



Europe: spread (not lost) in space

by Lucia Marta

Since the launch of its two ‘flagship programmes’ in the late 1990s, the European Union (EU) has been increasingly involved in space activities. The earth observation programme GMES (Global Monitoring for Environment and Security, recently renamed Copernicus) and Galileo (positioning and navigation, just like the American GPS) will soon be operational and will support a whole spectrum of European policies, from environment and transport to security and defence.

There is often the temptation to compare EU space activities and policies with those of other space-faring nations. However, the EU is not a state (or a federation) and its space-related initiatives build on pre-existing capabilities and skills spread among some European countries and organisations, such as the European Space Agency (ESA), based in Paris, or EUMETSAT. Various former and current stakeholders are therefore involved and need to be accommodated. Moreover, there is no consolidated European programme in this domain, although some reflections are ongoing: for instance, the EU-ESA jointly endorsed European Space Policy (2007), and the staff working document of the Commission reporting preliminary elements for a space programme.

Space jam – how and why Europe joined in

The main reasons behind the Union’s involvement include: investing in Research and Develop-

ment (R&D) to support a competitive European Space Technological and Industrial Base (ESTIB) and promote technological non-dependence; fostering economic growth and the ‘knowledge society’; and providing services for EU policies and citizens. Considerations linked to security and defence proper emerged at a slightly later stage and enriched the panoply of potential space applications for EU space programmes. Indeed, the two flagship programmes – although they are of civilian nature and under civilian control – were soon acknowledged by all EU institutions as being useful also for European and national security and military players.

Accordingly, the ‘Public Regulated Service’ of the Galileo positioning and navigation programme will soon provide encrypted and jamming-resistant signals to authorised European institutional users for sensitive applications (emergency response services, critical transportation, energy or defence-related purposes). Concerning Copernicus, services for security applications such as support to European external action, border control and maritime surveillance are still at the development stage. Its core stakeholders are currently discussing the funding of Copernicus’ operational phase for the next seven years through the EU budget (which is still under negotiation) as well as the definition and governance of the services, including such sensitive issues as data policy or security restrictions.



Moreover, the EU proposes to develop a Space Surveillance and Tracking system making use of existing national ground-based sensors and telescopes, which will also contribute to security in space. Involved stakeholders (mainly the Commission, national space agencies, the Sat-Cen, and the ESA) still need to agree on key aspects of that, including its financing, management, governance and data policy. Beyond the EC proposal and ESA R&D projects, however, no formal decision to launch it has been taken so far.

On top of all this, when it comes to space-based intelligence for crisis management and defence purposes, the European Union Satellite Centre (SatCen) – an autonomous agency based in Torrejón, near Madrid, now under the aegis of the High Representative Catherine Ashton – provides relevant information, though it does not own or manage space assets: it simply purchases space-based images, mainly on the commercial market, and processes them. The European Defence Agency, in collaboration with the ESA, is also carrying out background research and promoting common space capabilities. Yet no concrete European space military programme exists: military programmes are developed at national level and shared (at times) in bilateral or mini-lateral cooperation schemes.

Last but not least, the EU has engaged diplomatically with the international community in the field of space. It drafted a proposal for a multi-lateral Code of Conduct on outer space activities to achieve enhanced security in space through the development and implementation of transparency and confidence-building measures. This political initiative may well come to constitute the beginning of a genuine European ‘space diplomacy’.

For its part, the Lisbon Treaty (arts. 4.3 and 189 TFEU) now provides the Union with the political and legal basis to go beyond civilian flagship programmes, stating the new and direct EU competence (albeit shared with the member states) in the space domain. The question is how the EU is going to exercise this new competence, in the light of the widespread – but still rather fragmented – activities it oversees and manages through different programmes and institutions.

