

Supporting the Uptake of Satellite-based Services in the Public Sector

Eurisy's Support to the Northern Ireland Space-Enabled Region Pathfinder Project

*Public Stakeholder
Engagement Report*

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**UNLOCKING SPACE
FOR GOVERNMENT**

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Executive Summary

This report examines how public sector stakeholder engagement supports the uptake of satellite-based services across Europe, drawing on a literature review, interviews with several European institutions, and case studies of public authorities using satellite applications in practice. The analysis was conducted in the context of Eurisy's support to the Northern Ireland Space Enabled Region Pathfinder Project under the UK Space Agency's *Unlocking Space for Government* programme.

The literature consistently shows that wider adoption of satellite-based services in the public sector depends on sustained, user-centred engagement. Public authorities are not merely end users but active partners whose operational needs, feedback, and policy constraints must shape service design. While open data policies and technological advances, particularly through Copernicus, have significantly lowered access barriers, major challenges persist. These include limited awareness and trust, technical complexity, weak coordination across public bodies, and insufficient skills and infrastructure. The literature highlights capacity building, coordinated procurement, knowledge sharing, and a shift from raw data provision to value-added, decision-ready services as critical enablers for moving beyond pilot projects.

Interviews with national space offices and intermediary organisations in the Netherlands, Spain, France, Slovakia, Hungary, and Cyprus reveal a broadly shared engagement pathway, despite differences in mandates and maturity. This pathway typically begins with awareness raising, followed by structured identification of public sector needs, co-development of projects with public authorities and service providers, and, where successful, consolidation into operational services and documented success stories.

Public user case studies from the Cyprus Audit Office, the German Central Command for Maritime Emergencies, and the UK Environment Agency illustrate that adoption of satellite-based services has so far been largely self-initiated and driven by concrete operational needs, such as compliance monitoring, maritime pollution detection, and flood management. Engagement with several European institutions and service providers has often been limited or indirect, even where satellite data delivers clear efficiency, cost, and performance benefits. Nevertheless, these cases also demonstrate how sustained interaction and user feedback can significantly improve services over time.

Overall, the findings underline the critical role of national space offices and intermediary actors in bridging the gap between satellite data capabilities and public sector needs. By facilitating awareness, translating needs into technical requirements, supporting co-development, and enabling access to skills, platforms, and funding, these actors can help embed satellite-based services into routine governance and public service delivery. Strengthening this intermediary role and fostering closer collaboration between public authorities and service providers will be key to unlocking the full societal value of satellite-based applications across Europe.

1. Introduction

The United Kingdom Space Agency (“UKSA”) initiated a programme entitled *Unlocking Space for Government* (“USG”), which is a strategic initiative aimed at harnessing the UK’s space-enabled capabilities to enhance the efficiency and effectiveness of UK government services and positioning the Government to be a more proactive and intelligent anchor customer for the space sector. This programme seeks to support government agencies in improving the delivery of public services through the adoption of these capabilities with the potential to benefit services ranging from environmental monitoring and urban planning to transport infrastructure, healthcare and disaster management. As part of the USG programme, Northern Ireland Space Office (“NISO”) was awarded a pathfinder project, which would serve as a pilot project for the UK (“Pathfinder Project”).

In this “Supporting the Uptake of Satellite-based Services in the Public Sector” project, Eurisy provides additional support to NISO.

The present report aims to identify and collect existing approaches and methodologies to public sector stakeholder engagement across Europe related to the uptake of satellite-based applications, with examples from the Netherlands Space Agency (“NLSA”; before: Netherlands Space Office “NSO”*), Institute of Space Studies of Catalonia (“IEEC”), the French Space Office (“CNES”), the Slovak Space Office (“SSO”), Lechner Knowledge Center in Hungary, and the Department of Electronic Communications of Cyprus. It also provides a user perspective with examples of the Cyprus Audit Office, the German Central Command for Maritime Emergencies and the UK Environment Agency. For the purposes of this deliverable, satellite-based applications include Earth observation (“EO”), GNSS and satellite communications (“SatCom”).



DEPARTMENT OF ELECTRONIC COMMUNICATIONS
DEPUTY MINISTRY OF RESEARCH, INNOVATION AND DIGITAL POLICY



*The Netherlands Space Office (NSO) was renamed the Netherlands Space Agency (NLSA) in March 2026. Both abbreviations refer to the same organisation throughout this report. References to NSO reflect the name in use at the time of the activities, programmes, or source material discussed.

This report consists of desk research, interviews with above mentioned European institutions and public stakeholders, and draws amongst other prior work upon recent experience conducting a general best practice user engagement study for the European Space Agency (“ESA”) [1], looking at space and similar sectors (such as robotics) and advising Eurisy members on public sector engagement surveys.

The deliverable is structured to first present the findings of a literature review of public sector user engagement methods, which defines the concept of user engagement and outlines the main approaches known to involve users in public services (Chapter 2). It then examines public sector user engagement specifically in the space industry, building on interviews conducted with space offices, which aimed to analyse how user engagement is implemented in practice within the space sector across various EU countries (Chapter 3). This is followed by the public user perspective, focusing on how public authorities came to adopt and use satellite data in their operations (Chapter 4). Finally, the deliverable concludes with the main findings on the existing approached and methodologies to public sector stakeholder engagement (Chapter 5).

[1] See Eurisy Activity Report 24–25, page 9, accessible [here](#).

