# ADS-B/MLAT Surveillance

AVIONIX openAir1090 represents a fully-featured and cost-effective ADS-B/MLAT solution based on a dual channel high-sensitive FPGA based Mode-A/C/S and ADS-B receiver and decoder. A high precision GPS timing receiver assigns timestamps on nanosecond resolution, thus enabling high precision multilateration localization.

The solution offers excellent surveillance accuracy, update rate and identification information at lower cost compared to traditional surveillance systems. The 19" ground station embeds a powerful PC to run the ED-129B compliant generation of ASTERIX CAT021/023/247 categories and the local CMS application. Multiple ground stations can be configured to form a redundant cluster.

openAir1090 offers:

- Surveillance coverage in non-radar airspace

- Scalability from a single sensor system to a multi-sensor distributed MLAT system

- Easy data exchange with other systems (ASTERIX, JSON, RAW formats)

- Advanced decoding techniques, decoding of overlapping signal frames, CRC correction

- Site-monitoring function

- High dynamic receiver for monitoring of en-route, terminal area and surface movement at the same time

- Compact and high reliability, no moving parts

- Low cost of ownership

- Optional onboard 4G modem simplifying setup at remote locations

- Indoor and outdoor variant

- Decoding according DO260/A/B, fully ED-129B compliant

- 110-240VAC, 24VDC, PoE power options
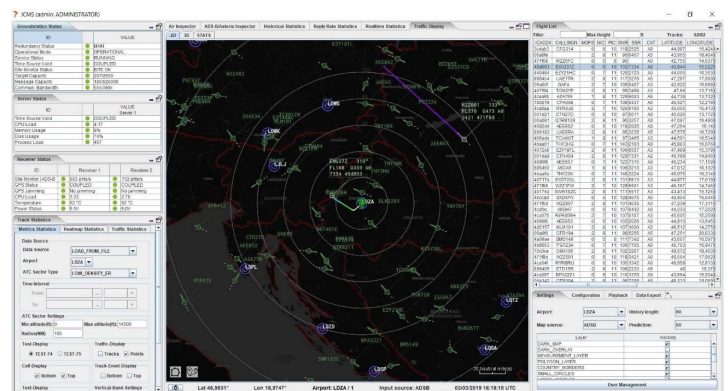
ATC Spectrum Monitoring

EU Regulation No 1207/2011 requires that by January 2020 Member States shall ensure that a secondary surveillance radar transponder on board any aircraft is not subject to excessive interrogations that are transmitted by ground-based surveillance interrogators. Additionally, it shall be ensured that the use of a ground-based transmitter does not produce harmful interference on other surveillance systems.

The **AVIONIX ATC Spectrum Monitoring** system represents a solution to address this requirement. A specially designed receiver station constantly monitors the spectrum and decodes the signals on the 1030 and 1090MHz frequencies and processes the data and visualizes the results. The signals are archived in raw RF sample data, decoded and derived statistical data for real-time and offline analysis. Excess of interrogation limits or other abnormalities are recognized and may trigger alarms. The performance and proper function of SSR and local ground surveillance systems can be analyzed and monitored constantly without depending on support from suppliers.
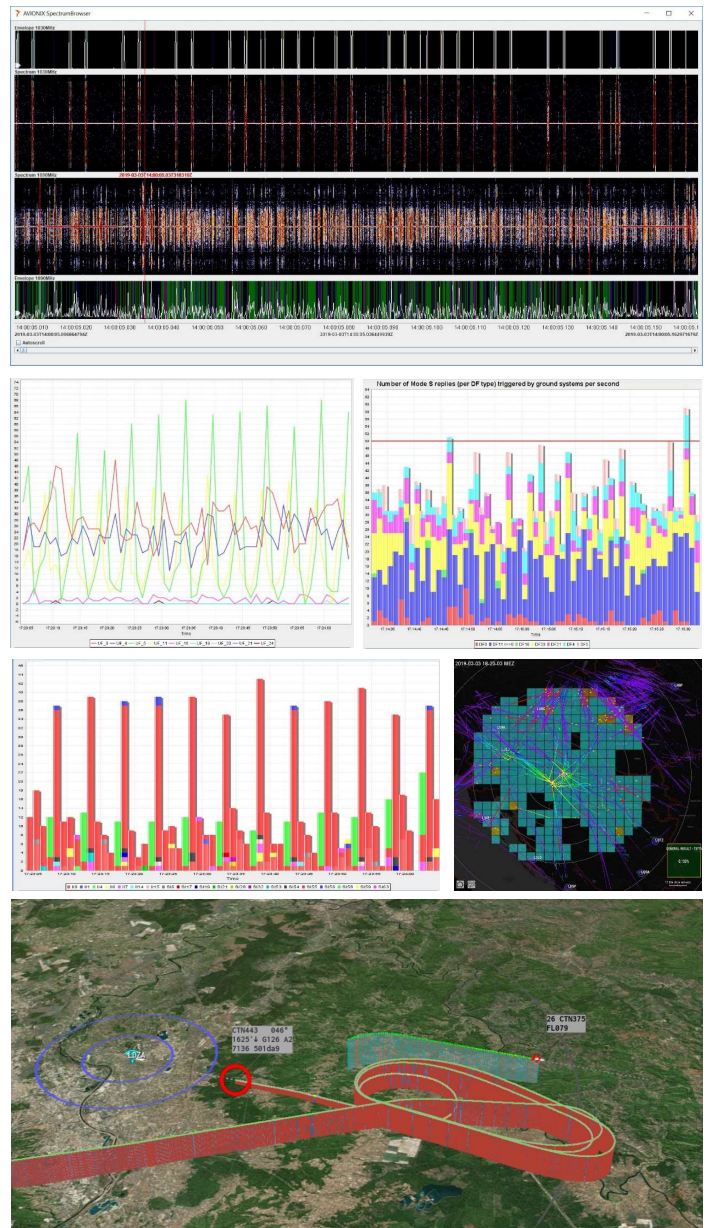
- **Software Development**
  - Flexible software solutions for airports and ATC
  - Surveillance Data Processing
  - ASTERIX Data Fusion, ED-129B Test Suite
- **Hardware Development**
  - RF Hardware Design
  - Mode-S/ADS-B/MLAT Receiver
  - ATC Spectrum Monitoring
  - Airport Vehicle Transponder
- **Consulting, Project Management and Networking**
  - A-CDM, A-SMGCS, Airport Planning, AOCC
  - Support for Project, Offer and Tender Management