SATERA

Space-based composite
ADS-B and multila**T**eration
syst**E**m validation th**R**ough
scalable simul**A**tions

Exploratory Research

July 2024 - December 2026

SATERA proposes a space-based aeronautical surveillance system that utilizes small satellites in Low Earth Orbit to enhance air traffic safety and security in remote regions, such as oceanic routes





SATERA is designing and validating a GNSS-independent Air Traffic Control (ATC) surveillance system, establishing integrity parameters for space-based ADS-B data to improve air traffic safety and security.

SATERA is establishing and validating the concept of a space-based multilateration system for ADS-B signals using a constellation of LEO satellites. Moreover, SATERA is combining Time-of-Arrival (ToA) measurements with Angle-of-Arrival (AoA) and Frequency-of-Arrival (FoA) measurements, leading to the concept of Enhanced Multilateration (E-MLAT) from space.

The SATERA outcomes are the functional requirements for a space-based ADS-B + E-MLAT system, performance evaluation and prediction tools, and simulators for MLAT stations, communication networks, and central processing.

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