Mapping EU space players

Space activities in the EU were initially justified by the Community’s competence in the research, transport and environmental sectors, and they were (and still are) managed by the European Commission (EC). Today, within DG Enterprise and Industry (ENTR), two main Directorates are involved: one dealing with Copernicus and Space Policy (Directorate for Aerospace, Maritime, Security and Defence industries), and one with Galileo (Directorate for EU satellite navigation programmes). The Commission is assisted by a number of bodies involving EU officials as well as national representatives with specific expertise, as in the GMES Committee and its ‘security board’. End users (intended as persons and bodies that will benefit from space-based services) and experts appointed by member states meet instead in the ‘User Forum’ to assist the EC in the definition of user requirements.

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The Galileo programme, managed by the European GNSS Agency (GSA) established by the Commission, has a Board consisting of the EC, member states representatives, and a European Parliament representative, with the ESA and the High Representative as observers. The EC and the EU-27 are also represented in a specific Security Accreditation Board, established within the GSA and dealing with different security issues, from infrastructures to services.

European countries advance their interests in this domain also through three main configurations of the Council. In its Competitiveness formation, the Council discusses Copernicus and is supported by the Working Party on Space (one representative per country). Since 2004, the Competitiveness Council regularly meets with ESA members (18 EU countries plus Norway and Switzerland) at ministerial level, jointly with the Presidency of the Commission, in the so called ‘Space Council’. In this context, countries coordinate among themselves to jointly endorse documents on the Union’s and the Agency’s common visions.

Moreover, the Transport, Telecommunications and Energy configuration of the Council deals, inter alia, with the Galileo programme and is supported by the Working Party on transport intermodal questions and networks.



Within the European External Action Service (EEAS), the division for 'weapons of mass destruction, conventional weapons and space' – supported by the Disarmament and Space Experts Working Group (CODUN SPACE) – is responsible for dealing with disarmament and global security space issues. The Code of Conduct on Outer Space activities – adopted in 2008 by the Council, under French presidency – is now being negotiated with third countries under EEAS responsibility.

Last but not least, the abovementioned EU SatCen, the only EU structure dealing with space-based tools, was established as a specialised body within the now defunct Western European Union (WEU) back in the early 1990s, then transferred to the Union by an EU Council Joint Action in 2001. The EU-27 all sit on its Board. The main goal of the Centre is to support the CFSP/CSDP by providing space-based intelligence to member states and the EU military staff, the CMDP or the EU Intelligence Centre (it has done so recently in the context of the Arab Spring and the naval operations off the Horn of Africa). The European Defence Agency (EDA), also headed by the HR/VP, is equally involved in space-related initiatives: the Steering Board of the agency is composed of member states representatives from the defence ministries, with the participation of a representative of the Commission (without voting rights).

Overall, the political guidance and management of the civilian flagship programmes – including some 'soft' security aspects – is embedded in the community structure (DG ENTR), with the participation of the member states through well-established policy-shaping procedures and channels. Other issues related to 'hard' security/military issues (the Code of Conduct, military intelligence and such initiatives as the establishment of a procurement cell for military telecommunications) are addressed within the Council or the EEAS and their bodies and agencies, thus reflecting the EU members' preference for keeping them under (inter-) governmental control. Concerning the legislative process, the ordinary legislative procedure applies, with the Council and the Parliament being co-legislators and working on EC proposals.

Money (and location) in space

The EU financed its flagship programmes mainly through R&D investments within the framework programmes for Research and Technology (€1.4 billion were allocated to 'space' for the period 2007-2013), along with other non-research related EU funds. All member states contribute to the EU budget, and the next multi-annual financial framework (MFF) is supposed to finance operations

from 2014 to 2020. It is worth noting that, while Galileo is a fully European programme (the EU being the sole owner), for Copernicus, instead, some components (sentinel missions, ground segments and services) are European assets while some infrastructures (called 'Contributing Missions') are programmes funded and owned by countries or other organisations. Examples include national missions such as Cosmo-SkyMed, TerraSar X, Pleiades, or EUMETSAT's Meteosat SG mission. Perhaps unsurprisingly, the governance and data policy of Copernicus' services seems more complicated to set up, if compared with Galileo.

