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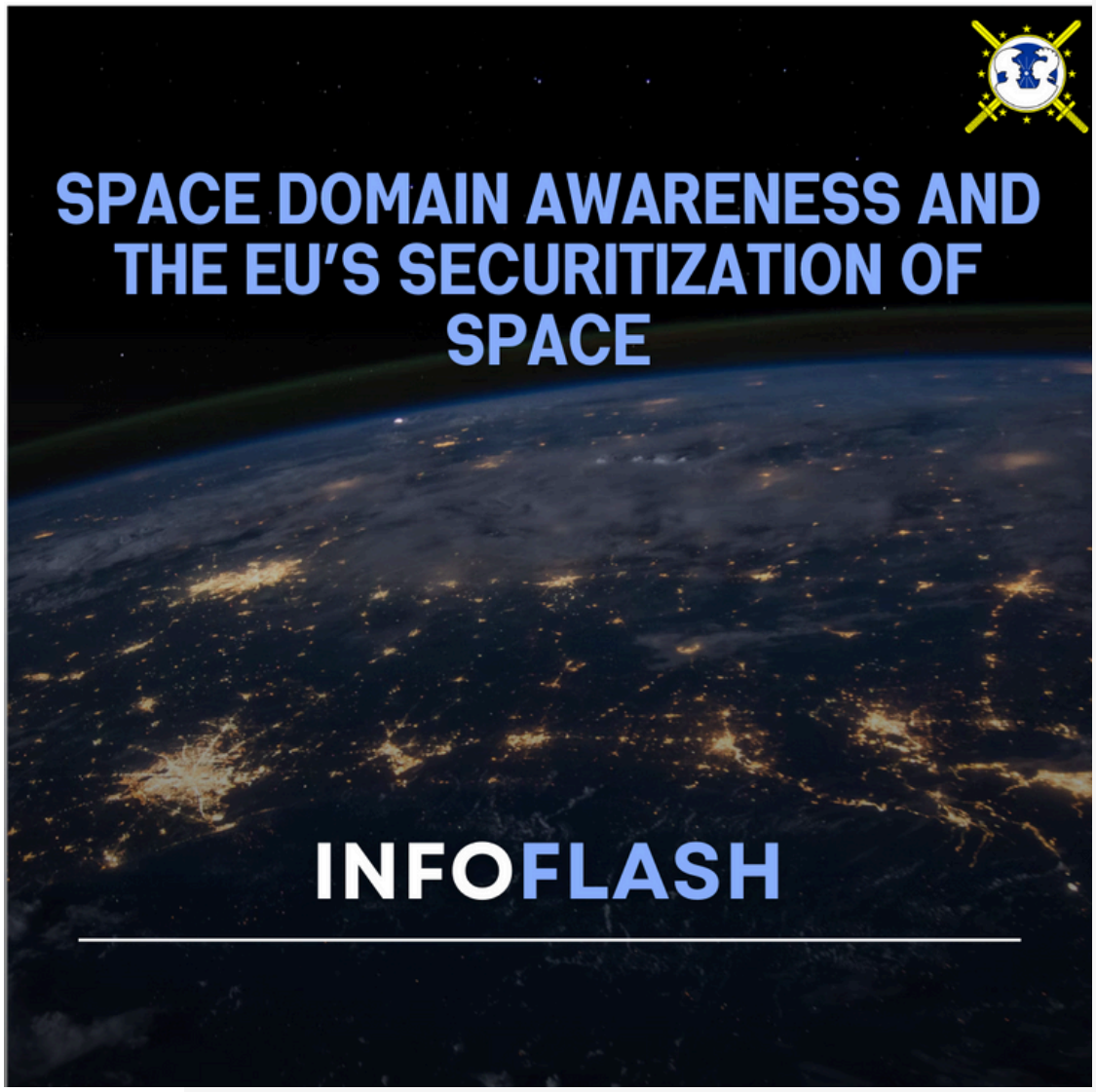

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Introduction

Since the EU introduced the 2021-2027 Space Programme, it has assumed an entrepreneurial role in coining new concepts and terms to frame its increasingly versatile space activities. As the EU's action in space gradually developed to increase new projects, so did the terminology employed in the EU's official document addressing space affairs. In particular, the EU conceptual framework for space expanded to include comprehensive notions such as Space Situational Awareness (SSA) and Space Domain Awareness (SDA) that add to the more pragmatic ones of Space Surveillance and Tracking (SST) and Space Traffic Management (STM). This paper analyses how diverse notions have come to be in some of the EU's space-related programmatic documents and how they relate to one another. Such an analysis is key to understanding the current trends of the EU's action in space, trends which in turn imply restructuring the space policy governance.

