
A stellar moment? Spain, strategy and European space

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Theme

How can Spain help enhance EU space, security and defence?

Summary

This analysis looks at the shifting nature of space, security and defence in the EU. It provides an account of the growing geopolitical contest in space and stresses the vital importance of space for Europe's strategic autonomy. What is more, the analysis looks at Spain's approach to space, security and defence and it outlines how it is supporting the EU's space efforts. Looking to the future and the first-ever EU Strategy for Space, Security and Defence, this paper probes some of the challenges and opportunities facing Spain –and the EU– as a space actor.

Analysis

Spain has always been an important player in European defence, security and space policy. Not only is it a member of the EU and NATO, but it is a founding member of the European Space Agency (ESA). Furthermore, Madrid has historically played an important role in key EU flagship space projects such as Galileo and Copernicus. As host to the EU Satellite Centre (EU SatGen), Spain has also been at the forefront of developing the Union's capacities for geospatial intelligence, which goes a long way to ensuring that the EU has the autonomous capacity to observe earth for its civilian and military missions and operations. Aside from its European efforts, Spain is also currently developing its national space sector with a stress on developing its scientific and industrial base, as well as trying to seize upon the opportunities available for Spanish space-related start-ups.

The year 2023 is shaping up to be an important juncture for European space policy, and this gives Spain –which will hold the Presidency of the Council of the EU in the second half of the year– an opportunity to help develop the Union's space and defence initiatives. While it is true that the first-ever EU Strategy for Space, Security and Defence will be published in March 2023 under the Swedish Presidency, Spain will take on the initial responsibility for the implementation of the Strategy, as well as the existing policy deliverables articulated in the EU's Strategic Compass. Spain's EU Presidency comes at a time of war in Europe and when the EU is launching new satellite communication constellations such as IRIS². This is, moreover, a crucial moment for the EU-NATO relationship and the third Joint Declaration specifically underlines space as an area for more intensive cooperation.¹

¹ 'Joint Declaration on EU-NATO Cooperation', 10/1/2023, <https://www.consilium.europa.eu/en/press/press-releases/2023/01/10/eu-nato-joint-declaration-10-january-2023/>.

Given the growing importance of the EU's space, security and defence efforts, it is necessary to look at how European space policy is evolving, explain the role Spain is playing and comment on the challenges and opportunities associated with the EU's overall space strategy. To this end, this paper first looks at how the EU is gearing up for a more robust strategy for space, security and defence. It then presents the unique features of Spain's space policy and underlines the role it plays in the EU's endeavours. Finally, the paper ends with some observations about how EU space, security and defence policy will likely evolve in the coming years.

A new frontier for Europe?

Traditionally, in Europe, space has been characterised as a largely economic domain where EU member states can work to improve the functioning of the single market. This can be done by using space assets such as Copernicus and Galileo for transport, environmental monitoring, agricultural policy, and search and rescue tasks. Yet today, for Europeans space is increasingly bound up with geopolitics and strategic competition. As war has returned to European soil and Sino-US rivalry intensifies, European governments and institutions are increasingly looking to shore up the resilience of their space assets. A major risk in this regard is the growing congestion in –and the contest for– space. Congestion has emerged on the back of increased launchings into space by governments and private companies. In this regard, the ESA has calculated that in 2019 there were around 25,000 objects weighing over 8,700 tonnes in earth's orbit.² The consequences of space debris can be extremely serious: in 2022, for instance, the International Space Station had to make an evasive manoeuvre following the appearance of debris caused by a direct ascent Russian anti-satellite (ASAT) missile launched a year earlier, which had destroyed a defunct Soviet satellite named Cosmos 1408.³

Such actions have only added to the urgency to protect European space assets. While countries such as the US have sought to impose a moratorium on the use of ASATs, the reality is that countries such as China, Russia, India and others consider space a domain in which they can expand national security. Both Russia and China have in the recent past developed military doctrines that specifically underline the need to use space to enhance their respective military power. China, in particular, has moved at a fast pace to launch military signals intelligence satellites into orbit and it has made no secret about how space will enable its nuclear power and the use and guidance of hypersonic glide vehicles.⁴

European governments and NATO allies have not been slow in recognising the importance of space for geostrategic ends. We have seen how, since 2019, the US set up a Space Force and Space Command and the 2022 US National Defense Strategy underlined that Washington must do more to deter harmful space activities. France published a Space Defence Strategy in 2019 and it has since established its own Space Command and Air and Space Force, as well as organising its first-ever military space exercise (*AsterX*) in March 2021. Italy has also created a space operations command

² European Space Agency (2022), 'Annual Space Environment Report', 22/IV/2022, https://www.sdo.esoc.esa.int/environment_report/Space_Environment_Report_latest.pdf.

