

Space

Context

The role of space-based services for security and defence actors is a recognised priority for Europe. EU Heads of State and Governments underlined the key role of space for defence during the December 2013 European Council, further echoed by EU Ministers at the Foreign Affairs Council of 20 May 2015.

The June 2016 Global Strategy sets Europe's political ambition with respect to security and defence, namely that the "EU's role as a credible force for peace in our region and in the world, and as a guarantor of our citizens' wellbeing and security, is more important than ever." The Implementation Plan on Security and Defence of 14 November 2016, which gives the Global Strategy concrete output, further highlights the capability priority areas in which Europe needs to invest and develop collaborative approaches as identified by the Capability Development Plan (CDP) approved by the EDA Steering Board in 2014. These include cyber and maritime security, Intelligence, Surveillance and Reconnaissance (ISR), Remotely Piloted Aircraft Systems (RPAS), satellite communications including Governmental Satellite Communications (GOVSATCOM), and autonomous access to space and permanent Earth observation.

The Commission's Communication on a "Space Strategy for Europe" of 26 October 2016 took stock of this evolving and ambitious policy framework. The Strategy is calling for the reinforcement of "synergies between civil and security space activities" based on the assessment that, while EU and Member States security actors increasingly rely on space services for their missions, critical security and defence needs may not be fully met today. Echoing this political orientation, the EU and ESA, in their "Joint Statement on Shared Vision and Goals for The Future of Europe in Space" further called for "strengthening synergies between civilian and security activities in the fields of navigation, communication and observation" and to "ensure European autonomy in accessing and using space in a safe and secure environment... including against cyber threats."

The importance of space assets and applications for defence capabilities is reflected in the revised [Capability Development Plan](#) (CDP) approved by the EDA Steering Board in June 2018. Space related priorities are included notably in the so-called priority areas of Space Based Information Services (Earth Observation (EO); Positioning, Navigation and Timing (PNT); Space Situational Awareness (SSA); Satellite Communication); Information superiority (Radio Spectrum Management; Tactical Communication and Information System (CIS); Information management; Intelligence, Surveillance and Reconnaissance (ISR) capabilities); Air Superiority (i.a. Ballistic Missile Defence) and; cyber defence in space. The approval of the CDP has set in motion the elaboration of so-called Strategic Context Cases (SCC) that will facilitate the implementation of the priorities.

Space activities at the EDA are organised on a cross-directorate level, taking advantage of the expertise and tools available at the EDA to foster cooperation in space related areas, ranging from R&T to capability development. Space activities at the EDA are in line with the [Long Term Review of the Agency](#) and take full benefit of the CDP, [OSRA](#), KSA and [CARD](#) processes.

EDA Space Related R&T activities

EDA R&T is structured via [Capability Technology Areas](#) (CapTechs), representing technology areas focusing on a specific military domain assisted by the associated network of experts drawn from EDA Member States, but also, as appropriate, from industry, research institutes, academic institutions and agencies (international, European and national). The purpose of a CapTech is to generate collaborative R&T

Projects and to support EDA participating Member States in the preparation of wider Programmes. The CapTechs with space related interest at the EDA include: Experimentation, System of Systems, Space, Battle lab and Modelling & Simulation; Electro Optical Sensors Technologies; Radio Frequency Sensors Technologies; Materials and Structures; Technologies for Components and Modules; Guidance, Navigation and Control; CBRN and Human Factors, and; Communication Information Systems and Networks.

As a concrete example, Micro-Satellite Clusters II - MIRACLE II is a 3-year project started in January 2018. Two Member States, Italy and Norway, are cooperating to research on technologies and operational concepts for virtual Synthetic Aperture Radar (SAR) satellite constellations as well as on clusters of real SAR satellites, in combination with new SAR technologies both on the instrument and processing side. The study focusses on in-depth analyses and concept development for a multi-satellite SAR constellation to identify an efficient system that produces high-resolution imagery with higher performance than present systems, at lower cost and being less vulnerable.

For what concerns synergies between civil and defence R&T activities, the R&T mandate of the EDA includes the promotion of closer collaboration with other European stakeholders. Together with ESA, the European Commission and industry, the EDA has been participating in the “Critical Space Technologies for European Strategic Non-Dependence” exercise. In this framework, since 2008, the EDA has been a full member of a dedicated joint task force together with ESA and the European Commission. The EDA thereby supports this strategic European process seeking to establish a common European list of critical technologies in view of coordinated European investment efforts. The EDA contributes by determining and implementing the Critical Defence Technologies (CDT) through R&T projects, e.g. by supporting the establishment of European supply sources, which provide synergies between defence and space needs.

Several EDA studies have been and are being carried out focusing on military applications of autonomous and multi-robot systems. The specific defence mission and operational requirements of unmanned multi-robot systems present the possibility of developing synergies with space applications.

The EDA and ESA have a joint project called “Cyber Defence for Space”. The objectives of Phase 1 are to identify risks to which current and future space systems that contribute to military operations might be exposed and the specific threats and security concerns military operations face, and to recommend specific security measures. The future Phase 2 will implement selected recommendations.

