



GIS/Surveying



Geomonitoring



Construction/Mining



Agriculture/Forestry



Maritime/IWW Navigation



Traffic/Transportation

GNSS Sensor Concept - Telemetry & Precise Positioning



A08-RTK GEO-MICHEL®



A10-RTK



A08-MONiPOL®



Digital Control Point

- Precise GNSS-RTK modules
- 4G LTE modem and BT / Wifi communication
- Internal memory
- Processor with Alberding software

A08-RTK GEO-MICHEL®

- Secure transfer of correction data (**TLS**)
- Measurements with a tilted antenna rod (**IMU**)
- Reception of SSR correction data (**DAB+**)
- Galileo HAS with **u-blox X20P** module



Single Receiver – Multiple Uses



DTM - A08App



Vehicle Mounting



Handheld RTK System



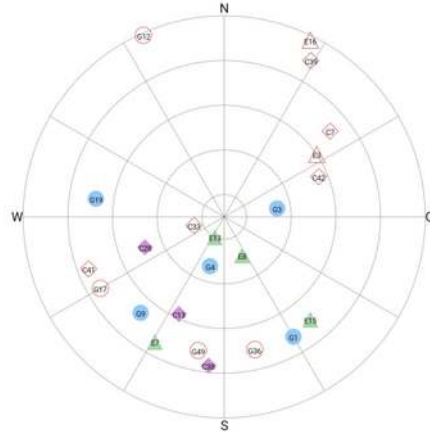
GIS Data Collection

- Compact and user friendly L1/L2/L5 system
- E-paper display for system information
- Usable with or without external control unit
- 4G LTE modem, BT/WLAN module

Alberding A08App



DTM Measurement



Satellite Visibility

Configuration

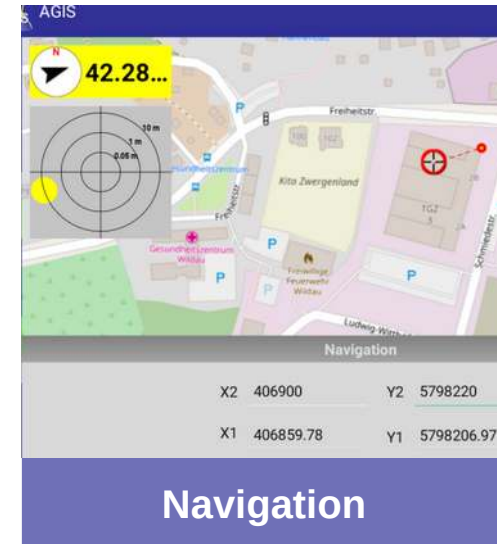
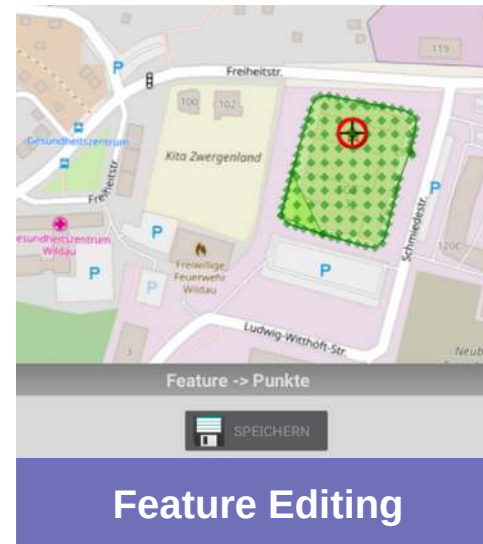
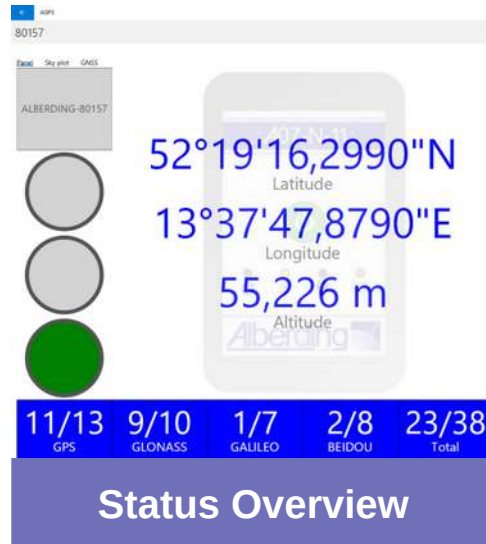
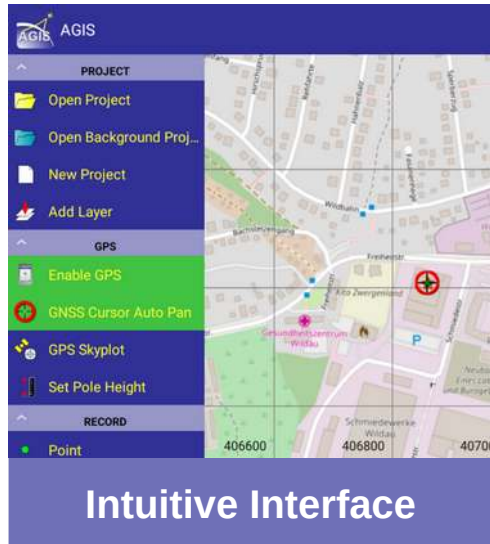
Auswahl	Punkt	Zeit	Exportiert
☐		2026-06-22T10:49:20	
☐	Test	2026-06-23T08:40:50	✓
☐		2026-06-23T08:42:23	
☐	Test2	2026-06-23T08:49:11	✓

