



ICAO EUR
STO PT

**INTERNATIONAL
CIVIL AVIATION
ORGANIZATION**



ICAO EUR Region Space Transport Operations Project Team

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STO PT

ICAO European Region
Space Transport
Operations
Project Team (STO PT)

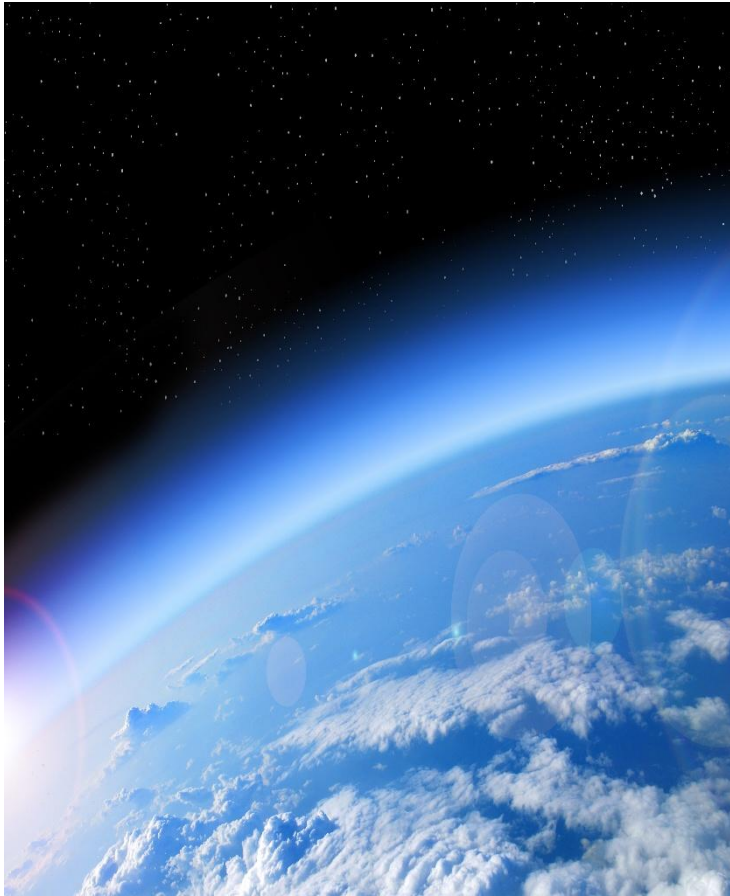
- EASPG agreed to establish a dedicated multidisciplinary Project Team for the development of regional guidance material on Space Transport Operations for the EUR Region (EASPG Decision 6/2)
- virtual kick-off meeting on 09 April 2025
- Mr. Stefano Pieraccini from Italy is the chairperson of the PT
- Aviation and Space experts from Austria, Croatia, France, Germany, Ireland, Italy, Kazakhstan, Spain, Sweden, United Kingdom, (United States as an observer), French Guiana Space Center (CNES), EUROCONTROL, IATA
- PT is expected to finish in June 2026



STO PT ToRs

Project Title	EUR REGION SPACE TRANSPORT OPERATIONS Project Team (EUR STO PT)
Parent Group	PCG
Project Supervisory body	EASPG
Project Period	February 2025 to December 2025, extended to June 2026
Project Objective	To deliver harmonized guidance material on airspace integration to ensure safe and efficient navigation of aircraft around Space Transport Operations
Project Outcomes:	Guidance Material on Space Transport Operations for the ICAO EUR Region in the form of an EUR Document
Membership	Nominated subject matter experts from ICAO EUR Region States and international organisations The membership may be expanded, on a case by case basis, to participants or organizations from outside of the EUR Region that can contribute to work of the PT (i.e. STO organizations that can provide expertise)
Coordination Requirements	Coordination with States, International organization and STO entities within the EUR Region and in collaboration with adjacent ICAO Regions and ICAO HQ, as appropriate
Project High level Tasks	<ul style="list-style-type: none"> i) Share STO information among EUR States and other stakeholders ii) Monitor and take into consideration global, inter-regional and regional developments as well as consider best practices and initiatives in STO iii) Identify the specific responsibilities of the involved stakeholders iv) Develop guidelines on the coordination between the State regulators, ANSPs/ATSUs and STO operators v) Develop guidelines for STO Operators on the planning process for the operations vi) Develop guidelines on ATM/STO interface and contingency management
Project Lead	Stefano Pieraccini, ENAC, Italy
Project Secretariat Support	Sven Halle