The Geospatial Information to Support Decision Making in Operations (GISMO) Project is currently in its fourth phase (GISMO 4). GISMO is an initiative of the EDA and Satcen, aimed at supporting operational decision making based on available geospatial information. Geohub is a tool created in the frame of GISMO. GISMO 4 aims to make the transition from an initial operating capability of Geohub to full operational capability and design the GISMO future roadmap.

Satellite Communications

The EDA Steering Board at Ministerial level endorsed on 19 November 2013 the EDA’s proposal and roadmap on developing a future [Governmental Satellite Communications](#) (GOVSATCOM) capability in support of national defence efforts. In parallel, the 19 December 2013 European Council, “committed to delivering key capabilities and addressing critical shortfalls through concrete projects by Member States, supported by the European Defence Agency”, and welcomed “preparations for the next generation of Governmental Satellite Communication through close cooperation between the Member States, the European Commission and the European Space Agency”. Based on this tasking, the High Level Civil Military User Needs for Governmental Satellite Communications (GOVSATCOM) were endorsed by the Council PSC in March 2017.

The military user needs for GOVSATCOM were adopted by the EDA Steering Board through the Common Staff Target already on 4 November 2014 and subsequently, the EDA Steering Board endorsed on 23 March 2017 the Common Staff Requirements and Business Case analysing the requirements and recommending implementing options for GOVSATCOM in the EDA.

On the 16 June 2017, the EDA Steering Board set up a Category B Project for the EDA GOVSATCOM demonstration project. The EDA is in the process of finalising and signing with its contributing Members the Project Arrangement on the EDA GOVSATCOM Demonstration project with operations to commence before the end of 2018. The main goal of the project is to prove and demonstrate the concept and benefits of a collaborative Pooling and Sharing model in GOVSATCOM and meet the GOVSATCOM demand of MS and European CSDP actors through a pooled capability (bandwidth/power and/or services) provided by contributing Member States.

ESA and the EDA signed an Implementing Arrangement on the cooperation on GOVSATCOM in December 2017. A close cooperation with the European Commission on EU GOVSATCOM is established. In addition, the EDA Steering Board approved in February 2018 a mandate for the EDA to act as facilitator in support of the Ministries of Defence within the EU GOVSATCOM Programme governance.

In 2009, the EDA launched the European Satellite Communications Procurement Cell (ESCPC) project which was renamed to the [EU Satellite Communications Market](#) in 2014. The project's aim is to pool and share commercial satellite communications services as well as wider Communication and Information Systems (CIS) services. By pooling the demand, the project efficiently and effectively provides SatCom and CIS services to the members, contributing to the overall operational efficiency. The project constitutes an efficient pay-per-use solution that does not impose any binding financial commitments beyond services requested. It is quick and flexible, reducing the administrative burden for members who do not have to run their own bidding processes since they can rely on the EDA framework contracts. There are currently 27 contributing members to the EU SatCom Market. The Satcom services offered include end to end services with transmission links as well as SatCom terminals for all bands (including military). The CIS services offered include the integration of telecommunications with radio and IT networks, for hardware as well as software. The range of services provided through the EU SatCom Market project can enable users to access, store, transmit and receive information required to meet a wide range of operational needs, both abroad and at home.

Earth Observation

The EDA is collecting high-level user requirements for EU operations and national interests in a 2025-2030 timeframe with a view to going beyond the already planned military satellite constellations. This task is executed in cooperation with Member States, the European External Action Service (EEAS), the European Union Military Staff (EUMS) and the European Satellite Centre, also relying on the experience and expertise of ESA and the European Commission. The EDA has been invited by the European Commission (DG GROW) to investigate how better use can be made of Copernicus to improve the support to military operations.

The Common Staff Target on Space Based Earth Observation capability approved in June 2017 was the initial step towards the definition of the future programmes for security applications in this domain to which ESA is closely involved. The EDA is currently in the process of elaborating its Common Staff Requirements for Space-Based Earth Observation (SBEO) Capability. The EDA and ESA are also progressing on a joint study on dual-use Earth observation requirements following the approval of the related Implementing Arrangement. The EDA could conduct a further classified analysis to explore the full spectrum of military requirements.

Positioning, Navigation & Timing

In May 2015, the EDA Steering Board mandated the EDA to support the development of a European Military Satellite Navigation Policy. This Policy was approved by the EDA Steering Board in March 2017. EDA Member States subsequently endorsed a Common Staff Target on Military Positioning, Navigation and Timing in the Steering Board in June 2018. The EDA has been mandated to further develop a follow-on Common Staff Requirement and Business case on military PNT by the end of 2020. The EDA is investigating the use of Galileo for defence users, in collaboration with the European Commission (DG GROW). The PNT activity has been carried forward by the CAT and ESI Directorates which recently launched a joint study to support the CSR process that has been also supporting by the EEAS and EUMS. In September 2018 EDA got the mandate to act as facilitator to assist Member States' Ministries of Defence develop capabilities with due regard to EU PNT services, in the context of the EGNSS programme.

Last updated: 21 September 2018