



Australian 2020 Grid and Geoid Model for HYPACK

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HYPACK has recently updated the Geodetic Parameters program to accommodate Australia's new, official national datum. Due to the movement of the Aussie tectonic plate (about 7 cm per year), the difference between the new coordinates (GDA2020) and the previous coordinates (GDA94) can be almost 2 meters! In addition to the new grid, we have also added the latest Aussie geoid model, GEOID2020.

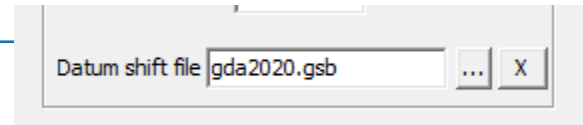
The Geodetic Parameters update was not developed in time for the HYPACK® 2019 release; however, we have made the updated files available for you to download from the HYPACK website. The [AUS2020_Update.ZIP](#) file contains the necessary updated applications and files. Simply download the ZIP file, and extract all the files to your HYPACK® 2019 directory, overwriting the original files.

Once the files are updated, you can run the Geodetic Parameters program (PREPARATION – GEODETIC PARAMETERS) to set up the new grid: In Geodetic Parameters, go to the Predefined Grid drop-down menu and select “Australia MGA2020.” Select the proper zone and click [OK]. You are now good to go.

The screenshot shows the 'Geodetic Parameters' application window. The 'Predefined Grids' list on the left has 'Australia MGA2020' selected. The 'Ellipsoid' is set to 'GRS-1980', 'Semi-Major Axis' is 6378137, and 'Flattening' is 298.257222101. The 'Datum transformation parameters' section shows Delta X, Y, Z, rX, rY, rZ, and Scale all set to 0.00000. The 'Datum shift file' is 'gda2020.gsb'. The 'Projection' is 'Transverse Mercator', with 'Central Meridian' at 147 00 0 E, 'Reference Latitude' at 00 00 0 N, and 'Scale Factor' at 0.999600000. 'False Easting' is 500000.0000 and 'False Northing' is 10000000.0000. The 'RTK Tide Method' section has 'Not using RTK tide' selected. The 'Chart Datum Level' is 0.00. Buttons for 'OK' and 'Cancel' are visible at the bottom right.

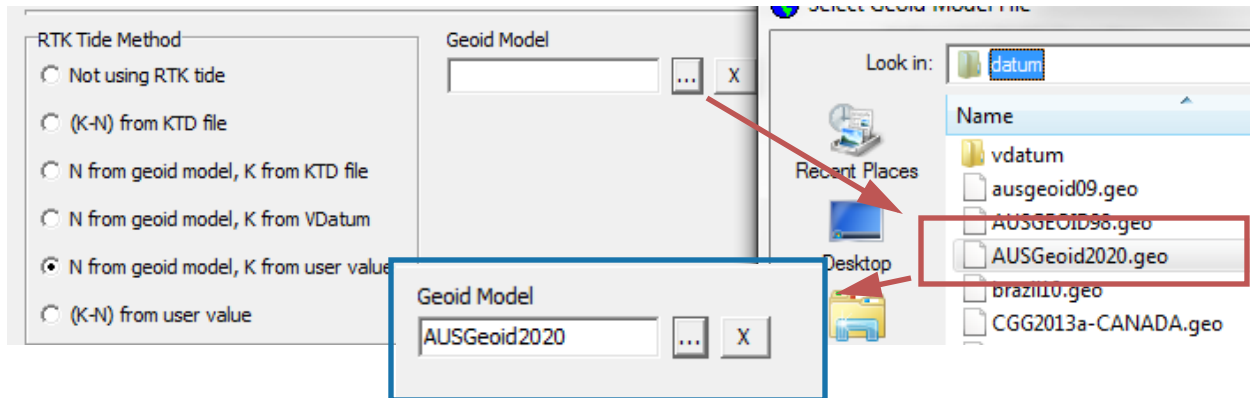
Notice that when MGA2020 is selected, a file called gda2020.gsb appears in the Datum Shift File text box:

FIGURE 1. Datum Shift File



This is the datum shift file provided by Geoscience Australia that basically replicates a 7-parameter datum shift from GDA94 coordinates to GDA2020 coordinates. (This file, although available from Geoscience Australia website, is also included in the HYPACK® update.)

To use the AUSGEOID2020 geoid model in the Geodetic Parameters program, choose your RTK tide method and select AUSGeoid2020.geo.



AUS2020.zip contains the following files:

FILENAME	LOCATION	DATE MODIFIED	VERSION	FILE SIZE
geo32.dll	HYPACK 2019	March 26, 2019	19.1.20	605 KB
geopar.exe	HYPACK 2019	March 20, 2019	19.1.0	668 KB
geo64.dll	\x64	March 26, 2019	19.1.20	777 KB
AUSGeoid2020.geo	\datum	March 12, 2019	n/a	60,402 KB
GDA2020.gsb	\datum	March 11, 2019	n/a	81,083 KB
geopar.db	\datum	March 25, 2019	n/a	7,206 KB