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**INDRA DEVELOPS THE FIRST**

**HIGH-RESOLUTION PASSIVE RADAR SYSTEM**

* **The company has successfully led this project sponsored by the European Defence Agency**
* **Its applications include the surveillance of the airspace, frontiers, maritime traffic control and the protection of infrastructures**
* **Such an achievement places Indra ahead of the rest of companies operating in the sector in international markets**

Indra has recently completed the development and demonstration of the functionalities of a passive high-resolution primary radar system. The project was sponsored by the European Defence Agency (EDA). This is the first passive system in the world that is capable of offering images with the application of inverse synthetic aperture radar (ISAR) techniques.

The APIS project (Array Passive ISAR Adaptive Processing) had a 24-month duration. The following entities participated in the project: CNIT (IT) (National Telecommunications Engineering Consortium), Vitrociset Spa (IT), University of Alcalá (ES) and University of Cyprus (CH), as well as the Hungarian Science Academy (MTA).

The passive radar is characterised by not emitting any form of radiation, i.e., it uses the signals present in the environment. In the case of APIS system, the radar uses Digital Terrestrial Television signals as the non-cooperative sources of illumination in the environment.

This type of radar offers different advantages, such as its undetectability (it does not emit signals), its low cost and possibility to use the radar practically anywhere, even in mobile scenarios, given the wide coverage of TDT signals nowadays.

The APIS consortium has taken a step forward in the development of this system with its new advanced inverse synthetic aperture radar (ISAR) processing capacity. This is the first time that such a technique has been applied to a radar, which uses the target's movement to obtain its radar image.

The APIS consortium lead by Indra has implemented the most complex and innovating signal processing algorithms in this solution, such as STAP (Space Time Adaptive Processing) and non-deterministic (algorithms based on MUSIC) digital beam forming techniques (Digital Beamforming).

The system's smart functionalities have turned it into the most advanced solution available right now and the only system that can offer high-resolution images.

The passive high-resolution radar developed by Indra offers a high commercial potential, as a result of the difference in cost vs. active systems. It can cover the air traffic control requirements in areas with a low or zero coverage of conventional primary radars and is particularly effective when used to detect aircraft flying at low altitudes. Likewise, it can be used to control frontiers, maritime traffic and critical infrastructures.

The success of the APIS project places Indra, and the consortium partners, ahead of the rest of the industry and research institutes in the development of advanced passive radars. Indra has an experience of over 30 years in the development of radars. To this end, in the civil air control sector, the company has implemented primary and secondary radars in countries of the five continents, highlighting the 3D LANZA radar range in the defence sector, available in fixed, mobile and naval configurations, with different detection ranges.

**Indra**

Indra is the leading Spanish multinational consulting and technology firm and one of the main players in Europe and Latin America. Innovation is the cornerstone of its business and sustainability, having allocated €550 M to R+D+i in the last three years, making it one of the leading companies in Europe in its sector in terms of investment. With sales approaching €3,000 M, 55% of its income is from the international market and over 42,000 professionals work for the company.