TESS
Tactically Enhanced Surveillance Sensor

Multipurpose and rapid deployable surveillance solution with ADS-B coverage, for time critical situations.

The Solution
Frequentis Comsoft new multipurpose, rapid deployable surveillance solution is intended to be used at in the immediate wake of a natural disaster, or technical radar failure to provide sequencing, separation of aircraft, navigation assistance and airspace control services when remaining radar surveillance sources are absent, reducing the out of operation time and therefore minimising the stress impact for operators.

User Benefits
The all-in-one-box solution has multiple use cases; the first is the fast provision of the air situation picture, essential for reducing the risk of a safety infringement or worse, a mid-air collision. With TESS the timeframe between a faulty or broken surveillance infrastructure and an operationally ready mobile tower can be filled with the ADS-B sensor. The operator can then provide safe and orderly guidance for aircraft in the assigned airspace with the integrated air situation display.

Alternatively, in the event of SSR failure, TESS can be connected to the faulty surveillance source and provide analysis and performance reports to ensure fast root-cause analysis and a safe re-commissioning of the faulty sensor. In addition, the ADS-B sensor can feed the ASTERIX data directly into the ANSPs surveillance data network.

Highlights
- Operational readiness < 15 min
- Plug & Play system design
- Easily operated by one person
- Portable solution (vehicle or checked-in luggage)
- Powerful sensor kit consisting of single ADS-B surveillance system, radar data analysis tool (RAPS-3) and Air situation display (ASD)
- Seamless ADS-B coverage up to 250NM
Key Features

**Fast set up:** With a weight of 32 kg the box can be deployed anywhere in the world within 24 hours, is transportable as checked-in luggage and can be operational within 15 minutes of unloading.

**Performance in all environments:** TESS components are housed in molded plastic containers, sealed with an airtight and watertight gasket to enable operability in all climates. The ADS-B sensor and the fully rugged notebook, showing the air situation, provides best-in-class performance – even in harsh environmental conditions.

**Back-up solution:** In addition to meeting urgent demands in a low infrastructure environment, TESS could also be used to provide a fast back-up for failed civilian radar stations or towers.

**Permanent display of critical and important information:** High-performance, human machine Interface (HMI) provides a seamless air situation picture for Air Traffic Controllers (ATCO) and Aerodrome Flight Information Service Officers (AFISO) based on ADS-B technology.

**Ready for customer’s surveillance infrastructure:** TESS provides standard interfaces for ASTERIX formats to feed surveillance data into customer’s surveillance network.

### Use case: Natural Disaster

- **Conventional separation High stress impact for ATCOs Safety critical situation**
- **Time to deploy and operate TESS: 24 h**

**Benefits**

- Minimal time without surveillance data
- Reduced risk of safety infringements
- Enables safe and efficient humanitarian airlift to the airport

### Use case: Radar Breakdown

- **Conventional separation High stress impact for ATCOs Safety critical situation**
- **Technical evaluation of incident**
- **Quality report of radar data**

**Benefits**

- RAPS-3 combines analysis and validation features in one system
- Potential for earlier quality reports
- ADS-B data as reference for quality analysis

**With TESS**

- **Installation of deployable ADS-B ground station**
- **Technical evaluation of incident**
- **Quality report of radar data**

**Benefits**

- Easy to operate, Plug & Play components
- Simultaneous radar analysis and ADS-B coverage