



3rd STM Brief

The EU Approach to Space Traffic Management

*The STM Joint Communication and the Spaceways project
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www.spaceways-h2020.eu

Spaceways will establish an assessment of technical and policy-related issues associated with Space Traffic Management (STM) and propose a set of recommendations and guidelines to the European Commission. A main goal will be to **characterise and understand the context of STM**, especially its international and domestic dimensions. The project focuses on an analysis of European capabilities and technology gaps and on a policy, legal and economic assessment of this domain, leading to recommendations and guidelines. This **third Brief** provides an overview of the initiatives in the field of STM at global level.

The EU approach on STM

On 15 February 2022, the European Commission and the EU High Representative for Foreign Affairs and Security Policy published the Joint Communication “**An EU Approach for Space Traffic Management - An EU contribution addressing a global challenge**”.¹ In the light of the congested nature of space,² the high-level policy document aims to establish an EU approach in the field of STM «for a safe, sustainable and secure use of space».

The Joint Communication recognises the compelling need for the EU to adopt a European approach to STM. This urgency was previously acknowledged in the “Action Plan on synergies between civil, defence and space industries”, delivered by the European Commission on 22 February 2021, which identified the need for intensified dialogue on and development towards a STM flagship project.³

The Joint Communication lays down a “dynamic” and “working” definition of STM as «the means and rules to access, conduct activities in, and return from outer space safely, sustainably and securely».⁴ The EU STM approach rests upon four elements. First, the Commission and the High Representative acknowledge the importance of assessing the **STM civilian and military requirements and impacts** for the EU. This process is to be carried out through the establishment of an inclusive consultation mechanism with all pertinent EU stakeholders. Second, the Joint Communication calls for the **enhancement of the EU operational capabilities to support STM**, namely Space Surveillance and Tracking (SST), with a central role of the *EU SST Partnership*.⁵ In the view of the Commission

¹https://ec.europa.eu/info/files/joint-communication-eu-approach-space-traffic-management-eu-contribution-addressing-global-challenge_en

² See: Spaceways (May 2022) A Congested Space and its Safety. The importance of space traffic management. <https://spacewaysh2020.eu/publications-spaceways/spaceways-1st-stm-brief-may-2022/>.

³ The other two flagship projects mentioned in the document are “EU drone technologies” and “EU space-based global secure communications system”.

https://ec.europa.eu/info/sites/default/files/action_plan_on_synergies_en.pdf

⁴ https://ec.europa.eu/info/files/joint-communication-eu-approach-space-traffic-management-eu-contribution-addressing-global-challenge_en

⁵ Created by the *Regulation 2021/696 establishing the Union Space Programme* (“Space Regulation”), the *EU SST Partnership* is set to replace the *EU SST consortium*, which has been operational since 2014.



and of the High Representative, this entails the development of new services and technologies, comprising the location of EU-controlled assets outside the European continent and making full use of the existing EU industrial ecosystem. Third, as far as the **regulatory aspects** of STM are concerned, particular attention is to be paid to monitor the evolving STM standards at the international level and to develop EU rules and guidelines, including a toolbox and possible incentive measures and obligations for EU industries, with the objective of adopting a legislative proposal. Finally, the Commission and the High Representative aim to promote a **multilateral approach** and to **conduct dialogue** with lead international actors, starting with the U.S. The Council of the European Union announced its support of the Joint Communication on June 10th 2022, emphasizing the need to reinforce European capabilities, to encourage coordination on legislation and standardisation, and to reinforce the EU's voice on the international scene.⁶

The need for an EU STM approach is also mentioned in the *EU Strategic Compass*⁷ published in March 2022, explicitly referring to the Joint Communication, which emphasised how disruption on PNT and Earth Observation would have “direct impact upon the security, safety, economy, and well-being of European citizens, therefore limiting our freedom of action” and identified STM as a contribution to **the security and defence dimensions of the EU in space**.⁸

“The need to act collectively”

The Joint Communication acknowledges space as global and not confined by national boundaries, thus highlighting that it is imperative to work on a collective approach with the involvement of all EU stakeholders. The EU SST **Consortium** is identified as the operational pillar for the EU STM approach. As of now, the Consortium comprises seven members (France, Germany, Italy, Poland, Portugal, Romania, Spain) but it will be replaced by the EU SST **Partnership**, in accordance with the Regulation establishing the Union Space Programme⁹ and enlarging the number of states participating to the endeavour. For instance, during the EU STM Conference of July 2021, Austria expressed its interest to access the EU SST framework. Member states have a key role by contributing with sensors and

