WIDE AREA MULTILATERATION (WAM)

Secondary surveillance radars (SSRs) are costly to deploy and maintain, as such, Air Navigation Service Providers (ANSPs) are seeking alternative technologies. Multi-sensor surveillance system NEO by ERA outperforms SSRS in accuracy and update-rates and will do so at a fraction of the cost.

NEO by ERA can be configured as a cooperative wide area surveillance system dedicated to air traffic control. The extremely high availability characteristics provided by the built in redundancy of wide area systems makes ERA's NEO the ideal SSR replacement. Applications include wide area, terminal, parallel runway monitoring and height monitoring solutions, providing higher accuracy, greater update rates, better coverage and improved reliability at a much lower cost.

NEO by ERA is a modular system, easily adaptable to any terminal and wide area requirements as well as all terrain challenges. For each deployment, the best configuration and related data link technology are carefully selected to meet the requirements of the customer with optimal utilization of the available infrastructure (e.g. copper wires, optical fibers, wireless connections).

In areas with sufficient Mode A/C/S interrogation provided by local SSR or in areas with transponder overloading problems, NEO by ERA can be configured as a fully passive solution and utilizes all available SSR replies to locate, identify and track aircraft. In this application, there is no need for additional transponder interrogation.

AL4W antennas installed on custom antenna mounts at Monasavu dam, Fiji (left).

The mountains surrounding Queenstown, New Zealand make an ideal backdrop for ERA AL2W and GPS antennas.

Countries with ERA WAM: Czech Republic, Namibia, New Zealand, United Kingdom, Armenia, Azerbaijan, Japan, United Arab Emirates, South Africa, Romania, Tajikistan, Azores, etc.

BENEFITS

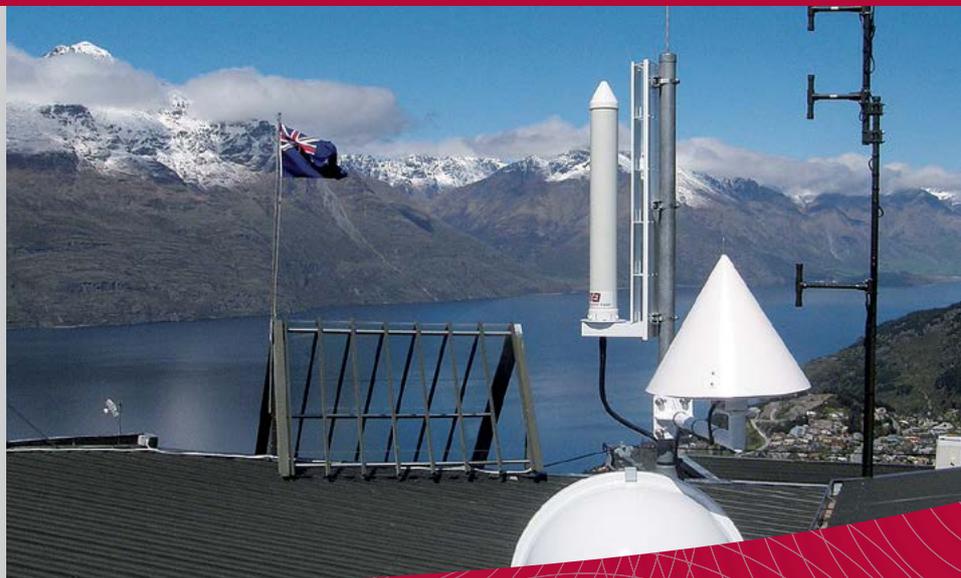Low cost replacement for Secondary Surveillance Radar (SSR) for wide area surveillance, (en route)

Completely modular and scalable to fit all surveillance requirements

Higher accuracy

Greater update rates

3-dimensional air surveillance within the entire TMA

Built in ADS-B

NextGen Surveillance Solutions

PERFORMANCE PARAMETERS

NEO performance is relative to the specific application of Wide Area Multilateration (WAM), as defined in chapter 3.3 of EUROCAE standard ED-142 'Technical Specification for Wide Area Multilateration System'. The sample performance figures below are applicable to the targets located within the defined operational coverage volume of the system.

Type of targets	Mode A/C, Mode S, Mode S ES
System Capacity	At least 500 simultaneous targets
Data Output Format	ASTERIX CAT010, CAT019, CAT020, CAT021, CAT023
Output Period	Data driven or periodic mode (Settable 1-12 seconds)

ERA's long range antenna (AL4W) deployed as part of a WAM system in Azerbaijan.
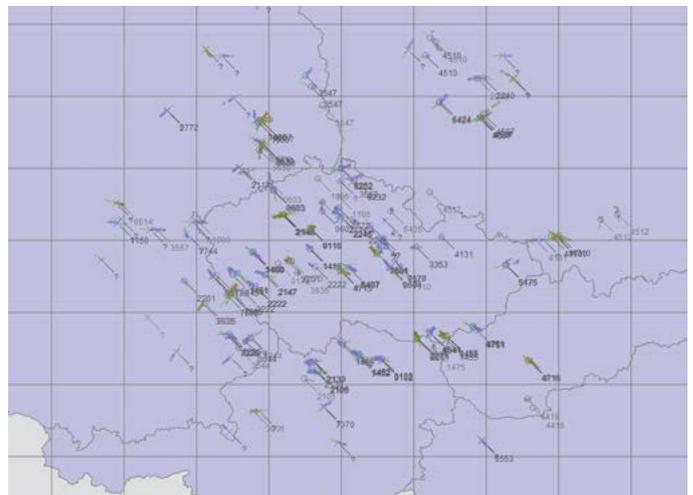
Partial view of an system maintenance console showing active tracks from a WAM system.

"Airways New Zealand has awarded a contract to ERA of the Czech Republic to expand the multilateration network at Queenstown Airport to the lower part of the South Island of New Zealand. This contract reflects the confidence that Airways has with the performance of the existing WAM system and will provide Air Traffic Control surveillance in an area of the country that is not currently covered by radar."

- Rex Wilson, Project Manager, Airways New Zealand

Basic facts on ERA Company

ERA Company is a pioneer and leading supplier of next-generation surveillance and flight tracking solutions for the air traffic management and military markets. As one of the producers of the technologies of multilateration and ADS-B it has over 100 installations at airports and military bases in 55 countries on 5 continents. For half a century ERA has built a proud heritage delivering MLAT based solutions to ATM controllers. Apart from systems for the civil sector, ERA has developed the unique passive radiolocation system VERA-NG wich is used as part of defence surveillance network and advanced border protection.