First EU space strategy for security and defence: What implications for EU strategic autonomy?

In 2022, the EU Strategic Compass included space as a strategic domain, and called for a dedicated European strategy. In the meantime, Russia's invasion of Ukraine confirmed the key role of space for defence and resilience, but also highlighted vulnerabilities related to space systems. Another 'wake-up call' came from a different direction; SpaceX's advances in reusable rocket technology leading to Starship's first orbital flight test turned the spotlight onto launch providers and access to space. Space is a critical infrastructure issue with growing economic significance. It is also an increasingly contested arena between competing geopolitical interests. To address these rising challenges, in March 2023 the European Commission and the High Representative/Vice-President presented their first joint communication on a European space strategy for security and defence.

Autonomous access to space

As stated in the communication, 'the EU is taking action to protect its space assets, defend its interests, deter into hostile activities in space and strengthen its strategic posture and autonomy'. The EU strategy for space and defence is breaking down the silos between space and defence by: i) laying out a shared understanding of space threats; ii) improving the resilience and protection of space services in the EU by proposing an EU space law to ensure the unity of the market and to address security requirements; iii) developing space use cases for defence; iv) responding to space threats; and v) calling for the strengthening of international partnerships, including with organisations such as the North Atlantic Treaty Organization (NATO), and for the promotion of responsible behaviour in space.

Europe is facing gaps in its access to space; the European Space Agency (ESA) was obliged to use a United States Falcon 9 rocket to ensure the continuity of the Euclid mission. Meanwhile, on April 2023, SpaceX sent a prototype of its Starship on a first orbital test flight from Boca Chica, Texas. Even though the vehicle exploded without reaching orbit, Starship is the most powerful launch vehicle ever built, the first intended to be fully reusable and designed to refuel in orbit, before heading to destinations such as the Moon and perhaps even on interplanetary missions to Mars.

If successful, the massive spacecraft would not only serve as a door-opener for space exploration but could give the US military an enormous advantage by establishing long-term superiority in controlling the 'ultimate high ground'. Enabling a much bigger payload, around 10 times that of Ariane 5, would allow a much higher pace in installing advanced satellite constellations. Most importantly, it would further consolidate the trend of cutting the cost of transporting cargo into orbit through the rapid reuse of a launch system.

With its 'low(er)-cost' Falcon 9 rocket, SpaceX is already reshaping commercial launch industries and markets globally. Once Starship becomes operational, it could become an important measure of space capability. This leaves other space actors trying to catch up on developing reusable rockets. Several private and public space operators in the EU are investing in micro-launchers and a range of reusable launchers.

The European space strategy for security and defence mentions reusable launchers and seeks to stimulate the responsiveness and versatility of EU access to space 'by boosting new EU launcher systems, by proposing preparatory actions to ensure long-term EU autonomous access to space and by addressing, in particular, security and defence needs'. Europe needs to assess how to improve its independent access to space in terms of governance, investment and research. A draft report from the European Parliament's Committee on Foreign Affairs (AFET) on the Strategic compass and EU space-based defence capabilities suggests that a 'synergy-based effort must be made to further the long-term production of European launchers'.

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Use of space for security and defence

Space communication and remote sensing technology grabbed headlines in the wake of Russia's invasion in Ukraine and is playing a visible role in Ukraine's military resistance and resilience. Commercial satellite services ensure that Ukrainians have reliable internet connectivity and communications, while a fleet of Earth observation satellites witnessed Russia's pre-war military build-up and advances towards Kyiv.

The use of such technologies in Ukraine is indicative of what can be expected in the future. Facilitating access to commercial space products and sharing classified space information with like-minded partners can provide an advantage in conflict. The use of space for security and defence purposes serves as a powerful force multiplier, enhancing the effectiveness of military operations and the resilience of critical infrastructure and public services. Space-based assets provide critical capabilities including intelligence, surveillance, and reconnaissance (ISR), which enable the monitoring of all kind of activities worldwide.

Since space is such a critical enabler for defence, the new strategy seeks to maximise its use for defence purposes by improving coordination and synergies. The strategy equally emphasises the importance of 'dual-use services provided by EU space programmes and by commercial entities, which need to be further developed to increase the strategic autonomy of the EU and its Member States'. As technology advances, so will the quality of and access to space data. The draft report mentioned above 'calls for the IRIS^2 secure connectivity constellation to be set up swiftly and made ready for use, with a view to providing constant access to secure and sovereign connectivity services'. It stresses that 'changes to Copernicus services to enable it to meet defence requirements should be subject to appropriate governance closely involving the European Union Satellite Centre'.

Responding to space threats

In November 2021, Russia illegally tested its Nudol kinetic anti-satellite weapon (ASAT). On the first day of the Ukraine invasion, a Russian operation used destructive malware to disable ViaSat's KA-SAT, a US-based commercial network, of which the Ukrainian military was a heavy user and the obvious target.

With the increasing contribution of space to battlefield outcomes, it is unsurprising that adversaries seek to interfere with, or deny use of these capabilities. Satellites are regarded as highly vulnerable to ASAT attacks. Recent developments in Ukraine, however, show that hybrid threats such as cyber, blinding and electronic jamming are more likely than kinetic space attacks. This is mainly because such measures do not create debris, are less expensive than building interceptor missiles, offer deniability, and are less likely to trigger armed retaliation. In the future, technology originating from on-orbit servicing could also allow satellites to be disabled without causing more space debris – thereby blurring the borders between the two.

Given the increase in counter-space threats, the strategy notes 'there is a need to enhance the capability to detect, characterise and attribute a threat in the space domain and to react to it in a timely, proportionate, and coherent manner both nationally and at EU level'. Space domain awareness is key: without the ability to monitor threats, risks and hazards in real time there can be no attribution of malign acts in space to an adversary (a highly political decision). To respond to threats, the strategy aims to identify and test various tools and measures at technical, diplomatic, and economic levels. However, taking Europe's space and defence to the next level will be challenging. The next steps would be for the EU to go beyond the strategy itself to develop deterrence capabilities and a dedicated space doctrine. Furthermore, the recent draft AFET report refers to Article 42(7) TEU and 'calls for further work to be done to make the mutual assistance clause ready for use'.

Outlook for the EU

Space will undoubtedly become more important in the next 20 years for both new economic opportunities and for defence. Future outcomes will depend on trends in relations between geopolitical powers, whether engaged in peaceful cooperation, escalating competition or conflict. Recent events hint at a likely trajectory and at how adversaries are planning to use space, which may contradict Europe's goal of preserving the peaceful use of space.