

MAPPING with GPS & Tablet

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SUMMARY

- Goal of the presentation
- My gear
- Pros of mapping with GPS + tablet (Cons?)
- Tablets (OS, screen, stylus, software, gps)
- Base maps and georeferencing (projection and datum)
- 3 North's (magnetic, true, grid)
- LIDAR
- Free imagery on the web (georef)

WHAT TO EXPECT?

- People with different backgrounds here
- Not easy to replicate tomorrow what you see here (software – hardware – knowledge... it took me years to build this expertise)
- Useful hints
- Ideas for building your own mapping gear

MY GEAR

- A 10-year quest for better solutions
- Since 2013 tablet and gps



RUGGED TABLET ARMOR

Windows7 - 7" screen

External GPS w/Bluetooth taped on hat

Extra batteries

Compass

OCAD9 Pro – Globalmapper - SASPlanet

TABLET+GPS mapping PROS

- Multiple base maps
- GPS help – very powerful
- Save time at home for the drafting
- Skip print – tape mylar on board – scan

TABLET+GPS mapping CONS

- Screen in the sunlight (→ rugged tablet)
- Using stylus tricky at first

Minor CONS

- Dangerous x32 zoom (a threat to generalization)
- Weight to carry
- Power-dependent; must remember to charge batteries and gps

CHOOSING TABLET

- OCAD needs WINDOWS
[ocad.com] 580 CHF = 800 CAD +vat
- Open Orienteering Mapper
[openorienteering.github.io] FREE!
WINDOWS MAC ANDROID

MY EXPERIENCE WITH OOM+ANDROID
stylus + screen w/sunlight

CHOOSING GPS

- HOLUX M 1000
25 EUR (Nov 2012)

SCREEN + STYLUS

- resistive-capacitive-rugged
- 7" screen

mobile phone mapping 3-4" (Erik Sundberg)

www.momap.se

WINDOWS PHONE / ANDROID

only swedish

5000 SEK = 800 CAD

GEOREFERENCING

- Giving a reference (a number) to a point
 - all base maps (if georef), will go automatically at the right place
 - all ocad files combine together

PROJECTION

the representation on a plane surface of any part of the surface of the earth

DATUM

Shape of the Earth: Ellipsoid, Geoid.



PROJECTION

A lot of different projections 

- UTM

UTM 11 N here

- Alberta 3TM

- Italy GAUSS-BOAGA

- Very Local: Emilia Romagna

DATUM

ED50 × European Datum 1950

NAD83 North American Datum 1983

WGS84 World Geodetic System 1984

Projection + Datum

OCAD – built in not configurable

OOM - GLOBALMAPPER- configurable

BASEMAPS

RASTER

- GeoTIFF + TFW

VECTOR

- DXF (DWG)
- SHP
- Sometimes PDF

THE NORTH

- TRUE NORTH
- MAGNETIC NORTH
- GRID NORTH



<http://www.geomag.nrcan.gc.ca/calc/mdcal-en.php>

LIDAR

- .ascii .xyz
- .las (with classification)
- .tiff
- digital elevation model (DEM), digital terrain model (DTM) and digital surface model (DSM)

LIDAR software

- OCAD
- GLOBALMAPPER
- oapp.se/Applikationer/OL_Laser.html
- www.routegadget.net/karttapullautin
- tmsw.no/mapping/basemap_generation.html

A topographic map with contour lines, green and yellow shaded areas, and red and blue lines. The map is the background of the entire slide.

SASPLANET

www.sasgis.org/download

Russian!

- **GOOGLE MAPS**
- **BING**
- **NOKIA**
- **YAHOO**