GEODETIC INSTITUTE OF SLOVENIA

Mountains info points
Look your way!

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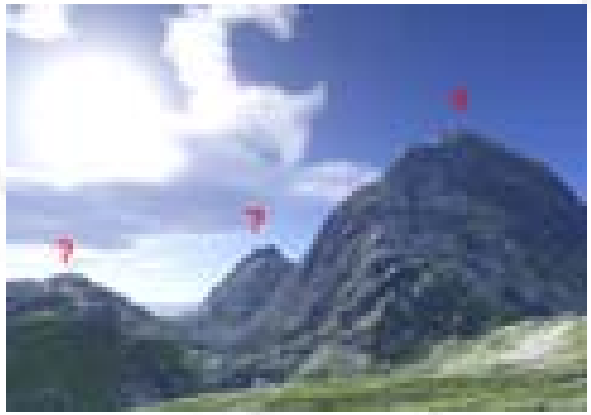
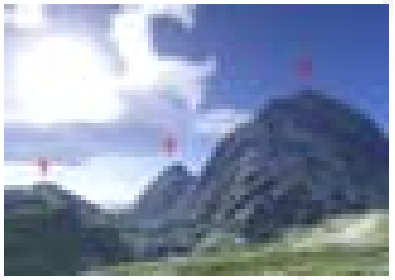
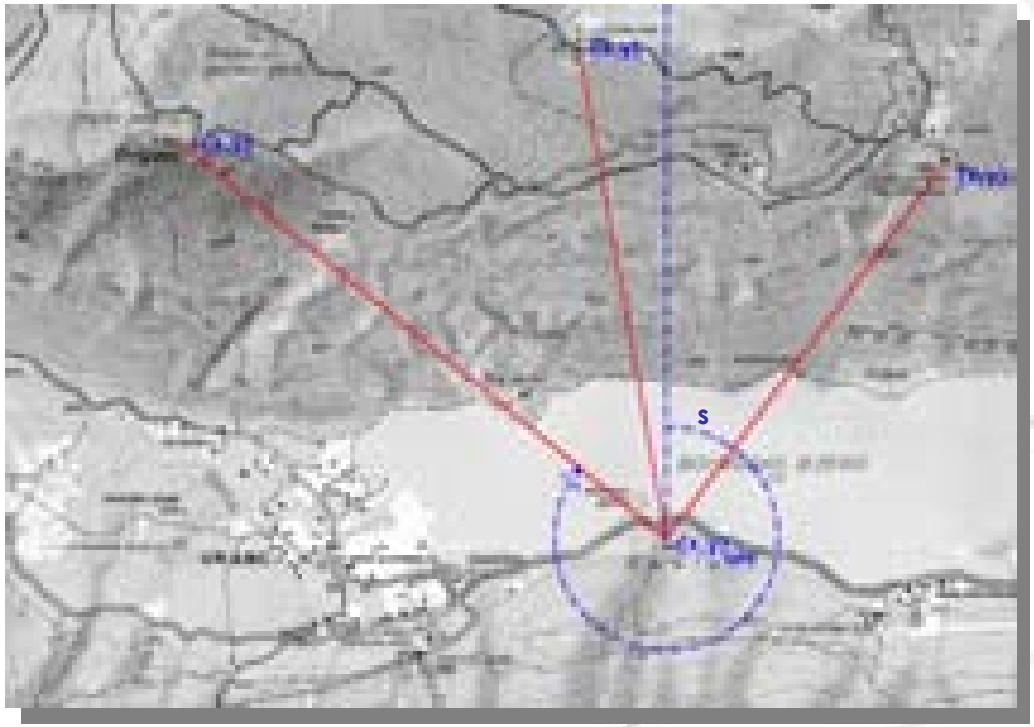
Imagine …



… you are alone in the middle of the mountains …
… you are enyojing beautiful view …
… you would like to know which mountain is in front of you …
… you have a map …
… but you don't know how to read maps …