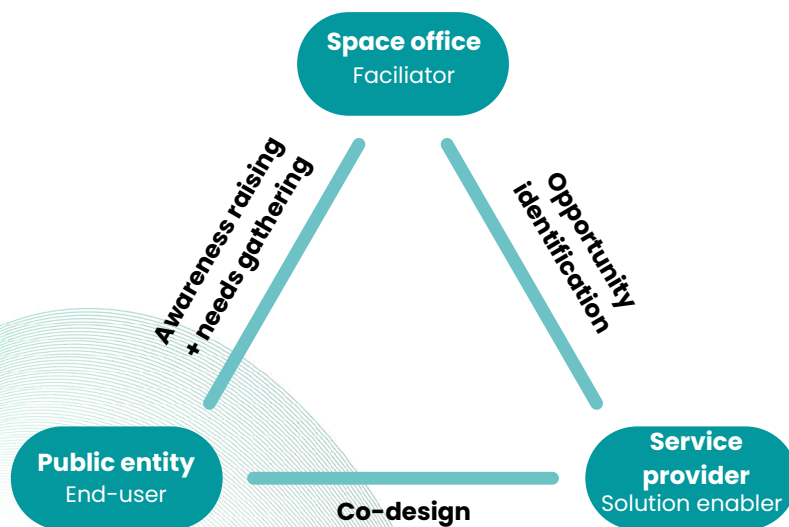
2. Public Sector User Engagement

2.1 What is User Engagement?

User engagement is an important tool for the development, deployment, and improvement of new services within the space sector, as users can capture the value of satellite data and generate new businesses. For the purposes of this report, a user is a public sector entity utilising the equipment and satellite communication services, and other satellite data.

No consensus on the definition of ‘user engagement’ exists yet, given the diversity of perspectives on the purpose and means of user engagement, as well as its multifaceted and complex nature. However, certain common features of user engagement can be identified and defined as *“the connection that exists, at any point in time and possibly over time, between a user and a resource.”* In addition, it is important to note that user engagement is an iterative process that spans awareness-building, needs discovery, co-design, and finally operational testing and is not just reduced to data collection.

For the purposes of this project, user engagement could be defined as ***“the connection between public satellite data users, space offices acting as facilitators, and service providers acting as solution enablers. This interaction aims to support the uptake of satellite data by public sector entities through awareness-raising, needs collection, and co-design.”***



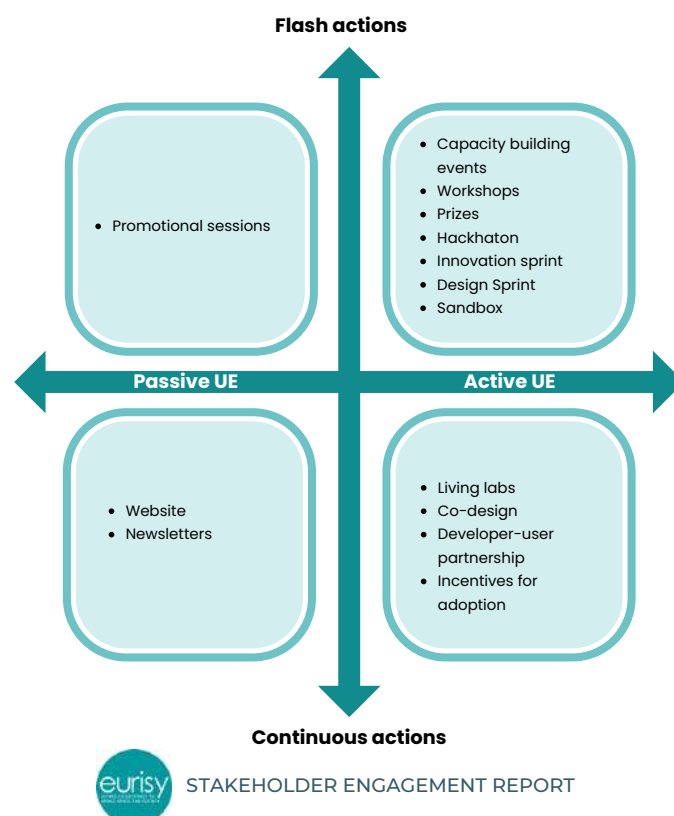
2.2 User Engagement Methodologies

User engagement methodologies include the research methods, tools, and procedures used to measure, analyse, or evaluate user engagement. According to literature, they can be categorised on the basis of the level of user involvement and their duration.

The distinction between **active and passive user engagement** is based on the involvement of users. Active engagement refers to actions taken between both a user and provider requiring involvement from both parties in order to increase mutual understanding between each party. Passive engagement, on the other hand, refers to actions that require the involvement, or exchange of information from only one party towards another.

In addition, the distinction between **flash and continuous actions** is based on the duration of user engagement methodologies. A flash action means a short-term user engagement method with a rapid result in the form of either gathered feedback, needs capacity building or similar, while a continuous action refers to a long-term user engagement method, additionally ensuring continuous engagement with the users throughout a longer period of time and enabling the development of stronger relationships with the latter.

User engagement is conducted through the use of various tools with a specific purpose and to a targeted community within specific stages of the user engagement process, including:



2.2.1 Literature Review of User Engagement Methodologies in the Space Sector

In 2021, Eurisy conducted a study entitled, ***Space for Society: How Eurisy's Activities and Research Support Public Awareness of Satellite Applications in Meeting Societal Needs*** [2]. The study analyses the success stories gathered by Eurisy between 2011 and 2019. Success stories are case studies of successful use of data or space applications that Eurisy regularly publishes in its online catalogue in order to raise awareness of the solutions provided by the space sector.

The report highlights that increasing uptake of satellite-based services (in the report, end users are mostly local and regional public authorities) depends on sustained engagement with users and a continuous understanding of their needs. Space agencies are encouraged to play an active intermediary role by guiding public authorities through available satellite data, services, and programmes, and by providing not only funding but also technical support and training.

The literature also stresses the importance of involving policy- and decision-makers directly through targeted events and forums that connect them with space sector actors to co-develop practical, policy-relevant solutions.

Finally, capacity-building initiatives are identified as a key mechanism for scaling successful engagement models, both within Europe and beyond, reinforcing the role of satellite-based services as accessible and transferable tools for public authorities. This study builds on Eurisy's 2015 study, entitled ***Satellites for Society: Reporting on operational uses of satellite-based services in the public sector***, which analysed more than 100 replies submitted to the Eurisy survey for public authorities. The analysis found that public authorities should not be considered as mere final customers of satellite-based services, but their experiences and feedback services should be taken into account to develop and improve satellite-based services for their use.

