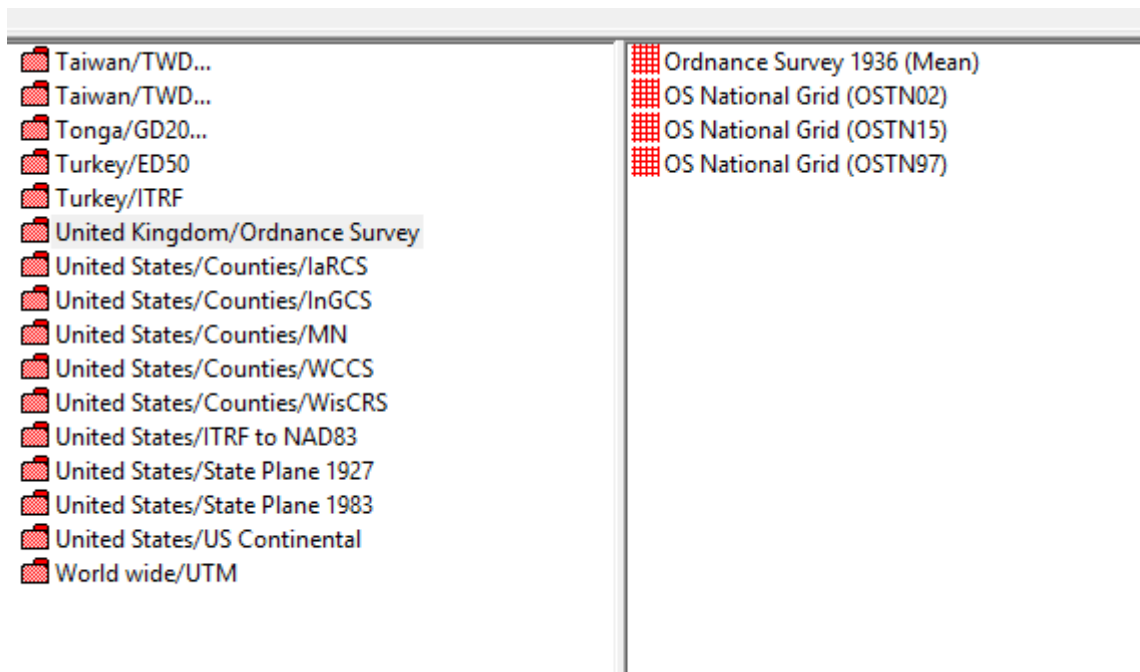


Updating Trimble TerraSync for OSTN15/OSGM15

The TerraSync software works with Trimble GPS Pathfinder Office, which is used to view or transfer data and components back and forth between the mobile data logger and the desktop software.

The 32 bit version of Trimble Coordinate System Manager (CSM) manages the coordinate system library available to Trimble software on a PC. This file is updated regularly through automated Trimble updates or when software upgrades are installed.

To check whether the current.csd file on the PC running Pathfinder Office has already been updated for OSTN15, launch the Trimble Coordinate System Manager program. (Program Files\Trimble Office\Coordinate System Manager). and check the entries displayed for the United Kingdom. See below. If prompted to upgrade after launching the Coordinate System Manager, then do so.

