Balamis

www.balamis.com

ARIEL

- L-band microwave radiometer

- High density on demand soil moisture data without requiring infrastructure

- Configuration through web-based user interface

- To be used on board aircrafts, drones, and ground vehicles.

- Compatible with most common GIS software

Agriculture / Environment

· Soil and soil moisture variability

· Puddle detection with
  vegetation cover

· Irrigation planning

· Land management

Civil engineering and mining

· Levee inspection

· Tunnel and galleries
  inspection

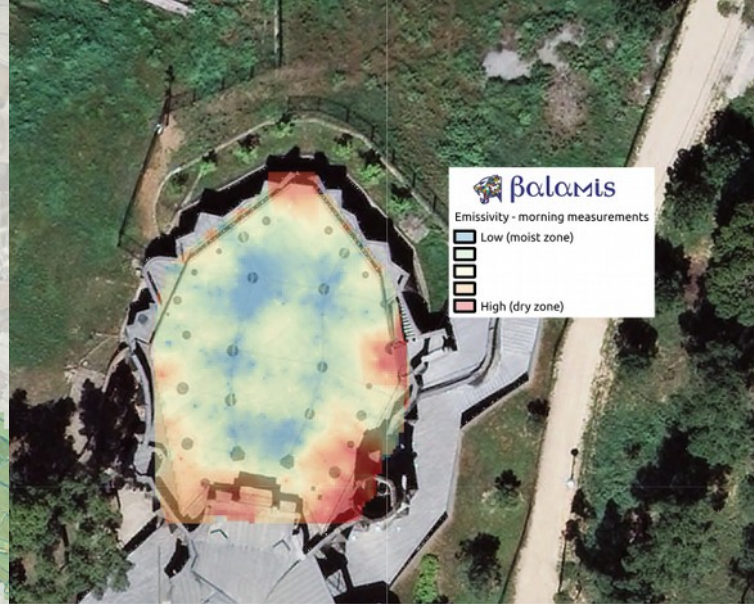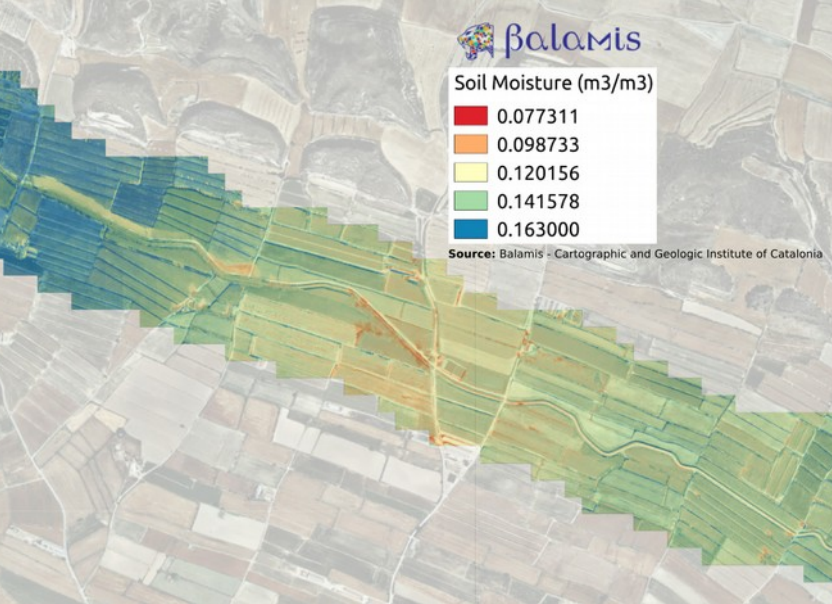· Surface moisture in linear
  infrastructure

Other

· Earth observation, validation of
  satellite data.

· Sea ice thickness

· Telecomm, location of sources
  of electromagnetic interferences

Balamis is a company pioneer in developing sensors for large areas soil moisture measurements. Our mission is to develop innovative technologies for better water management and mitigation of climate change effects.

Balamis, based in Barcelona, started after 15 years of research in microwave remote sensing at Technical University of Catalonia. Since its creation, Balamis has converted the original university prototypes into industrial products. This intensive research and development program has been supported by the European Space Agency incubation program, the European Institute of Technology and the Spanish agencies CDTI and ENISA.

Soil Moisture (m3/m3)
- 0.077311
- 0.098733
- 0.120156
- 0.141578
- 0.163000

Source: Balamis - Cartographic and Geologic Institute of Catalonia

Emissivity - morning measurements
- Low (moist zone)
- High (dry zone)

L-band radiometer
· Central frequency: 1.413 GHz
· Bandwidth: 20 MHz
· Radiometric accuracy: 0.7 K at 1 Hz
· Sampling rate: up to 8 Hz

Patch array antenna
· Dual polarization (H+V)
· Beamwidth: 36º (Ground version, UAV)
        22º (aircraft)
Please contact for other configurations

· Built-in calibration hot and cold loads

Power input
· Voltage: 12 V
· Electronics current consumption: 0.5 A
· Heating system current consumption: 1 A
(ground and UAV), 4 A (aircraft)

Thermal IR photodiode (ground)
· Resolution: 0.02 K
· Accuracy: 0.2 K

Red/NIR dual photodiode for vegetation retrieval (optional for ground radiometer)

Positioning
· GPS, Glonass and Beidou integrated receiver
· CEP position accuracy: 2.5 m(standalone), 0.025 m (RTK mode).
· WGS82 EPSG:4326 format

Weight
· 5.8 kg (ground)
· 2.8 kg (UAV)
· 15 kg (aircraft)

Configuration
· ARIEL is configurable using a web-based integrated user interface

Data
· Internal storage
· Ethernet interface configuration

Processing software
· RAW data into brightness temperature software included
· Brightness temperature to soil moisture conversion software optional

Size:
· 400 mm * 300 mm * 250 mm ARIEL ground version
· 410 mm diameter ARIEL UAV version