



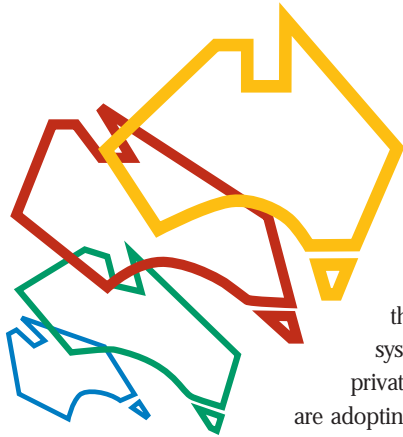
# Get In Step With the Geocentric Datum

*Discussing the Business Issues*



G E O C E N T R I C   D A T U M   O F   A U S T R A L I A

# Get in step with the



If maps, spatial data or geographic positioning are important to your business, the move, in Australia and New Zealand, to a geocentric datum is likely to affect your operations.

Australia and New Zealand are aligning their spatial coordinates with international systems. As part of this process, public and private sector organisations in both countries are adopting a geocentric datum for the spatial information they use and generate. The Geocentric Datum of Australia (GDA) and the New Zealand Geodetic Datum 2000 (NZGD2000) will both be implemented in 2000.

The move to the geocentric datum will affect your business if you:

- use or produce maps or spatial data for business purposes;
- describe land, sea or air in terms of coordinates or grids;
- use or prepare legislation including coordinates and grids;
- require staff and/or customers to know about the new datum; and/or
- provide staff or customers with information on policy and/or technical issues relating to the new datum.

If your business will be affected, you need to develop and implement strategies and timetables to:

- raise awareness in your organisation;
- discuss the changes with your customers, providers and industry bodies;

## Why a geocentric datum?

A datum is a mathematical surface on which a mapping and coordinate system is based.

A geocentric datum has the centre of the earth as its origin. It:

- supports the latest survey techniques and provides a modern and accessible positioning framework, free of distortion, for most practical purposes;
- provides global integration and supports the direct use of satellite positioning systems such as Global Positioning System (GPS); and
- ensures spatial data is compatible with other international systems, such as the World Geodetic System 1984 (WGS84).

The change means the horizontal coordinates of existing datums will shift by about 200 metres in Australia and New Zealand. The change applies to all spatial data, including latitudes and longitudes, and grid coordinates of northings and eastings.

- assess the urgency to change, based on your operations, or those of your customers and providers;
- implement change – such as training staff, converting maps or spatial data, or amending legislation;
- understand and integrate with your suppliers' strategies; and
- tell dependent organisations what you are doing – so they, too, can plan.



## First steps

A change in geodetic datum is rare, so it is important to understand the issues and research them in your own organisation. Find out about the datum you currently use, as well as the new geocentric datum.

It is worth reading the *Know Where You Stand with GDA* brochure by the Intergovernmental Committee on Surveying and Mapping (ICSM), and the *NZ Geodetic Datum 2000 (NZGD2000)* fact sheet by Land Information NZ.

Two web sites have authoritative information on these geocentric datums:

- <http://www.anzlic.org.au/icsm/gda/index.htm> covers national and regional information in Australia; and
- <http://www.linz.govt.nz/publications/osg/index.html> has information on NZGD2000.

ICSM representatives are available to conduct briefings on either new datum.

# e g e o c e n t r i c d a t u m

## Your needs

Once you understand the topic, identify your needs and how the geocentric datum will affect those needs. Conduct discussions within your organisation – involve all levels and groups – to gain a picture of your current and future data and application requirements. To help you develop a coordinated approach, find out if and how the new datum will affect your customers and data providers.



## Your approach

If you need to adopt the geocentric datum, the common approaches are:

- all at once;
- staged – by program, product or service;
- staged – by geographic region; or
- on demand.

Your approach will depend on the nature and size of your business' spatial and textual databases and map products, your technical capabilities and the needs of your clients. Choose an approach that minimises confusion.

## Considerations

The size of your organisation and the amount of data you use or supply will affect the costs and timetables relating to any transition. In the long term, you may save money by moving to the geocentric datum sooner rather than later.

You also need to consider your:

- data management and data integrity procedures;
- hardware and software capabilities; and
- technical and client support.

## Your plan

Your plan to move to the geocentric datum should include:

- an audit of your existing data and its sources;
- your data supplier's timetable for adopting the new geocentric datum;
- your procedures for converting to the new datum;
- your procedures for dealing with dual coordinate systems during the transition;
- your procedures, if required, for changing legislation;
- who is responsible for implementing the new datum in your organisation; and
- a timetable of events.

## Data audit

A data audit will help you to determine:

- which of your operations use geographic information;
- whether, and when, you need to convert to a geocentric datum;
- who is responsible for maintaining data;
- who can access the data; and
- what corporate geographic information already exists, where it came from, its level of accuracy and how it is used.

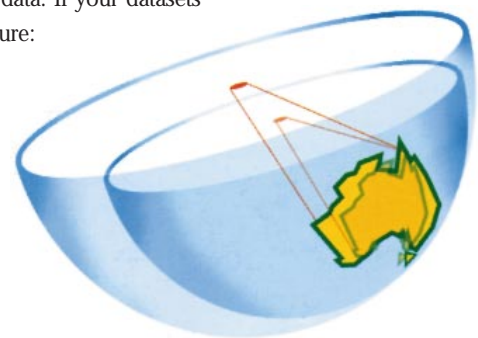
## Digital data

Your move to the geocentric datum should include strategies to inform those who use your data. If your datasets are sourced externally, make sure:

- your data providers are aware of your requirements;
- you both have integrated strategies and solutions; and
- your database links are not destroyed.

Your plan should address:

- how tile-based datasets are handled; and
- how raster data can be converted and how the conversion will affect the information you hold.



*A geocentric datum has its origin at the centre of the Earth. Until now Australia and New Zealand used different datums with their origins about 200m from the Earth's centre.*



## Local, non-standard datums

If you use local, non-standard datums, you need to consider:

- whether this information needs to integrate, in the future, with external databases using the geocentric datum;
- how you can bring this information onto the geocentric datum; and
- how this information affects your day-to-day operations.

## Hard copy maps

Review whether it is practical or necessary to convert or replace any, or all, of the hard copy maps you hold.

## Software

You may use software to process, view or manipulate spatial data. An audit of existing systems will establish the processing paths of various data elements and identify all the software used in your organisation.

You will need to assess whether the software you use provides you with accurate and appropriate conversions to the new geocentric datum.

## Legal issues

The new datum may have legal implications for you.

Find out if:

- legislation and associated regulations refer to key words such as datum, longitude, latitude, coordinates and the like; and
- your spatial information can be used as evidence in court.

Your contracts may also need to make reference to the new datum.

If you have questions, seek legal advice.

## A timetable

For the most part, your timetable for converting to the geocentric datum will be dictated by:

- your data suppliers' conversion timetable (depending on when they can provide geocentric datasets, you may need to use dual-mapping systems);
- your customers' conversion timetable;
- any legislation governing your operations; and
- relevant government policy.



## Staff

In moving to the new datum, you may need to train or brief staff and/or customers on technical, policy and functional matters. Consider appointing a full or part-time project manager.

## Funding

Ensure funds are set aside in current budgets or made available as supplementary allocations.

You may be able to plan and fund the change to the geocentric datum as a part of other projects or system upgrades.

## Contact details



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