



**PRESS RELEASE**

## **CEA-Leti Demonstrates First Single-Impulse Active 3D Imaging Matrix Operating At Infrared Frequency**

GRENOBLE, France – Oct. 19, 2010 – CEA-Leti said today it has demonstrated the first single-impulse active 3D imaging matrix operating at infrared frequency capable of returning a three-dimensional image of a distant object with a spatial resolution of 30cm from a single-laser flash, providing excellent stealth.

The infrared-active 3D imaging matrix, with a format of 320x256, currently operates at a wavelength of 1.55 microns for reasons of eye safety, but is also capable of operating with infrared lasers at wavelengths up to five microns.

The infrared-active 3D imaging matrix combines two major technical innovations developed by CEA-Leti.

The first innovation is the manufacture of an avalanche photodiode matrix created in the HgCdTe semiconductor. These extremely fast avalanche photodiodes operating in the nanosecond range have exceptional characteristics that imitate those of a perfect amplifier. They are capable of obtaining very high gains (in excess of 100) at low polarization voltages (less than 10 volts), without any excessive noise.

The second innovation is the design and manufacture of a read-out circuit based on a highly original concept patented by CEA-Leti that combines a time-of-flight measurement with a three-dimensional radiometric acquisition.

The results stem from Leti's partnership with Sofradir, the European leader in developing and manufacturing advanced infrared detectors and holder of an exclusive license of CEA-Leti technology for this line of components for military, space, industrial and scientific applications

Their collaboration, which helps consolidate Sofradir's position as an international leader in infrared, is carried out within the framework of a joint laboratory (DEFIR) and supported by CEA, Sofradir, DGA and Onera.

Leti presented these research results at the SPIE Defense, Security and Sensing conference in Orlando, Fla., earlier this year.

### **About CEA-Leti**

CEA is a French research and technology public organisation, with activities in four main areas: energy, information technologies, healthcare technologies and defence and security. Within CEA, the Laboratory for Electronics & Information Technology (CEA-Leti) works with companies in order to increase their competitiveness through technological innovation and transfers. CEA-Leti is focused on micro and nanotechnologies and their applications, from wireless devices and systems, to biology and healthcare or photonics. Nanoelectronics and microsystems (MEMS) are at the core of its activities. As a major player in MINATEC campus, CEA-Leti operates 8,000-m<sup>2</sup> state-of-the-art clean rooms, on 24/7 mode, on 200mm and 300mm wafer standards. With 1,200 employees, CEA-Leti trains more than 150 Ph.D. students and hosts 200 assignees from partner companies.

Strongly committed to the creation of value for the industry, CEA-Leti puts a strong emphasis on intellectual property and owns more than 1,500 patent families. For more information, visit [www.leti.fr](http://www.leti.fr).

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