

IAF SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (2)

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SATELLITE-BASED AIR TRAFFIC MANAGEMENT (ATM) SYSTEMS' IMPACT ON CO2
EMISSION**Abstract**

This research studies the impact of the implementation of satellite-based air-ground communication systems in the aviation industry on the reduction of CO₂ emissions by overcoming several flight inefficiencies. As the skies become busier, their traffic management require continuous improvements thus the implementation of services Satellite-based air traffic management (ATM) systems is imperative to boost efficiency, performance and reduce the environmental footprint made by the aviation industry. Satellite-based ATM is meant to improve controller-pilot communication, pinpoint the aircraft in space and time and to calculate the safest, most efficient flight plans resulting in flight-path optimization, delays reduction and lower CO₂ emissions. Satellite-based ATM IRIS, developed and deployed as part of Single European Sky ATM Research (SESAR) program, is therefore meant deliver such benefit to air travel. As the digital skies continue to fill with an ever-increasing range of users, satellite-based ATM services will provide an essential part of the safe and efficient digital communication infrastructure with ubiquitous connectivity, which will contribute to the actions taken to curb the climate change.

Keywords: aviation, climate change, CO₂, ESA, ATM, 5G, emissions