

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

PROJECTION

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

DATUM

Shape of the Earth: Ellipsoid. Geoid.

PROJECTION

<http://www.theguardian.com/global/gallery/2009/apr/17/world-maps-mercator->

- UTM
- UTM 11 N here
- Alberta 3TM
- Italy GAUSS-BOAGA
- Very Local: Emilia Romagna

OCAD – built in not configurable

OOM - GLOBALMAPPER- configurable

A topographic map with contour lines, roads, and various colored areas (yellow, green, blue). The map is overlaid with a grid of red and blue lines. The word 'DATUM' is written in large, bold, black letters in the upper center.

DATUM

ED50 European Datum 1950

NAD83 North American Datum 1983

WGS84 World Geodetic System 1984

BASEMAPS

RASTER

- GeoTIFF + TFW

VECTOR

- DXF
- .shp

THE NORTH

- TRUE NORTH
- MAGNETIC NORTH
- GRID NORTH

LIDAR

- .las
- .ascii .xyz
- .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**