Data Management

- A08-RTK GEO-MICHEL® Mobile app
- Receiver configuration via BT / USB

- Import / Management of DTM
- Visualisation of elevation deviations (cut / fill)

Field Data Collection with AGIS



- **Import / export** of existing GIS data (shapefiles)
- **Navigate to / stake out** existing features
- **Quality control** of real-time GNSS position input
- **Display and storage** length and area

A08-MONiPOL[®]

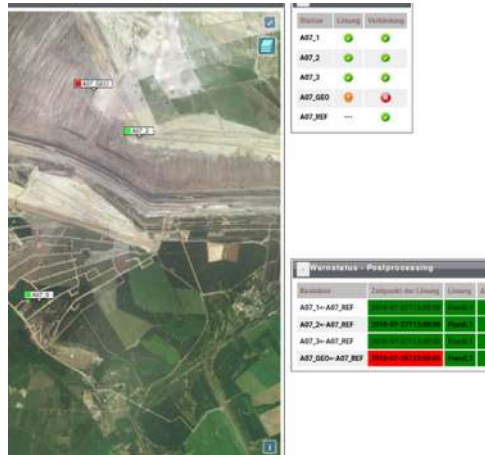
- **Cost-Effective** GNSS Monitoring Sensor
- **Easy to install** and **setup**
- **Autonomous** energy supply via **solar power**
- **Automated** data flow, **API** available



Alberding Monitoring Software (AMoS)



Charts



Station Overview

ung	Lösung	Delta O 1h [m]	Delta N 1h [m]	Delta H 1h [m]
00:00	FixedL1st	0.033	0.019	-0.041
00:00	FixedL1st	0.022	0.028	-0.004
00:00	FloatDGSS	22454.428	31739.691	-15.879
00:00	FixedL1st	0.012	0.015	-0.158
00:00	FixedL1st	0.038	0.002	-0.038
00:00	FixedL1st	-0.014	0.008	0.010
00:00	FixedL1st	0.021	0.016	-0.019
00:00	FixedL1st	0.018	0.015	-0.020
00:00	FixedL1st	0.002	0.010	-0.131
00:00	FixedL1st	0.009	0.024	-0.071

Warning Status

The screenshot shows the 'User Settings' window. It includes a 'Zeitspanne' (Time span) section with a dropdown for 'Gleitendes Zeitfenster' (Sliding time window) and a 'fester Bereich' (Fixed area) section. The 'Monitoringstation' section lists various stations with checkboxes for selection. The 'Referenzstation' section lists reference stations. The 'Prozessierungsintervall' (Processing interval) section has a dropdown for selection. The 'Wetterstation' (Weather station) section has a checkbox for selection. The 'Details' section has a checkbox for selection. The 'nur Fix' (Only fixed) section has a checkbox for selection. The 'Plotauswahl' (Plot selection) section has checkboxes for Delta O, Delta N, Delta H, and other parameters. The 'Plots vergleichen' (Compare plots) section has a checkbox for selection. The 'Vergleichsplot 1' (Comparison plot 1) and 'Vergleichsplot 2' (Comparison plot 2) sections have radio buttons for selection.