[2] Vernile, A. (2021). Space for society: How Eurisy's activities and research support the use of space applications by society. Acta Astronautica, Article S0094576520305348.

<https://www.sciencedirect.com/science/article/abs/pii/S0094576520305348>

The study ***Earth observation: A trillion-dollar opportunity for sustainable economic growth on the adoption of EO-based services (2024)*** [3] shows that wider use of EO, especially in the public sector, depends on several connected factors. These include **fair access to data, awareness of available applications, the ability to demonstrate clear benefits**, and **ease of use**. Although open data policies from public agencies and major digital platforms have greatly improved access to satellite data, *challenges* remain in turning these data into practical information for non-expert users.

Limited knowledge of sector-specific use cases, together with a lack of clear evidence on the economic and operational value of satellite services, continues to slow adoption.

At the same time, technical complexity, caused by fragmented standards and a complex market for EO services, creates additional barriers for public sector organisations. In response, the study highlights the **importance of user-centred approaches, co-creation with end users, and the role of intermediaries in adapting satellite-based application to address the public sector needs**. Finally, governments' strong position as major buyers of EO services gives them an important role in shaping the market, for example by moving procurement from raw data toward value-added insights that support broader and more sustainable uptake across public services.

The ***Public sector's benefits from using satellite data and barriers to uptake: OECD perspective (2024)*** [4] report identifies a range of internal and external barriers that continue to limit the wider uptake of satellite-based services in the public sector. Internal barriers include limited trust in satellite data, poor understanding of what data systems can deliver, low awareness of new technological possibilities, weak coordination and information sharing across public services, and inadequate Information and communications technology (ICT) infrastructure or connectivity. In addition, external barriers relate to difficulties in accessing skilled personnel, limited availability of high-quality ground data needed for model training, high costs for high-resolution and radar data, and the expense of data storage and processing.

[3] Anglin, A., Horn, S., Couture, J., Steinmann, J., Loubert, B., & Johnston, J. (2024, September 2). Earth observation: A trillion-dollar opportunity for sustainable economic growth. Deloitte Center for Government Insights.

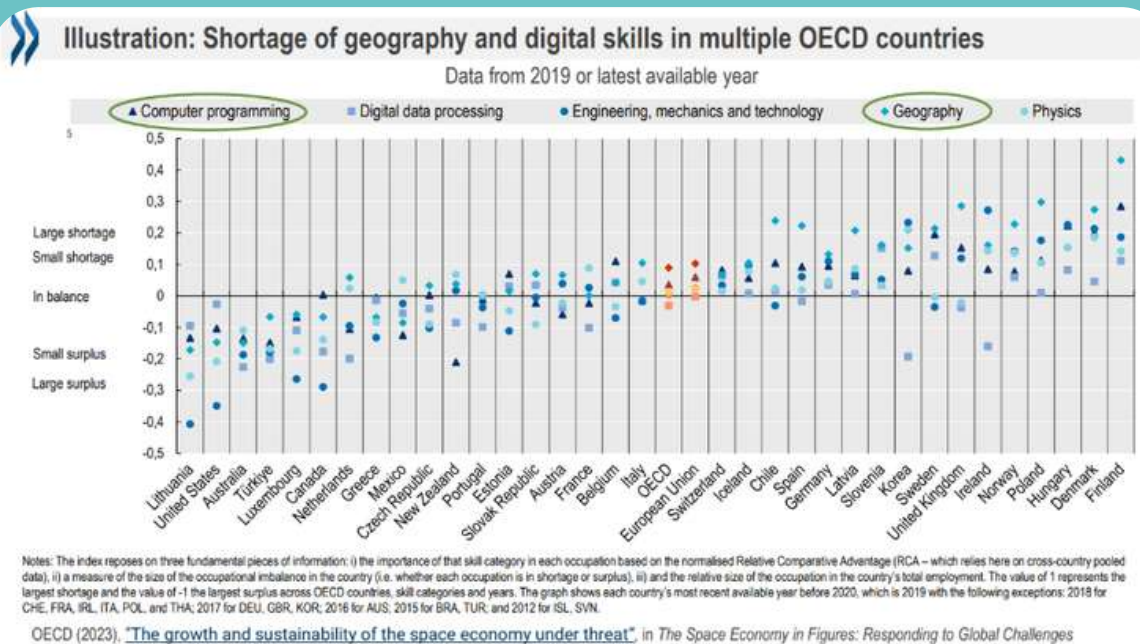
<https://www.deloitte.com/us/en/insights/industry/government-public-sector-services/earth-observation-sustainable-economic-growth.html>

[4] Undseth, M. (2024, June 13). Public sector's benefits from using satellite data and barriers to uptake: OECD perspective (ExpandEO workshop). OECD Space Forum, OECD Directorate for Science, Technology and Innovation.

https://earsc.org/sebs/wp-content/uploads/2024/07/OECD-MARIT-UNDSETH_EXPANDEO2024_BARRIERS-OF-UPTAKE_v2.pdf

Also, satellite data is not always the most suitable option and is often used alongside more traditional data sources rather than as a replacement. According to the study, the uptake tends to be stronger in areas or regions where alternative data sources are limited, and reductions in data costs are expected to support adoption in some organisations (see figure below).

To address these challenges, the report points to solutions such as strengthening user communities, improving the sharing of existing open EO data across public services, exploring possibility of coordinated data procurement, enhancing collaboration and knowledge exchange, and considering consolidated approaches to EO data processing. It also highlights the role of data providers in managing expectations about the promise of EO applications, clearly communicating technical and cost requirements, supporting enabling conditions where possible, and ensuring long-term continuity of observations and data products.



A UK study published in 2022 entitled ***Investigating UK public sector demand for Earth Observation technology*** [5] examines how EO data is currently used across the public sector in the country and where the greatest opportunities for added value lie. The study finds that many public organisations face common barriers to wider EO adoption, including limited understanding of the capabilities of EO tools and platforms, low awareness of new technical developments, and difficulties in building a strong case for investment.