From Technological Standards to Strategic Objectives

In the EU's space-related programmatic documents, the designation of space activities uses a wide array of terms and concepts. Much of the terminological repertoire has been recently introduced along with the EU Space Programme rather than with the long-established flagship projects Galileo and Copernicus, preceding components of the Programme. Those perfectly fit the conventional categories of Global Navigation Satellite System (GNSS) and Earth Observation (EO) with no need for further conceptual framing. Moreover, Galileo and Copernicus were designed to allow the EU to catch up with other spacefaring nations in terms of technological capabilities, as it was the concern "about being dependent on US systems that sparked the Galileo, Copernicus and Egnos satellite navigation and earth observation programmes" (Tani, 2022). On the contrary, recent EU space initiatives explore new applications of satellite systems, requiring additional terms and concepts.

Since the EU issued the Regulation (EU) 2021/696 establishing the EU space programme and the European Union Agency for the Space Programme (referred to as the "Space Directive"), it has not only worked to improve European space capabilities to meet other spacefaring nations' technical standards, but it also begun indicating which strategic functions those technologically advanced space assets should perform (European Parliament and the Council of the European Union, 2021). In particular, the Space Directive clarifies that "Space technology, data and services (...) play an essential role in preserving many strategic interests", thus acknowledging the strategic importance of space assets and expressing the EU's interest in taking care of such an aspect (European Parliament and the Council of the European Union, 2021, p. 1). Also, Regulation 2021/696 enables the EU to enact regulatory measures on the use of its satellite services "to maximise the socio-economic benefits of Galileo and EGNOS, while contributing to Union's strategic autonomy, particularly in sensitive sectors and in the area of safety and security" (European Parliament and the Council of the European Union, 2021, p. 12). Therefore, the EU has gradually shifted from being a mere receptor of technical standards to playing a leading role in defining the strategic objectives of satellite applications.

The Increasing Conceptual Repertory of the EU Space Activities

In the arena of space policy terms such as Space Situational Awareness (SSA), Space Surveillance and Tracking (SST) and Space Traffic Management (STM) are commonplace (Fiott, 2023). SSA refers to the knowledge of the space environment, including the location and function of space objects and space weather phenomena. Since 2021, the SSA has been one of the five components of the EU Space Programme, including Space Surveillance and Tracking (SST) among its subcomponents. SST is a system of networked sensors that survey and track space objects together with processing capabilities to provide data, information and services on objects that orbit the Earth (European Union Agency for the Space Programme, 2024.). The SST system is useful for carrying out efficient Space Traffic Management (STM), which encompasses the means and the rules to access, conduct activities in, and return from outer space safely, sustainably, and securely (European Commission, "Space Traffic Management", n.d.). However, the proliferation of space-related key concepts in EU documents might create confusion and the relationship between SST, STM and SSA needs to be examined further.

The first fundamental distinction is that SST refers to a mean, while STM and SSA refer to ends. The second distinction is that STM refers to a limited scope, while SSA is potentially unfulfillable. On the one hand, STM is strictly concerned with the safety, sustainability, and security of exclusively human space activities, thus having a limited set of standards to reach over a great but still limited set of items, namely space activities. On the other hand, SSA is concerned with the awareness of an array of both human and natural space items that are relevant for space activities. However, such relevance depends on whether those items represent a threat or a risk for space activities. Since the human and natural space items that might put space activities at risk are potentially infinite and unpredictable, SSA is potentially unfulfillable, as it presupposes an awareness of the things it prescribes to be aware of, which is paradoxical. Therefore, SSA is more of an umbrella term, than a specific aim, encompassing a wide variety of functions. The European Space Agency (ESA) specifies that SSA aims to "enable Europe to autonomously detect, predict and assess the risk to life and property due to remnant man-made space objects, re-entries, in-orbit explosions and release events, in-orbit collisions, disruption of missions and satellite-based service capabilities, potential impacts of Near Earth Objects, and the effects of space weather phenomena on space- and ground-based infrastructure" (ESA, "Space Situational Awareness", n.d.). SSA entails a holistic approach, and the vagueness of the concept has allowed its expansion to include malicious attacks in space.

Nevertheless, a notion of SSA that covers deliberate attacks overlaps with another notion coined in the 2023 EU Space Strategy for Security and Defence; Space Domain Awareness (SDA). According to this document, "Space Domain Awareness (SDA) consists of detecting, identifying and characterising space objects of interest in near real time, describing and understanding their behaviours, and connecting this information to underlying doctrines and related space systems" (European Commission & High Representative of the Union for Foreign Affairs and Security Policy, 2023, p.8).

Neither the 2016 Space Strategy nor the 2022 Strategic Compass mentioned such a concept, even if they recognized the importance of SSA respectively for space, weather and cyber alerts (European Commission, 2016) and "to better understand and reduce space-based risks, threats and vulnerabilities" (Council of the European Union, 2022, p.24).

