Leica Captivate GNSS: Create coordinate system – 1-point localisation

'Pseudo OS' co-ordinate system

One Point Localisation can be used to create new Coordinate Systems for use with your GPS kit. A single point defines the Coordinate System – this point must be surveyed with the GPS kit and you must know the Eastings, Northings and Orthometric Height you want to assign the point in your new Coord System.
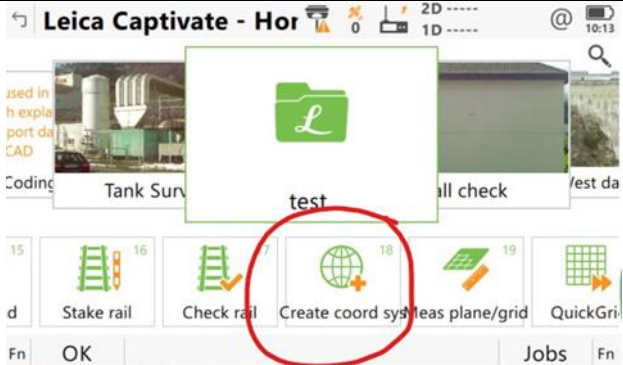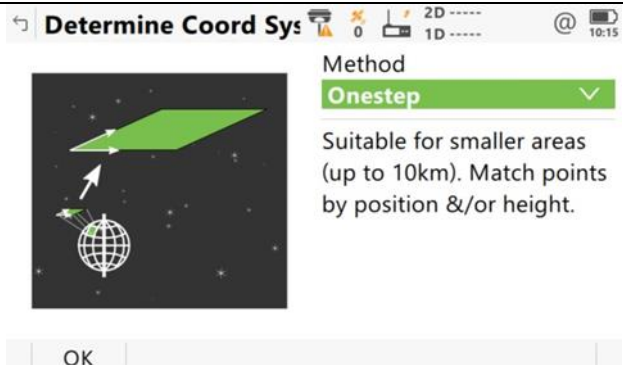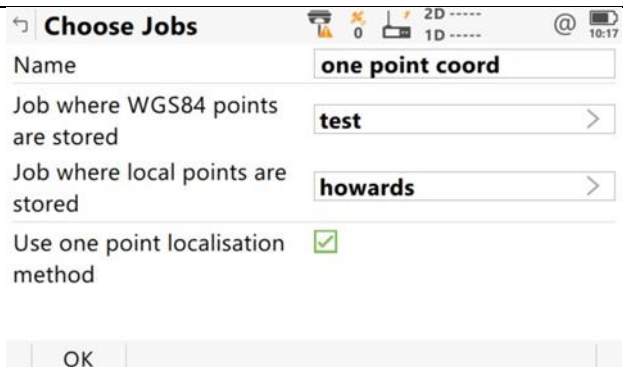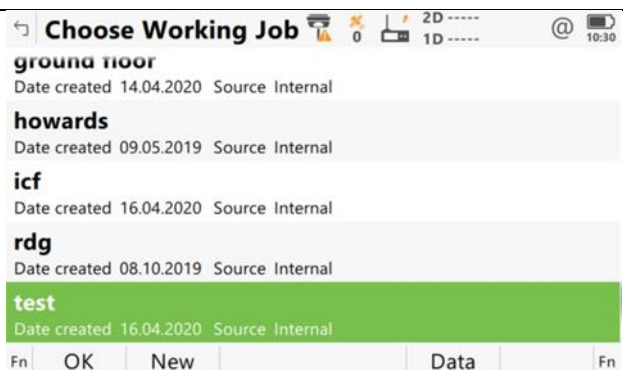
This guide outlines the creation of a coordinate system using coordinates derived from the Ordnance Survey grid.

