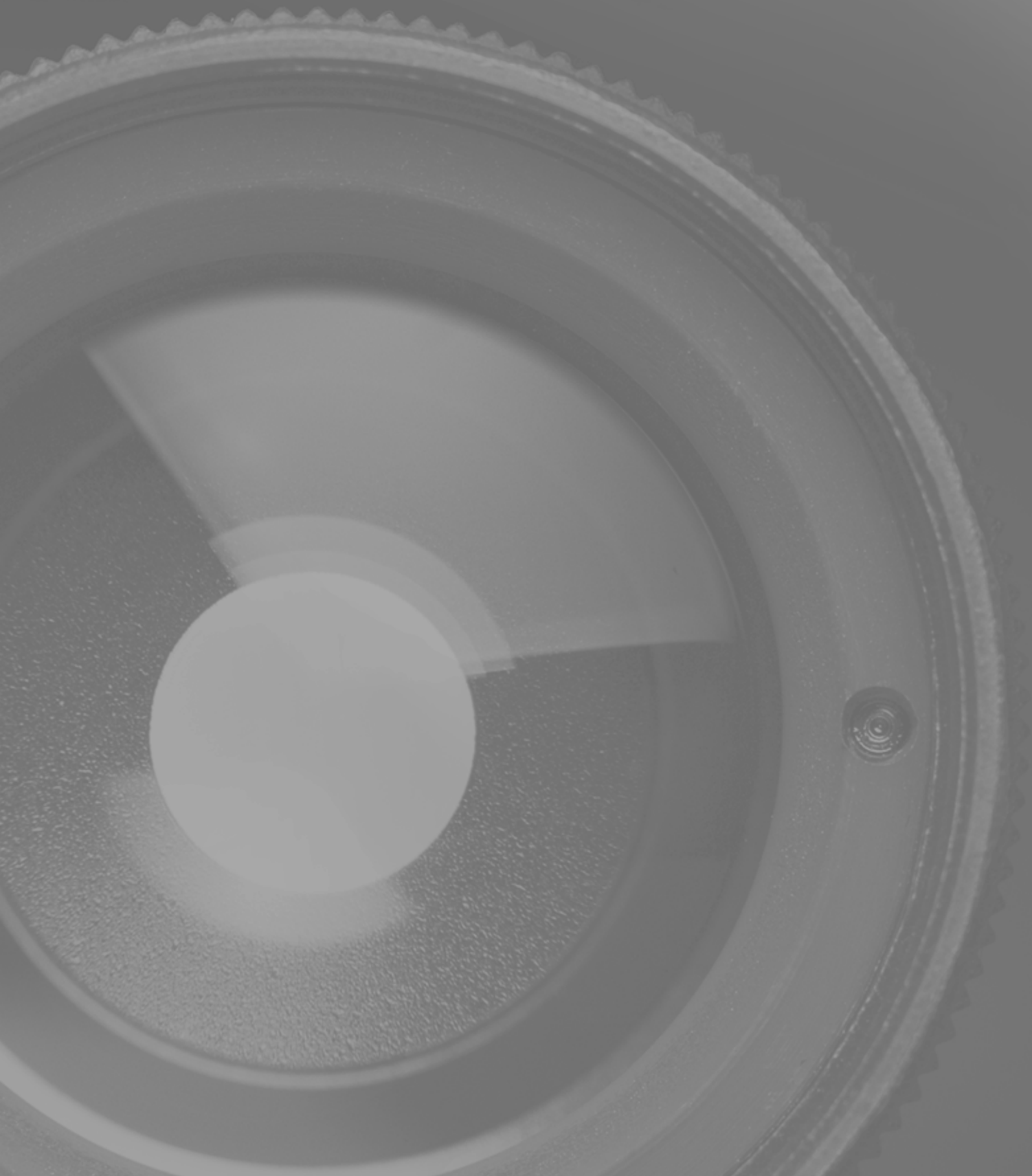


# AISA SYSTEMS



SPECIM AISA SYSTEMS

# AISA SYSTEMS

SPECIM AISA systems are state-of-the-art airborne hyperspectral imaging solutions covering the VNIR, SWIR and thermal spectral ranges. The sensors unbeatable performance has established AISA as the market leader in the airborne hyperspectral imaging industry for a wide range of applications.



AISA system: power supply, GPS/IMU unit, mount, screen, sensor, data acquisition unit and keyboard.

Whether the final application is forestry, agriculture, geology or defence, high quality of the data is what matters. AISA systems are proven to be invaluable tools in innumerable applications. For instance, natural forest mapping has proven the high sensitivity of the sensors, which are able to discriminate between different tree species and detect tree health status even under sub-optimal conditions.

In many emergency response situations, AISA systems are effectively used to assess environmental catastrophes such as oil spills, water floods or, used in combination with LiDAR data, in mapping semiurban areas to determine forest fire risk behavioural models.

## READY-TO-USE SYSTEMS

AISA sensors superb performance and compact size are the key reason why AISA is preferred by renowned research institutions, commercial enterprises and defence organizations to guarantee the success of their flight missions.

SPECIM provides complete systems ready to be installed and start a flight campaign, including comprehensive onsite training to the AISA users, as well as always timely replies to after-sales support enquiries.

## INNOVATIVE TECHNOLOGY

AISA sensors are based on SPECIM's innovative, proprietary, push-broom type hyperspectral imaging technology that allows acquiring full spectral information of the target, per each pixel, at hundreds of spectral channels, and provides the highest spatial and spectral data quality.

SPECIM AISA systems consist of AISA sensor, GPS/IMU unit, data acquisition computer, control and operation software, and CaliGeo pre-processing software. The system can flexibly be modified according to the user's needs.

