHD value than in the previous version of AUSPOS, which applied AUSGeoid09 to a GDA94 ellipsoidal height.

Therefore, when lodging results from AUSPOS version 2.3 (or later), surveyors should continue to lodge GDA94 horizontal values but should quote AUSGeoid2020 as the geoid model used in determining the AHD value. That option to quote AUSGeoid2020 has been enabled in the latest version of the PSM Sketch Plan and in the Survey Control Data Base (SCDB).

It is also important to note that, in any given part of Queensland, there may be offsets between AHD heights calculated using AUSGeoid09 versus those using AUSGeoid2020. Therefore, if a project is already based on AHD from AUSGeoid09 it might be necessary to apply a local offset to AUSPOS Version 2.3 results to maintain a consistent realisation of AHD across the project area.

Finally, it should also be noted that AUSPOS version 2.3 provides an uncertainty estimate on the derived AHD value. That uncertainty is a combination of the uncertainty estimates of the ellipsoidal height, the AUSGeoid2020 gravimetric model and the surrounding AHD heights. In some cases that uncertainty may seem quite large but this should not be interpreted as the AHD value being worse than in previous versions of AUSPOS. If uncertainties had been calculated in the previous version of AUSPOS they would have typically been larger than in the latest version (i.e. not calculating AHD uncertainty previously does not mean it was zero). Also, the AHD uncertainty can be thought of as an absolute value

on a continental scale, the likely relative uncertainty between nearby points should be considerably better.

### **Distribution of Forms 6 to surveyors**

When a Form 6 is imaged in the department, a copy is emailed to the surveyor who submitted the form. The department is currently scanning the reverse page of previously submitted forms, and this is leading to numerous emails being sent to some surveyors. To avoid this, the process of emailing Forms 6 to surveyors has been suspended. When the scanning of historical forms has been completed, it will be decided whether it is necessary to resume the service. All scanned Forms 6 are available from the Queensland Globe. This will not affect the emailing of idents and registered plans.

### **Datum connection update**

#### *GDA2020 coordinates on survey plans*

The *Surveying and Mapping Infrastructure Regulation 2014* prescribes the geodetic reference framework for coordinates. Until the regulation is remade to accommodate GDA2020, where coordinates are shown on a survey plan they are to be GDA94 coordinates.

#### *Post-processed solution using commercial CORS*

Commercial CORS providers have developed software to enable users to do post-processing of GNSS observations relative to their networks. Where a post-processed network solution is used to connect the survey to datum using commercial CORS, then the description in the coordinates table for the method of determining the coordinates on the connection points will be the term 'Network Post-processed'. As the technique is based on CORS, CSR 3.14.3 applies and it is not necessary to state the Datum PMs in the coordinates table

### **Surveying in Queensland Globe**

As the Google Earth based Queensland Globe was decommissioned on Thursday 23 August 2018, now is the time to move to the new [Queensland Globe](#).

The new web based Queensland Globe provides the ability to save and share maps, add your own data and view the latest imagery as well as connecting with hundreds of data sets providing opportunities across government, industry and the community.

#### *Surveying Topic*

The Topics panel enables users to quickly add groups of data layers to the Queensland Globe. A Surveying Topic, which is accessible under the Construction Topic, has been implemented to support users getting operational quickly. Direct access to the surveying topic data on the Queensland Globe is also available through the following direct link:

<https://qldglobe.information.qld.gov.au/?topic=surveying>.

SmartMaps are able to be generated through the Queensland

Globe. Instructions are available in the FAQs – “How do I get a SmartMap or title search?” on the [help page](#).

Visit the Queensland Globe [help page](#) for information on new features, video tutorials and FAQs or subscribe to [Qld Globe Alerts](#) for information updates and more.

For troubleshooting or specific questions about Queensland Globe, email the team at [opendata@dnrme.qld.gov.au](mailto:opendata@dnrme.qld.gov.au)

### **Land Title Regulation 2015**

The Registrar of Titles is considering changes to the Land Title Regulation 2015, section 5(3)(b). The change being considered is in relation to the minimum density of paper required for a plan of survey from “of a density at least 130gm to a square metre” to “of a density at least 80 gm to a square metre”.

The Registrar is seeking feedback on this proposal. Feedback can be provided to [Titlesinfo@dnrme.qld.gov.au](mailto:Titlesinfo@dnrme.qld.gov.au), marked attention to M Compton.

