

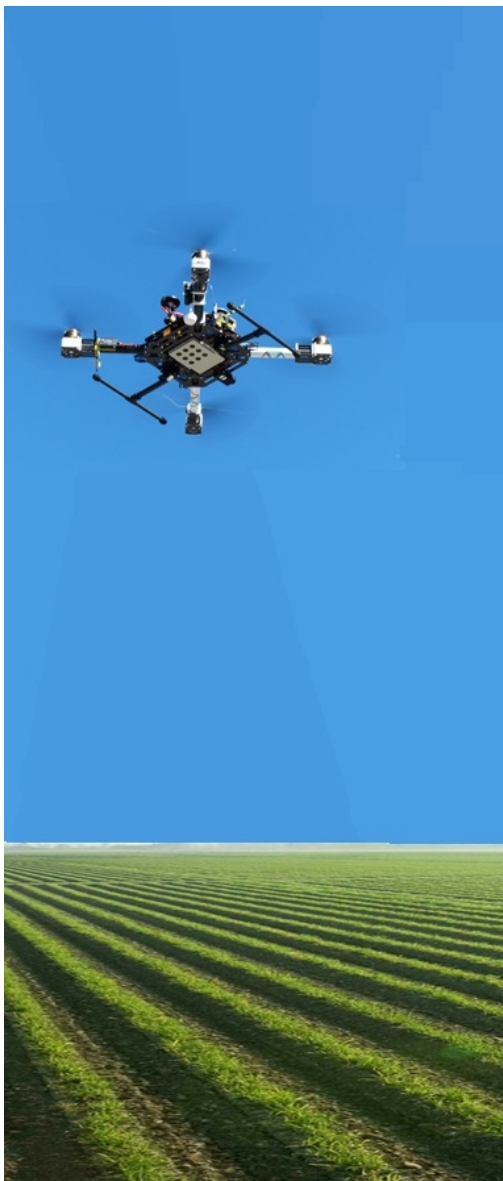
MAIA - Multispectral Imaging Camera

User's benefits

- Better control of plants health and fertilization status
- Early detection of disease or nutrient deficiencies symptoms
- Input of pesticides optimization
- Calculation of yield with agronomic indices (NDVI, GNDVI, SAVI...)

Applications

- Precision farming
- Vegetative index mapping
- Orchard health condition monitoring
- Environmental monitoring and survey
- Detection of spill of pollutant or hazardous substances



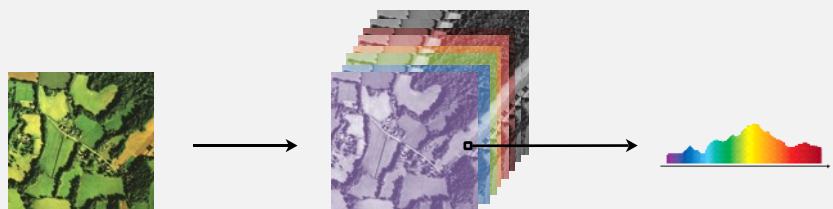
MAIA is the most advanced multi-spectral imaging camera, specifically designed for use aboard Unmanned Aircraft Vehicles (UAVs), aircraft and land-vehicles in precision farming and environmental monitoring applications.

MAIA is based on an array of imaging sensors, each coupled with a band-pass filter that precisely defines the spectrum of the radiation to be detected. The sensitivity spans the visible (VIS) to near-infrared (NIR) region [from 395nm to 950nm] and bands match those of the WorldView-2 or Sentinel-2 satellites, allowing the multi-spectral camera to be successfully deployed for *precision farming* and *environmental monitoring* applications.

The camera is supplied with the geometrical calibration data of each lens. The imaging sensors features 1.2Mpix resolution, high-sensitivity and global shutter technology, allowing the simultaneous acquisition of images free from motion artifacts at a frame rate up to 5Hz.

MAIA can be interfaced to an external GPS to trigger the acquisition start and to get the position of the camera at the time of shot. The geo-tagged images are thus stored in an internal solid state non-volatile memory.

The data pre-processing software bundled with MAIA allows the user to merge the single-band images at each shot into a unique multi-layer image with pixel-to-pixel accuracy. The software features also the computation of standard indexes (NDVI, SAVI, ...) and the user can easily define custom indexes by means of the embedded calculator. The multi-layer images can be exported to formats widely accepted by third-party advanced analysis software.



Technical specifications in this document may be changed without notice.
 Sentinel-2 e WorldView-2 are brands of ESA and DigitalGlobe.
 Their quote doesn't imply any MAIA endorsement by ESA and DigitalGlobe.