User Settings

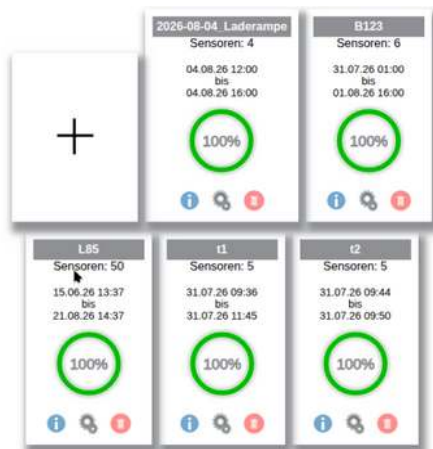
- **Automated** geo-monitoring software solution
- Near real-time **PP / RTK** monitoring
- **External sensors** (tilt, weather, geotechnical, ...)
- Automatic **email** and **SMS** warnings

Digital Control Point

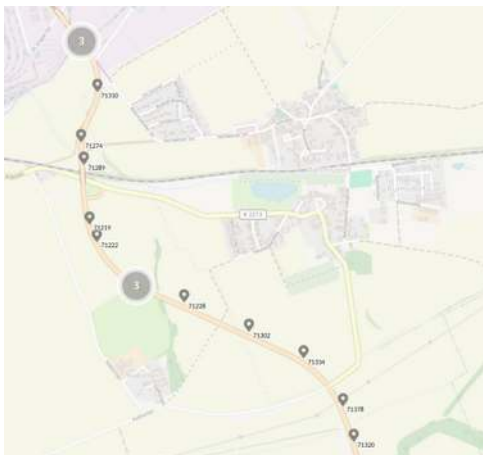
- **Simple set up** in the field
- RTK correction data „**on demand**“
- **Automated** data flow and processing
- **Precise** control points **without surveying**



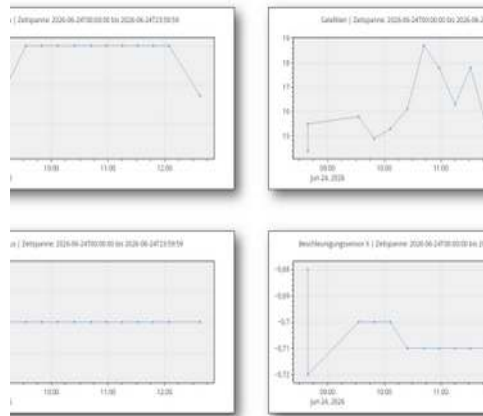
Alberding SmartTrack



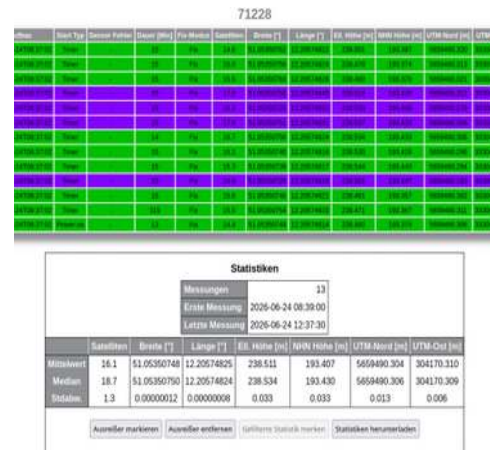
Project Management



Map Visualisation



Time-series Graphs



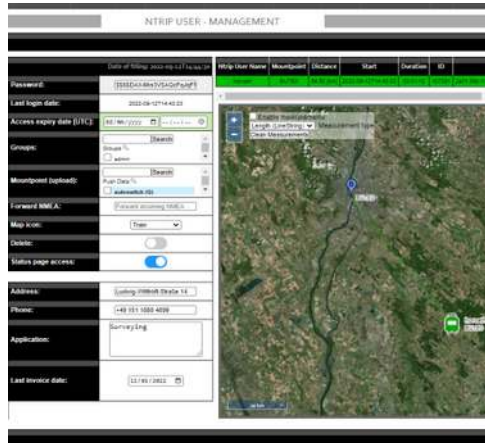
Statistics

- Data collection and visualisation
- Map display with additional information
- Automatic email and SMS warnings
- Sensor data transmission via API, MQTT, ...