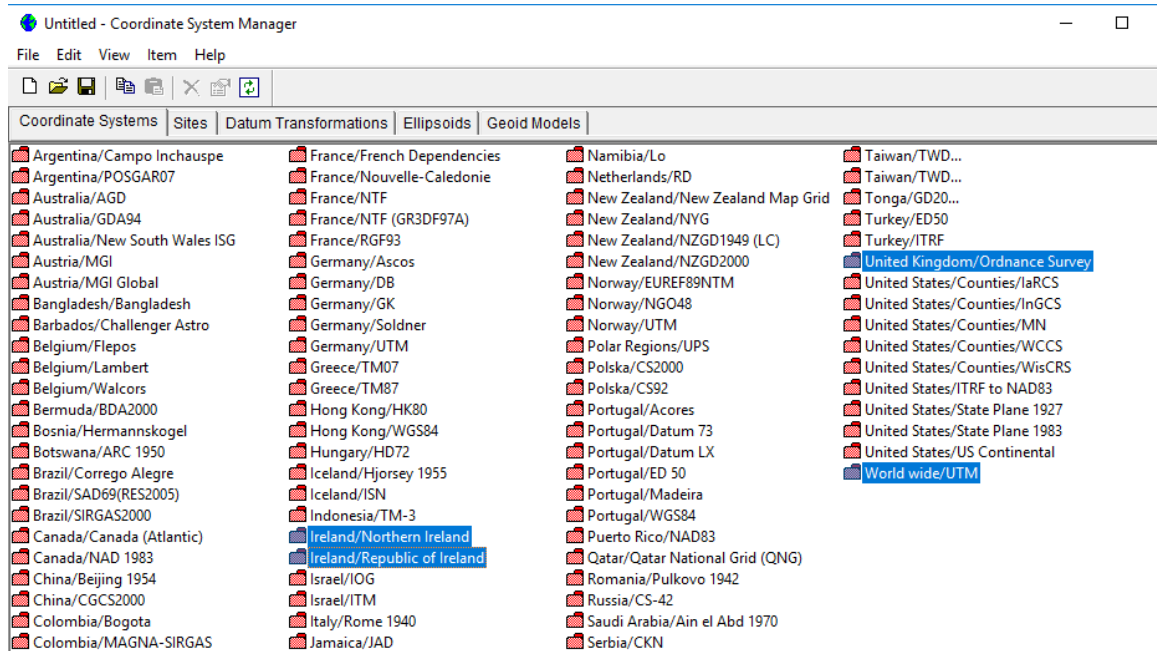


If the CSM library doesn't contain OSTN15, then contact support@korecgroup.com for assistance.

The CSM will be used to create a new coordinate export file which is then transferred to the logger via the Data Transfer utility in Pathfinder Office. (Utility menu).

Step 1: Creating the coordinate export file

Open Coordinate System Manager. On the Coordinate Systems tab select and highlight the coordinate systems to transfer to the data logger.



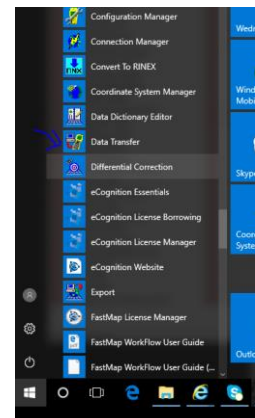
Select the File menu, then Select Export..... from the Export pop up window select Selected records only:

Choose a name and location to save the new coordinate export file. A required files log window will open displaying the files which are part of the export file. Select OK then close the CSM.

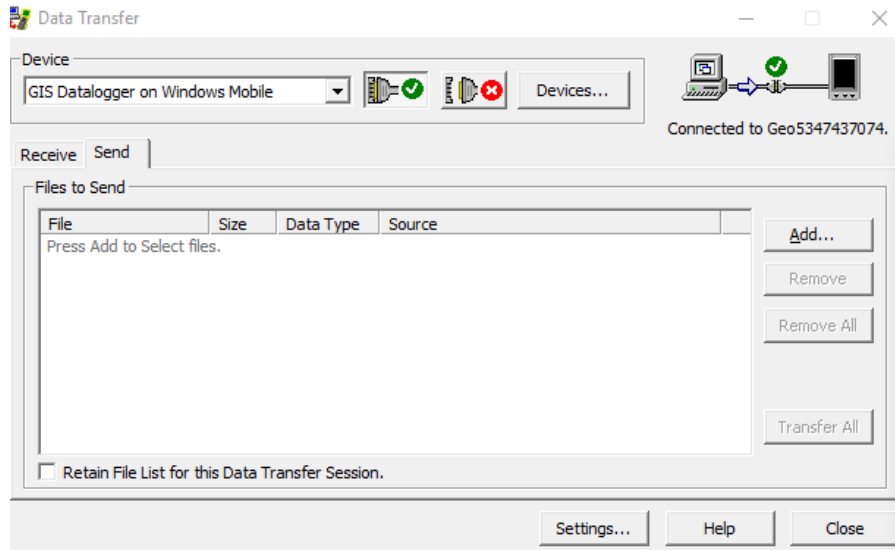
Step 2: Transferring the coordinate export file to TerraSync

Connect the data logger to the PC running Pathfinder Office via cable and wait to connect via Windows Mobile Device Center.