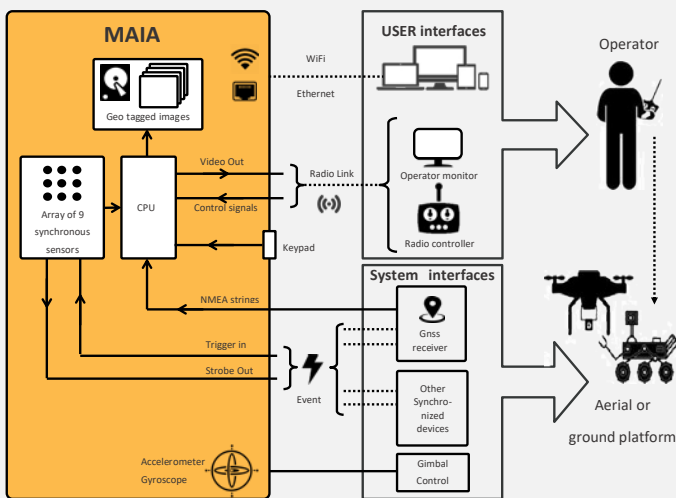


Technical specifications

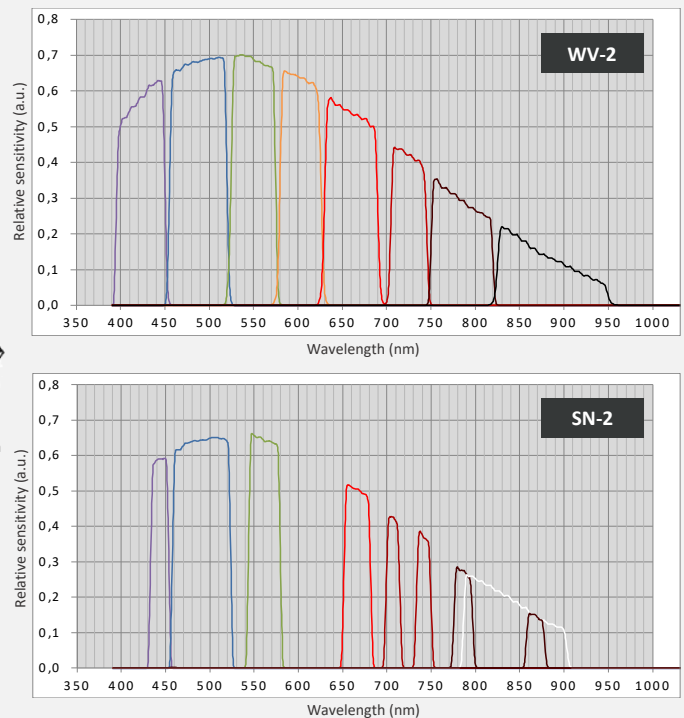
Sensors and bands	9 CMOS sensor 1.2Mpix (1280x960) with global shutter				
	WV-2		SN-2		
	Band (nm)	Approx. color	Band (nm)	Approx. color	
	1	395-450	Violet (Coastal)	433-453	Violet (Coastal)
	2	455-520	Blue	457-523	Blue
	3	525-575	Green	542-578	Green
	4	580-625	Orange	650-680	Red
	5	630-690	Red	697-713	Red Edge 1
	6	705-745	Red Edge	732-748	Red Edge 2
	7	758-820	NIR1	773-793	NIR 1
	8	825-950	NIR2	784-900	NIR 2
	9	(VIS) (RGB)	855-875	NIR 3	
Geometric factory-calibration of each lens					
Optical parameters	Focal length 7.5mm, f/# 2.8				
	Angle of view: 35° horizontal, 26° vertical, 43° diagonal				
	Ground sampling distance (GSD): 3 cm*				
	Field of view (FOV): 45x34m ² *				
* at 75m flight altitude above ground					
Exposure	Full automatic or manual exposure mode				
	Each sensor individually tunable				

Acquisition	Single shot or continuous (external trigger or fixed rate) Simultaneous shot of all sensors up to 5fps
Images	Multi-layer / multi-band RAW 8 - 10 - 12bits per pixel, TIFF File size: from 10,7 to 21,2MB depending on the format
Internal storage	210GB internal storage (from 10.000 to 20.000 images)
Interfaces	WiFi with web-based interface for configuration and image live view GigE interface for data download Remote controller input with event detection (PWM) Trigger input and Strobe output sync signals NTSC/PAL composite video output port Serial port for NMEA protocol GPS input On-board 6-axis inertial unit
Size and weight	99 x 129 x 46 mm ³ , 470 g
Power supply	9-26VDC, ~7.5W typical
Environmental conditions	Operating temperature 0-40°C, 32-104°F Humidity 20-80% RH non-condensing IP50 protection rating

Architecture & interfaces



Bands configuration



MAIA – The Multispectral Imaging Camera

Jointly developed by EOPTIS and SAL Engineering. Manufactured in ITALY

EOPTIS designs and manufactures **innovative vision systems** for special applications and **optoelectronic instruments** for the in-line control of products and monitoring of manufacturing processes. Our customers use EOPTIS' products in the industrial, biomedical, security and food sectors. Our know-how in **electronics, optics, mechanics and analysis algorithms** is used to design products available off-the-shelf or for custom OEM solutions.