



MACS – RT

Modular Airborne Camera System with Realtime Map Projection and 3D Extraction

Optical Information Systems at the Robotics and Mechatronics Center (RMC)
Department Sensor Concepts and Applications

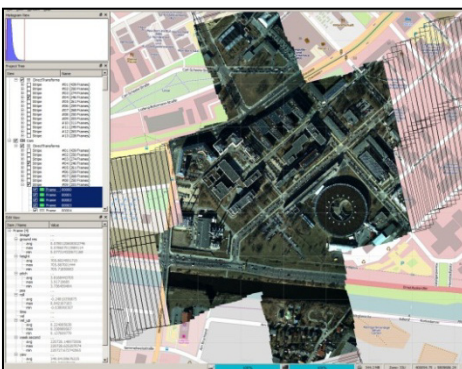
Measure | Identifiy | Visualize



MACS-RT for Stemme-Wingpod



CONDOR (Stemme S10 aircraft), receiving antenna of OHB ARDS data link (back)



Map projected realtime mosaic

MACS

Modular Airborne Camera System (MACS) is a DLR-developed family of highly specialized aerial cameras aimed to produce cutting-edge photogrammetric products. The overall process from sensor conception to system design to processing and visualization of data in 2D and 3D is covered. Due to extensive modularity, flexible to design adaptations can be realized. Multispectral, thermal as well as oblique sensing systems were demonstrated successfully. A holistic approach ensures turnkey solutions for most different airborne carriers and applications.

Beside MACS-RT other systems are in operation, e.g. MACS-Jet (jet aircraft carried), MACS-Heli (helicopter) and MACS-TumbleCam (UAV).

MACS – RT (Real-Time)

- Digital realtime mapping and monitoring (2D)
- 3D information with high-precision position accuracy in postprocessing
- Broadband data link, e.g. ARDS by OHB System AG
- Optional: extended field of applications through sCMOS- and thermal sensor technology
- Fully automated multisensor system
- Operation in MALE carriers and UAS as Stemme S10
- Internationally applied
- Realtime coordination of action forces and resources
- Spatial and temporal documentation of occurrences
- Surveillance of extended structures like coasts, dams and pipelines





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Interactively explorable 2.5D world



Single image (detail, realtime quality)

Specifications

Focal length	70mm
Angular aperture (α)	28.9° x 19.5°
Sensor resolution	4008 x 2672px
Ground resolution	6.4cm @ 500m height 12.9cm @ 1,000m height
Swath width	250m @ 500m height 500m @ 1,000m height
Image rate	5Hz max.
Onboard logging capacity	~ 43,000 images on 1TB HDD capacity, extendable
Onboard logging duration	~ 3h @ 4Hz ~ 6h @ 2Hz ~ 12h @ 1Hz.
Area output 2D (3D)	~ 800 (400) km ² @ 6cm ground res. ~ 3,200 (1,600) km ² @ 12cm ground res.
Required downlink bandwidth for realtime mosaic (optional)	5 ... 70 Mbit/s Through variable data compression
Temperature range	0° ... 45°C
Dimensions	~ 75 x 35 x 35 cm ³ (L x W x H)
Weight	~ 20kg, plus ballast 15kg
Power supply	28V / 200W typ.