In this case the site is centred on an OSGB15 grid position and orientated to OSGB15 grid north, but 'true' OSGB15 co-ordinates are not desirable as a site scale factor of 1 is required. For this method the geoid model OSGM15 can be used.
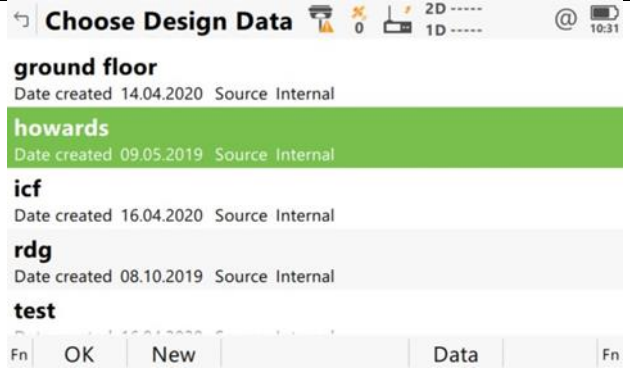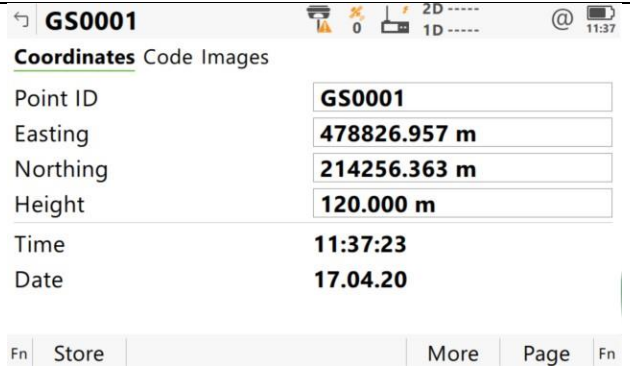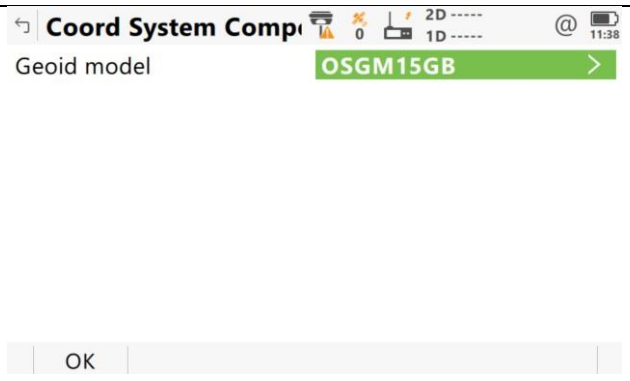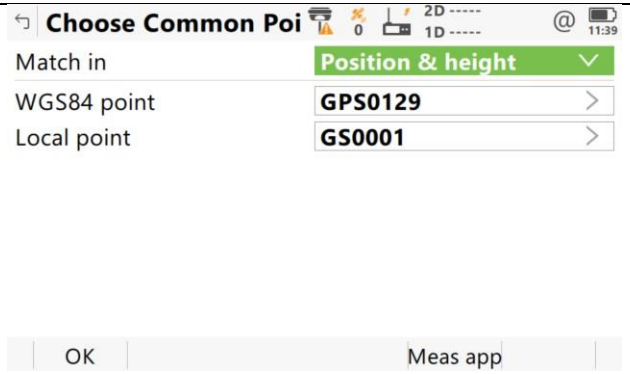
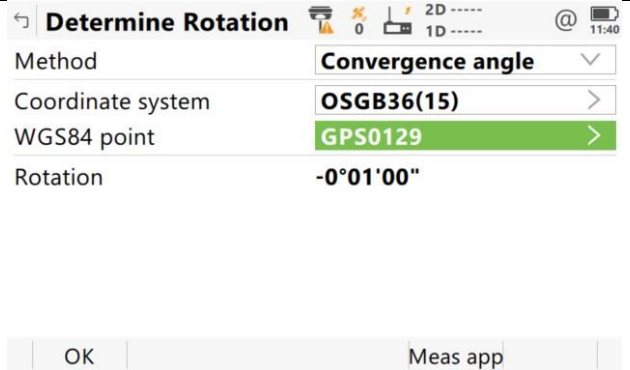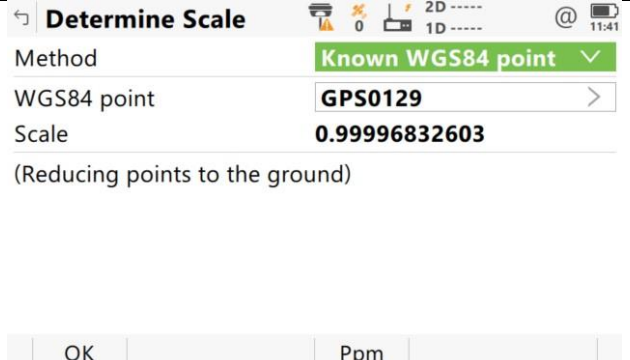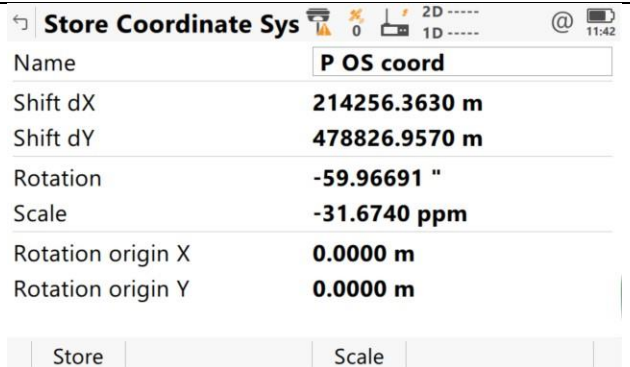|		
1	**Pseudo OS Co-ordinate system** In order to generate a new coordinate system, you first need to survey a point around which your system will be based. Then from the home screen select the 'Create coord system' action from the bottom carousel.	
2	Select the 'Onestep' method then hit **OK**.	
3	Give your new coordinate system a name (one related to the site you are working on is useful). **Tick** the box to use one-point localisation method	
4	The WGS84 job should be the one where your surveyed point is located. Tap on the job and select that job. Select **Data** and edit the surveyed point and copy down the OS coordinates for that position. Select **OK** until you return to the Choose Jobs screen.	

