

Benefits

- Cost-effective surveillance
- Enhanced safety
- Improved situational awareness
- No rotating mechanical parts
- Extremely durable design
- Multilateration capable

Features

- High accuracy and high update rate
- Large target processing capacity
- High reliability
- Low power consumption
- Low cost for installation, operation and maintenance
- Extensive remote control

ADS-B Ground Station

Automatic Dependent Surveillance – Broadcast (ADS-B) is a critical component of next generation air traffic management because ADS-B offers significant safety, cost and operational benefits over traditional radar. Aircraft equipped with ADS-B automatically and constantly transmit position information derived from GNSS, along with other information such as altitude, heading, velocity and identification data. This information can be received and decoded by other aircraft and, by deploying a network of Era's MSS Ground Stations, can also be made available to air traffic management systems.

Era's trusted and widely-deployed MSS ground station is a fully-featured, fully-standards-compliant and highly durable ADS-B receiver, which receives and decodes aircraft ADS-B information and transmits this information in real-time through a variety of network media. Fitted with Era's purpose-built, long range antenna, information can be received from aircraft up to 250 NM away from the ground station.



Aircraft avionics transmit precise position data from a Global Navigation Satellite System to Era's ADS-B ground stations, enabling greater accuracy, more rapid updates and improved situational awareness when compared to traditional radar.

Implementation



Data is processed according to all applicable international standards, including RTCA DO-242A, DO-260 and DO-260A and Era's MSS ground stations have been approved for ATC application in various countries. Data can be provided to upstream ATM automation systems directly from the MSS ground station in ASTERIX Category 21 format. Optionally, an MSS Target Processor Server can be used to fuse the data from a network of MSS ground stations to deliver a single fused output to upstream systems.

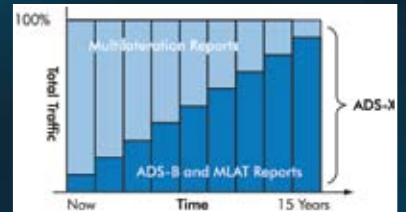
Era's MSS ground station is easy to install, compact and lightweight, yet is extremely robust, ensuring minimal need for site attendance and flawless operation in the most extreme weather conditions. The modular architecture allows ground stations to ideally be configured to suit each deployment and application, and each module is a fully sealed and self-contained LRU, which minimizes training requirements and repair times.

The ground station can be remotely configured and managed and supports an SNMP for easy integration into consolidated management architectures. Era's MSS Management Console can also be deployed to ensure easy configuration, management and monitoring of a network of MSS ground stations. Each ground station can be supplied with an Era ADS-B Site Monitor which sends regular signals to the ground station to ensure overall system operation and integrity.





ADS-B Transition



The Future is Now

While ADS-B is clearly an important element in next generation air traffic management, its full benefits will not be achieved until all aircraft are equipped with the required avionics, which may take some years. In the meantime, Era's ADS-B ground station is also a fully functional multilateration receiver, which means that a suitable network of Era ground stations can accurately track all aircraft, including those only equipped with Mode A/C or Mode S transponders.

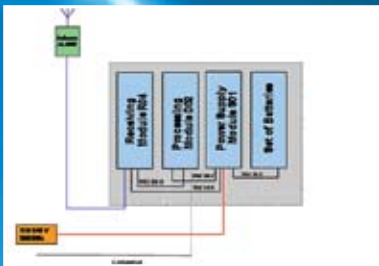
This dual functionality provides an ideal transitional approach to ADS-B deployment, allowing Era's customers to deploy the right technology for tomorrow's ADS-B world. Benefits are realized today by using multilateration to track existing aircraft. This dual purpose capability will also have longer term value as a mechanism to help validate ADS-B position information once the transition to ADS-B is complete.



Areas of Application

- En route
- Terminal area
- Surface movement

Signal Data Flow



Performance Parameters

Processed Signals	1090 MHz Mode S Extended Squitter (DF17 and DF18)
Individual Ground Station Track Capacity	500
ADS-B Server Capacity	>1,500
Range	surface to extreme wide area
Communication Formats	Proprietary protocol, ASTERIX, SNMP, NTP
Output message format	Asterix Category 21 Option: Asterix Category 10
Physical Dimensions	560 x 613 x 380
Weight	35 kg (49 kg with UPS)
Power Supply	120/230 VAC \pm 10%, 50/60 Hz \pm 3%
Operating Temperature Range	-40 °C to +60 °C (open air)
Environment	Relative humidity: up to 100% (condensation involved) Ingress protection: IP67 - submersion up to 1 m Aggressive atmosphere resistance: category C4 according to ISO 9223 Dust resistant Icing: up to 15 mm
European Standards	EN 55022 (class B) on EM Emissions EN 61000-6-2 (EMC, industrial environment), EN 61000-6-3 (EMC, emissions, residential, commercial and light industry environment) ETSI 300 019 class 4.1E and EN 60068 on Environmental conditions
European Directives	Low-Voltage Directive (73/23/EEC) and EMC Directive (89/336/EEC)
Lightning protection	Lightning Suppression installed on AC and antenna inputs.
External Interfaces	Dual LAN
Options	UPS (>24 h backup) Site Monitor Dual Antenna, Dual Redundant Configuration

United States

1881 Campus Commons Dr.
Suite 101
Reston, VA 20191

Tel +1 703 637 7283
Fax +1 703 637 7245

Czech Republic

Prumyslova 387
530 03 Pardubice
Czech Republic

Tel +420 467 004 253
Fax +420 466 670 461

www.erabeyondradar.com

Era Corporation is a pioneer and leading supplier of next-generation surveillance and flight tracking solutions for the air traffic management, military, security and airport operations markets. With proven multilateration and ADS-B technologies delivering high-performance, high-reliability surveillance solutions, the company has over 100 airport, air traffic management and military customers throughout North America, Europe, the Middle East, Africa, South America and Asia. Era systems are providing high performance, high reliability surveillance with hundreds of operational sensors covering the airspace of over 35 different countries around the world. Era's investment in research and development and its track record of product innovation has resulted in a substantial patent portfolio. Era is headquartered in Reston, Virginia with leading product research and development centers of excellence in the U.S. and Czech Republic.

For more information,
please visit www.erabeyondradar.com.

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