Industry views on the EU Space Strategy for Security and Defence

Position paper from the European Earth Observation Downstream services industry

Summary:

This position paper expresses the views of the European Earth Observation (EO) services industry [represented by EARSC] on the European Union's action plan to strengthen the EU's security and defence policy by 2030.

The main points covered in this paper are the following:

      1. Introduction
      2. The role of Copernicus
      3. Governance
      4. Opportunities
      5. Challenges
      6. Conclusion

European Association of Remote Sensing Companies - EARSC:

EARSC represents the Earth Observation geo-information services sector in Europe, with over 135 members from 25 countries covering the full EO services value chain, including commercial operators of EO satellites, data resellers, value-adding companies, geospatial information suppliers, consultancies and system/software providers. The sector plays a key role in providing value-added, geospatial information to its customers in Europe and the world. This paper reflects the views of the full members of EARSC, which are commercial companies from EU or ESA Member States providing services (including consultancy) or supplying equipment in the field of remote sensing or using EO data. EARSC observer members are informed and may have commented on the paper but are not necessarily endorsing its conclusions.

For any further information on this position paper, please contact us at: info@earsc.org

1- Introduction

Space capacities are an essential component for security and defence-related policy objectives. Whilst **the technical capacity in Europe is strong** due to collaborative efforts of the European Space Agency (ESA) and, more recently, the dedicated European Union's (EU) flagship programmes Galileo and Copernicus, the current geopolitical context calls for a **strengthening of the EU capacities in the next 5-10 years.**

Due to an increasing power struggle and intensifying threats to the EU and its Member States, EU leaders **have developed** a Strategic Compass and released a dedicated EU Space Strategy for Security and Defence.

The European downstream services industry welcomes this initiative to respond to space threats and enhance the use of EU space capabilities for security and defence policy by 2030.

The Joint Communication to the European Parliament and the Council for the European Union Space Strategy for Security and Defence, published on 10th March 2023[1], identifies the space domain as a **critical strategic area**. The EU Security Union Strategy[2] recognises space infrastructure as an essential service which must be adequately protected against current and anticipated threats and be resilient. The implementation of the Space Strategy for Security and Defence will take into account several aspects, including the availability of different data sources, the need to ensure an adequate level of security of the infrastructure and services, and the new technological developments as well as the long-term capacity of the private sector to deliver appropriate solutions.

The Joint Communication[3] underlines **space-based Earth Observation as a "key enabler for security and defence" as it supports factual assessment and decision-making.** Through its modernisation strategy, the Copernicus programme is analysing the required evolution to answer the user needs and provide enhanced EO capability for security and defence in support of the future EU agenda.

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[1] "European Union Space Strategy for Security and Defence", 10.3.2023 JOIN(2023) 9 final /JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL
[2] COM(2020) 605 final
[3] See page 11 # 4.1.2. Earth Observation.

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The **value-added industry will play a critical role** as it will implement and deliver security and defence EO-based services to the users. Therefore, it is critical for the EO Downstream services sector to:

1-**Identify current capabilities and gaps in the industry** to shape the implementation and governance of future EO services and applications for security and defence.

2-Make sure that the **European Downstream industry's know-how and operational solutions are fully exploited** to enhance the EU capabilities in defence and security.

The objectives supported by EARSC are the following: to **reinforce** the voice of the European Earth Observation data and services industry; **ensure** that the EU Space Strategy on Security and Defence leverages the EO services industry capabilities; **strengthen** the role of industrial capabilities for EU defence and security purposes; **consolidate** relations with relevant stakeholders to make sure that the industry is recognised as an essential actor in the space value chain for the implementation of defence and security EO-based services.

2-The role of Copernicus

The EU Copernicus programme already supports the EU's response to several security challenges. Copernicus offers an Emergency Management Service, as well as services for "border surveillance" (contributing to improving the surveillance of the EU's borders and reducing illegal immigration), "maritime surveillance" (contributing to navigation safety, fisheries control, law enforcement and combating marine pollution) and "support to EU External Action" (providing decision makers with geo-information on remote, hard-to-reach areas). The industry is participating in these efforts and delivers operational solutions, which could be used to extend these services or create new services.

The creation of an EU Observation Governmental service should not weaken the existing Copernicus programme. A dedicated programme with its own budget will be necessary to support European industries' future competitiveness in both civil security and defence areas.

As mentioned in EARSC's previous position paper on the evolution of Copernicus, the industry would like to highlight the importance of considering the need for robustness and resilience of the entire Copernicus

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data and services ecosystem. In particular, the redundancy of the infrastructure is critical, and the capacity to react should be further developed, expanding the constellation low latency application services[4].

3-Governance

A **strong and efficient governance framework will be the backbone** of the strategy's successful implementation. In particular, an efficient **coordination with Member States** will be critical to achieving the ambitious objectives at the EU level. A robust governance framework shall ensure a seamless implementation and operation of the programme and prevent blocking situations[5].

As sub-paragraph 4.1.2 of the Joint Communication mentions, the EU Earth Observation Governmental service, « complementing national, commercial space infrastructure will be further developed ». In this regard, a **close dialogue with commercial (New Space) companies** would be needed to ensure these will complement planned commercial development and that full exploitation of commercial dual-use development would be ensured.

