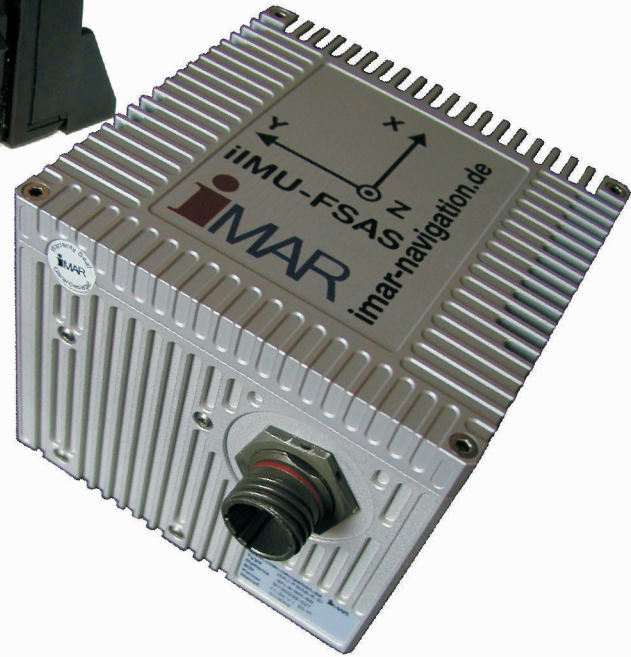
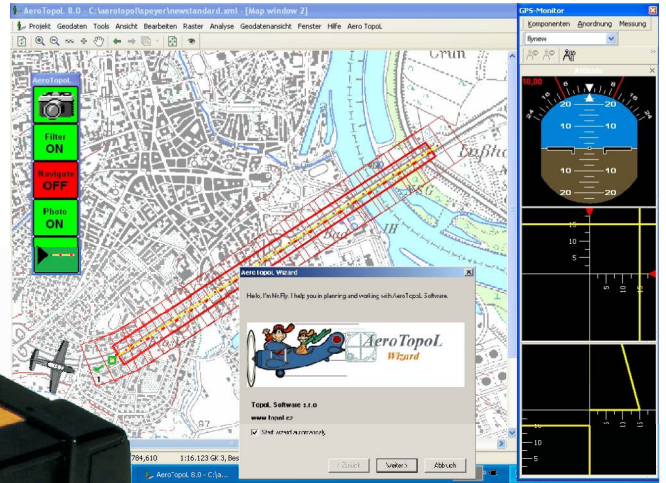


AeroDiDOS

Deeply Integrated Direct-Orientation-System



AeroDiDOS is the first deep integration of Novatel's SPAN System for aerial surveying applications, e.g. aerial imaging (with less or no ground-controls) or scanner-missions.

AeroDiDOS includes AeroTopoL Flight Management System, S/W which supports direct access to real-time SPAN-data. The GPS-INS solution is used for navigation and for pre-orientation of image-footprints in real-time.

AeroTopoL's Flight Management makes use of 10Hz-Refreshrate to enable extreme smooth and precise navigation.

AeroDiDOS Main Unit logs GPS and IMU RAW-data with up to 200Hz on SD-cards for post processing. This saves an additional PC for the on board data logging and enables an easy data transfer for the post flight workflow.

The AeroDiDOS Main Unit is releasing the camera and registering the mid exposure pulse. In parallel it logs the pulses on the SD-card and interfaces to the AeroTopoL S/W for release control. Scanners can automatically be started and controlled, too.

AeroDiDOS enables the same flexibility as the SPAN-System, meaning various IMUs can be combined with the Main Unit. Tightly coupling in real time and in post processing is supported.

For raw-data post processing, the market leading software package, the Inertial Explorer from Waypoint, is bundled with AeroDiDOS. Once processed, the data can be transferred to AeroTopoL S/W for further processing, enabling a smooth workflow for the whole data processing.

