

INDUSTRY INPUTS TO EUROPEAN INDUSTRY AND START-UPS FORUM (EISF)

MAY 2023

PREAMBLE

The European space industry, represented by Eurospace, strongly supports the **emergence of an EU approach on Space Traffic Management (STM) with regulatory and capability pillars in lockstep**. A unified and comprehensive Europe, able to speak internationally with a single voice on STM, is key to support the European space ecosystem and protect its strategic interests and competitiveness.

If creating our own reference architectures and standards to safeguard our competitiveness is an objective that will require all European and national efforts to converge, in the short-term, the **EU should seek the quick adoption of pragmatic STM measures focused on leveraging existing institutional and industrial SSA assets**, while retaining its longer-term goal of a truly harmonised set of STM regulations.

In this regard, the establishment by the European Commission and the EU SST Partnership of a European Industry and Start-ups Forum (EISF) is a first step in this direction; a **step very much welcome by the European space industry** towards establishing the EU as long-term partner and customer of industry. In order for the EISF to be as efficient as possible, the European space industry believes that continuity between EISF plenaries may be needed (e.g., in the form of interim meetings, surveys, separate Working Groups meetings...).

The European space industry supports the role of the EU SST Partnership as a key operational capability. In addition, a **stronger involvement of the European space industry**, alongside the capabilities owned by the members of the EU SST Partnership, is also vital to guarantee high revisit, swath of observation and ultimately strategic autonomy with respect to US capabilities.

In this regard, the **European space industry welcomes EU SST proposals and measures** in favour of a stronger involvement of the industry, presented on February 2023, and wishes the European Commission and the EU SST partnership to **consider the following points of attention**.

Data provision

The combination of different sensor technologies is key to enhance the quality of EU SST catalogue and services.

The ramp up foreseen to significantly increase the share of commercial data acquired by EU SST is very welcome. In order to achieve this, it is proposed to keep a continuous open call in order to have new commercial sensors being evaluated and potentially integrated into the system (and not only in two closed tendering periods, as proposed), bearing in mind that we should avoid a permanent unstable situation where it might be difficult to project a business model.

In addition, robustness and non-dependability of the network and the solution should be promoted: the EU shall promote the use of several commercial data providers even if in some cases it could imply counting on redundancies. This will also be useful to promote competition and competitiveness of the European data providers.

The inclusion of space-based data is important to enlarge the swath of observation and increase the performances of revisit time.

However, the current state of play regarding space-based space surveillance (SBSS) technology in Europe indicates that if some observation solutions are mature and await implementation phase (passive optical telescopes solutions), some other still necessitate TRL raising before being ready for the provision of operational data in the short term (notwithstanding the fact that identifying the impact of such observations in the overall objects monitoring cataloguing effort as part of architectural analyses is needed). Therefore, further investments on R&D are required before a complete portfolio of SBSS sensors can be deployed in space and contribute with operational data to the EU SST. As a consequence, activities of the WG2 (Development of innovative commercial sensors and value chain) shall also focus on what is needed to mature the complete set of European SBSS technologies (additional sensor technologies like IR, passive RF, LiDar, Radar; Space Weather, on-board data processing for compression and autonomy; on-ground data processing for analysis, cataloguing, characterisation).

Since there are currently no European space-based data provider, and in the support of our own autonomy and sovereignty, Europe shall evaluate all options to secure a space-based data source in the long term. First, Europe shall support current European based R&D efforts to provide a space-Based data provider. In the specific case no reliable local data source is available (in this case, it may be advisable to open up the competition to non-EU data provider, as long and until there is not a reliable data provider in Europe).

Finally, the European space industry unfortunately notes that satellite laser ranging (SLR) is not considered as ready for operations (while in this context SBSS is) although it is: this should be clearly re-evaluated.

Foster and protect the creation of a market for commercial SSA data is of utmost importance to encourage and stimulate investments from industry.

In this regard, defining Service Level Agreements (SLAs) for the exchange of data from commercial data providers to the EU SST and from the EU SST to the different members of the partnership is key. A bespoke cost model shall be envisaged, for instance considering a pay per use model (e.g., price per access on the portal, price per user, royalty on EU SST services, etc...).

More particularly, these SLAs need to be defined in order to harmonise technical conditions (e.g., data quantity, quality, availability). In addition, pricing models should be discussed in order to promote the best value for the money concept and, as a result, the competitiveness of the European data providers. In relation to pricing models, it is also important to clarify whether there will be Firm Fixed Price (FFP) or Fix Use Price (FUP) contracts put in place and the definition of units of service.