Apparently, detection, identification and characterization are functions that space capabilities could perform in the existing conceptual framework, and introducing a different term could increase the terminological ambiguity in the field. However, Space Domain Awareness, unlike other labels, brings into sharper focus the military dimensions of space (Fiott, 2023) by stating that "SDA is key for attributing space threats in orbit and triggering a potential EU response" because SSA, SST and STM are mainly geared to non-military space risks such as debris and accidental collisions (European Commission & High Representative of the Union for Foreign Affairs and Security Policy, 2023, p.8). For the first time, the Strategy focuses on "intentionally hostile activities through counterspace capabilities" in space (European Commission & High Representative of the Union for Foreign Affairs and Security Policy, 2023, p.3). It is not the technical functions, but the strategic objective and the space policy governance that SDA aims to change.

The Securitisation of Space

The progressive integration of military terms and concepts in the EU space policy can be described as a process of securitisation of space. The core claim of securitisation theory is that "threat emergence and management are shaped by the actions of a securitising agent that explicitly links together the social construction of the threat with socially acceptable governance or policy measures" (Lucarelli, 2019, p.413). The act of securitising is essentially an act of communicating certain representations that qualify as a threat something that was not supposed to be perceived as a threat. Securitising triggers "acceptance by the audience that a referent object is threatened empowers the securitising agent to undertake exceptional measures to counter it" (Balzacq et all., 2015, p.98).

The advancement of certain notions, which carry with them a perception of threat and trigger the need for a security response, can be considered an act of securitisation. Therefore, the emergence of Space Domain Awareness is part of such a process, along with many other narratives in the political debate, despite not being included in the EU's programmatic documents. This notion was also addressed at the 11th European Space Conference in 2019 by Elzbieta Bienkowska then European Commissioner for the Internal Market; "The U.S. has created a Space Force. We need, on the medium to long-term, a European Space Force" (Peck, 2019). Similar appeals form a nexus between space and security, instil a sense of threat and create the need to adopt adequate space governance measures.

The practical effect of space securitisation in terms of governance reconfiguration is complex, and "must be understood against the background of the specific space policy's set-up and historical development" (Klimburg-Witjes, 2021, p.528).

The European space governance is characterised as an "institutional triangle, simultaneously comprising national, intergovernmental and communitarian approaches" shaped by the role of member states and scientific organisations like the European Space Agency (ESA) (Aliberti & Lahcen, 2015, p. 13). Due to the EU institutions' securitising work, EU member states have increasingly engaged in EU-patrocinated initiatives on space and defence, mainly through the Permanent Structured Cooperation (PESCO). The 4th wave of PESCO projects, launched in 2021, is focused "in particular in the air and space domains" (Council of the European Union, 2021). It is also important to examine ESA's role, as it has been increasingly involved in partnership with the EU and in military-related activities after the reinterpretation of its founding convention's first paragraph that allowed the organisation to "move into policy areas previously denied" (Sheehan, 2009, p. 182). In 2014, during an interview about cooperation between ESA and the European Defence Agency, the then Director-General of ESA, Jean Jaques Dordain, adhered to the securitisation narrative by stating that: "The ESA itself is not a civilian agency. It is an agency for peaceful purposes and may have programs with a security component" (ESA, 2014).

The impact of space securitisation in the EU can be seen in two ways. First, it entails a restructuring of EU governance in the space sector. The European Commission has taken on the responsibility of steering forward the security and defence dimension of EU space projects, by committing to "propose a pilot for the delivery of initial SDA services in support of EU response and to explore synergies with the SST subcomponent of the Space Programme, with a view to future developments" (European Commission & High Representative of the Union for Foreign Affairs and Security Policy, 2023), p.15). Second, the securitization of space "affects the nature and modalities of EU security governance across different policy domains" (Lucarelli, 2019, p. 420), as space is perceived as an enabling domain for many other policy sectors such as communications, transport and agriculture. Consequently, the Commission has entered other policy sectors by promoting "start-ups developing innovative solutions based on EU space technologies, space data and services" with the CASSINI Space Entrepreneurship Initiative (European Commission, "Promoting our European way of life", n.d.).

Conclusion

The progressive introduction of new notions and concepts in the terminology employed in EU official space policy-related documents shows how the EU has gradually shifted its action from adaptation to technical standards to delineation of strategic objectives for space assets. However, the abundance of neologisms implies some ambiguity in the field. In particular, Space Situational Awareness is a very wide and open-ended component, overlapping with the notion of Space Domain Awareness. This goal has military implications and proves the progressive EU securitisation of space. As securitization demands governance restructuring, the European Commission proposes itself as the leading institution for granting security in space both directly through space policy and indirectly by promoting space-related initiatives in other policy sectors.

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