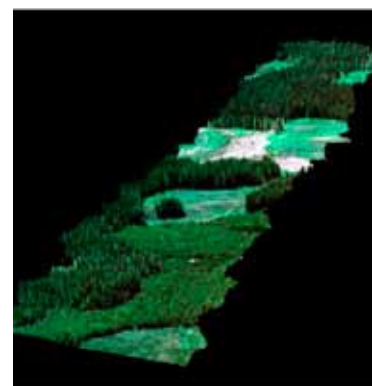
The AISA sensor is mounted together with the GPS/IMU unit to monitor the aircraft position and attitude and to obtain a rectified image.

## Applications

- Plant mapping and distribution
- Water quality, oil spills
- Geology, mineralogy
- Vegetation health
- Forest inventory
- Archaeology
- Target detection
  - Drug plantations
  - Illegal activities
  - Security and defence threads

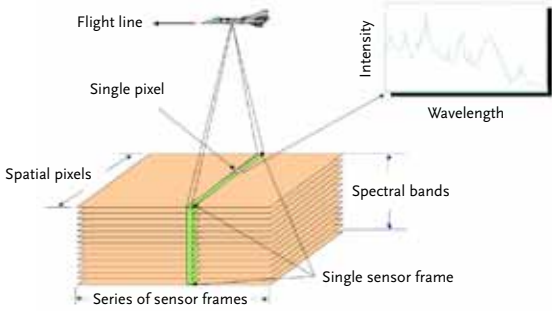


**Bathymetry** Bathymetry of St. Kilda Channel, Adelaide, Australia, measured with AisaEAGLE.



**AISA-LiDAR Data Fusion** A Digital Surface Model (DSM) is created from LiDAR data. DSM is resampled to same resolution with hyperspectral image and used for orthorectification of hyperspectral AISA data.

## AISA Sensors



### OPERATIONAL FLEXIBILITY

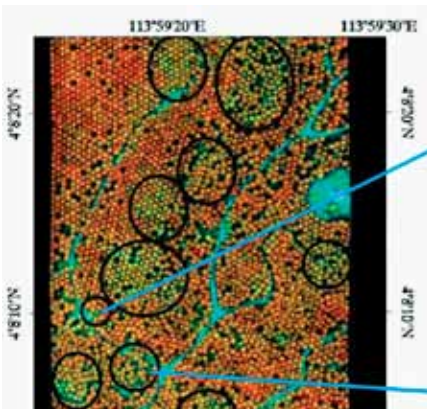
AISA systems include control and operation software that allows data acquisition settings to be easily tailored for individual mission requirements. Parameters such as integration time, frame rate and spectral bands can be easily set. The system parameters can be selected to optimize image acquisition for pixel size, spectral sampling and SNR.

With SPECIM preprocessing software, data turnaround time is reduced to the minimum, resulting in a radiometrically corrected, rectified image.

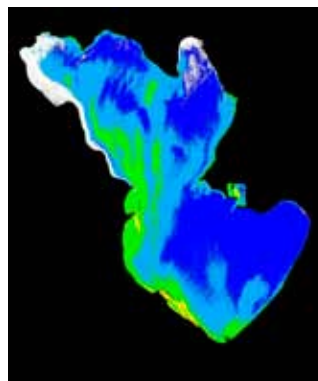
### MODULAR AND COMPACT DESIGN

AISA systems are specifically designed as compact and lightweight as possible to be deployed in almost any kind of aircraft, helicopter and UAV. They are quick and easy to install, transport and store.

A special valuable asset for AISA users is the possibility of using the sensor not only in airborne applications but also in the field or lab, together with SPECIM's scanning solutions.



**Oil Palm Mapping** to distinguish fungus infected trees among the healthy ones. In this map, red indicates healthy trees, while yellow shows the infected ones.



**Chlorophyll Map** University of Nebraska flew AisaEAGLE to study the distribution of chlorophyll and total suspended solids concentration in the waters.



### Different Installation Possibilities

AISA systems compact design allows for installation in almost any aircraft, helicopter, UAV and in gimbals or gyro-stabilized mounts.

<b>AisaEAGLE</b>	VNIR full hyperspectral data in 400-970 nm	512 or 1024 spatial pixels
		Up to 488 spectral bands
		Image rate up to 160 Hz
<b>AisaEAGLET</b>	VNIR full hyperspectral data in 400-1000 nm	1600 spatial pixels
		Up to 410 spectral bands
		Image rate up to 120 Hz
<b>AisaHAWK</b>	SWIR full hyperspectral data in 970-2500 nm	320 spatial pixels
		254 spectral bands
		Image rate up to 100 Hz
<b>AisaDUAL</b>	Full hyperspectral data in 400-2500 nm	320 spatial pixels
		Up to 500 spectral bands
		Image rate up to 100 Hz
<b>AisaOWL</b>	Full hyperspectral data in 8-12 $\mu\text{m}$	384 spatial pixels
		Up to 84 spectral bands
		Image rate up to 100 Hz

» THE MOST WIDELY USED AIRBORNE  
HYPERSENSPECTRAL SENSORS IN THE WORLD «

SPECIM IS A WORLD LEADING COMPANY for hyperspectral imaging instruments, from UV through VNIR and SWIR up to LWIR (long wave infrared).

We provide ImSpector imaging spectrographs, Spectral Cameras and hyperspectral imaging solutions to a rapidly increasing number of industrial OEM customers and a large scientific clientele. SPECIM'S AISA FAMILY of airborne hyperspectral sensors provides market leading solutions for remote sensing, from small UAV systems to full featured commercial, research and military remote sensing tools.

Our hyperspectral products are known for the highest performance at the lowest budget in the market. They are used in an increasing range of demanding applications like color, Process Analytical Technology (PAT), life sciences, chemical imaging, military and security.



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