High costs for high-resolution commercial EO data are also seen as a major obstacle, with many organisations running similar trials independently. For more advanced users, additional challenges relate to licensing restrictions, uncertainty around value for money, and concerns about data sharing under existing contracts. Organisations with moderate EO maturity highlight a lack of effective mechanisms for sharing lessons learned across the public sector, making it harder to justify further investment.

To address these issues, the study recommends strengthening and standardising existing public EO data services to facilitate access, broaden available datasets and value-added products, and limit duplication across organisations, thereby improving efficiency, skills development, and cost-effectiveness.

It also highlights the need for a coordinated approach to procuring commercial EO data through shared mechanisms, reducing fragmented purchasing, ensuring licensing consistency, improving market awareness, and supporting the identification of gaps and future national EO capabilities. Finally, it encourages greater knowledge sharing and collaboration between public bodies and research partners to enhance capabilities and support national policy objectives such as *Net Zero* and *Levelling Up*. Together, these measures are seen as key to increasing efficiency, reducing duplication, and unlocking greater public value from EO data.

[5] Government Digital Service, Cabinet Office, & Geospatial Commission. (2022, June 16). Investigating UK public sector demand for Earth Observation technology: Executive summary. GOV.UK.
<https://www.gov.uk/government/publications/investigating-uk-public-sector-demand-for-earth-observation-technology/investigating-uk-public-sector-demand-for-earth-observation-technology-executive-summary?utm>.

The ***Earth-Observation-Based Services for National Reporting of the Sustainable Development Goal Indicators: Three Showcases in Bulgaria*** [6] report focused on strategies for engaging governments and stakeholders in the Bulgarian space sector, specifically in the field of EO. This report identifies EO as a valuable instrument for public authorities to support Sustainable Development Goal (SDG) monitoring and broader policy implementation, notably due to its capacity to deliver consistent, wide-area, and repeatable data that complement conventional in-situ measurements.

In the Bulgarian case, public sector interest in EO is mainly driven by international and EU reporting obligations, potential efficiency gains in environmental monitoring, and alignment with national development and space strategies. However, adoption remains limited by a range of institutional and operational barriers. The use of EO is still limited and concentrated within a small number of organisations in Bulgaria, primarily the Aerospace Monitoring Center (AMC) within the Ministry of Interior, which operates a receiving station for the MODIS–Terra and Aqua satellites and supports the use of aerial and satellite data in the Land Parcel Identification System. Many public bodies lack the technical capacity, infrastructure, and established workflows required to integrate EO outputs into routine statistical and administrative processes. In addition, existing EO products may not always provide the spatial or temporal resolution required for national-scale indicators, and national statistical or environmental monitoring systems are not consistently designed to integrate EO inputs. Trust and usability issues also persist, as decision-makers tend to require locally validated and clearly interpretable products rather than raw EO data.

As a result, EO initiatives often remain at pilot stage, without being fully embedded in long-term governance, funding, and reporting structures, especially since without a clear policy mandate linking EO to national goals or legal reporting requirements, decision-makers often deprioritise EO investments.

[6] Aleksieva-Petrova, A., Mladenova, I., Dimitrova, K., Iliev, K., Georgiev, A., & Dyankova, A. (2022). Earth-Observation-Based Services for National Reporting of the Sustainable Development Goal Indicators—Three Showcases in Bulgaria. *Remote Sensing*, 14(11), 2597, <https://doi.org/10.3390/rs14112597><https://www.mdpi.com/2072-4292/14/11/2597>.

According to this report, from the perspective of EO and space stakeholders (data providers, agencies, researchers), governments represent a natural and strategically important user group, particularly in domains such as environmental protection, agriculture, and disaster risk management. The growing availability of free and open EO data, alongside national space policies that recognise EO as a strategic area, has lowered entry barriers and stimulated innovation.

Nevertheless, the report highlights persistent challenges in translating EO capabilities into operational public services. These include technical complexity, lack of standardised methods for policy indicators such as SDGs, and difficulties in integrating EO with in-situ and administrative data. A key challenge for EO actors is moving beyond short-term demonstration projects toward sustainable, long-term service provision adopted by public authorities.

Enablers identified include co-design with public sector users, the development of value-added and decision-oriented products, clear demonstration of policy relevance and cost-benefits, and investment in national skills and industrial capacity to support continuity and trust.

Dimension	Motivation	Barriers	Enablers
Governments	Reporting obligations,	Limited capacity, data mismatch,	Pilots, local validation, legal
Space / EO actors	Market opportunities,	Technical complexity, low	Co-design, value-added products,

Joint Synthesis: Government & Space-Sector Engagement

Germany's **National User Uptake Strategy of the Federal Government** [7] frames the use of European satellite data and services as a strategic enabler for public sector decision-making, security, and long-term resilience. The strategy emphasises increasing awareness and expertise within public administration, improving coordination across institutions, and ensuring the demand-driven provision of interoperable satellite data and services.

A central objective is to strengthen the government's ability to act by embedding satellite-based information into routine governance and policy processes. Implementation focuses on five key action areas through the Copernicus programme and the CODE-DE platform (German Copernicus Data and Exploitation platform), the Galileo programme and the EUMETSAT meteorological programmes: **ensuring reliable and user-oriented infrastructure and access, developing services based on user needs, strengthening communication and user networks, building skills and advisory capacity within public authorities, and establishing an enabling regulatory framework.**

Overall, the strategy highlights that sustained public sector uptake depends on user engagement, capacity building, and the translation of satellite data into operational, decision-ready products rather than raw data alone. In this context, the strategy explicitly shifts focus from the mere provision of satellite signals and raw observations toward strengthening the downstream segment of the space data value chain, where data are processed, interpreted and turned into actionable information that can be understood and used by administrations and authorities. This includes tailored training, advisory services, and expanded support structures to help public authorities interpret and integrate these data into their workflows, policy-making and operational procedures, effectively bridging the gap between technical output and practical use.

