

RSMS

S-MODE MSSR

MONOPULSE SECONDARY SURVEILLANCE RADAR



RSMS is the S-Mode Monopulse Secondary Surveillance Radar developed by INVAP S.E. to operate in the current modern air traffic scenarios. It is the new version of the RSMA, which since 2007 is being used (without radome) in the different environments of Argentina: from the cold “end of the world” in Ushuaia, to the humid subtropical climate of Misiones, from the heights of the Puna to the terminal area of Buenos Aires, and in seismic zones of the Cordillera de Los Andes. Our radar complies with ICAO recommendations and achieves the performance required by Eurocontrol for S-mode stations.

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

All modes of operation show excellent performance even in severe conditions of FRUIT and GARBLE.

The RSMS also has ADS-B functionality that allows it to acquire, decode and process aircraft Extended Squitter messages.

The system is designed to operate even under harsh environmental conditions.

Its redundant design allows it to operate continuously, 24 hours a day, 365 days a year with high availability. It is designed to require minimal preventive maintenance, as well as to minimize operating costs throughout its life cycle.

MAIN FEATURES

- 100% fully digital processing, solid state state-of-the-art technology.
- High availability, low maintenance redundant design.
- Double redundant channel integrated in a single standard cabinet.
- Monopulse LVA (Large Vertical Aperture) Antenna.
- Built-in radar geographic alignment, calibration and supervision system using Far Field Monitor or opportunity flights.
- Extensive self-diagnostic system, with automatic or manual channel switching.
- Operation modes 1, 2, 3/A, C, S Elementary surveillance (ELS) and Enhanced Surveillance (EHS) selective interrogation.
 - *UF4, UF5, UF11 (Uplink)*
 - *DF4, DF5, DF11, DF20, DF21 (Downlink)*
 - *Comm B*
- Ability to re-interrogate in the current sector.
- Modes Interlace capability and user sector selectable interrogation rate.
- Configurable sector-to-sector inhibition capability.
- Extended Squitter ADS-B messages reception and extraction
- FRUIT, Multiple garbling, and reflection detection and suppression processor.



INTERFACES

- Output data format: ASTERIX Cat 1, Cat 2, Cat 21, Cat 34, Cat 48
- Configuration and control by means of command console and graphic tools for local and remote use.

Specifications		
Coverage volume:	Range	256 NM
	Azimuth	360°
	Altitude	100.000 pies
	Max. elevation	> 45°
Modes		1, 2, 3/A, C, S ELS y EHS
Total capacity (360°)		> 1,000 targets
Accuracy		< 0.02 NM rms
		< 0.06° rms
Resolution		0.05 NM
		0.6°
Detection probability		> 99.7%
Code validation	mode 3/A	> 97.1%
	mode C	> 96.7%
Operation frequency		1030 / 1090 MHz
Interrogation frequency		50 to 400 Hz
Supported FRUIT rate (within 3dB main lobe antenna width)		11,000 / sec.
Scan rate		up to 15 RPM
Environment		
Wind speed (operation)		60 kn
Wind speed (not operative)		100 kn
Operating temperature		-30°C/+60°C
Operating humidity (max.)		100%
Seismic: INTI Reglamento IMPRES-CIRSOC 103		Zone 4
System availability		
Measured (over more than 1,400,000 RSMA operation hours)		> 99.997 %
MTBCF	Measured (over more than 1,400,000 RSMA operation hours)	>180.000 h
MTTR		30 min



INVAP's headquarters are located in San Carlos de Bariloche at the foot of the Patagonian Andes. The company has offices in several cities throughout Argentina and operates in various countries.

INVAP's Headquarters

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