



New Datum Shift and Geoid Model for Spain

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For quite some time, our customers in Spain have been requesting that we integrate the official datum shift and geoid model provided by Instituto Geographico Nacional (IGN) into HYPACK®. The problem was that we didn't have a conversion program that would convert those files from the format provided by IGN to the HYPACK® formats (LLS for datum shift files and GEO for geoid model). Now we finally had a bit of time to write those conversion programs and generate the required files. They should be available for download from the HYPACK® update web site by the time you read this newsletter.

The files are:

- R2009V9.LLS contains datum shift information for peninsular Spain.
- BALR2009.LLS datum shift for the Baleares Islands
- EGM08IGN.GEO geoid model for peninsular Spain

To use them, just copy those files in the DATUM folder of your HYPACK® installation and select them in the Geodetic Parameters program:

FIGURE 1. Loading the Geoid and Datum Shift Files in the Geodetic Parameters Program

Note The ellipsoid must be set to "International" because the old coordinate system in Spain was ED-50 that is based on International ellipsoid.

The only bad news is that we didn't have any control points to check these files. We had to use a very convoluted method to test our conversion programs... well, I guess you don't want to know all the gory details. If and when we can get our hands on some control points we will make sure everything is right.

The screenshot shows the 'Hypack - Geodetic parameters' dialog box. The 'Predefined' section has 'Grids' set to 'UTM North' and 'Zone' set to 'Zone 31(0 - 6E)'. The 'Projection' is 'Transverse Mercator'. 'Distance Unit' is 'Meter' and 'Depth Unit' is 'same as horizontal'. 'Elevation Mode' is checked. The 'Datum transformation parameters' section has 'Delta X', 'Delta Y', 'Delta Z', 'Delta rX', 'Delta rY', 'Delta rZ', and 'Delta Scale' all set to 0.00. The 'Datum shift file' is set to 'R2009V9'. The 'Geoid Model' is set to 'EGM08IGN'. The 'Orthometric Height Correction' is 0.000 m and 'Chart datum level above geoid' is 0.00. The 'Local Grid Adjustment' checkbox is unchecked.