[7] Federal Ministry for Digital and Transport (Germany), National User Uptake Strategy of the Federal Government: Use of Satellite Signals and Data Provided by the European Copernicus and Galileo Programmes and the EUMETSAT Meteorological Programmes (BMV 2025)
<https://www.bmv.de/SharedDocs/EN/publications/national-strategy-copernicus-galileo.pdf>.

The German government's approach recognises that many potential users in the public administration currently lack the technical expertise to exploit Earth observation and navigation data themselves. Consequently, the strategy emphasises capacity building through targeted engagement measures, collaboration mechanisms and services that facilitate access and understanding. These measures aim to integrate satellite-derived products into existing institutional processes and decision-making frameworks, rather than leaving stakeholders with underutilised raw data sets. In doing so, the strategy aims to go beyond awareness-raising to enable routine operational use, ensuring that public sector actors are equipped not only with information, but also with the skills and context necessary to integrate this information into useful and policy-relevant applications.

2.2.2 Summary of the Findings

The literature consistently shows that wider public sector uptake of satellite-based services depends largely on sustained, user-centred engagement. Public authorities are not merely end users but active partners whose feedback, operational needs, and policy constraints must shape service design.

Key barriers include limited awareness and trust, technical complexity, fragmented markets and standards, high costs for high-resolution data, weak coordination across public bodies, and insufficient skills and infrastructure. While open data policies have lowered entry barriers, challenges persist in translating raw satellite data into decision-ready, policy-relevant insights.

Capacity building, coordinated procurement, improved knowledge sharing, and a shift from raw data provision toward value-added services are repeatedly identified as essential to moving beyond pilot projects and embedding satellite-based services into routine governance, regulatory reporting, and long-term public service delivery.

3. Public Sector User Engagement in Practice

Effective uptake is therefore enabled by intermediary actors such as space agencies that guide public entities as satellite-based applications end-users, facilitate technical support and training, co-creation, and connect decision-makers with space-sector actors, making public sector user engagement especially important in the space industry.

In order to provide an overview of the ongoing existing public sector user engagement in the space industry in Europe, Eurisy conducted interviews with the following entities: NLSA, IEEC, CNES, SSO, the Department of Electronic Communications of Cyprus and Lechner Knowledge Centre in Hungary. For the purposes of this project, a questionnaire was prepared (*Annex 1*). Questionnaires filled in with the answers from the above-mentioned entities are attached in *Annex 2*.

3.1. Netherlands Space Agency



The Netherlands Space Agency is the governmental Space Agency of the Netherlands. NLSA (NSO) was established on 1 January 2009, with the aim of consolidating various executive tasks of Dutch space policy and setting up of a single point of contact for the government with respect to the space sector. As such, it is also the Dutch entity that oversees the engagement of users of satellite-based application.

Motivation and objectives of the NLSA efforts of public sector user engagement:

NLSA recognised the rapid growth in the number of satellites and the corresponding increase in available satellite data. However, it remained unclear which types of data were most relevant and valuable for users, making it difficult to align data access and services with actual user needs. Thus, NLSA wanted to understand users' needs and which information they extracted from satellite data, and for this purpose, it initiated a user engagement process. Another key objective was to increase visibility, stimulate interest, and identify potential end users of satellite applications. The focus of the different studies was on the needs of a large spectrum of users: governmental, academic and commercial users on different thematic areas. The present report only focuses on government users.

Public sector user engagement process:

Following an initial selection of thematic areas, NLSA commissioned different entities to collect user needs on those specific thematic areas between 2019–2022. The list below includes the entities conducting the user needs studies, their methodologies and the main findings:

AEROVISION B.V.



For the land, agriculture and food thematic areas. [8]

STEPS

- Desk research
- Expert interviews [9] to understand how satellite data is used within the thematic areas of land, agriculture and food
- Group workshop with participants from the different stakeholders and experts, aiming to validate the results of the study, prioritise the different needs and look forward to enhance driven innovation in satellite technology

MAIN FINDINGS

This study analyses then emerging information needs in the land, agriculture and food thematic area and shows that while satellite data is well established for traditional applications such as land use, soil and vegetation monitoring, new opportunities are emerging in areas like biodiversity, fauna and greenhouse gas emissions. It finds that the rapid uptake of AI, data science and machine learning is reshaping the value of EO data, increasing the need for harmonised, continuous time series, data fusion and user-oriented infrastructures that make satellite data accessible beyond expert communities. Overall, the study highlights that future impact depends not only on improvements in spatial, temporal and spectral resolution, but also on better data access, experimentation, user coordination and closer interaction between the space sector and heterogeneous user groups.

[8] Sebastian Paolini van Helfteren, Bauke Abma and Tamme van der Wal, Future Spatial Information Needs in Land, Agriculture and Food and Their Value for Space Applications (AeroVision BV for Netherlands Space Office, 28 June 2022),

https://www.spaceoffice.nl/files/documenten/Behoeftestudie/2_Behoeftestudie%202022%20Agro.pdf.

[9] The experts were representatives of the main actors for each of the main field.

NATIONAL INSTITUTE FOR PUBLIC HEALTH AND THE ENVIRONMENT



National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

For the emission monitoring thematic area. [10]

STEPS

- Literature review to understand how satellite data is used within this thematic area
- Interviews with a total of 24 people employed at universities, research facilities, and governmental institutions in the Netherlands (e.g. municipalities and ministries)

MAIN FINDINGS

Wider and more effective use of satellite data requires not only technical improvements but, above all, stronger organisational coordination, standardisation and user-oriented translation of data into actionable products. It calls for increased investment in data analysis capacity, interoperable and accessible data infrastructures, policy shifts towards data-driven workflows, and continued advances in satellite resolution, sensitivity, timeliness and validation to better support societal, environmental and regulatory applications.

[10] W. Hendricx and H. Volten, User Needs for Satellite Data Regarding Emissions (RIVM Letter Report 2022-0088, commissioned by Netherlands Space Office, 2022),
https://www.spaceoffice.nl/files/documenten/Behoeftestudie/1_Behoeftestudie%202022%20Emissies.pdf.

