

Get Started:

Before going on the field:

1. Open ArcPad  > ArcPad 10.2
2. load the project  >  > Open Map > GetStarted.apm.
3. If you don't see the map  >  > zoom Full Extent > Sorge2009_20cm.tif
4. Check the settings:

 >  > Map properties > projections > CH1903_LV03 (datum D_CH1903)

 >  > GPS Preferences > GPS tab > Protocole: Positions ArcPad extension; port: COM3

 >  > GPS Preferences > Datum tab > **D_WGS_1984 (D_CH1903 = ~150m shift!)**

 >  > GPS Preferences > GPS height > if no antenna, set Antenna Height to 0. With the Tempest Antenna, set to 1m

 >  > Setup > GNSS Settings >  > set accuracy bar on productivity instead of precision (or tick "use smart settings")

 >  > Real Time > SBAS (real time correction: Satellite-Based Augmentation System) (

 >  > Setup > Logging Settings > Log GNSS to SSF should be "on". This generates a .ssf file for post-processing.

 >  > Setup > Logging Settings > Antenna Height  > If no Antenna: type Geo7X Internal (part number set automatically). You can use the Tempest antenna to improve signal and reduce noise when under a canopy.

Once you are on the field: place the Handheld on the ground where you want the coordinate and wait until you get an adequate signal and that the device has collected enough positions (in the .ssf file). This can take up to 20min (for the first calibration, then about 2 min for each relev ).

5. Activate the GPS receiver  >  > GPS Active. The satellite icon should then have a red frame and a red banner appear on the map with "No Fix" at first, then with the coordinates once it gets GPS signal.
6. Check satellite reception on the skyplot  >  > GPS Position Window > Skyplot tab (or click on the banner). Satellites should appear and connect after a few minutes.
7. Check coordinates and precision  >  > GPS Position Window > Data tab. Wait until the realtime correction is activated and GPS Mode is SBAS. You can check the general precision (DPOP), or change it to HDOP (horizontal precision) by clicking on the right. You can also change the coordinates system (Map Project is the one we usually want, but you can check the lat/long on WGS84).
8. You can check the same info and more on the GPScorrect extension  >  > Skyplot. The upper part  tells you how many satellites are connected, if the SBAS real-time correction is active (when the antenna stop blinking), if you are connected to a phone (we don't have that) and the estimated precision after post-correction (with Trimble GPS Analyst™ extension for the ArcGIS). You should see the SBAS satellite for real-time correction  on the skyplot.

9. Coordinates on SW corner of Biophore balcony 4th floor should be CH1903 533863/152510 (WGS84 46.52061°; 6.57675) and the position marker , should be correctly located on the map. In good conditions you should get a HDOP of about 80cm!

Data collection. You can note your coordinates on a piece of paper, but if you want to improve their accuracy (i.e. from 1-4m to 0.2-1m), they need to be post-processed with Trimble Pathfinder and the ShapeCorrect tool . And for this you need the .ssf file and a shapefile of points/lines/polygons edited on the field:

10. Load the shapefile  >  > add layer > GetStarted > points.shp.
11.  >  indicate that the shapefile is editable.
12. Once you have the desired estimated accuracy after postprocessing, you can capture a point feature with  . Enter a number in the “Value” field to reference your point.
13. When you leave the spot where the data is collected, deactivate the GPS receiver (point 5.) to avoid collecting unnecessary GPS positions

Back from the field:

14. Connect the GPS device to a USB port
15. Browse the content of the GPS on Windows Mobile Device Center
16. Transfer the .ssf file(s) and shapefiles and send them to Olivier who will post-process the data for you