

3400 MSSS MULTILATERATION & ADS-B SYSTEMS



Air Traffic Control Systems

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The 3400 Multi-Sensor Surveillance System (MSSS) provides high performance, accurate, all-weather Multilateration and ADS-B surveillance for Airport and Wide-Area applications.

3400 MSSS is the best solution to meet the operational performance requirements, and to provide an intrinsic level of modularity meeting the advanced requirements of a modern Air Traffic Control system. It supports future capabilities that the customer might need to integrate.

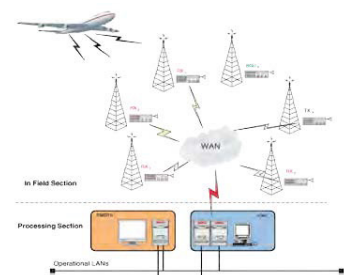


3400 MSSS exploits outstanding advanced sensors design and innovative target processing in a flexible and redundant architecture for co-operative detection of targets on the airport surface or on TMA/en-route airspace.

3400 MSSS is compliant to the latest standards such as EUROCAE ED-117 MOPS, and ED-129 TS, WG-70 Technical Specification and RTCS DO-260/260A/260B MOPS.

3400 MSSS consists of:

- Network of receivers and/or receivers-interrogators (Sensors), positioned in strategic locations and providing the required coverage, accuracy and continuity of service
- Central Processing Facility (CPF) which collect sensor data, performs target identification, and target monitoring.



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3400 MSSS uses the spontaneous Mode-S “squitter” transmission and asynchronous transponder replies as well as the responses to interrogations elicited by the system themselves. It also manages DF17/DF18 ADS-B Extended Squitter messages from targets as an integrated independent surveillance data flow with integrated ADS-B validation.

Sensors are designed for timing precision, allowing accurate Time of Arrival computation at the receiver level. The sensor hardware design is completely modular, allowing the local/remote monitoring (through resident built-in-tests) of each module.

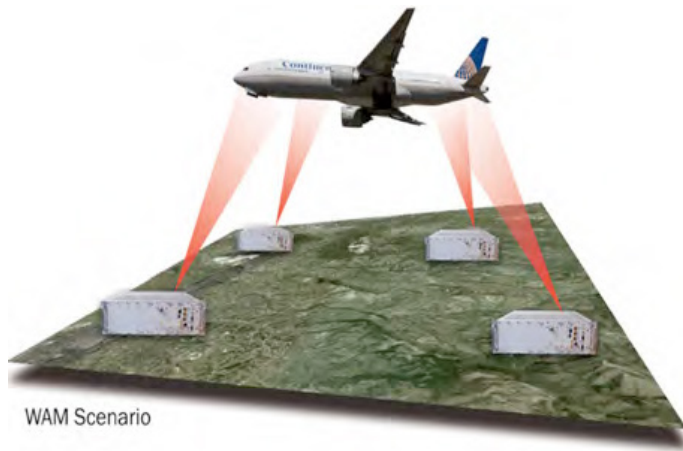
BENEFITS

Airport

- Improved accuracy and update rate
- Supports Surface Movement Applications
- Supports Runway Incursion Monitoring
- Improves Situational Awareness through aircraft derived data
- Supports Extended Arrival and Departure Procedures
- Expands Closely Spaced Parallel Runway Operations
- Increases routing efficiency.

Wide Area

- Complement or alternative to radar surveillance
- Fully adaptable to specific environment
- Optimized performance
- Low and easy maintenance
- Reduces infrastructure costs in airspace
- Supports advanced/complex approach.



SYSTEM ARCHITECTURE

The multilateration principle requires a distributed system in order to enable the simultaneous reception of signals at different locations on the airport and in TMA/En-Route.

Time Synchronization is fundamental in Time Difference Of Arrival (TDOA) multilateration systems. 3400 MSSS can exploit two different time synchronization methods to meet the most stringent requirements, depending on the coverage volume for the application:

Airport

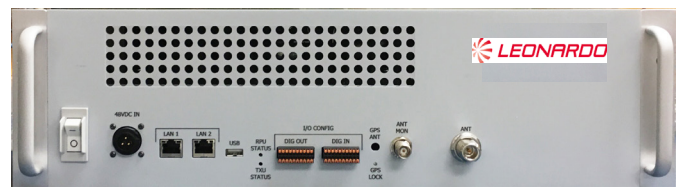
Squitter synchronization uses reference transmissions from a Squitter Generator Unit to synchronize the clocks at each of the Receiver sites.

Wide Area

Timebase synchronization exploits a GNSS receiver or a precise timing reference device at each receiver to have a common timing reference.

The 3400 MSSS CPF performs the following functions:

- Target Location and Plot Extraction
- System Time Synchronization and Check
- Interrogation scheduling and Target Identification
- Target Tracking
- ADS-B Data Extraction
- ADS-B Data Integrity Check
- Output Data Formats Handling: ASTERIX CAT10, 19, 20 and 21.



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