

SATERA

Space-based composite
ADS-B and multilateration
system validation through
scalable simulations

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 will design and validate 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 aims to establish and validate the concept of a space-based multilateration system for ADS-B signals using a constellation of LEO satellites. Moreover, SATERA will combine 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 the Space.

SATERA project expected 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.



This project receives funding from the SESAR 3 Joint Undertaking under grant agreement N° 101164313 under European Union's Horizon Europe research and innovation programme. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or SESAR 3 JU. Neither the European Union nor the granting authority can be held responsible for them.

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