³ Brett Tingley (2022), 'International Space Station dodges space debris from Russian anti-satellite test', *Space.com*, 25/X/2022, <https://www.space.com/international-space-station-dodges-russian-space-debris>.

⁴ Daniel Fiott (2020), 'The European space sector as an enabler of EU strategic autonomy', Study for the European Parliament, December, p. 14, [https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/653620/EXPO_IDA\(2020\)653620_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/653620/EXPO_IDA(2020)653620_EN.pdf).

and has moved responsibilities for Space Situational Awareness (SSA) and Space Traffic Management (STM) to the military air chain of command. Germany and the UK have also developed operation centres or defence space strategies. Finally, NATO has already designated space as an operational domain in its Space Policy and has opened a space centre at the Ramstein air base in Germany, as well as a Centre of Excellence for space in Toulouse, France.⁵ The NATO Strategic Concept that followed the Madrid Summit in June 2022 also highlighted the relevance of space for the alliance's defence.

Under the guidance of the High Representative/Vice-president (HR/VP) of the European Commission, Josep Borrell Fontelles, the EU has also started to invest in the military dimensions of space. This is a major departure for the Union, which, if one reads the 2016 EU Space Strategy, has felt more comfortable treating space as an economic domain. Indeed, under the 2022 EU Strategic Compass the HR/VP made clear that 'EU space systems should offer global connectivity to security and defence actors'.⁶ To this end, the EU intends to bolster the capabilities and role of the EU SatCen, develop a dedicated EU Strategy for Security, Space and Defence, run exercises on space domain events at the EU level, and invest in space sensors and platforms. In practical terms, the efforts are already underway. For instance, so far eight space projects are being financed under the European Defence Fund (EDF), worth close to €170 million in areas such as microsatellites, missile interception sensors, satellite communications, and positioning, navigation and timing (PNT). A further five projects are being developed under Permanent Structured Cooperation (PESCO), including space surveillance, earth observation, and warning and interception capacities.

Spain and space

The growing geopolitical relevance of space is also a matter of importance for Spain, and the war in Ukraine has only galvanised Spanish perspectives towards a stronger national security. In many respects, this should come as no surprise.⁷ Spain was an early supporter of EU space infrastructure projects such as Galileo and Copernicus, and Madrid is home to the EUSatCen. The SatCen continues to play a major role in providing geospatial intelligence to the HR/VP and senior EU decision makers. Without SatCen it would be very difficult for the EU to undertake military and civilian missions and operations autonomously. On the technological front, the Spanish government and firms form part of important defence capability projects under EDF and PESCO. For example, of the five PESCO space projects currently underway, Spain participates in four, in which it cooperates with Austria, Belgium, Finland, France, Germany, Italy, Lithuania, Luxembourg, the Netherlands, Poland, Portugal and Romania on a radio navigation system, space surveillance and space governmental imagery. Under the EDF, 19 Spanish firms and institutes participate in seven out of eight space-relevant projects worth a total of around €164 million for optical intelligence microsatellites, military-grade

⁵ Daniel Fiott (2022), 'The Strategic Compass and EU space-based defence capabilities', study for the European Parliament, November, [https://www.europarl.europa.eu/RegData/etudes/IDAN/2022/702569/EXPO_IDA\(2022\)702569_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2022/702569/EXPO_IDA(2022)702569_EN.pdf).

⁶ European External Action Service (2022), 'A Strategic Compass for Security and Defence: for a European Union that protects its citizens, values and interests and contributes to international peace and security', March, p. 35, https://www.eeas.europa.eu/sites/default/files/documents/strategic_compass_en3_web.pdf.