STO EUR Doc guidance material will be consistent with



- ICAO Doc 7300 - International Convention on Civil Aviation
- ICAO Annex 2 - Rules of the Air
- ICAO Annex 11 - Air Traffic Services
- ICAO Annex 13 - Aircraft Accident and Incident Investigation
- ICAO Annex 15 - Aeronautical Information Services
- ICAO Annex 19 - Safety Management
- ICAO Doc 4444 - Procedures for Air Navigation Services - ATM
- ICAO Doc 10066 - PANS - AIM
- ICAO Doc 10088 - Manual on civil military cooperation in ATM

- NAT Doc 013 - Operational Guidance Material for Commercial Space Operations
- EUR Doc 032 - Flexible Use of Airspace Concept
- ICAO Asia/Pacific Regional Guidance for Space Object Launch and Re-entry Activities
- CANSO – Considerations for Managing Space Operations

- Additional space law provisions as defined by the UNOOSA treaties/principles and/or UN COPUOS

STO EUR Doc

- The guidance material provides harmonised procedures for the planning and management of airspace to support the safe, efficient and predictable integration of Space Transport Operations (STO), including launch and re-entry events, within the ICAO EUR Region
- It is intended for **STO stakeholders** as defined in the Definitions section and supports coordination at national, cross-border and inter-regional levels while recognizing State sovereignty and the operational requirements of the EUR airspace network
- The guidance complements national laws and operational procedures without superseding State authority. It may also support coordination with neighboring FIRs and States outside the ICAO EUR Region where STO activities affect EUR airspace

STO Stakeholders - The organisations and persons having responsibilities or interests in the planning, coordination, publication, execution or review of space transport operations affecting European airspace. STO stakeholders include National Space Regulators, Civil Aviation Authorities, military authorities, air navigation service providers, air traffic services units, the Network Manager where applicable, launch and re-entry operators, spaceport and range operators, aeronautical information service providers and NOTAM offices, meteorological service providers, search and rescue and maritime authorities, law enforcement and civil protection authorities, airspace users, and other service providers supporting mission planning, hazard analysis, tracking, telemetry, data exchange and post-operations review, as appropriate.

STO EUR Doc structure

- The guidance material is structured to reflect the operational lifecycle of Space Transport Operations (STO) integration within the EUR Region, from early planning and coordination through operational execution and post-operation review.
- Chapter 1 prescribes the general outline including definitions, terms, abbreviations
- Chapter 2 provides an overview of Space Transport Operations and their interaction with the aviation system.
- Chapter 3 outlines the regulatory and operational context for STO integration within the aviation system, including relevant ICAO provisions (STO is linked to Annex 11 chapter 2.19 - activities potentially hazardous to civil aircraft).
- Chapter 4 describes the roles and responsibilities of the principal stakeholders involved in STO coordination.
- Chapter 5 describes the planning and coordination framework for STO activities, including communication arrangements and the coordination milestones of Launch Notice of Intent (LNI), Launch Plan Notification (LPN) and Launch Event Confirmation (LEC).

