



Sofradir large format infrared detectors onboard PRISMA satellite

Italian Space Agency Earth observation mission will capture data on chemical make-up of objects through powerful hyperspectral imager built by Leonardo, which includes two Sofradir detectors

Grenoble, France, March 28, 2019 – Sofradir, a global leader in designing and manufacturing high quality infrared technologies, today announces that two of its large format infrared detectors (1000 x 256) lifted into orbit onboard the PRISMA (PREcursore IperSpettrale della Missione Applicativa) satellite launched on the Vega rocket from the Kourou, French Guiana Space Center on March 22.

PRISMA is a five-year program spearheaded by the Italian Space Agency, formed through a temporary joint venture of companies led by OHB Italia, which was responsible for the mission, managing three main segments: ground, flight and launch. It was joined by Leonardo, responsible for building the electro-optical hyperspectral instrumentation and on-board equipment such as solar panels and the power supply unit.

PRISMA will conduct the Earth observation mission, monitoring interactions between the atmosphere, biosphere and hydrosphere for the purposes of detecting potential natural disasters, monitoring crops, surveilling mines, tracking soil pollution and delivering humanitarian aid. The PRISMA satellite will orbit at an altitude of 615 kilometers at speeds of 27,000 kph, capturing up to 223 images of 30 km x 30 km scenes per day.

Sofradir's role began in 2007 when it was contracted by Leonardo, the prime contractor for the construction of the hyperspectral instrument, to design two types of infrared detectors for integration in the instrument itself: a Saturn 1000 x 256 SWIR detector with 30 μ m pitch and a usable spectral band of 0.9 μ m to 2.5 μ m, and a Saturn 1000 x 256 VISIR detector with 30 μ m pitch and a usable spectral band of 0.4 μ m to 1.1 μ m.

"Sofradir is thrilled to have delivered on the PRISMA project, designed to help scientists make new environmental discoveries about our planet," said Philippe Chorier, head of business development for space activity at Sofradir. "It also gave us a unique opportunity to develop the new passive cooling packaging for the Saturn detector and test the IR detector's performance in all the types and levels of radiation encountered in space."

Each detector is assembled in a helium-filled passive enclosure delivered without a cooling system. The detector is cooled onboard the satellite by a passive heat-transfer system that consists of a radiator facing cold space, which is linked to the detector by a thermal link.

The hyperspectral imager will capture information revealing the shape of objects and use each one's unique spectral signature to identify its chemical make-up. The instrument will be able to capture 239 spectral bands, each less than 12 nanometers wide, in the SWIR and visible range.



[Further information about PRISMA](#)

About Sofradir

Sofradir and its subsidiaries ULIS and US-based Sofradir-EC are global leaders in designing and manufacturing high quality infrared technologies for aerospace, defense and commercial markets. Their vast portfolio of infrared detectors covers the entire electromagnetic spectrum from near to very far infrared. The Group's products are at the center of multiple military programs and applications. Its IR detectors are the key component of many top brands in commercial thermal imaging equipment sold across Europe, Asia and North America. The organization is the leading European manufacturer for IR detectors deployed in space. It employs 1,000 staff. Safran and Thales are equal (50/50) shareholders.

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