- x AeroTopoL DTM+ FMS
- x 0.1 m Positioning accuracy
- x High accurate rotation determination
- x DTM Planning and Navigation
- x IMU control in AeroTopoL
- x Realtime Footprints and Scancarpets
- x All features of Novatel's SPAN
- x Postprocessing with Waypoint's Inertial Explorer
- x Supports PPP and Multibase
- x Fast and Smooth Navigation
- x Camera Control (release/event)
- x Raw-Data Storage on SD-Cards
- x Re-Integration of postprocessed Data into Mission Protocols

technical Data: AeroDiDOS

GPS-Board

Novatel OEM V3:
72 Channels, L1 C/A code, L2 P(Y), L2 C, RTK 2 cm,
up to 20 Hz PVT & RawData, up to 200 Hz IMU, L2 CP, DGPS,
OmniSTAR HP/XP/VBS, CDGPS, SBAS, smoothed D/GPS Receiver,
WAAS / EGNOS

Mode	Accuracy
L1 only	1.8 m CEP
L1/L2:	1.5 m CEP
WAAS with L1 only	1.2 m CEP
WAAS with L1/L2	0.8 m CEP
Code Differential	0.45 m CEP
RT-20	0.20 m CEP
RT-2	0.01 m + 1 ppm CEP
Time Accuracy	20 ns RMS*
Velocity Accuracy	0.03 m/s RMS

* Time accuracy does not include biases due to RF or antenna delay.

GPS-Antenna

GPS-L1/L2 Antenna + Glonass, L-Band, kinematic, Zero-Offset

IMU (iMAR-FSAS)

Gyro Input Range	500 °/sec
Gyro Rate Bias	0.75 °/hr
Gyro Rate SF	300 ppm
Angular Random Walk	0.1 °/√hr
Accelerometer Range	5 g
Accelerometer Linearity	400 ppm
Accelerometer Scale Factor	400 ppm
Accelerometer Bias	1 mg
Size in mm	128x128x104
Weight	2.1 kg
Power	16 W
Input Voltage	11 - 34 VDC
Operating	-40 to+ 71°C
MTBF	35,000 hrs
Pitch	0.015 rms
Roll	0.015 rms
Azimuth	0.041 rms
Data Rate	200 Hz
Typical AB result Roll*	0.006 °
Typical AB result Pitch*	0.006 °
Typical AB result Yaw*	0.009 °

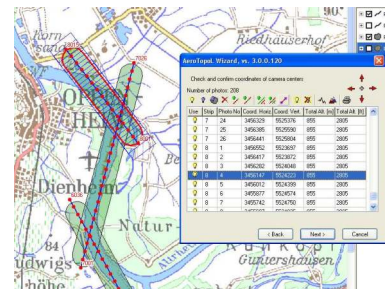
* typical airborne results using a complete GPS-trajectory in postprocessing with integrated base-station reference.

AeroDiDOS-MU (Main Unit)

Power:	10-30 VDC, 8W (without IMU)
Storage:	Raw Data on SD-Card
File-System:	Automated data-handling
Configuration:	Auto-configuration at power on
Interface IMU:	Power, Sync, Data
Interface Camera	Release and Event
Interface Scanner:	PPS, NMEA (Option), Start-stop (Option)
FMS AeroTopoL	Interface via bi-directional RS232
Set-Up:	via configuration Port
Status LEDs for:	Logging, GPS, IMU
size in mm:	225*180*50
weight:	1.5 kg
Operating:	-25 to +50°C

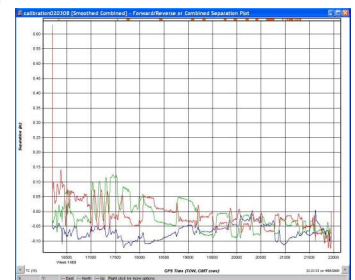
AeroTopoL Flight Management System

- AeroTopoL DTM+ Version for Planning and Navigation
- Mission planning for areas and corridors
- Adjustment over terrain
- Navigation using moving map and virtual avionic instruments
- using 10Hz GPS/IMU data for navigation and triggering the camera
- Using event based GPS-IMU data for footprinting
- Monitoring IMU and Alignment status
- Storage of real-time data with image ID
- Computation of orientation parameters X, Y, Z, Omega, Phi, Kappa
- Re-Integration of postprocessed data



Waypoints Inertial Explorer

- Most efficient postprocessing tool with interface to Aero-Formats
- Tightly and loosely coupled processing
- Forward backward iterations
- Enhanced smoothing algorithms
- PPP Processing
- Multibase functionality
- Many tools to control and refine the results



Content of Delivery

- AeroDiDOS-MU
- GPS Antenna
- IMU-FSAS
- AeroTopoL DTM+
- Waypoint Inertial Explorer-
- Cableset
- Manuals and Tutorials

OPTIONS:

- Scanner-Interface
- different IMU e.g. LN200, HG1700...
- AeroTopoL Options (Scanning, Oblique...)



keine Prospekthaftung, technische Änderungen vorbehalten
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