Cooperation with non-EU parties will also be important, even though it should not generate risks for the legitimate interests of the European EO industry and the implementation of the EU Security and Defence agenda.

Understanding users' needs will be equally important by ensuring a **regular dialogue** with them so that the downstream services industry can identify and provide relevant services, products and information.

The **acknowledgement of the importance of the Earth Observation services industry and its critical role in the space sector's value chain** is of paramount importance for the implementation and delivery of security and defence EO-based services to the users.

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[4] https://earsc.org/wp-content/uploads/2022/09/20220901_Copernicus-Evolution-Position-paper.pdf

[5] Such as in the Support to External Action Service. Non continuity of any service will jeopardise not only the credibility of the EU but put in danger the security of its citizens.

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4-Opportunities for the industry

As the implementation of the new programme will include new technological developments in the sector, potential opportunities will result from developing an EU Observation Governmental service.

It could lead to **new markets** with the **need for new capabilities** such as VHR imagery, frequent monitoring, thermal infrared, hyperspectral, near real-time availability or the increased use of AI and datacubes. The industry is already providing innovative operational solutions and is ready to **support further the development of enhanced capabilities**.

5- Challenges:

The industry would like to highlight several challenges to implement the Earth observation Governmental service.

First of all, it is of paramount importance to consider **EO technology stacks and the related techniques behind them** (ranging from flexible, scalable data management & analysis to AI and datacubes algorithms, training data, scenario definition,…) as **critical assets** for the EU and its **technological excellence and strategic autonomy**. Consequently, they will need to be **developed and protected by their strategic relevance.** Interfaces between such components should rely on open standards, which Europe needs to co-shape actively.

The transition from EO-based products and applications devoted to civil applications to defence requires specific action and strong collaboration with different stakeholders. There are technical[6], organisational and operational challenges and a critical budget to consider. Specific plans with assigned budgets shall be

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[6] For example, there is a need for a European collaborative middleware for **secured and multichannel data-dissemination**. For a holistic overview for any crisis-situation, whether it is a flood or a violent situation, a "middleware" layer will provide secure, capable and bidirectional data-connections from disaster response centres. Further, services on a high semantic level are required enabling rapid, easy access and analytics for both humans and automated processes, such as analysis-ready **datacube services** for multi-dimensional spatio-temporal data (such as satellite, drone, weather, in-situ, etc.). In this context not only technical interfaces and connectivity-solutions enabling an open-value chain are vital for a successful management of the situation, but additionally open, interoperable and secured interfaces to all established solutions in the domain of civil security and defence need to be agreed and developed.

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put in place to address those capabilities and identify the gaps to enable such capabilities for defence users.

Furthermore, a solid **understanding of the various user communities and their specific requirements** will be necessary to successfully implement and deploy an EU-enhanced capacity in security and defence.

Finally, the sector needs to ensure that the **eligibility criteria and conditions for participation** do not exclude SMEs due to an excessive administrative or financial burden they could not support. Similarly, **procurement** should foster the competitiveness of the industry, and incentives for large players to team up with SMEs might be helpful[7] in that regard.

6- Conclusion/Recommendations

EARSC is welcoming the EU Space Strategy for Security and Defence and is looking forward to the next steps, in collaboration with all the relevant stakeholders. Members of EARSC wish to highlight the importance of the European EO services industry in the implementation of the strategy.

Building upon these elements, we **recommend the following points:**

- Thanks to its **strength, flexibility and scalability**, the Earth Observation Downstream services industry can deliver **operational solutions** to enhance further EU capabilities for security and defence. The industry shall play a significant role in implementing the EU Space Strategy for Security and Defence.

- The strategic role of the Earth Observation industry should be acknowledged with the establishment of **appropriate measures** in terms of priorities, involvement of the sector in the governance, dialogue and budget in R&D and operational programs.

- The industry welcomes the creation of an EU Earth observation Governmental service. A **dedicated programme** with its own budget would be essential to support European industries' future civil security and defence competitiveness and not jeopardise the existing Copernicus programme.

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[7] The US SBIR instrument could be one possible role model for improved SME inclusion.

- A **strong governance mechanism** will be the primary driver for successfully implementing such a strategy. Good coordination with the relevant stakeholders, especially Member States, is paramount. The EO industry shall play a key role in the overall governance by identifying technological gaps and working closely with final users on the requirements and adoption of the services. A **continuous dialogue**, open to large and small industries alike, will be critical for the EO industry to contribute to building an EU strategic capability of EO services and applications for security and defence, which would leverage the exploitation of commercial and civil developments.

- **Specific budgets** within the current EU initiatives, such as EDF, shall be allocated to address the different pillars of the new program, ensuring that the downstream sector is fully recognised. User requirements and technical gaps shall be assessed, and pilot services covering representative scenarios implemented, paving the way for the programme implementation within the next MFF.

- The **creation of a community of interest or working group for EO for Security and defence**, involving the relevant EU and stakeholders together with the industry to exchange views and shape priorities, will be a crucial instrument to ensure that the implementation of the program leads us to an operational EU capacity in benefit of the MS.

- Due to the fundamentals (including sovereignty and autonomy) of the Space Strategy for security and defence, more than ever, it is required to **develop an industrial policy** that encompasses all related industrial derivatives of the strategy.