



# MyLocator3 Vertical Transform Export

Presented here is a proposal to incorporate improved vertical accuracy by allowing the MyLocator3 user to use and apply a local Geoid model.

Our GNSS device has a limited resolution Geoid model and by using a targeted Geoid model, it is expected the vertical accuracy will be improved.

The targeted Geoid model files are in GeoTIFF format. These are essentially a 2D map representing height values over a specific latitude and longitude range.

<https://en.wikipedia.org/wiki/GeoTIFF>

PROJ.org Datum grid Content Delivery Network (CDN):

<https://cdn.proj.org>

This CDN provides approximately 300 Cloud Optimised GeoTIFF datasets and contains shift grids for horizontal and vertical coordinate transformations.

When the user has selected an appropriate GeoTIFF file, the (improved accuracy) Geoid model can be applied.

## MyLocator3 Datalog UI

Add a selection option for GeoTIFF files as shown. When selected, the data will be automatically retrieved and applied.

Resetting to defaults will select 'None' as the GeoTIFF file.

The GeoTIFF file list can be updated automatically from the server.

Data Log Upload Datalog

Upload

Log Type: Defect Mapper

Upload to Cloud:

From: 0 To: 4682

Basic Advanced More

Height: Above Geoid

Height Of: GNSS Antenna

GeoTiff File:  Local OSGM15\_GB Great Britain mainland ons

OSGM15\_GB  
Great Britain mainland onshore - ETRS89 (EPSG:4937) to ODN height (EPSG:5701). Size: 1.5 MB.

## MyLocator3 Datalog UI

Add an option to select and use a local GeoTIFF file as shown. When selected, the data will be automatically applied.

Resetting to defaults will select 'None' as the GeoTIFF file.

The screenshot displays the 'Upload Datalog' interface. At the top, there are two tabs: 'Data Log' and 'Upload Datalog'. The 'Upload' section contains the following elements:

- Log Type:** A dropdown menu set to 'Defect Mapper'.
- Upload to Cloud:** An unchecked checkbox.
- Range:** A range selector with an 'From' field set to 0 and a 'To' field set to 4682.
- Configuration Tabs:** Three tabs labeled 'Basic', 'Advanced', and 'More'. The 'Basic' tab is currently selected.
- Height:** A dropdown menu set to 'Above Geoid'.
- Height Of:** A dropdown menu set to 'GNSS Antenna'.
- GeoTiff File:** A checked checkbox labeled 'Local' followed by a text input field containing 'us\_nga\_egm08\_25.tif' and a file selection icon.
- Source Datum:** A dropdown menu set to 'Default if missing'.
- WGS 84:** A dropdown menu set to 'WGS 84'.
- Reset:** A circular arrow icon in the bottom left corner of the configuration area.



1. When using a selected GeoTIFF file, the export should replace the logged Geoid Separation value with the value from the CDN. The file column header should indicate the selected GeoTIFF file. For example: Geoid Separation/RAF18b(m).
2. When using a selected GeoTIFF file, the export should replace the logged Altitude value with the (corrected) value from the CDN.
3. If the selected GeoTIFF file is not appropriate for the logged coordinates, then the logged values will be used unmodified.