

# Framework for space surveillance and tracking (SST) support

2013/0064(COD) - 03/05/2018 - Follow-up document

The Commission presented a report on the implementation of the space surveillance and tracking (SST) support framework (2014-2017).

**Background to the report:** Europe is set to have 40 Galileo and Copernicus satellites in space by 2020 and around 12% of the world's satellites. It therefore has a vital interest in ensuring that its space assets and services can be launched and operated safely.

In 2008, the Council underlined the need to develop a European capability for the monitoring and surveillance of European space infrastructure and of space debris. The EU's initial response was to establish a European Union space surveillance and tracking (EU SST) capability by means of Decision No 541/2014/EU of the European Parliament and of the Council establishing a framework for space surveillance and tracking support (the SST Decision).

**Results and impacts:** the main conclusion of the report is that the **framework delivered results** as regards the establishment and operation of EU SST functions and actions. However, given the relatively short timeframe of the EU SST operations, it is not yet possible to identify socio-economic impacts.

The main achievements of the framework can be summarised as follows:

- **availability of the EU SST services** – the SST Consortium has provided services under the EU SST logo since 1 July 2016, through the EU SST portal. The collision avoidance, in-orbit fragmentation and re-entry services are provided to all European institutional users and spacecraft owners and operators free of charge and on a 24/7 basis. The number of users has risen steadily;
- **outreach to users** – potential users were identified and their needs documented. While limited, feedback from users is promising. The EU SST helped to enhance stakeholders' awareness of space risks and the need to protect space infrastructure;
- **cooperation and collection of shared know-how** – regular communication has been established between NOCs. National experts share knowledge and working
- **mapping and pooling of European assets** – overall, 33 sensors contributed to the initial EU SST operations, covering all orbits. Their initial architecture and performance have been assessed. European sensors potentially suitable for EU SST have been identified and upgrades of national sensors have started;
- **outreach to other Member States** – the EU SST attracted interest and led new Member States to collaborate with or to join the SST Consortium.

**Effectiveness:** the report noted that the framework facilitated setting up the initial EU SST capability toward the general objective of ensuring the long-term sustainability of European space infrastructure and services. Since EU SST operations began, NOCs have provided collision warnings and there have been no catastrophic incidents involving registered spacecraft, including EU satellites. Re-entry events have been monitored and reported. The enlargement of the SST Consortium and execution of SST grants as of end 2017 was on track.

Despite these achievements, the EU SST has yet to **improve its performance and autonomy**. The EU SST functions as a sum of national capabilities, with different national databases and varying service level, and economies of scale and avoiding unnecessary duplications have yet to realise. The EU SST

services does not cover space hazards over the entire life-cycle of spacecraft missions from launch to disposal, which however threaten the long-term sustainability of European space infrastructure and services. Moreover, the framework does not define actions or provide means to facilitate exploring potential synergies with other segments of space situational awareness (space weather and near-Earth objects) and has yet to create leverage on the international scene as the capability develops.

**In terms of European added value**, the SST support framework has given Member States an incentive to cooperate in this nationally sensitive area and has helped to increase transparency and build confidence.

It contributes to making OSH services accessible to European users and is a **first step towards the future development of a certain level of European autonomy in SST**.

**Recommendations for the future:** the Commission considers that the following **operational milestones** would facilitate achievement of the overall objective of helping to ensure the long-term sustainability of European space infrastructure and services:

- **defining an effective future EU SST architecture and suitable arrangements for service delivery:** the EU SST builds on complementarity between national assets and optimizes the EU SST architecture while
- **a common EU database of orbital objects, building on national data:** to this end, progress is needed in the near future on the networking between NOCs and the exchange of SST data and information;
- **outreach to, and active engagement with, potential users, supported by further development of EU SST services:** a large pool of potential users has yet to be reached. To this end, the quality and efficiency of EU SST services needs to be improved according to the needs of users, including in terms of added value and operational handling of the fleet. This should be supported by: intensified outreach campaigns; further development of the user feedback mechanism and common EU SST operational procedures and standards for service provision;
- **consideration of the needs for, and possible means of realising, synergies with other segments of space situational awareness;**
- **formulation of a long-term vision, strategic objectives** and general guidelines at the EU level – these should be supported by implementation roadmaps and multiannual plans;
- further simplification of the EU SST grant management scheme;
- **governance changes** to ensure the cost-effective management – this is crucial to accommodate possible broader Member State participation and EU SST development. The Commission's involvement in EU SST should be stepped up to enable providing more guidance and monitoring at the strategic, policy and organisational levels.