NETHERLANDS INSTITUTE FOR PUBLIC SAFETY



For the security thematic area. [11]

STEPS

- Literature review
- Interviews with safety professionals and key stakeholders

MAIN FINDINGS

The study finds that while drone data is already widely used by safety professionals, satellite data remains underutilised due to limited awareness, accessibility and integration into existing operational systems, despite clear added value for situational awareness and early warning. It highlights strong user demand for simple, timely and actionable information products, and for better integration of satellite and drone data. The study therefore recommends increased awareness-raising and training, improved integration into national platforms, and targeted investment in data fusion, standardisation and experimentation to support long-term uptake.

[11] E Willemsen and J N Veeneklaas, Behoeftestudie NSO – Satelliet- en dronedata gebruik bij Veiligheidsprofessionals (Nederlands Instituut Publieke Veiligheid Report for Netherlands Space Office, Version 1.3, 9 August 2022), https://www.spaceoffice.nl/files/documenten/Behoeftestudie/3_Behoeftestudie%202022%20Veiligheidsmutaties.pdf. This study was written in Dutch and was translated to English by Chat GPT.

TWENTE UNIVERSITY**UNIVERSITY
OF TWENTE.**

For the air quality and climate thematic area. [12]

STEPS

- Literature review to identify the main fields of application of air quality and climate data
- Interviews with government experts

MAIN FINDINGS

The study finds that users across health, urban planning, environmental management, and modeling strongly require higher spatial and temporal resolution of satellite-based air quality and climate data. Integrating satellite measurements with in-situ data is essential for improving accuracy, supporting source apportionment, health studies, and local policy decisions, while commercial services are increasingly providing high-resolution, user-friendly applications. Challenges remain in expertise, political sensitivity, data quality, and interpretation – especially in developing countries – highlighting the need for capacity building, better validation, and standardized approaches for wider adoption.

[12] Johannes Flacke, Vera van Zoest and Frank Osei, NSO User Needs Study — Air Quality and Climate (Final report, Faculty of Geo-information Science and Earth Observation (ITC), University of Twente, Enschede, 5 April 2019), <https://www.spaceoffice.nl/files/documenten/Behoeftestudie/Behoeftestudie%20luchtkwaliteit.pdf>.

DELTARES

For the water management thematic area. [13]

STEPS

- Desk study
- Seven interviews with experts from universities, government, and industry

MAIN FINDINGS

The study concludes that Earth observation has become indispensable for inland and coastal water quantity management, particularly for flood and drought protection, but that significant gaps remain between current satellite capabilities and user needs for key variables such as groundwater storage, precipitation, water levels, topography and bathymetry. Users require higher spatial and temporal resolution, improved accuracy, stronger validation with in-situ data and long-term mission continuity to meet growing societal and climate-related pressures. The study recommends closer involvement of hydrological and coastal modelling communities in instrument design and the development of integrated, user-friendly data facilities that better combine satellite retrievals with models to maximise operational and scientific value.

[13] Chris Bremmer, Marieke Eleveld and Frederiek Sperna Weiland, Data and Information Needs in Inland and Coastal Water Quantity Management: In View of Earth Observation Developments (Deltares report commissioned by Netherlands Space Office, Version 0.1, 19 April 2019), <https://www.spaceoffice.nl/files/documenten/Behoeftestudie/Behoeftestudie%20waterbeheer.pdf>.

STUDY ON THE USE OF SATELLITE DATA IN MUNICIPALITIES [14]

STEPS

- Interviews with representatives of municipal networks and collaborative bodies, focusing on practical experiences, needs and constraints related to the use of satellite data

MAIN FINDINGS

The study found that main barriers are organisational rather than technological. Municipalities engage with satellite data mainly when it directly supports concrete policy challenges, such as climate adaptation, infrastructure management or enforcement. Uptake is strongest where satellite data delivers actionable insights, is integrated with other data sources, and is supported by a clear business case demonstrating societal and financial value. To address current gaps, the study recommends a joint, multi-year programme between NLSA and the Association of Dutch Municipalities (VNG), embedded in existing municipal networks. NLSA would provide technical expertise, access to satellite data and links to national and European funding, while the VNG would ensure policy alignment, coordination and municipal engagement. Funding should combine national and European resources with municipal co-financing to support implementation and long-term sustainability.

[14] This study was sent by NSO and is not public. It was done in Dutch and got translated to English by Chat GPT (see Annex 5).

These studies determine whether satellite data is relevant in the above-mentioned thematic areas and identify concrete operational needs. Taken together, they show that while satellite data is already well established in several domains, its broader impact increasingly depends on non-technical factors such as organisational coordination, user engagement, accessibility and integration into existing workflows. Across sectors, users consistently call for higher spatial and temporal resolution, better validation through in-situ data, and more harmonised, continuous data streams, particularly as AI and data-driven approaches become more prevalent. At the same time, the studies highlight persistent gaps between technological capabilities and operational uptake, driven by limited awareness, fragmented infrastructures and insufficient translation of data into actionable information. Overall, the findings underline that sustained investment in user-oriented infrastructures, capacity building, experimentation and cross-sector coordination is essential to ensure that satellite data delivers tangible societal, environmental and economic value.

The results from the different reports became the foundation for innovation programmes. For each thematic area chosen, NLSA launched innovation programmes, such as open calls, for the development of satellite data solutions based on the found public sector needs. Related to the public sector user engagement, the proposals to partake in those innovation programmes must include a mandatory end-user partner, and a letter of support from public user. Projects selected under the innovation call then proceed to operational pilot testing, which are carried out in partnership with the end-user organisation. NLSA funds the pilot but does not fund the long-term deployment and is not involved in the latter.