⁶ <https://www.consilium.europa.eu/media/56974/st10071-en22.pdf>

⁷ The EU Strategic Compass provides the EU with a plan of action for the next 5 to 10 years to guide and strengthen the EU's security and defence policy, based on a common threat analysis. The document is divided in 4 parts (Act, Secure, Invest and Partner). For more information please see: https://www.eeas.europa.eu/eeas/strategic-compass-security-and-defence-1_en

⁸ https://ec.europa.eu/info/files/joint-communication-eu-approach-space-traffic-management-eu-contribution-addressing-global-challenge_en ; https://www.eeas.europa.eu/sites/default/files/documents/strategic_compass_en3_web.pdf

⁹ <https://eur-lex.europa.eu/eli/reg/2021/696/oj>



expertise. Furthermore, within the current EU SST Consortium, the national Operation Centres (OCs) generate and deliver the pillar functions and associated services. The Space Regulation foresees the development of an EU SST catalogue by the end of 2024 using EU SST sensors, while the European Union Space Programme Agency (EUSPA) will act as the EU SST Front Desk.¹⁰

The SPACEWAYS Project

The Horizon 2020 SPACEWAYS project aims at understanding the challenging **context of Space Traffic Management**, with particular attention to its international and domestic components. The main goal of this 18 month-long project, started in January 2021, is to provide the European Commission with **recommendations and guidelines** in the STM field. This involves the pursuit of a **two-fold research strategy**, including a policy, legal and economic analysis of the STM domain and a complete assessment of the European STM technical capabilities. To this end, SPACEWAYS wishes to elaborate a shared **European vision of STM**.

The **collaborative dimension** is at the core of SPACEWAYS, which brings together key European research institutions and European industrial players. Coordinated by the Fondation pour la Recherche Stratégique (FRS), the consortium includes **all major European actors in STM development**, from concepts to industrialization: Airbus Defence and Space, Arianegroup, Deimos Engineering and Systems, the European Space Policy Institute, Indra Sistemas, the International Institute of Air and Space Law at Leiden University, Istituto Affari Internazionali, Leuven Centre for Global Governance Studies at Katholieke Universiteit Leuven, OHB System, European Union Satellite Centre, Thales Alenia Space, and Telespazio. Arianespace and Deimos Space engage in SPACEWAYS as linked third parties.

External stakeholders participate to this project through contacts with SPACEWAYS industrial partners and through a specific **Stakeholder Engagement Programme** aimed at making study outputs as inclusive as possible. Within this context, **three rounds of workshops** were organised in May 2021, November 2021 and March 2022, each involving external participants. Institutional actors, public and private satellite operators, Space Surveillance and Tracking (SST) service providers and R&D related entities took part in the discussions, which encompassed, among others, the status of STM framework and needs, the SSA/SST Technological Analysis for STM monitoring and STM technical regulations for a sustainable use of space. The project's end is scheduled for June 2022, with the SPACEWAYS Final Conference to be held in Brussels on 24th June.

¹⁰ On the EUSPA role, see also the Council conclusions on an EU approach to space traffic management, 10 May 2022.





The strength of Spaceways lies in the partnership **between major European research institutes and European Space Industry players**, used to working together and capable of providing an end-to-end analysis of Space Traffic Management (STM) issues and the most appropriate answers and solutions.

Spaceways brings these key actors together to develop a collaborative European vision of STM. This consortium, coordinated by the Fondation pour la Recherche Stratégique, is able to provide a complete review of STM stakes at each stage of the analysis, from concepts to industrialization, taking into account the evolution of legislation, and its impacts on technologies, space infrastructure and satellite operations.

To ensure the study outputs are embraced by the whole European space community, external stakeholders are actively involved within a **Stakeholder Engagement Programme**, gathered in a series of eight workshops with more than 100 participants from 24 European entities - including institutional actors (national agencies, Ministries of Defence, intergovernmental organisations, and EU institutions), public and private satellites operators, Space Surveillance and Tracking (SST) service providers, and R&D related entities (SME, start-ups, and a non-profit organisation).

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