

# Multilateration and ADS-B Ground Surveillance ADS-B Surveillance Solutions

- › Surface movement
- › Terminal area
- › En-route control



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**Stand alone ADS-B, centralized ADS-B**

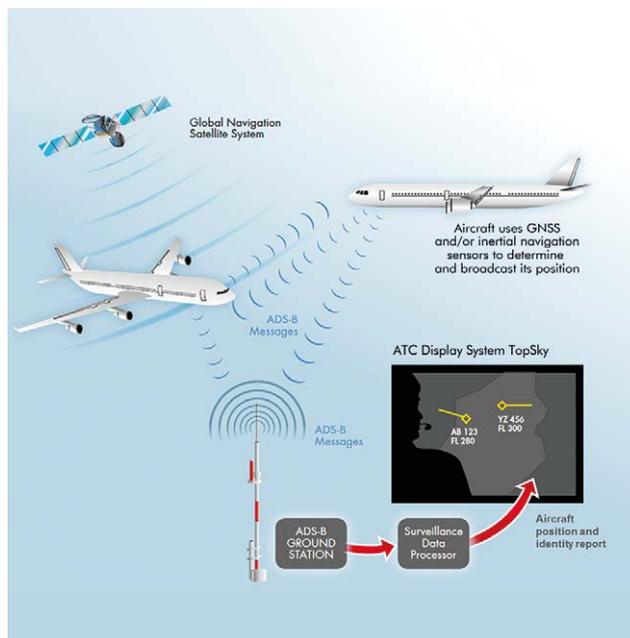
## Enhancing surveillance in both radar and non-radar airspace

Aircrafts equipped with Automatic Dependent Surveillance Broadcast (ADS-B) use a Global Navigation Satellite System (GNSS) to determine their position, and broadcast messages containing real time data : **position, altitude, velocity vector and intent**.

Thales' **Multilateration and ADS-B Ground Surveillance** products offer solution with full **ADS-B processing capability** supporting the Mode S Extended Squitter formats for both Mode S transponders and non-transponder devices as defined by ICAO.

This surveillance solution is used for **surface movement, terminal area and en-route control** even in difficult air traffic environment. It can be used as well in naval environment to increase surveillance awareness.

ADS-B data from ground stations can be directly processed and displayed at the TopSky ATC centre and other **Air Traffic Management System**.



## VALUE AND BENEFITS

- › **No maneuver tracking** needed as heading obtained directly from aircraft
- › Used for both **ground-based** and **airborne** surveillance applications
- › Low **ground equipment** cost and **infrastructure** requirements
- › Low **life cycle** cost, **maintenance-free** equipment
- › Simple guided commissioning without the need for specially trained staff

## KEY FEATURES

- › High accuracy: same position accuracy as GPS,
- › High update rate (2 positions/sec, 2 velocity vectors/sec)
- › Mode S Extended Squitter (1090ES), optional Universal Access Transceiver (UAT).
- › Individual coverage can exceed 250 NM
- › Identification includes Flight Plan Number and Aircraft Registration, as well as SSR Mode 3/A Code
- › Full remote operation including safe remote software updates
- › Prepared for direct use in MLAT and WAM systems
- › Direct output of ASTERIX cat21, cat23 and cat25

## SAFETY & SECURITY

- › Validated ADS-B: reliable ADS-B data due to embedded security features detecting jamming, spoofing, data modification attempts
- › Compliant with ICAO Annex 10 and EUROCAE ED-129B, ED-102/A, ED-109A, RTCA DO-260/A/B, DO-278A

## REFERENCES

- › More than **2300 ADS-B ground stations** in operation worldwide: major ANSP like US FAA, German DFS, UK NATS, French DTI, Hong Kong CAD, Airservices Australia, and Airways New Zealand rely on Thales ADS-B technology
- › **USA nationwide coverage** with more than 700 systems across the country