Australian plate motion (~7cm/year) affects high-precision positioning applications such as Cooperative Intelligent Transport.
Images https://www.icsm.gov.au/australian-terrestrial-reference-frame, https://www.nhtsa.gov/press-releases

GDA2020 – Australia's new National Datum

The Geocentric Datum of Australia 2020 (GDA2020) is Australia's new National Datum which replaces GDA94. GDA2020 is more accurate than GDA94, aligns more closely with GPS and GNSS positioning services and supports nationally consistent datasets, free of the known distortions of GDA94. GDA2020 coordinates are approximately 1.8 metres to the north east of GDA94 coordinates, which represents the motion of the Australian tectonic plate between 1994 and 2020.

GDA2020 is the first product of the modernised Australian Geospatial Reference System (AGRS), which provides the framework for coordinating all spatial information in Australia. These changes are needed to ensure that all users have access to accurate and nationally consistent spatial data and services which support the economically significant increase in high-accuracy positioning services anticipated over the next 10 years. (See AGRS link above for more details).

When will NSW adopt GDA2020?

From 1 January 2020, GDA2020 will be adopted as the legal datum for NSW. This change is supported by amendments to the Surveying and Spatial Information (S&SI) Act (2002) and Regulation (2017) which will commence on that date. Other legislation which governs spatial information will progressively be updated to refer to the updated S&SI Regulation and therefore GDA2020, to allow a more consistent treatment of prescribed datums across legislation.

DCS Spatial Services is working to enable and supply key datasets and services in both **GDA94 and GDA2020**:

10 Feb 2019:	CORSnet-NSW available in GDA2020 (and GDA94)
01 July 2019:	SCIMS Online (Survey Control) available in GDA2020 (and GDA94)
01 Jan 2020:	GDA2020 orientation and coordinates required on survey plans prepared under the S&SI Act and Regulation; Timing for plans prepared under other legislation, e.g. Mine Surveys, are TBC
30 June 2020:	ANZLIC GDA2020 adoption date: DCS Spatial Services will deliver and receive Foundation Spatial Data (Cadastre, Topography, Addressing, Imagery, etc.) in both **GDA94 and GDA2020.**
30 June 2023:	DCS Spatial Services commits to deliver and receive GDA94 data until 2023

In 2020 we expect to see significant adoption of GDA2020 across government, industry and academia, working in a mixture of GDA94 and GDA2020 data. DCS Spatial Services is coordinating this transition.

New services and tools – when can I expect them?

Existing delivery mechanisms for DCS Spatial Services' data will need to be upgraded before all datasets can be delivered in both GDA94 and GDA2020. This will include updates to our **Clip and Ship, Incremental Feed,** and **Web services,** scheduled for release by 30 June 2020. DCS Spatial Services will ensure that existing users are informed in advance of any changes to how this data is communicated, to assist with transition planning.

Tools to transform your existing GDA94 data are available already via:

- positioning.fsdf.org.au
- www.icsm.gov.au/datum/gda-transformation-products-and-tools
- your existing GIS tools and service providers.

What will happen to GDA94? Do I have to update to GDA2020 immediately?

DCS Spatial Services intends to support both GDA94 and GDA2020 services until at least 30 June 2023.

As GDA2020 data and services are rolled out, it is recognised that not every organisation is ready or capable of immediately upgrading their processes and software to cater for GDA2020. We recognise that these changes take time and may require further development of standards and software to support existing applications.

Business drivers for GDA2020 adoption will be different across industries and organisations. Your transition to GDA2020 will depend on your needs, applications and the benefits available to you from improved positioning capabilities. Also, provided you can receive and supply your data in GDA2020, your workflows can remain in GDA94 until you are ready to transition.

What about the dynamic datum? (ATRF and WGS84/Web Mercator time-dependence)

While GDA2020 is a **static** datum which behaves just like GDA94, updates to the national reference systems will also include a **dynamic** (or time-dependent) component called the Australian Terrestrial Reference Frame (ATRF). ATRF includes the 7cm / year plate motion model needed to properly combine centimetre-level data observed at different timestamps.

For many applications, adoption of ATRF and time-dependence is several years in the future and may not require explicit user action. Users will either gather data directly in GDA2020 (e.g. via a local CORS network) or will require software to bring data together seamlessly at a common epoch. Standards and software are currently under development.

An exception is when using WGS84 or Web Mercator, which is already widely applied in web-mapping and web-services. WGS84 data should include a time-stamp for any data at metre-level accuracy or better, but is rarely provided with one.

Note that DCS Spatial Services will provide WGS84 at epoch 1994.0 (equivalent to GDA94) unless otherwise indicated.

What do I need to do to prepare for GDA2020?

1. Enquire with your software provider(s) how to support GDA2020 data, and on-the-fly transformations.

2. Prepare to receive and supply data in GDA2020:
   Determine when your data providers and clients intend to supply or require data in GDA2020. Consider revising and communicating your policy regarding GDA94/GDA2020 data supply/receipt.

3. Ensure you can use the published transformations between GDA94 and GDA2020 in your software. Use the 'Conformal and Distortion' NTv2 grid when transforming data at metre-level accuracy or better.

4. Prepare to migrate your workflows (and potentially your data) to GDA2020.

Where can I find out more?

Keep informed via Fact-sheets, FAQ and a discussion forum on GDA2020: www.icsm.gov.au/gda2020

For more information, please email the GDA2020 Team at DCS Spatial Services: GDA2020@customerservice.nsw.gov.au