Leica Captivate One-Step Multi-Point Localization

Determine Coordinate System allows users to measure in a local coordinate system using a GNSS rover. This quick guide outlines the "One-step localization" method which is sometimes used rather than a standard UTM coordinate system.

Note: It is important to stake out some additional control before commencing the survey (and at the start of each day) to ensure that the system is working correctly.

If you have any questions please contact **support@stpg.ca** or our toll free number **1-855-414-9453**

Description	
This will compare local control points to GNSS measurements on the same locations. The control points can be uploaded or typed in. The GNSS points are either pre-measured in the Measure App, or on the fly in Create Coordinate System.	
Choose the 'Create Coord Sys' App at the Home screen. Then select One-step and hit OK. This method is the most common for sites up to 5km long.	**Determine Coord System** 2D ----- 1D ----- @ 15:27 Method **Onestep** ⌄ Suitable for smaller areas (up to 10km). Match points by position &/ or height. OK
Name the Local coordinate system. I recommend using the same name as your project. **Job where WGS84 Points are stored**: Choose the job that contains the points measured by GNSS. **Job where local points are stored**: Choose the job with the control points that you uploaded or keyed in. Both jobs may be the same, and there is an auto match function that can be used but not covered in this guide. Press OK.	**Choose Jobs** 2D ----- 1D ----- @ 15:31 Name — **Sample Project** Job where WGS84 points are stored — **Sample Control** > Job where local points are stored — **Sample Control** > Use one point localisation method ☐ Fn OK Fn
Enter a Transformation name which will be saved as the new local coordinate system. It's recommended to name it the same as your project for convenience. Set height mode to Orthometric Hit OK.	**Choose Height Mode** 2D ----- 1D ----- @ 15:34 Transformation name — **Sample Project** Transformation type — **Onestep** Height mode — **Orthometric** ⌄ OK
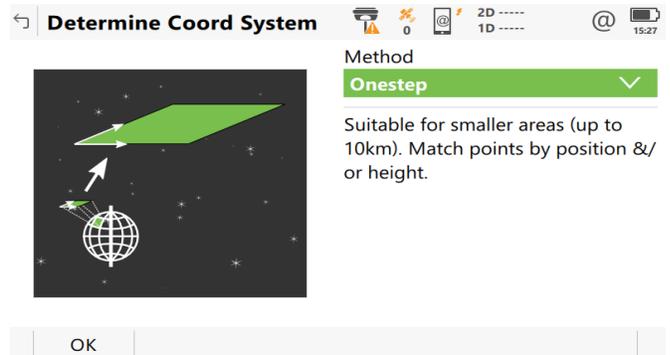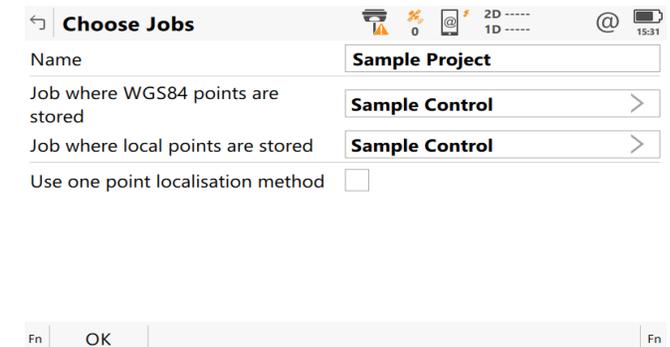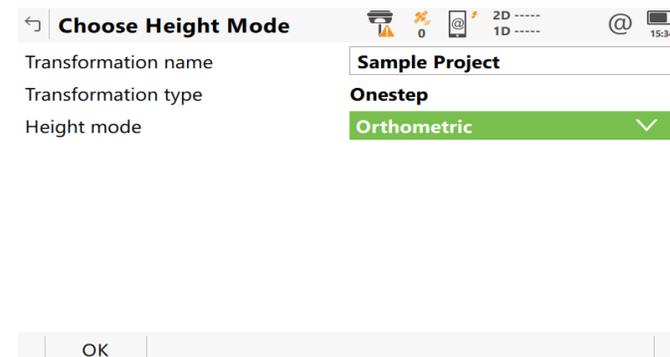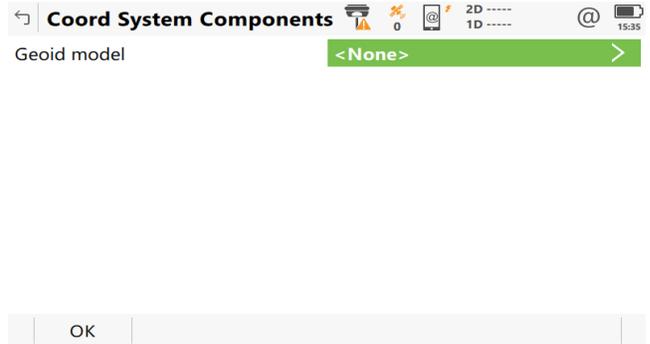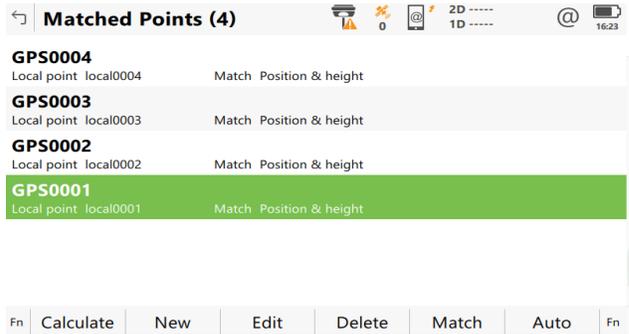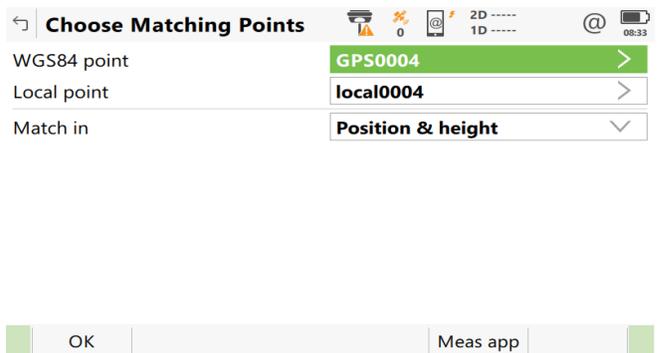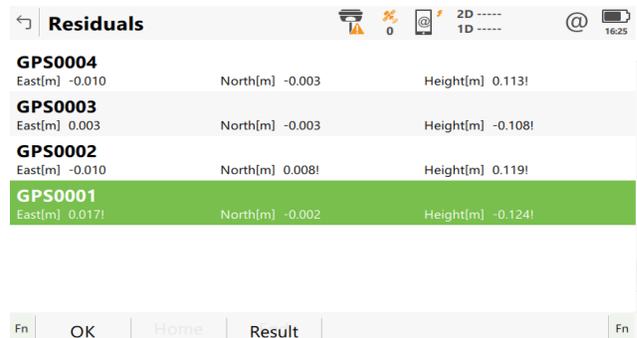