5	The local points job should contain a point with coordinates around which your new system is based. It can be the same job as your WGS84 job. Tap on the dropdown and highlight the job that will contain your local coordinate.	**Choose Design Data** ☷ 0 ⌸ 2D ----- 1D ----- @ 🔋 10:31 **ground floor** Date created 14.04.2020 Source Internal **howards** Date created 09.05.2019 Source Internal **icf** Date created 16.04.2020 Source Internal **rdg** Date created 08.10.2019 Source Internal **test** Fn OK New Data Fn
6	Select **Data** and then **New**. Create a new point using the OS coordinates from the points you measured and Store it. Select **OK** to confirm the job and take you back to the Choose Jobs screen. Then select **OK** again to move on to the next part of the process.	**GS0001** ☷ 0 ⌸ 2D ----- 1D ----- @ 🔋 11:37 **Coordinates** Code Images Point ID — GS0001 Easting — 478826.957 m Northing — 214256.363 m Height — 120.000 m Time — 11:37:23 Date — 17.04.20 Fn Store More Page Fn
7	Set the Geoid Model as OSGM15GB. Then select **OK**.	**Coord System Comp** ☷ 0 ⌸ 2D ----- 1D ----- @ 🔋 11:38 Geoid model — **OSGM15GB** › OK
8	Select to Match in **Position and Height**. Select **OK**.	**Choose Common Poi** ☷ 0 ⌸ 2D ----- 1D ----- @ 🔋 11:39 Match in — **Position & height** ⌄ WGS84 point — GPS0129 › Local point — GS0001 › OK Meas app

9	Set the Rotation Method as **Convergence angle** and the Coordinate system to **OSGB36(15)**. Select the point you used to define the coordinate system. The Rotation value is the calculated difference between WGS84 true north and your location. Select **OK**	**Determine Rotation** Method: **Convergence angle** Coordinate system: **OSGB36(15)** WGS84 point: **GPS0129** Rotation: -0°01'00" OK Meas app
10	For Method, choose **Known WGS84 pt**. For the WGS84 point, choose the point you used to define the new Coordinate System.	**Determine Scale** Method: **Known WGS84 point** WGS84 point: **GPS0129** Scale: 0.99996832603 (Reducing points to the ground) OK Ppm
11	This completes the coordinate system creation and a summary is displayed. Select **Store** to save the system and attach it to your job. N.B. by default the next new job you create will inherit this coordinate system.	**Store Coordinate Sys** Name: **P OS coord** Shift dX: 214256.3630 m Shift dY: 478826.9570 m Rotation: -59.96691 " Scale: -31.6740 ppm Rotation origin X: 0.0000 m Rotation origin Y: 0.0000 m Store Scale