Question and Answer from Slido

Tyson Hillyard

Since GDA2020 is static, is it safe to assume that we are going to need to update the datum in 15-20 years' time or will ATRF take over as the legal datum? (14 votes)

We don't have any plans for regular updates of Australia's static datum. We will continually be assessing the requirements of users and update it, if and when, it is required.

Anonymous

I thought GDA 2020 was a dynamic datum? (9 votes)

No - it's static; just like GDA94 is static. The reference epoch for GDA2020 is 1 January 2020.

Eddie C

What is the vertical movement of the Australian Plate p.a.? (5 votes)

Looking at the vertical rate from the 113 AuScope GPS sites over the period 2013.0-2019.0, the average vertical rate is ~-0.3 ± 0.5 mm/yr, but there is variability across the continent that ranges from -2.5 mm/yr, at Hillarys, WA (HIL1, which we know is subject to subsidence due to the withdrawal of groundwater from the Perth basin), to +2.5 mm/yr at Jabiru (JAB2).

Anonymous

Are there Phones that can get that [sub meter] accuracy now? (5 votes)

The answer is yes. In fact, both code and carrier-phase based GNSS techniques have now demonstrated sub-metre accuracy on mobile phones. There are some important limitations,

particularly in regards to the GNSS antennas used in mobile phones, but in general it's achievable today with the latest chipsets and antennas.

The recent proliferation of multi-frequency, multi-constellation GNSS chipsets for mobile phones is further driving mass-market demand for ever more accurate positioning.

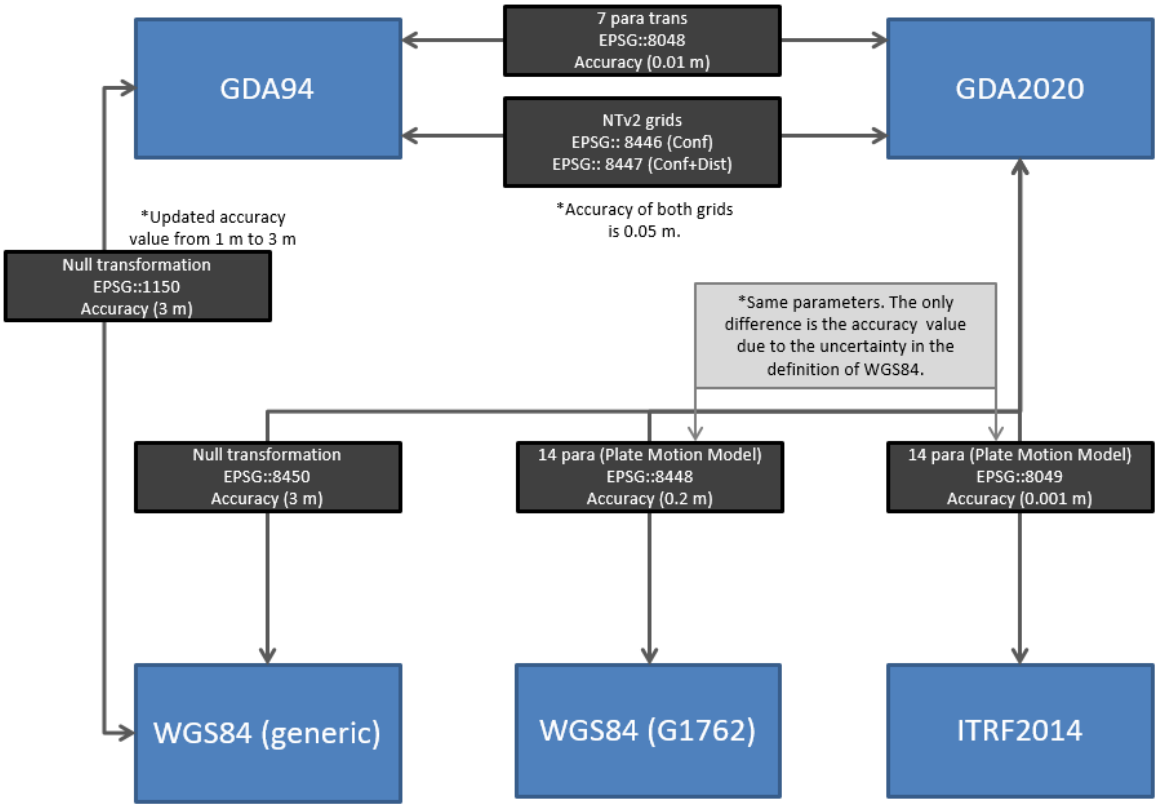
Here's some further background and information:

- 2018 GPS World article: https://www.gpsworld.com/how-to-achieve-1-meter-accuracy-in-android/
- 2014 presentation by Todd Humphreys from the University of Texas on mobile phone positioning: https://www.youtube.com/watch?v=rCOvklUB5vQ.
- 2019 presentation by Dinesh Manandhar, from the University of Tokyo: http://www.unoosa.org/documents/pdf/psa/activities/2019/UN_Fiji_2019/S5-28.pdf. You can even download his RTK software for Android phones!
- 2019 GPS World article: https://www.gpsworld.com/dual-frequency-gnss-smartphone-supports-bds-phase-iii-signal/

Anonymous

Is it true that if you project data from GDA2020 to Web Mercator it does not correctly align with data projected from GDA94 to Web Mercator (https://bit.ly/2kBV0pJ)? (5 votes)

There isn't a blanket answer to this question because it is completely dependent on the software you are using. As you can see in the EPSG code registry below, both GDA2020 and GDA94 have "null transformations" to get to WGS84 (generic) from which the Web Mercator projected coordinates are derived. This means both are inaccurate because, as the accuracy statement shows, they are accurate to 3 m. This problem is being discussed in the standards community to resolve it at the moment.



Anonymous

You mentioned that landslides and localised tectonic events affected GDA94. How will these be managed effectively in GDA2020? (3 votes)

New GDA2020 coordinates will be computed over time and if a jurisdiction believes coordinates have changed enough to cause a problem for users, they will update the GDA2020 coordinates in their database.

Jane Cooke

Can we have the link to the National Measurement Institute Determination 2017 document please? (3 votes)

https://www.legislation.gov.au/Details/F2017L01352

Anonymous

Is it legitimately linear? I would have expected the movement to be variable (3 votes)

It is a rotation about an Euler pole located south of New Zealand, so it is more of a curved arc than a straight line

Stephen Donaldson

How can we identify ground marks that are part of the 1. APREF, 2. Campaign or 3. Jurisdictional network? (3 votes)

This is not obvious to users of the survey mark network. It is a categorisation we used within PCG to weight data used in the national adjustment. The best indicator of the accuracy of a survey mark is to use the Positional Uncertainty of a coordinate shown in the survey mark database from each jurisdiction.

Anonymous

So how does GDA2020 data map to WGS84? Like GDA94 relates to WGS84? (2 votes)

Please see the options described in the diagram in the previous question.

Anonymous

So if you want to maintain AHD heights for a coordinate in a conversion we should use the 2D transformation? (2 votes)

If you have an AHD height derived from the AUSGeoid09 model, you will need to convert it back to an ellipsoidal height, transform the data from GDA94 to GDA2020 and then apply AUSGeoid2020. If this is not the scenario you were thinking of, please email me at Nicholas.Brown@ga.gov.au and I can work through the particular use case with you.

Anonymous

Are there plans for / is there the possibility of a 3D transformation gridfile? Or will position and height need to continue to be dealt with separately? (2 votes)

This would be ideal but unfortunately there isn't a widely recognise 3D file format available which is efficient for spatial software. I have been speaking with a number of spatial industry people about this and 'beta' versions are available, but nothing truly operational just yet.

Anonymous

GDA and MGA are used a lot on plans and regs. How can we tell if they are 94 or 2020? (2 votes)

I would recommend you contact your state/territory survey authority.