Idea



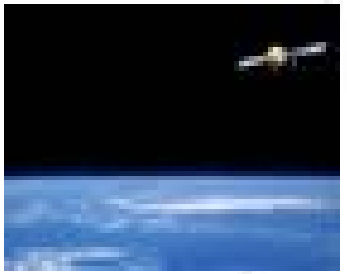


(x,y) – from database

$(x,y)_{GPS}$ – from GPS

s – from compass

Equipment



Hardware

- GPS receiver
- Digital compass
- Handheld computer

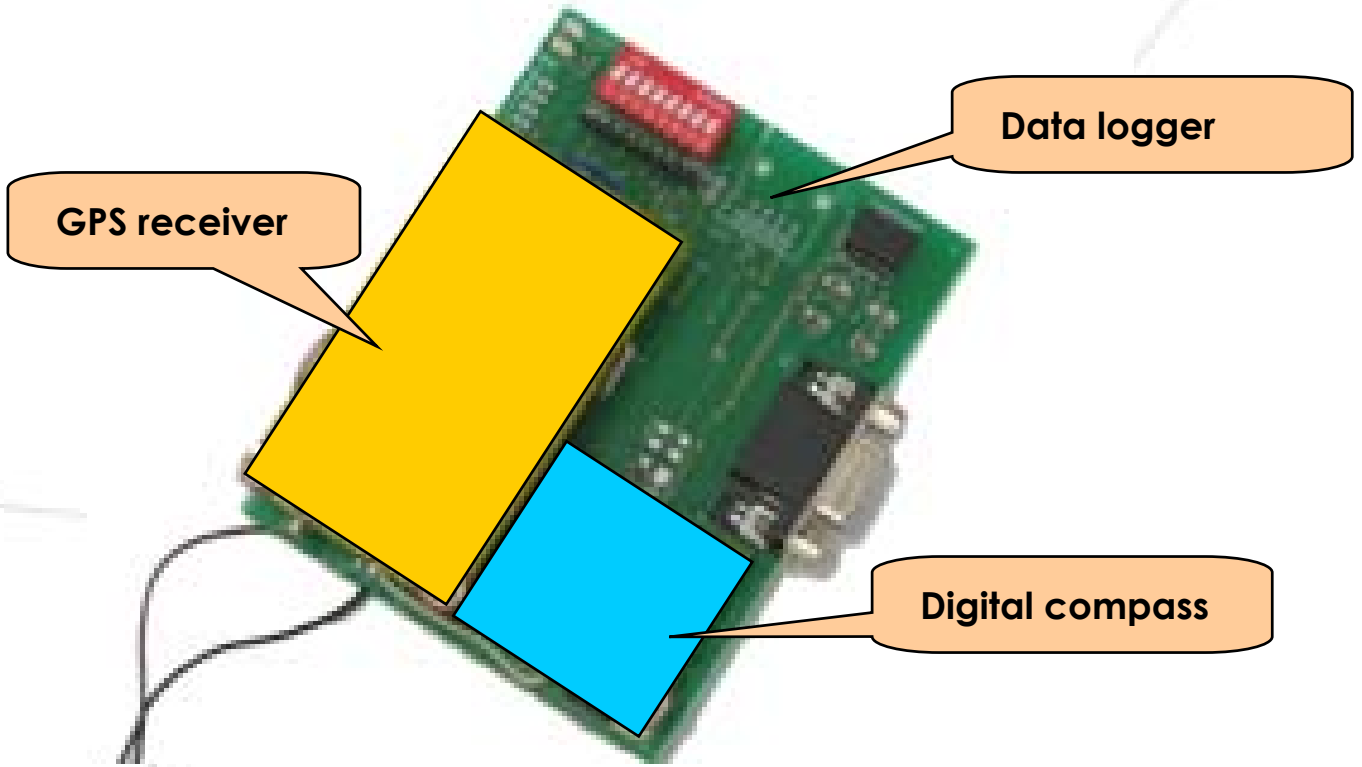
Software

- Handheld computer software
- Aplication server software
- Database

GPS receiver & Digital compass (SO-GPSC1)

Components:

- Data logger
- Ublox GPS receiver
- Digital compass



GPS receiver & Digital compass (SO-GPSC1)

Data Logger components:

- Data storage
- Clock
- Serial port
- Ethernet

Additions:

- Gyroscope
- Thermometer
- Hygrometer
- …

GPS receiver & Digital compass (SO-GPSC1)

U-Blox GPS receiver Chipset:

- Fully self-contained GPS receiver
- Ultra-low power consumption
- Active antenna support
- Accuracy:
  - Position 3m RMS
  - DGPS 2m RMS

GPS receiver & Digital compass (SO-GPSC1)

Digital compass:

- Working on Earth's gravitational field
- Accuracy: 1.5° RMS

Handheld computer

Compaq iPAQ 3850

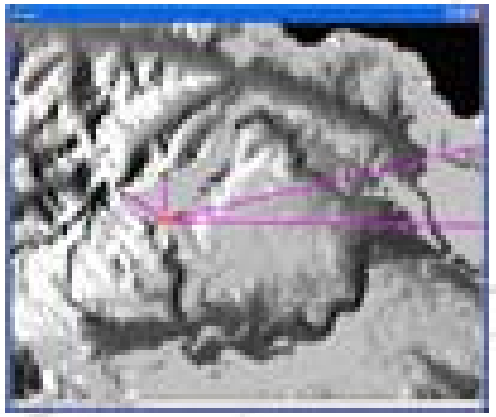
- Pocket PC operating system
- GSM/GPRS module

Handheld computer - HaGisCo software

Abilities:

- **Communications with hardware device**
- **Communications with application server**
- **Data visualization**

HaGisCo software – server side



Application server

- Manifold GIS system
- HaGisCo
  - Connection with handheld computer:
    - Wireless TCP/IP HTTP protokol
  - Abilites:
    - Getting data from handheld computer
    - Data calculation (result: list of mountains with heights)
    - Sending data to handheld computer

Database:

- PostGis

Conclusion

Further development – hardware:

- **Add some measurement additions**

Further development – software:

- **Generating 3D view picture with labels based on DTM**
- **Improve visibility algorithem**
- **Upgrade for mobile phones**
- **Upgrade navigation capabilities**