In addition to its the innovation programmes, NLSA also supports the Dutch space ecosystem through various initiatives:

Satellite Data Portal [15] : The portal provides registered Dutch users with free access to high-resolution satellite imagery, both optical and radar, as well as pre-processed national satellite data. Established to complement the European Space Agency's ("ESA") Sentinel missions, it facilitates more efficient policy implementation while enabling users to extract practical insights from satellite data. The creation of the portal has also stimulated innovation, allowing value-adding companies and knowledge institutions to develop new applications and strengthen international competitiveness. Funded by the Dutch Ministry of Economic Affairs and Climate Policy, with an initial investment of €4 million, the portal is accessible exclusively to Dutch entities and residents and is managed by the NLSA in close coordination with government, industry, academia and end users.

Its data portfolio has evolved to meet user needs and is now widely used across multiple sectors, notably precision farming, where it helps reduce costs and environmental impacts through improved land and crop management decisions. While the portal may initially appear to be a technical or infrastructural tool, it represents a continuous, passive form of user engagement.

By providing easy and free access to high-resolution datasets and facilitating exploration, experimentation and testing of satellite solutions, the portal allows public authorities to build familiarity and confidence with satellite data. The publication of user success stories further reinforces engagement by showcasing practical applications, inspiring new users, and creating a feedback loop for knowledge exchange. In this sense, the portal functions as an ongoing engagement instrument that promotes awareness, capacity building and long-term uptake of satellite services.

[15] Accessible [here](#).

One notable success from the use of satellite imagery from the portal was to support an investigation. The image provided investigative officers objective, time-stamped geospatial evidence to inform criminal investigations. This highlights a clear operational need articulated by public safety users. By leveraging satellite data to enhance situational insight, the officers gathered information that would otherwise be difficult or costly to obtain. By integrating user-driven requirements, dedicated public sector feedback and targeted budget allocation, the initiative not only showcased the practical value of EO in evidential contexts but also strengthened collaboration between space data providers and justice authorities, advancing both capability and uptake of satellite-based solutions in operational workflows.

The Innovation Impact Challenge (IIC) [16]: NLSA also supports user-driven innovation through the Innovation Impact Challenge (IIC), an innovation procurement scheme based on the broader methodology used by the Netherlands Enterprise Agency (RVO) to stimulate innovation across a range of sectors. While NLSA operates independently under its own name and branding, it applies this framework specifically to innovations that leverage space infrastructure and space-derived data. The scheme uses public innovation procurement to invite businesses to develop solutions to clearly defined public and societal challenges. The competition is structured in three phases: feasibility study, product research and development, and ultimately market deployment. Proposals are assessed based on impact, technical feasibility, and economic potential. The assessment criteria are applied as follows [17]:

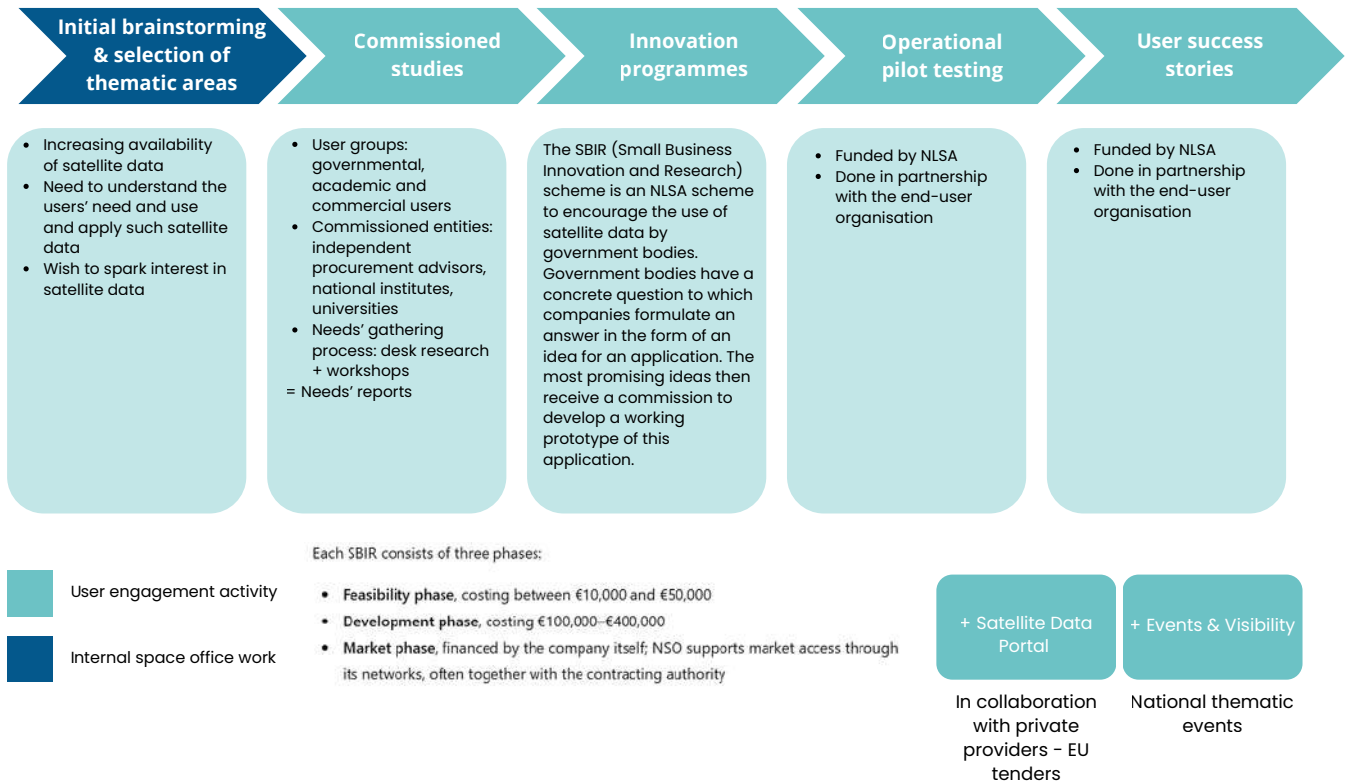
[16] Webpage accessible [here](#).