Anonymous

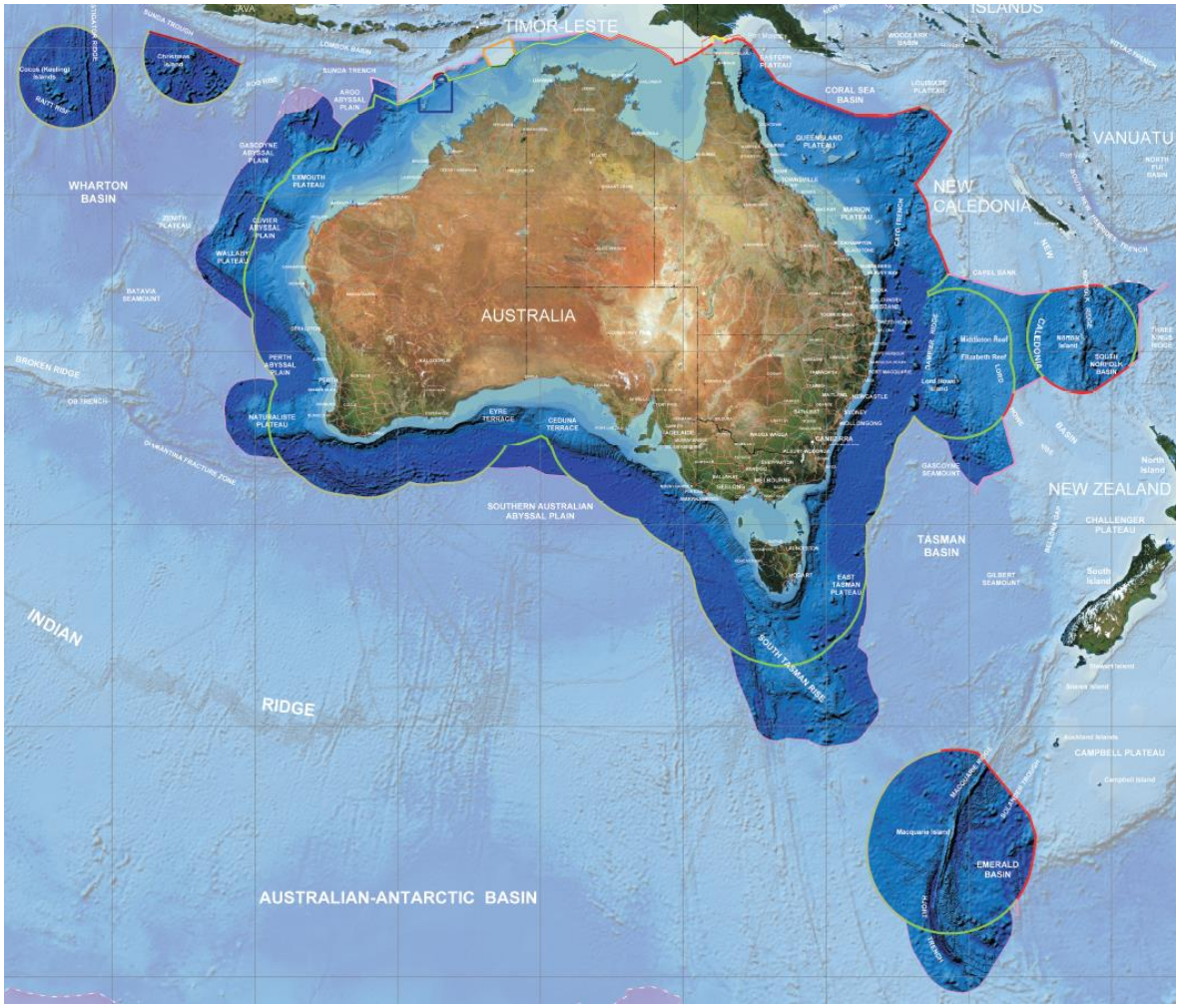
Do you apply different weights for campaign, CORS data?

Yes we do. GNSS Continuously Operating Reference Station (CORS) data is weighted higher than campaign data in the national adjustment.

Marcus Blake

Does GDA2020 cover Norfolk Island?

Yes it does. The extent of the GDA2020 includes all the areas contained within Australia's marine jurisdiction (within 200 nautical miles of Australia) and its external territories, and the areas of Australia's continental shelf beyond 200 nautical miles as confirmed by the United Nations Commission on the Limits of the Continental Shelf. The areas include Cocos (Keeling) Islands, Christmas Island, Norfolk Island and Macquarie Island but excludes Heard-McDonald Islands and the Australian Antarctic Territory (AAT) as shown below. The extent of GDA2020 is the same as the extent of GDA94.



Anonymous

Is it possible to re-watch the video of the 1st, 2nd presentation? Is there a link somewhere to download it?

Yes – it is available here https://www.icsm.gov.au/webinar-series-australian-geospatial-reference-system

Anonymous

Do you know when we can expect to be able to get GNSS corrections via satellite?

2023-24. Please have a look at https://www.ga.gov.au/scientific-topics/positioning-navigation/positioning-australia/understand-positioning-australia for more information.

Anonymous

Does the 109 sites include the 20 IGS sites in Australia?

Yes it does.