



# Surface Movement Radar

Indra Surface Movement Radar is a high-resolution radar designed for detecting small radar cross section targets using the continuous wave signals.

It is the only continuous wave surface movement radar in the market for airport applications, highly improving radar coverage, accuracy, target resolution reliability and maintainability as compared to the common pulsed surface movement radars.

Our SMR is characterised by a high level of integration designed to be deployed as a standalone system or integrated as part of an A-SMGCS System.

Experiences with ANSP from all over the world have built the good **reputation** and well proven reliability of Indra A-SMGCS products.

Our SMR is a **continuous wave radar**, state-of-the-art due to its design using solid-state technology, which offers great flexibility for adapting to customer needs.

The radar is designed to detect and locate stationary, moving, individual and multiple targets located in airport maneuvering and stand areas even in **low visibility** conditions caused by fog or rain. In comparison with pulsed SMRs, its solid-state low power design allows highly reliable operation with very simple maintenance.

## Only continuous wave surface movement radar in the market for airport applications.

The SMR radar consists of a linear array antenna and pedestal subsystem mounted on the top of a building or tower, and the electronic equipment assembled in dual channel for reception, transmission, process, extraction, tracking and formatting targets in **Eurocontrol ASTERIX format**.

The system is equipped with two redundant and fast speed Local Area Networks (LAN).

All of these are housed in a single 19" cabinet, which also includes two GPS units for time synchronization, as well as the system diagnostic and supervision equipment by means of a powerful BITE (Built In Test Equipment) feature.



The local and remote control and monitoring system are based on COTS products. CMS stores all relevant data regarding events, alarms and user actions in files. The radar site contains a local display where radar data are displayed to support maintenance, supervision and adjustment tasks.

### Integration with A-SMGCS: NOVA 9000

The system can be easily integrated as part of Advanced-Surface Movement Guidance and Control System - A-SMGCS: Concretely, as part of INDRA InNOVA AIR- Automated, Integrated and Remote - system. InNOVA AIR is the preferred and leading A-SMGCS in the market. InNOVA AIR is both an independent system and a fully integrated part of Indra's air traffic management systems within the new generation of Automated, Integrated and Remote tower solutions.

- Following CNS Roadmap defined in the context of SESAR2020 by Eurocontrol for future use of surveillance systems.

### Features to face the future

- Service-oriented system with highest resolution using continuous wave technology and linear frequency modulation (CW-LFM) for airport surveillance.
- Compliance with international standards (EUROCONTROL / ICAO / EUROCAE/RTCA).
- Used in Automated, Integrated and Remote Surveillance Tower solutions.
- Use of latest-generation signal and data processors.
- High level of integration. Fully modular
- High coverage: Up to 6 Km. Automatic tracking capability of a high number of targets
- Local and remote control and monitoring system with maximum efficiency and friendly human machine interface.

Indra is positioned as the market's leading supplier of air traffic management and communications, navigation and surveillance (ATM-CNS) systems.

With a complete portfolio of products in all flight phases, particularly in A-SMGCS, cooperative and non-cooperative surveillance domain, Indra covers all the stages of the flight.

In the SESAR solutions, INDRA is leading the development of a Surveillance Performance Monitoring tool in order to assess the performance of the sensors and of the entire Surveillance chain, including surface **sensors assessment**.

This is being done following the Performance Based approach in definition by Eurocontrol. Within this context, the new features that are **introduced in INDRA developments**, making its products the most advanced and competitive in the market.

## Integrated as part of InNOVA ground system, the preferred and leading A-SMGCS system in the market.