FUNCTIONAL SAMPLE OF GROUND BASED ADS-B AND MLAT RECEIVER

**Objectives:**

The main goal of this project is research and development of a hardware platform, firmware and software processing for a functional sample of ground based ADS-B and MLAT receiver. The system will be able to receive, process and evaluate ADS-B messages broadcasted by aircraft’s transponders as well as all other replies in mode S and SSR modes (1, 2, 3/A, B, C and D). The functional sample of ground based ADS-B receiver will work independently or in combination with primary and secondary surveillance radar systems. Furthermore, the ADS-B receiver can be configured to support the Mode S multilateration for both surface and wide area applications. The system will be designed as a modular, with a variable number of antennas and their gain according to customer requirements on range. Integration into atypical mobile airport radar systems will also be possible. Optional configuration of ADS-B receiver is intended for installation in a rack located in outdoor environment (with a possibility to supply it from batteries, which can be charged by solar cells). Conception of this functional sample will enable future extension of the functionality by firmware upgrade with minimal circuit modification requirements. In other words, hardware itself, particularly signal and data processing system will be designed using programmable logic devices (CPU, DSP, FPGA, etc.) with sufficient reserves (computing power, amount of memory, interface parameters, etc.).

**Parent Programmes:**

ALFA - ALFA PROGRAMME

**Institute type:** Research agency

**Institute name:** The Technology Agency of the Czech Republic

**Funding type:** Public (national/regional/local)

**Partners:**

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**STRIA Roadmaps:** Transport electrification, Network and traffic management systems

**Transport mode:** Air transport

**Transport sectors:** Passenger transport, Freight transport

**Geo-spatial type:** Other