The ESA, set up in 1975 (it includes 20 members, 18 from the EU plus Norway and Switzerland), is not an EU agency. However, ESA members have supported the EU flagship programmes' R&D activities with national investments channeled through the agency. The two programmes are optional, and ESA members subscribe to them seeking also for a return of their investments in the form of industrial contracts for national industries.

The choice of places where space infrastructure or centres are established reflects also the countries' financial and political 'weight' and tends to accommodate their national interests: for any given country, in fact, hosting space facilities brings political prestige, economic advantages (employment, expertise and industrial development) and, to some extent, even physical control of the activities. The UK and France, for instance, host Galileo's PRS centres, with major security issues at stake. The SatCen was set up in Spain and is currently one of the candidates to manage part of Copernicus' security services. The new location of the GSA agency is in the Czech Republic, a move that probably reflects the EC intention to decentralise space infrastructure and involve Central European countries.

A similar approach can be detected in the ESA, where the location of the main facilities is related to financial contributions and, consequently, to space-related interests of its members. Thus, Germany hosts the Center for Astronaut Training and the Columbus Control Centre, mirroring its interest in space science and exploration, while the ESA Telecommunication Central facilities have recently been moved to the UK, following the impressive increase of British investments in the agency and, in particular, in its telecommunications programmes. However, the financial engagement of ESA members is reflected, above all, in the allocation of industrial contracts to national industries for the implementation of the financed programmes, according to the so called 'geo-return' principle.



Industries are also key stakeholders in this sector: national/European aerospace companies are crucial enablers of any autonomous political project. What is commonly known as the European Space Technological and Industrial Base (ESTIB) is composed of a small number of big firms which are system integrators in the aerospace, security and defence sectors. Some of them have predominantly national roots – such as OHB (German), Thalès (French) and Finmeccanica (Italian) – while EADS became a transnational firm following the consolidation wave of the 1990s. Groups have a space business branch in the upstream (manufacturing hardware) and/or downstream sector (providing space-enabled services to users).

The ESTIB is composed also of a large network of small and medium-size enterprises (SMEs) in high technology niches, working as suppliers. They are spread all across Europe – with an important presence especially in the space-faring nations – and at times are linked to or stem from universities and laboratories.

Despite a growing commercial and export dimension in some space-related sectors, companies develop their activities with the support of public funding. These funds may be channeled through the ESA (which, by dint of the geo-return principle, has the advantage of attracting important amounts of national resources) and through EC R&D funding, which is instead allocated following the best value for money principle, based on fair and open competition among firms, independently of the contributions that individual countries provide.

Of course, member state governments also support ‘their’ firms at national level through nationally financed R&D and procurement contracts, testifying the importance for those countries of maintaining indigenous aerospace capabilities and skills, which are tightly interwoven with their national security and defence programmes. Therefore, national stakes in space initiatives are also of a technological and industrial nature.

Space’s multiple dimensions

Space is a cross-cutting policy area, potentially very sensitive in terms of security and defence. Due to that, to the pre-existence of space stakeholders and activities in Europe, and to the complexity of the EU institutional organisation and setting, multiple decision-making centres exist. In this context, and despite the formal disappearance of the EU ‘pillar’ structure, space issues are dealt with by institutions and bodies that continue to be different in nature, interests and approaches, and that are en-

gaged in a multi-faceted effort to achieve shared goals. This is the case with other EU policies too, but the multiple (strategic, technological, industrial, and defence-related) dimensions of space significantly complicate this endeavour. Data policy, funding rules or security restrictions are examples of discussions where compromises are not easy to find, and which may interfere with cooperative initiatives and common programmes.

Over the years, however, the EU has managed to accommodate different stakeholders and interests, providing the Union with near-operational space programmes as well as major political and diplomatic initiatives. It can be debated whether the EU, by having to accommodate so many different stakeholders, can pursue collective European interests in the space and security domain in an effective manner. But it is also debatable whether viable alternatives are at hand. Ensuring consistency and coherence between various players’ actions and interests continues to be Europe’s main *modus operandi* and, at the same time, its main challenge.

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