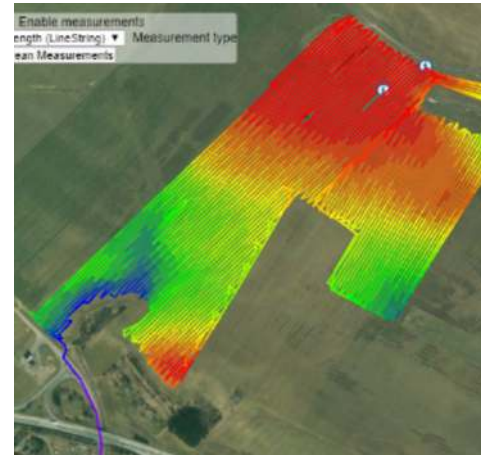
Alberding Ntrip Caster



Designed for mass usage



Data Management



Precision Agriculture



Analysis

- **Highly reliable** Ntrip broadcaster software
- Optimal for **RTK**, **PPP** and **PPP-RTK** services

- Web interface for **management** and **monitoring**
- **VRS** correction rebroadcasting, **API** available

Alberding-GPPS

ID	Projekt	Anfrage	Status	Variante	Start
17	test1	2026-08-27T15:50:12 (CEST)	unknown	SAPOS-GPPS	2026-08-24T00:00:00 (C
18	test2	2026-08-27T15:51:20 (CEST)	unknown	SAPOS-GPPS	2026-08-24T22:00:00 (C
19	test3	2026-08-27T15:54:03 (CEST)	unknown	GPPS-PRO	2026-08-25T00:00:00 (C

Ende	Intervall	Komprimierung	Stationen/Posit
2026-08-24T04:00:00 (CEST)	30 s	-	DARGUN
2026-08-25T02:50:00 (CEST)	30 s	-	DARGUN
2026-08-25T02:50:00 (CEST)	30 s	-	078300DEU_R_20262362200_01D Breite: 53.90136, Länge: 12.8626

rimierung	Stationen/Position	Herunterladen	Löschen
-	DARGUN	-	Löschen
-	DARGUN	-	Löschen
-	078300DEU_R_20262362200_01D_30S_MO.rnx Breite: 53.90136, Länge: 12.86268, Höhe: 0.0	-	Löschen

Orders

RINEX-Optionen

Stationen: ☐ ALHBECK (0807) ☐ ALTENTREPTOW (0789) ☐ ARKONA (0799) ☐ FERDINANDSHOF (0787) ☐ GÖDEHLEN (0801) ☐ GREIFSWALD (01) ☐ NEULUTZ (0797) ☐ PARCHEM (0798) ☐ POEL (0779) ☐ ROSE

Zeit:
 Zeitbezug: ☒ CEST ☐ UTC
 Startdatum: 01.09.2026 Startzeit: 14:43
 Enddatum: 02.09.2026 Endzeit: 14:43
 Intervall: 30 s

Komprimierung:
 Hatanaka ☐
 GZIP ☐

Projektname:

[Bestellung abschicken](#)

RINEX Data

VRS options

Position:
 Geogr. Koordin. (WGS84) XYZ - ECEF (WGS 84)
 Breite: 53.90136 X: 500000.000 m
 Länge: 12.86268 Y: 500000.000 m
 Ell. Höhe: 0.0 m Z: 500000.000 m

UTM:
 Zone: 32U
 Nordwert: 500000.000 m
 Rechtswert: 500000.000 m
 Höhe: 0.0 m

☒ Es muss nur ein Koordinatenpaar angegeben werden. Die UTM-Zone muss die Zonennummer und das Zonenfeld enthalten.

Zeit:
 Zeitbezug: ☒ CEST ☐ UTC
 Startdatum: 01.09.2026 Startzeit: 14:43
 Enddatum: 02.09.2026 Endzeit: 14:43
 Intervall: 30 s

Komprimierung:
 Hatanaka ☐
 GZIP ☐

Projektname:

[Bestellung abschicken](#)

VRS Data

Datum:

Jahr / Tag d. Jahres: 2026 / 244

GPS Woche / Tag d. Woche (So=0): 2434 / 2

[Datum umwandeln](#) [Datum umwandeln](#) [Datum umwandeln](#)

[Herunterladen](#) [Herunterladen](#) [Herunterladen](#)

Ephemeris

- Providing GNSS data for **PP applications**
- **RINEX** provision for station data and ephemeris
- Generation of **VRS data**
- **Download** by central project management

[illegible]

Connection-String

ntrips://moupoint[username:password]@[server]:[port]://nmea[.sec]
 tcp://server[:port]
 serial://baud[bits:parity:stop:protocol]@[device]

