



# INVAP

DEFENSE, SECURITY  
AND ENVIRONMENT

## RSMS Mode S Monopulse Secondary Radar



# Protect for a better living.

The RSMS is the latest generation Mode S monopulse secondary radar developed by INVAP to operate in today's air traffic scenarios.

It is the new version of the RSMA, a radar that has been used since 2007 in various environments of Argentina.

This radar complies with ICAO recommendations and meets Eurocontrol's performance requirements for Mode S stations.

**With state-of-the-art technology, it has interrogation capabilities in modes 1, 2, 3/A, C, S (ELS and EHS).**

**This radar provides excellent performance in all modes of operation, even under severe FRUIT and garble conditions.**

**The RSMS also provides an ADS-B functionality to acquire, decode, and process Extended Squitter messages emitted by aircrafts.**

**The system is designed to operate even under the most adverse environmental conditions.**

**Its redundant design allows for 24/7 all-year-round continuous operation and achieves high availability. It is conceived to demand minimal preventive maintenance, as well as minimizing operating costs during its whole life cycle.**

## MAIN FEATURES

- Developed and built with the latest technology, 100% solid state, and fully digital processing.
- High availability, low-maintenance, redundant design.
- Two redundant channels integrated into a single standard case.
- Monopulse antenna with large vertical aperture.
- Geographical alignment, self-calibration, and supervision system using a remote monitor or opportunity flights.
- Extensive self-diagnosis system, with automatic or manual channel switching.
- Modes of operation 1, 2, 3/A, C, S, Elementary Surveillance (ELS) and Enhanced Surveillance (EHS), with selective interrogation and the ability to re-interrogate in the current sector.
- UF4, UF5, UF11 (Uplink).
- DF4, DF5, DF11, DF20, DF21 (Downlink).
- Comm-B.
- Configurable mode-interleaving capacity and interrogation rate per sector.
- Configurable sector by sector inhibition capacity.
- ADS-B to receive and extract extended squitter messages.
- FRUIT, multiple garbling, and reflex detection and suppression processor.

## Interfaces

- Data output: ASTERIX Cat 1, Cat 2, Cat 21, Cat 34, Cat 48.
- Control panel with commands and graphical tools for local and remote configuration and control.

TECHNICAL SPECIFICATIONS

Coverage volume

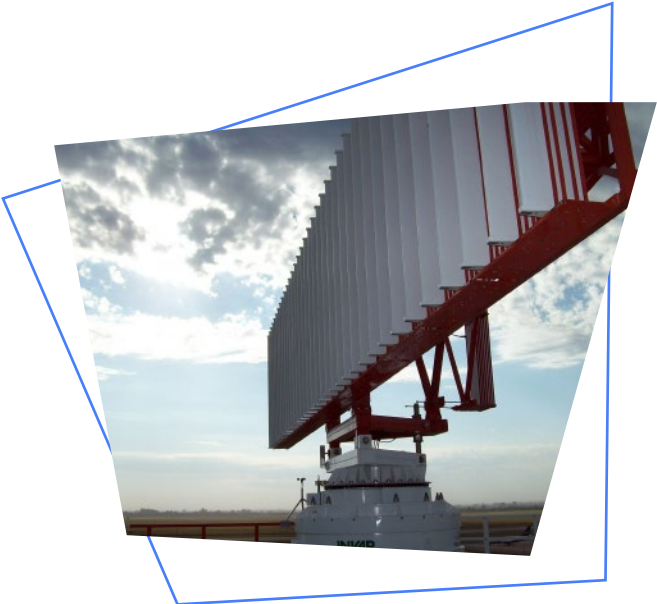
Range	256 NM
Azimuth	360 <sup>a</sup>
Altitude	100.000 feet
Maximum elevation	>45 <sup>a</sup>
Modes	1, 2, 3/A, C, S (ELS and EHS)
Total target detection capability (360°)	> 1.000 aircrafts
Accuracy	< 0.2 NM rms < 0.06° rms
Resolution	0.05 NM 0.6°
Detection probability	> 99.7%
Code validation mode 3/A	> 97.1%
Code validation mode C	> 96.7%
Operating Frequency	1030 / 1090 MHz
Interrogation frequency	50 to 400 Hz
FRUIT frequency supported (in the 3dB beamwidth of the main antenna lobe)	11.000 / seg.
Scan rate	7.5/15 RPM

Environmental conditions

Wind speed (in operation)	60 knots
Wind speed (not operating)	100 knots
Outdoor operating temperature	-30°C/+60°C
Maximum operating humidity	100%
Seismic INTI INPRES-CIRSOC 103 Rules	Zone 4

System availability

(Calculated on 1,400,000 hours of RSMA operation)	> 99.997 %
MTBCF (measured on 1,400,000 hours of RSMA operation)	>180.000 h
MTTR	30 min







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**INVAP** is a high-tech company specialized in custom designed complex projects.

Our business areas cover the fields of Space, Nuclear, Defense, Security, Environment and Medical Systems.



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