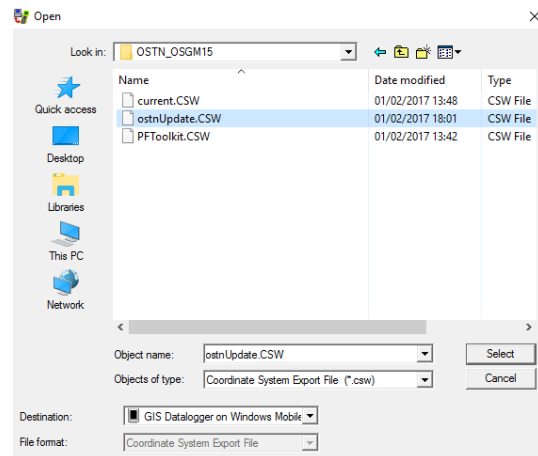
Data Transfer can be accessed via the Pathfinder Office Utility menu. Or from Program Files\Trimble Office\Data Transfer.



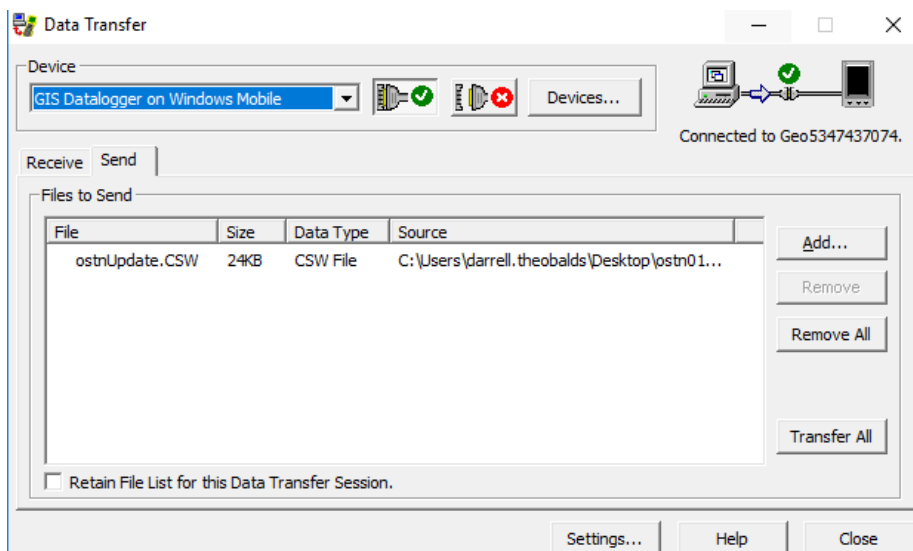
Launch Data Transfer and ensure that the logger is connected (Green tick). Select the send Tab and press Add.



Select the coordinate export file created previously.



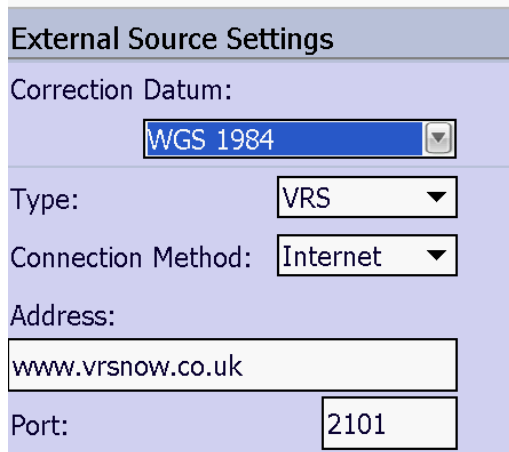
Then press Transfer All to transfer the file to the data logger.