⁷ Juan Manuel de Faramiñán Gilbert (2022), 'Spain's challenges in the aerospace field: towards the creation of a Spanish Space Agency and the adoption of a Global Space Law', *Air and Space Law*, vol. 47, nr 1, p. 93-110.

satellite communications services, quantum-based navigation systems, PNT resilience, hypersonic defence interceptors and more.⁸

Spain's need to work with European and international partners to ensure that outer space is safe and secure is self-evident. This logic is already reflected in how aerospace is a crucial part of Spain's National Security Council, where assessments on space-based threats and challenges are fed directly into the highest organs of the state.⁹ This is doubly important as both the 2019 National Aerospace Security Strategy and the 2021 National Security Strategy understand that space is a new geopolitical frontier.¹⁰ In this respect, there is certainly a clear rationale for closer cooperation between the principal Spanish Ministries, bodies and associations involved in space to pursue these ambitions, including the Centre for the Development of Industrial Technology (CDTI) at the Ministry of Science and Innovation, the Ministry of Defence, the National Institute of Aerospace Technology (INTA), the Spanish Association for Defence, Security, Aeronautical and Space Technologies (TEDAE), and the National Research Council (CSIC).

In this vein, plans for a dedicated Spanish Space Agency in 2023 should bring together the economic, strategic and military dimensions of Spain's space policy. This is the geopolitical moment to ensure that Spain's economic operators, armed forces and aerospace sector can work to enhance the country's space power. Although there remains further room to develop a defence and strategic culture, Spain has also sought to modernise its defence forces and in June 2022 created a 'Spanish Air and Space Force' to oversee operations in the air and space domains.¹¹ Such a transition has seemingly moved in line with a broader political commitment to increase Spanish defence spending over the next seven years by approximately €13 billion.¹² Without this firm commitment to defence spending at the national and European levels, maintaining and extending Spain's position as a European space power will be challenging and may risk undermining the resilience of its space systems.

Recognising that space is a dual-use technology domain, investments in the economic and defence aspects of outer space are vital. Spain recently enhanced its contribution to the ESA by 50%, with an increased investment worth around €1.5 billion up to 2025.¹³ Such investments not only contribute to European space cooperation but help maintain Spain's technological, scientific and innovation sectors alive. In this respect, it should be borne in mind that Spain has embraced the principle of supporting space start-ups. As a European Investment Bank study made clear in 2019, 12% of the total 400+ investors in

⁸ European Commission (2021), 'European Defence Fund 2021 calls for proposals - results', https://defence-industry-space.ec.europa.eu/funding-and-grants/calls-proposals/european-defence-fund-2021-calls-proposals-results_en#summary-of-edf-2021-selected-projects---factsheet.

⁹ 'National Aerospace Security Strategy', 2019, p. 78,

https://www.dsn.gob.es/g1/file/3184/download?token=_zXgs3DR.

¹⁰ Gobierno de España (2021), 'National Security Strategy 2021', p. 62,

<https://www.dsn.gob.es/es/file/7272/download?token=miLM79u6>.

¹¹ Gobierno de España (nd), 'Ejército del Aire y del Espacio',

<https://ejercitodelaire.defensa.gob.es/EA/eae/>.

¹² Joseph Wilson (2022), 'Spain boosts military spending to close the gap with NATO goal', *Associated Press*, 5/VII/2022, <https://apnews.com/article/nato-russia-ukraine-spain-eastern-europe-madrid-61f2e9644404358defb517dcd37a2170>.

¹³ 'Spain reinforces its leadership in space with a €1.5 billion contribution to the European Space Agency', *La Moncloa*, 23/XI/2022,

https://www.lamoncloa.gob.es/lang/en/gobierno/news/Paginas/2022/20221123_esa-contribution.aspx.

'new space' around the world are based in Spain.¹⁴ Space is increasingly vital for Spain's economic and digital development. For instance, one estimate shows how Spain's aerospace and defence industry accounted for 1.5% of Spain's overall GDP in 2020, with a turnover of €11.4 billion and the employment of over 47,600 people.¹⁵ Furthermore, the 'Digital Spain 2026' roadmap will depend on satellites to provide greater connectivity for economic, social and territorial cohesion.¹⁶ Space will also help Spain achieve the goals of its national recovery and resilience plan under the NextGenerationEU initiative.¹⁷ In particular, secure satellite communications will be a critical component of Spain's drive towards the modernisation of its industry services.¹⁸

Looking to the stars?

Spain is evolving to meet the geopolitical challenges posed by and in outer space. Clearly, continued investment in its national technological and industrial aerospace is of great importance, but European cooperation will remain a core element of Spain's space strategy. Fortunately, Spain is already engaged in developing EU-level initiatives such as the forthcoming EU Strategy for Space, Security and Defence. This, along with the development of new EU satellite constellation projects such as IRIS² will provide Madrid with an additional impetus to maintain space on the EU's agenda during its Council of the EU Presidency in the second half of 2023. Spain can profit from the increased momentum for EU space, security and defence, but it can also influence the direction of EU policy by volunteering bold and ambitious initiatives.

