FIRST DA42 MPP SPECIAL MISSION AIRCRAFT WITH A HYPERSPECTRAL SENSOR CONFIGURATION

News / Manufacturer

Diamond Aircraft Austria has completed the Factory Acceptance Test for a special multi-role configuration, which will be delivered in the upcoming weeks to the Government of Malaysia. The aircraft is configured as a multi-role aircraft which includes two interchangeable configurations.

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The 1st Configuration contains three SPECIM Hyperspectral sensors (Fenix 1K, OWL, Kestrel) to be used for Forestry Management:

The SPECIM AisaFENIX1k is afull spectrum hyperspectral sensor, providing HSI data for visible, near infrared and short wave infrared spectral ranges and accurately measuring things that are not visible to the human eye. It is the only fully co-registered commercially available 1024 pixel HSI solution for applications like vegetation mapping, forest fire studies, geology and law enforcement, to only name a few.

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SPECIM AisaFENIX1k is stabilized by a SOMAG GSM 4000 mount, that dynamically stabilizes and tremendously increases the data quality, resulting in an optimal movement reduction of the sensor.

The SPECIM Aisa OWL is a Thermal Airborne Pushbroom Imager covering a contiguous spectral range from 7.6 to 12.3 um in nearly 100 channels compared to broadband thermal cameras, which only have one channel. It can recognize the chemical composition of materials, even gases and measure temperatures and emissivity of targets. Operations both day and night are possible. Together with AisaFENIX1k you get a very powerful combination for geological applications like identifying different minerals.

The SPECIM Aisa KESTREL is a hyperspectral imager to create visible and near infrared images. If mounting space for the AsiaFENIX1k is limited, the AisaOWL is an excellent addition to it. In that case hyperspectral data can be acquired together with a WESCAM MX-10 advanced EO/IR, laser imaging and targeting sensor system.

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All SPECIM's HSI solutions are pushbroom imagers. Airborne data is captured without any moving parts and complex mounting systems, resulting in an excellent image quality and very stable and rugged instruments.

All sensors are fully controlled by the IGI Flight Management System. The CCNS-5 Computer Controlled Navigation System is a guidance, positioning and sensor management system for aerial survey missions.

The 2nd Configuration comprises a WESCAM MX-10 EO/IR sensor combined with two SPECIM Hyperspectral sensors (OWL, Kestrel) to fight against illegal logging:

For this configuration the Diamond Special Mission Aircraft multi-purpose pod concept is very beneficial: it allows an easy change of the nose section in order to switch sensors from the SPECIM AisaFenix1K to a WESCAM MX-10. All other sensors remain the same as in the first configuration.

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The WESCAM MX10 is a small, multi-spectral imaging system which provides superior image stabilization, long range imaging performance, and true metadata embedded in digital video.

According to the information from the customer, this aircraft will be an essential part of the fight against illegal logging and forest management and they very much look forward to start operations.

Michael Neufingerl-Ille, Sales Manager Special Mission Aircraft, Diamond Aircraft Austria: “It was a very long and challenging way in order to complete this complex project, but we are very proud to have succeeded in creating a unique turnkey solution to support our customer. I am very confident that this system will increase the performance and outcome of their mission and will dramatically reduce operational costs.”

Jukka Okkonen, Co-Founder and Senior Applications Specialist at SPECIM: “I am extremely happy to have been involved in this high-end development project. The customer now has one of the most sophisticated surveillance aircraft including three hyperspectral cameras and a target sensor system to be used for various forestry and law enforcement applications. I can’t wait to see the results demonstrating the performance of the system leaving many other customers to want similar turnkey solutions for their own applications.”

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