Select 'none' for Geoid model (You are matching to your local points) Hit OK.	**Coord System Components** 2D ----- 1D ----- 15:35 Geoid model **<None>** > OK
This screen shows the matching points. You'll be able to add new, edit, delete the match, or change the match options by select the bottom of the screen until you are satisfied with the match list.	**Matched Points (4)** 2D ----- 1D ----- 16:23 **GPS0004** Local point local0004 Match Position & height **GPS0003** Local point local0003 Match Position & height **GPS0002** Local point local0002 Match Position & height **GPS0001** Local point local0001 Match Position & height Fn Calculate New Edit Delete Match Auto Fn
Hit 'New' to create a match. You can select the WGS84 and Local points in this screen. The Meas App function above F5 will allow you to measure GPS points on the fly if they are not previously stored.	**Choose Matching Points** 2D ----- 1D ----- 08:33 WGS84 point **GPS0004** > Local point **local0004** > Match in **Position & height** ∨ OK Meas app
The next screen will show the residuals of the matched locations. Depending on the accuracy requirement of the project, you can press escape to make a change, or hit 'ok' to accept the result.	**Residuals** 2D ----- 1D ----- 16:25 **GPS0004** East[m] -0.010 North[m] -0.003 Height[m] 0.113! **GPS0003** East[m] 0.003 North[m] -0.003 Height[m] -0.108! **GPS0002** East[m] -0.010 North[m] 0.008! Height[m] 0.119! **GPS0001** East[m] 0.017! North[m] -0.002 Height[m] -0.124! Fn OK Home Result Fn
A summary screen will be displayed. The residuals will be displayed, Use the residuals to identify errors in the matching process or isolate bad control points. In a typical situation, the residuals should be under 30mm, but does depend on quality of the control/survey observations. Press 'Store' to save this coordinate system and to set it as the current system being used.	**Store Coordinate System** 2D ----- 1D ----- 16:27 **Summary** Coordinate system Name **sample project** Transformation type **Onestep** Number of matched points **4** Largest residuals Easting **0.017 m** Northing **0.008 m** Height **0.124 m** Store Page