STO EUR Doc structure

- Chapter 6 addresses Aviation Impact Assessments and Aviation Safety Risk Assessments associated with STO activities.
- Chapter 7 describes airspace management measures that may be applied to protect aircraft from hazards associated with STO activities.
- Chapter 8 outlines the promulgation of aeronautical information related to STO activities.
- Chapter 9 provides guidance on operational coordination during the day of operations.
- Chapter 10 addresses unexpected deviations or non-nominal events which are no longer contained in the defined hazard areas and may affect airspace within the EUR Region.
- Chapter 11 describes post-operation review activities and the capture of lessons learned.
- The Annexes provide practical examples, reference and supporting material (e.g. draft NOTAM/SPACETAM template) to assist States and aviation stakeholders in implementing the coordination framework described in this guidance

STO EUR Doc focus on Airspace Coordination

- The primary focus of this guidance is to support the safe, efficient and harmonized coordination of airspace for STO in a manner that preserves network resilience and ensures equitable access for all airspace users. All airspace is a shared and finite resource that serves a wide range of civil, state and military users. The integration of STO must therefore be managed in a way that respects established ATM procedures and minimises disruption to all users of the airspace
- Timely engagement, transparent information sharing, and collaborative decision-making (CDM) are essential to balancing the needs of STO operators with those of traditional airspace users, notably scheduled commercial traffic. These guidelines should aim to mitigate disproportionate impacts on all stakeholders
- The flexible use of airspace (FUA) principles, civil-military coordination mechanisms, and cross-border cooperation frameworks are fundamental tools in achieving these objectives. The overall goal of the guidance is to enable the sustainable growth of space transport activities while preserving the safety, continuity, resilience, and environmental efficiency of European air traffic management and network performance

STO EUR Doc some initial key aspects

- Space transport operations (STOs), as nominal space launch or re-entry operations, pass through the common source of airspace in some phases.
- Currently, airspace segregation is the approach used to integrate STO with civil aviation.
- The integration of Space Transport Operations (STO) requires timely exchange of information between space and aviation stakeholders. These may include the Launch and Re-entry Operator (LRO), the Spaceport Operator, the National Space Regulator (NSR), the Civil Aviation Authority (CAA), military authorities (where relevant), Air Navigation Service Providers (ANSPs), and where applicable the EUROCONTROL Network Manager (NM).
- The space sector stakeholders are expected to provide to aviation, prior to the STO, hazard areas through which most of the debris, such as dropped stages, would fall during a nominal launch
- The hazard areas established by the Launch and Re-entry Operator (LRO)s and validated by the National Space Regulator will be shared with the launching State Civil Aviation Authority, and ANSP to ensure establishment of the necessary airspace structure to ensure safe integration of STO with civil aviation.

STO EUR Doc some initial key aspects

- Those airspace structures will be promulgated through AIS as prohibited, restricted and/or danger areas in the affected FIRs or as other special use airspace such as TRA in case where FUA is implemented . Over the High Seas, only danger areas can be established.
- Aviation Impact and Safety Risk assessments should be performed by the ANSPs, in order to assess the potential impacts of the STO on air traffic management. If the STO operations affect air traffic management, a safety risk assessment should be conducted to assess the degree of risk posed to civil aircraft by the planned operation.
- Based on the outcomes of both impact assessment and safety risk assessment, a multi stakeholder collaborative decision-making process should be initiated to identify potential mitigation measures that maintain safety and minimize the impact on civil aviation.
- During the tactical phase, close coordination, for example through a hotline, is recommended between the relevant space sector stakeholders and the affected ANSPs, in order to keep the latter abreast of the STO progress, including any anomalies requiring urgent action.

STO EUR Doc some initial key aspects

- As the STO progresses, airspace must be released and NOTAMs be cancelled. Consistency between progress of the STO and NOTAM cancellation is essential.
- The responsibilities of National Space Regulators, Launch and Re-entry operators, Spaceports, Civil Aviation Authorities, and Air Navigation Services Providers may vary by States, and consequently differ from the general aspects as described in the guidance material
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Once approved as EUR Doc, it can be expected that the current guidance material for the NAT Region will be amended accordingly





Thank You