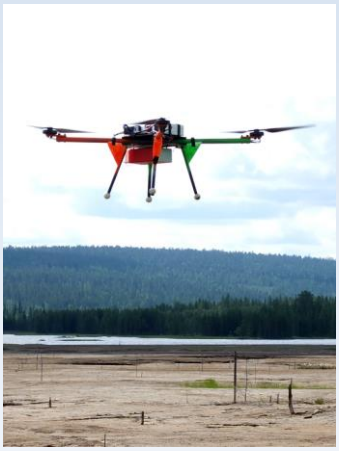
radai

Geophysical Surveys and
Remote Sensing with UAVs

Radai's radiometric survey system utilizing unmanned aerial vehicles (UAVs)

Key concept:

- Custom-made quad-copter
- Light-weight gamma spectrometer
- Low-altitude surveys



Custom-made UAV

- Dimensions ∅ ca. 1.0 m
- Weight 8 kg (12 kg with batteries)
- Power source 2 x LiPo
- Flight speed 0–10 m/s
- Flight time up to 40 min with 3.5 kg payload
- Autopilot & inertial measurement unit (IMU) control drone flight
- Flight path defined by waypoints with DEM based altitude
- Flight controlled in real-time by PC software via a telemetry link.

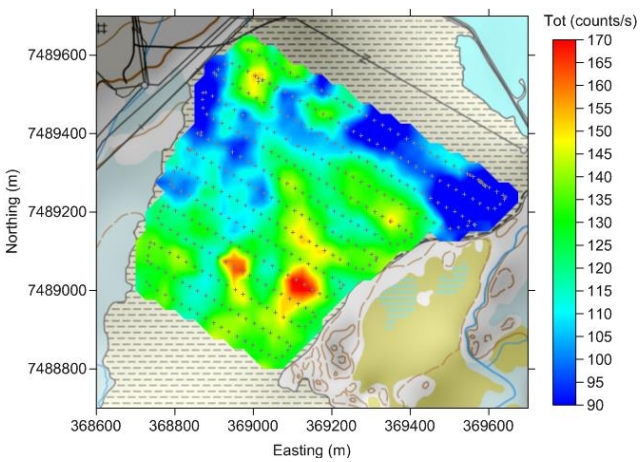
Gamma spectrometer

- 2 BGO or NaI/Tl crystals
- 25-3000 keV
- Integrated GPS
- Weight 3.5 kg
- Sample time > 2 s

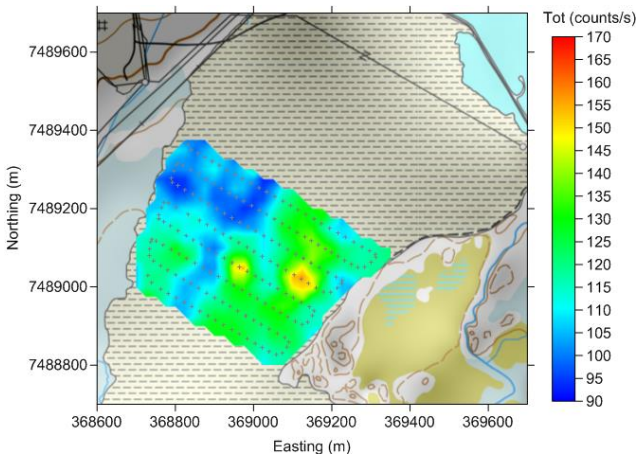
Radai GammaPros

- Data processing software
- UTM coordinates
- Data summation
- Data normalization
- Output formatting

Total intensity at h= 5 m



Total intensity at h= 10 m



Report available: http://tupa.gtk.fi/raportti/arkisto/74_2016.pdf