Indication on whether procurements will be global or per orbital regime or technology are not clear. The European space industry considers that procurements per technology could make sense in order to allow a simpler evaluation process with clear and homogeneous criteria. It is indeed difficult to compare different types of sensors.

Allow small data providers to play a role in these activities by relying on them as data aggregators (in consortia) should be evaluated. This will alleviate the managerial burden on the EU SST and, at the same time, promote the collaboration among different data providers.

Finally, the conditions for a commercial data provider to be eligible for the presented call need to be clarified. It must be noted that there are commercial data providers which do not own their sensors but only operate them as the sensors are owned by a national institution or commercial entity. In this regard, the European space industry believes that unauthorised and unregulated data reselling - not considered fair in terms of competition - should be clearly regulated. At the same time, the possibility for a private company to engage in a negotiated and authorised exclusivity reseller agreement with its institutional counterpart or a third-party commercial entity - provided that they are the only one authorised data reseller - is very much welcome.

Development of innovative commercial sensors and value chain

An ambitious and coherent support to Research & Development (R&D) is a cornerstone of the sustainability of the space sector, and its capacity to serve public policy needs. Indeed, investments in innovation are the driver of the European space sector's readiness and competitiveness.

Europe needs a stronger and more consistent support to R&D to maintain its position in space, to ensure the availability of a domestic industry that could continue to be able to design, deliver and exploit state-of-the-art space systems, required by public and private customers worldwide. R&D support to competitiveness will allow the sector to grow its shares on commercial and international markets, creating added value for European citizens and contributing to a healthy and balanced external trade.

In this regard, **accelerating the ramp up of provision of commercial data to the EU SST via R&D is much appreciated**. In particular, if industry is mature to rapidly deliver solutions for optical SST systems aiming at tracking with a certain level of surveillance, more R&D effort is needed to address more ambitious objectives (e.g., building up a LEO catalogue or characterisation objects beyond light-curves).

The virtuous circle concept is understood and accepted although the advantageous conditions requested for a certain period of time need to be well defined.

The **promotion of several European data providers** and not relying on one single champion should be a priority as it enables to ensure redundancies and thus the robustness of the concept, both technically and industrially.

Conditions on whether deployments of existing sensor technology need to be clarified and more particularly regarding the coverage (i.e., coverage of R&D and non-recurrent costs only? Or also including recurrent costs?) **The European space industry expects both costs to be covered in order to foster the quick extension of networks.**

The subject of whether hardware costs are covered should be also be clarified, for which the **European space industry believes that it would foster the quick development of new innovative commercial sensors**. Unfortunately, the figures provided cannot cover only (mainly) manpower as it would imply tremendous (and probably unfeasible) additional funding.

Additional R&D activities for lower TRL sensors should also be promoted in a separate initiative as a previous step for future sensors.

The EU SST and the European Commission have anticipated that R&D activities will not only cover the development of commercial sensors, but also innovations on cataloguing, platform architectures and services in order to close the gap with the USA.

It is the view of the European space industry that the EU shall not only limit to the funding of R&D activities, but also have a **role as anchor customer** for what is going to be developed. At the same time, it is crucial that having the EU acting as an anchor customer does not limit the exploitation on the commercial market and that the sustainability of the joint investment over time is not jeopardised by aggressive policies, such as discounts,

exclusivity, etc. In addition, industry co-funding should not be considered until the commercial model is demonstrated: assuming the existence of huge markets outside EUSST may kill EU industry.

Lastly, the activities for the development of the “value chain” are much appreciated. As for sensors, it is expected that the (intellectual) property of the software assets developed will remain in industry and licenses will be provided to the EU SST in favourable conditions following the same virtuous circle concept. In this way, the EU SST will also become an anchor customer for the European commercial/industrial SST software/service solutions developed as it is the case for the European commercial/industrial SST sensors.

Services

The approach of the EU SST to be a public catalyser for the development of commercial services is much appreciated.

But to start with, a clear definition of public services shall be shared between the EU SST/EC and industry. In this respect, the notion of services available to a wide public – core services - (e.g., conjunction alerts) as opposed to services that are benefitting only one player at a time (e.g., collision avoidance manoeuvres suggestion, consultancy) shall be taken into account.

Services available to a wide public are clearly identified as public services to be available free of charge, in order to protect the sustainability of the space environment. On the contrary, **services that are benefitting only one player at a time shall be provided by industry as services in the growing SSA market:** for commercial operators to augment those core services and provide new ones (e.g., delivery of updated conjunction analyses for LEO applications, on demand tracking service during Launch and Early Operations or in case of contingency) to answer to specific needs of the end user which go beyond the core services.

