

AIR TRAFFIC MANAGEMENT

ELECTRONICS DIVISION



 **LEONARDO**

With capabilities covering the domains of communications, navigation, weather and surveillance and backed by extensive expertise in system integration, we help ensure the safe, fast and efficient flow of air traffic, the security of people and goods, and the effective exchange of information between operators.

SURVEILLANCE

The company's surveillance services provide reliable positioning information and unambiguous identification of targets thanks to high-performance sensors and sophisticated data fusion algorithms; track/call sign association can be based on multilateration data, Mode-S data as well as traditional SSR code.

Key benefits include:

- › Maximum flexibility to facilitate numerous and varied integrated surveillance sources such as radars, multi-lateration, ADS-B and ADS-C
- › Enhanced situational awareness by means of integrated traffic picture and aircraft-derived data
- › Expanded operations on closely spaced parallel runways.

Our range of solutions includes:

- › ATR-33S and ATR-44S primary surveillance radars
- › SIR-S modular secondary surveillance Mode-S radar
- › SMR magnetron or solid state surface radar
- › MXC ADS-B Ground Station for gate-to-gate control (1090MHz standard)
- › ADAM local and wide-area multi-lateration solutions for airport and en route control





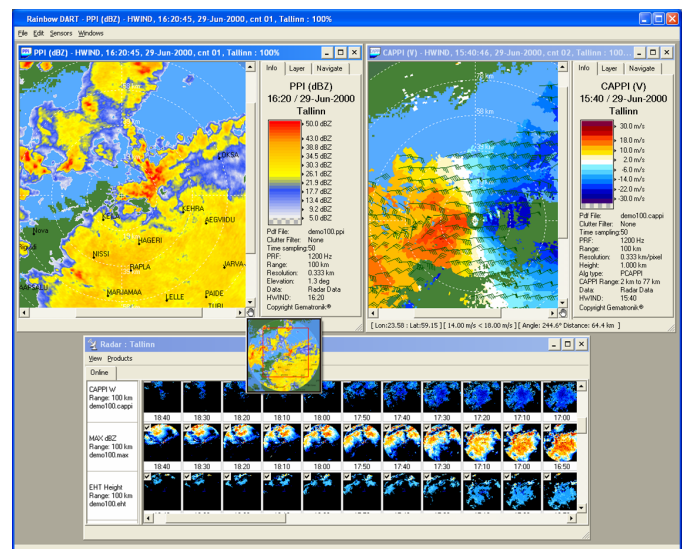
WEATHER

We are world leader in the design, manufacture and installation of weather radar sensors and weather systems. Our systems integrate data received from a range of weather sensors and sources to provide a complete weather picture, and forecast meteorological products and real-time alerts. Key benefits include:

- › Reliable weather products for heterogeneous meteorological aviation services
- › Composite real-time presentation of weather situation and related hazards
- › Ability to integrate several third-party sensors

Our range of solutions includes:

- › METEOR
 - Advanced doppler weather radar systems
- › RAINBOW 5
 - Multi-radar network management
- › AWOS
 - Airport Weather Observation System



NAVIGATION

We design, manufacture, commission and support a complete line of ground-based radio navigation and landing aids, including category I through II/III Instrument Landing System, doppler and conventional VHF omni-directional range, and high and low power distance measuring equipment. Key benefits include:

- › GNSS technology to improve safety levels during all flight phases
- › Total turn-key solutions for en-route, precision landing and airport guidance requirements, to fulfil the most challenging and diverse operational scenarios
- › Minimum maintenance costs

Our range of solutions includes:

- › VOR
 - VHF Omni-directional Range
- › ILS
 - Instrument Landing Systems
- › DME
 - Distance Measuring Equipment
- › GRACE
 - GNSS ATC interface monitoring and predicting GNSS performances (e.g. GPS, EGNOS, Glonass, Galileo) over the airways of the controlled airspace.





COMMUNICATIONS

The company supplies complete, reliable and redundant ground-to-air voice and data multimode communications systems, also allowing the connection to package communication networks and leading to a cut in operational costs.

We are pioneering AeroMACS broadband ground data link and exploiting the benefits of IP and VoIP in advanced radio network solutions for voice and data communications.

Key benefits include:

- › Faster, safer and more efficient air traffic thanks to the ability to communicate using various voice and data modes
- › Efficient coordination in traffic flow management
- › Increased operations effectiveness and efficiency
- ›

Our range of solutions includes:

- › Radio base stations
 - Multi-mode VHF/UHF ground-air-ground communications
- › Datalinks
 - Ground-air-ground datalink support for air traffic management
- › Communication network management systems:
 - Solutions engineered to help operators and controllers manage networks and devices from remote control centres

The company provides the VDL2/ACARS & ATN integrated data link ground system solution for AOC communications, for current CPDLC communications and future VDL2-supported applications over which new ATM technologies studied within SESAR are based (e.g., ADS-C). The ENAV LINK IT system that is part of the LINK2000+ project being deployed in Italy to satisfy the EC Mandate for Data Link according to the IR 29/2009.



OPERATIONS AND CONTROL CENTRE

The company's Operations and Control Centre integrates actual and predicted traffic information from airside and landside sources, as well as field and communication infrastructures and interoperability services. It provides decision support tools for controllers to direct and separate aircraft in all flight phases.

Key benefits include:

- › High degree of automation and interoperability
- › Improved operational efficiency
- › HMI flexibility for different operational needs (clearance delivery, ground, tower, APP, ACC)
- › Tight integration between ground/ground, ground/air and airside/landside

Our range of solutions includes:

- › SATCAS, systems for ATC automated services and management integrating:
 - Flight Data Processor
 - Monitoring aids
 - Arrival manager
 - Short and medium term conflict detection
 - Air/ground data link
 - Controller working position
- › GAINST[™], advanced surface movement guidance and control system integrating:
 - Ground safety nets
 - Path monitoring
 - Ground route and departure planning
 - Aircraft and vehicle guidance
 - Integrated tower working position
- › ATON, simulation environment for training and test purpose







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