For example, there is scope to rethink how the EU approaches space surveillance and tracking. If most prognoses are correct and there will be an even greater need to track debris and malicious objects in the future, then there is scope for modernising the Union's approach to SST. Thus far, the EU has approached SST through a 'federated system' based on a consortium of member states where national SST capacities are pooled. In November 2022 a new EU SST partnership agreement between 15 member states was signed, and this replaced the previous system, created in 2015, with seven original members (including Spain). This new agreement will see the EU SST transferred from the EU SatCen to the EU Space Programme Agency, although the so-called 'SST Front Desk' will remain in Madrid. Beyond this new agreement, however, it is worth thinking about the future technological needs for SST and explore whether a more centralised 'control and command' capacity for SST could be created in the EU. Such an approach would make sense as the Union as a whole moves to better protect Galileo, Copernicus and IRIS² from malicious and accidental space incidents.

¹⁴ European Investment Bank (2019), 'The future of the European space sector: how to leverage Europe's technological leadership and boost investments for space ventures', https://www.eib.org/attachments/thematic/future_of_european_space_sector_en.pdf.

¹⁵ 'Spain for Aerospace Industry', Gobierno de España, 26/1/2023, <https://www.investinspain.org/content/dam/icex-invest/documentos/publicaciones/sectores/aeroespacial/ICEX-Invest%20in%20Spain.%20Aeroespace.pdf>.

¹⁶ Gobierno de España (2022), 'Digital Spain 2026', <https://espanadigital.gob.es/en>.

¹⁷ European Commission (2021), 'Laying the foundations for recovery: Spain', June, https://commission.europa.eu/system/files/2021-06/spain-recovery-resilience-factsheet_en.pdf.

¹⁸ European Commission (2021), 'Analysis of the Recovery and Resilience Plan of Spain', *SWD(2021) 147 final*, Brussels, 16/VI/2021, p. 26, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021SC0147&from=EN>.

Another possible entry point for closer European space cooperation is in the EU-NATO sphere. Indeed, the third Joint Declaration signed in January 2023 calls on the two organisations to further their cooperation on space matters. An obvious approach would be to organise joint exercises on space-based scenarios. This could greatly assist the EU in preparing for space-based crises, and the new NATO Centre of Excellence for space, EU SatCen, the EU Military Staff and the NATO space centre could work together in this regard. It should be borne in mind that NATO has already declared space an operational domain that could give rise to invoking Article 5 of the Washington Treaty. Yet, the EU is further behind in understanding how its own mutual assistance clause (Article 42.7 TEU) would apply in the event of a malicious attack on European space assets. In this respect, any EU-NATO space exercises could help each organisation and member state to better understand how the EU and NATO could jointly respond to a major crisis involving outer space.

Furthermore, there should be a vested interest in supporting the future transition of the EU SatCen. As the geopolitical climate in and around Europe deteriorates, a stronger emphasis needs to be placed on the Union's ability to rely on credible geospatial intelligence. The EU SatCen will need to move with the times in having available cutting-edge and resilient technologies at its Madrid headquarters to facilitate the speedy and safe handling of restricted or classified geospatial information. Furthermore, there is a need to better connect and integrate the EU SatCen with the EU's broader decision-making, planning and intelligence framework and willing national intelligence services. As the EU Strategic Compass acknowledges, the need for intelligence-based situational awareness is key to developing a common strategic culture, as well as being able to anticipate and deter aggressive actions by strategic competitors.¹⁹

Conclusions

Beyond these specific suggestions, the forthcoming Spanish Presidency of the Council of the EU is an opportunity to take stock of the Union's various initiatives that have been developed on the back of the pandemic and the war in Ukraine. While there is certainly no time to rest if the geopolitical challenges facing Europe are to be tackled, there is an opportunity to develop a more comprehensive strategic culture and outlook for space, security and defence. This should begin by insisting on investments in this critical strategic sector, but would also mean bringing together various EU policies related to the security of supplies, critical raw materials, foreign direct investment, data, cyberdefence, defence investments and more. It is to be hoped that the new EU Strategy for Space, Security and Defence will help in this regard, although the Strategy should not be the final frontier of the EU's space policy.

¹⁹ European External Action Service (2022), *op. cit.*, p. 33.