Regarding collision avoidance services and conjunction analyses, taking into consideration the huge and ever-growing number of alerts (particularly in LEO) and not only with space debris but also with other active satellites, operations coordination and automation are becoming a must. As iterating with external stakeholders (service providers, other operators, etc.) is complex, these activities must be increasingly automated.

Many discussions were held on the market for SST services but very few on the actual need of such services by the users and their willingness to pay. It is therefore important to **promote the adoption of top-class public core services while at the same time giving room to industry to develop additional services to answer to such needs.**

As such, it is recommended that the **EU acts as an independent validator of services made available by industry**, in order to provide a quality guarantee to the users. In addition, the EU SST/EC shall also allocate funds for the development of the associated infrastructure (i.e. marketplace) to make sure that such services are made available to the widest possible community: a Request For Information (RFI) similar to what has been issued in the USA¹ is a good example of a list of public services and consultation of what should be open and free.

Finally, the access to the data generated by the EU SST must be further discussed and, as a minimum, the **same level of data sharing as the one available in the US should be seen as an objective.** It is difficult to understand that European industries have a broader access to data from the American SST system than from the European

¹ <https://www.federalregister.gov/documents/2023/01/26/2023-01556/request-for-information-on-scope-of-civil-space-situational-awareness-services>

one. Consequently, If access to EUSST data coming from commercial operators is granted for services development, data should be paid accordingly to the sensor owner.

Annex – Eurospace members status

Company	Country
Air Liquide Advanced Technologies	France
Air Liquide France Industry	France
Airbus Defence & Space Gmbh	Germany
Airbus Defence & Space Ltd	United Kingdom
Airbus Defence & Space Netherlands B.V.	Netherlands
Airbus Defence & Space Sas	France
Airbus Defence & Space Sau	Spain
ALTEC	Italy
ALTER Technology-TÜV Nord France	France
ALTER Technology-TÜV Nord S.A.U.	Spain
ALTER Technology-TÜV Nord UK	United Kingdom
AntwerpSpace N.V.	Belgium
APCO technologies	Switzerland
Arianegroup Gmbh	Germany
Arianegroup Sas	France
Arianespace	France
Avio Spa	Italy
Azur Space	Germany
Beyond Gravity AB	Sweden
Beyond Gravity Austria	Austria
Beyond Gravity Swiss	Switzerland
CGI France SAS	France
CGI Deutschland B.V & Co. KG	Germany
CS Gmbh	Germany
CS GROUP - France	France
CS Romania	Romania
Dassault Aviation	France
Deimos Engenharia	Portugal
Deimos Space	Spain
Deimos Space Romania	Romania
Deimos Space UK	United Kingdom
eGEOS	Italy
Elecnor Infrastrutture e Aerospaziale	Italy
GMV Aerospace & Defense S.A.U.	Spain
GMV GmbH	Germany
GMV Innovating Solutions B.V	Netherlands
GMV Innovating Solutions S.R.L. (B)	Belgium
GMV Innovating Solutions S.R.L. (RO)	Romania
GMV Innovating Solutions SARL	France
GMV Innovating Solutions Sp.z o.o.	Poland
GMV NSL Limited	United Kingdom

GMV Soluciones Globales Internet S.A.U.	Spain
GMVIS Skysoft S.A.	Portugal
Indra Sistemas SA	Spain
Kongsberg Defence & Aerospace	Norway
Loft Orbital	France
MOLTEK	Netherlands
MT Aerospace AG	Germany
Neuraspace	Portugal
OHB ITALIA	Italy
OHB Systems AG	Germany
Pangea Aerospace	Spain
REOSC	France
RHEA Group	Belgium
SABCA	Belgium
Safran Aero Boosters	Belgium
Safran Aircraft Engines	France
Safran Data Systems	France
Safran Electrical & Power	France
Safran Electronics & Defense	France
Safran Engineering Services	France
Safran Filtration Systems	France
SENER Aerospace and Defence	Spain
SITael S.p.A.	Italy
SpaceAble	France
ST Engineering iDirect Europe CY NV	Belgium
Telespazio Belgium SRL	Belgium
Telespazio Germany GmbH	Germany
Telespazio Italy Spa	Italy
Terma A/S	Denmark
TESAT Spacecom GmbH&Co. KG	Germany
Thales Alenia Space Belgium	Belgium
Thales Alenia Space France	France
Thales Alenia Space Germany	Germany
Thales Alenia Space Italy	Italy
Thales Alenia Space Luxembourg	Luxembourg
Thales Alenia Space Poland	Poland
Thales Alenia Space Spain	Spain
Thales Alenia Space Switzerland	Switzerland
TNO	Netherlands
TTTech Computertechnik GmbH	Austria