Inputs

onlyNMEA.-

Datarate

☐

Check Start Stop

Output

Update data Stop Refresh Reset Download

```

RTCM (2017-09-01T12:43:47.63 delay 0.8s) Type 18: ID=582, zcnt=2644.8, Seg1=1,
Health=UERE Scale Factor 1', Incentivity detected
Frequency=2, Line of measurement=0.00000000
Svr 1, Multiplier=yes, Code=C/A, Type=GPS, Qual=3 (cc 0.022008), Loss=0, cpi=64510
Svr 8, Multiplier=yes, Code=C/A, Type=GPS, Qual=0 (cc 0.00391), Loss=0, cpi=69711
Svr10, Multiplier=yes, Code=C/A, Type=GPS, Qual=0 (cc 0.00391), Loss=1, cpi=78468
Svr11, Multiplier=yes, Code=C/A, Type=GPS, Qual=1 (cc 0.00696), Loss=0, cpi=72221
Svr14, Multiplier=yes, Code=C/A, Type=GPS, Qual=4 (cc 0.03353), Loss=2, cpi=52033
Svr15, Multiplier=yes, Code=C/A, Type=GPS, Qual=5 (cc 0.07006), Loss=0, cpi=17443
Svr18, Multiplier=yes, Code=C/A, Type=GPS, Qual=1 (cc 0.00696), Loss=2, cpi=25396
Svr21, Multiplier=yes, Code=C/A, Type=GPS, Qual=5 (cc 0.07006), Loss=0, cpi=75531
Svr22, Multiplier=yes, Code=C/A, Type=GPS, Qual=5 (cc 0.07006), Loss=1, cpi=32763
Svr27, Multiplier=yes, Code=C/A, Type=GPS, Qual=0 (cc 0.00391), Loss=0, cpi=72545
Svr28, Multiplier=yes, Code=C/A, Type=GPS, Qual=3 (cc 0.022008), Loss=1, cpi=49441
Svr29, Multiplier=yes, Code=C/A, Type=GPS, Qual=1 (cc 0.01299), Loss=1, cpi=51817
RTCM (2017-09-01T12:43:47.63 delay 0.8s) Type 18: ID=582, zcnt=2644.8, Seg1=2,
Health=UERE Scale Factor 1'
Frequency=2, Line of measurement=2645.00000000
Svr 1, Multiplier=yes, Code=P, Type=GPS, Qual=3 (cc 0.022008), Loss=0, cpi=41234
Svr 8, Multiplier=yes, Code=P, Type=GPS, Qual=0 (cc 0.00391), Loss=1, cpi=14541
Svr10, Multiplier=yes, Code=P, Type=GPS, Qual=0 (cc 0.00391), Loss=1, cpi=15113
Svr11, Multiplier=yes, Code=P, Type=GPS, Qual=1 (cc 0.00696), Loss=0, cpi=81858

```

Figure 1 consists of two vertically stacked plots showing the time evolution of the height of the ionospheric virtual height. The top plot displays Δ Height [cm] on the y-axis (ranging from -4.00 to +4.00) against Time [UTC] on the x-axis (ranging from 2021-03-03T00 to 2021-03-03T12). The data is represented by a blue line with orange dots indicating the error bar scale. A text box in the top plot specifies 'Date: 2021-03-03 01:30:42' and ' Δ Height: 2.7 (cm)'. The bottom plot displays Δ Height [cm] on the y-axis (ranging from -5 to 15) against Time [UTC] on the x-axis (ranging from 01:00 to 07:00 on Sep 2, 2020). The data is represented by a blue line with orange dots indicating the error bar scale. A text box in the bottom plot specifies 'Date: 2020-09-02 03:00:18' and ' Δ Height: 1.8 (cm)'. Both plots show a blue line representing the height and orange dots representing the error bar scale.

Normal Working Hours EnUTC:	16
Delay between new connections [s]:	0.1
Delay between reconnection attempts [s]:	10
Sort Checkstream by Caster and Subnet:	☐
Enable Availability Values for Checkstream:	☒
Display server and port on plots:	☐
Split availability plots by ip addresses:	☐
Google key for used domain:	-
Ping Server:	ANNEdit
Default Ping Response [s]:	0.1
RTK-Check RTKLIB	
Ephemeric Source:	http://rtcm3.epfl.ch/aqc/aqcdemo/ntprip.gnssonline.eu/2101/RTK3
Upload ATX File (igs15.atx):	Durchsuchen... keine Datei ausgewählt Upload
Global RTKLIB Configuration	
Charts	
Dynamic charts:	☒
Export format:	JPEG

User Settings

- **Quality control** of RTK and PPP corrections
- Customised performance **reports** (PDF, CSV)
- **Configuration / Monitoring** via web interface
- Automatic **email** and **SMS warnings**