Close Data Transfer and launch TerraSync. In the Settings section select Coordinate System and select the new OSTN15 coordinate system transformation and the MSL Geoid OSGM15.

Step 3: Change the VRSNow settings

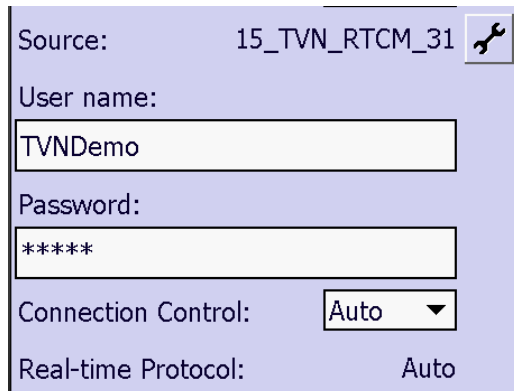
Go to Real Time Settings, then External Source..... select the spanner to edit the External Source Settings.



The screenshot shows the 'External Source Settings' dialog box. It contains the following fields and controls:

- Correction Datum:** A dropdown menu with 'WGS 1984' selected.
- Type:** A dropdown menu with 'VRS' selected.
- Connection Method:** A dropdown menu with 'Internet' selected.
- Address:** A text input field containing 'www.vrsnow.co.uk'.
- Port:** A text input field containing '2101'.

Press the spanner next to Source to edit the Ntrip lookup table. Select 15_TVN_RTCM_31 as the new source. The user name and password don't need to be changed.



The screenshot shows the Ntrip lookup table settings for the selected source '15_TVN_RTCM_31'. It contains the following fields and controls:

- Source:** '15_TVN_RTCM_31' with a spanner icon to its right.
- User name:** A text input field containing 'TVNDemo'.
- Password:** A text input field containing '*****'.
- Connection Control:** A dropdown menu with 'Auto' selected.
- Real-time Protocol:** 'Auto'.

Select Done, then restart TerraSync.

Changes to OSTN02 Transformation - Background

OSTN and OSGM are the transformations that link 3D positions measured using GNSS with the national coordinate and height reference systems of Great Britain, Ireland and Northern Ireland.

OSTN02 was aligned to the older EUREF GB 2001 realisation of ETRS89. OSTN15 has been aligned to the EUREF IE/UK 2009 realisation of ETRS89 by applying a transformation to the OSTN transformation data set ETRS89 coordinates to shift them to the new ETRS89 realisation.

The format of the OSTN15/OSGM15 transformation parameter file is unchanged from OSTN02/OSGM02. The main difference between the two files, apart from the updated parameters, is that the inbuilt 10km offshore cut-off in OSTN02/OSGM02 has been removed from OSTN15/OSGM15. In OSTN02/OSGM02 transformation parameters beyond 10km offshore were set to zero. The OSTN15/OSGM15 transformation grid is fully populated.

The on-shore parameters are computed from the OSTN dataset of over 4,200 points with an observed difference between OSGB36 and ETRS89. A Triangulated Irregular Network (TIN) is fitted to the dataset to express the datum shifts as “surfaces” (one for east shift and another for north).

The accuracy of the onshore transformation remains the same as it was for OSTN02. Within Great Britain, OSTN15 defines OSGB36. i.e. OSTN15 in combination with the ETRS89 coordinates of the OS Net stations, rather than the fixed triangulation network, define the National Grid. This means that, for example, the National Grid coordinates of an existing OSGB36 point, refixed using GNSS from OS Net and OSTN15, will be the correct ones. The original archived OSGB36 National Grid coordinates of the point (if different) will be wrong, by definition, but the two coordinates (new and archived) will agree on average to better than 0.1m (0.1m rmse, 68% probability) average to better than 0.1m (0.1m rmse, 68%probability). Source: Ordnance Survey.

The Trimble TerraSync and the KOREC K-Mobile professional mobile GIS software packages need to reflect these new changes to the OSTN and OSGM transformation.