

IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES (D6)
Commercial Spaceflight Safety and Emerging Issues (1)

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ENABLING A SAFE & RELIABLE SPACE TRAFFIC MANAGEMENT SYSTEM

Abstract

There are high expectations for a global, multi-billion Euro commercial space travel market. Key players in the space business are preparing to serve this market by developing their own ballistic reusable space vehicles to carry humans and cargo payloads into suborbital space. Some concepts go further, targeting manned suborbital point-to-point (p2p) transportation, similar to today's aircraft travel but with much shorter flight times. Without a consolidated European, if not global, commitment to a commercial Space Traffic Management (STM), the ever-growing number of space vehicles expected to pass through aerospace in the foreseeable future is going to jeopardise airspace safety.

As part of an evaluation study to generate a roadmap for the implementation of a European STM system, the necessary supporting and conducive Safety Reliability aspects have been investigated and objectives defined in order to enable safe and reliable STM operations. This has included the challenge of safely integrating space vehicle travel within an evolving Air Traffic Management (ATM) system. The study was funded by the European Space Agency and led by DLR GfR with their partners (ROSAS, DLR, Austro Control University of Bern).

This paper summarises the results of the SR part of the study, including recommendations on topics such as: regulations and standards, smart SR assessments as enablers for commercial space travel, risk management, acceptable level of safety and addressing the key hazards (space weather, space debris/objects, re-entering objects and shared airspace).