[17] To note that those criteria are derived from the Chat GPT translation of from the Dutch Rijksdienst voor Ondernemend Nederland (RVO), Oproeptekst Innovation Impact Challenge: Arbeidsbesparende Innovaties voor de energietransities (RVO, 17 June 2025) <https://www.rvo.nl/sites/default/files/2025-06/oproeptekst-Innovation-Impact-Challenge-Arbeidsbesparende-Innovaties-voor-de-energietransities.pdf>.

- **Impact:** Evaluates how convincingly the proposal addresses the specific societal challenge [*positive change, including quantifiable benefits such as labour savings, emissions reduction, or efficiency gains.*]. The committee considers the extent to which the innovation tackles the real problem, the measurable societal value, the pathway to impact, the realism of expected effects, and sometimes value for money relative to budget.
- **Technical feasibility:** Examines clarity of the proposal, methodology and implementation plan, team capability, and risk management.
- **Economic prospects:** Assesses market potential, scalability, business case quality, and contribution to public sector goals.
- **Practical outcome:** Only projects meeting a minimum quality threshold and fitting within the available budget are awarded contracts.

Regarding the budget, using the 2024 call on autonomous threat information sharing (available [here](#)) as an example, it had a total budget of €1.5 million, with €400,000 allocated for Phase 1 (feasibility studies) and €1.1 million for Phase 2 (prototype development). The maximum funding per project was €30,000 for Phase 1 and €200,000 for Phase 2. This call was funded by the Dutch Ministry of Economic Affairs and Climate Policy.

The summary of the NLSA public sector user engagement process:



This table provides an illustrative overview of NLSA's public sector user engagement process. Although the activities are presented sequentially, the process is iterative, with user consultations, studies and innovation programmes being undertaken on a recurring basis to address evolving public sector challenges and opportunities.

Beyond these programmes, NLSA actively promotes satellite data uptake and fosters engagement with public stakeholders. This includes attending thematic events (such as water, EO and GEO data conferences, and Smart City Expo), organising or co-organising networking events and webinars (especially with municipal associations), and maintaining a visible presence through booths and presentations to introduce space-based solutions. These activities help NLSA build awareness, spark interest, and identify potential end users.

3.2. The Institute of Space Studies of Catalonia



The Institute of Space Studies of Catalonia (Institut d'Estudis Espacials de Catalunya - IEEC) belongs to the public sector of the Government of Catalonia and is, at the same time, a CERCA centre (Centres de Recerca de Catalunya). It is a leading institution that promotes the development of activities related to space in Catalonia in the areas of training, research and innovation. It is governed by a Board of Trustees composed of the Generalitat de Catalunya, the University of Barcelona (UB), the Universitat Autònoma de Barcelona (UAB), the Universitat Politècnica de Catalunya BarcelonaTech (UPC) and the Spanish Research Council (CSIC). The lines of research developed at the IEEC are framed in the areas of astrophysics and cosmology, Earth observation and navigation, and space technology. The IEEC incorporates within its structure the Area for the Promotion of the Space Sector of Catalonia (APEC). The APEC articulates the promotion of the space sector in Catalonia and the advancement of knowledge in related areas, as planned in the space strategy of the Catalan Government.

Motivation and objectives of the Catalonia space strategy efforts of public sector user engagement:

The Catalan government has made the adoption of satellite-based services a strategic priority [18]. This is not limited to funding satellite missions but extends to actively integrating EO and SatCom into public administration workflows. The goal is to modernise public services, improve territorial management, and create a more data-driven public sector. The government directly finances all activities that are discussed in this report (no ESA or external mechanisms), including innovative procurement, challenges, and pilot projects.

Public sector user engagement process:

Thus, based on the strategy, the Government of Catalonia, with the support of i2Cat Research and Innovation Center (i2cat), the Cartographic and Geological Institute of Catalonia (ICGC) and the Institute of Space Studies of Catalonia (IEEC), initiated a year-long consultation process (2021–2022) involving a large number of government departments. Because this was their first major programme of this kind, it took more than a year to define the needs properly. For many, it was the first exposure to satellite-based services. Meetings were technical, iterative, and exploratory.

[18] Catalonia Space 2030 Strategy,

https://politiquesdigitals.gencat.cat/web/ca/economia/espai/ENG_estrategia_catalunya_espai_2030_def_comprimida_en_AAO.pdf.

Throughout that period, they analysed departmental needs and selected specific thematic areas in which satellite data could contribute to the government. Their approach combines top-down policy input with bottom-up operational insight and evolves as engagement with users deepens. In practice, the methodology follows several key steps:

- **Identification of strategic priorities:** High-level political objectives and ministerial priorities are first collected to frame the overall thematic focus areas.
- **Operational needs gathering:** Direct engagement with operational public bodies (e.g. mapping agencies, emergency services, agriculture and water authorities) is carried out through targeted discussions and workshops to identify concrete day-to-day challenges, data gaps and constraints.
- **Translation into technical requirements:** Institutions positioned close to operational practice act as intermediaries, translating policy goals and operational needs into technical and functional requirements that satellite-based solutions could potentially address.
- **Co-definition of challenges and use cases:** Public entities remain actively involved in shaping challenges and use cases, ensuring that proposed solutions respond to real operational conditions rather than technology-driven assumptions.
- **Pilot implementation and testing:** Selected projects are developed and tested in close partnership with public users, allowing feedback from real operational contexts to inform iterative refinement.

Overall, this methodology emphasises continuous interaction between policy makers, operational users and technical actors, recognising that effective user engagement is not a one-off consultation but an ongoing process that supports experimentation while laying the groundwork for long-term integration of satellite data into public sector practice.

Based on the selected thematic areas, initial one on one meetings with the relevant government departments, such as firefighters, traffic authorities, transport and communications departments, and environmental agencies, were organized to understand the departments' needs and to explain whether satellite data could address those needs, or whether they need to analyse the problem internally to know if using satellite data was relevant before giving an answer. Many departments initially did not know what satellites could do, so the i2cat, ICGC and IEEC helped articulate potential use cases. The outcome of the consultations was a list of needs across sectors, including operational problems, monitoring requirements, or data gaps that satellite services might address.

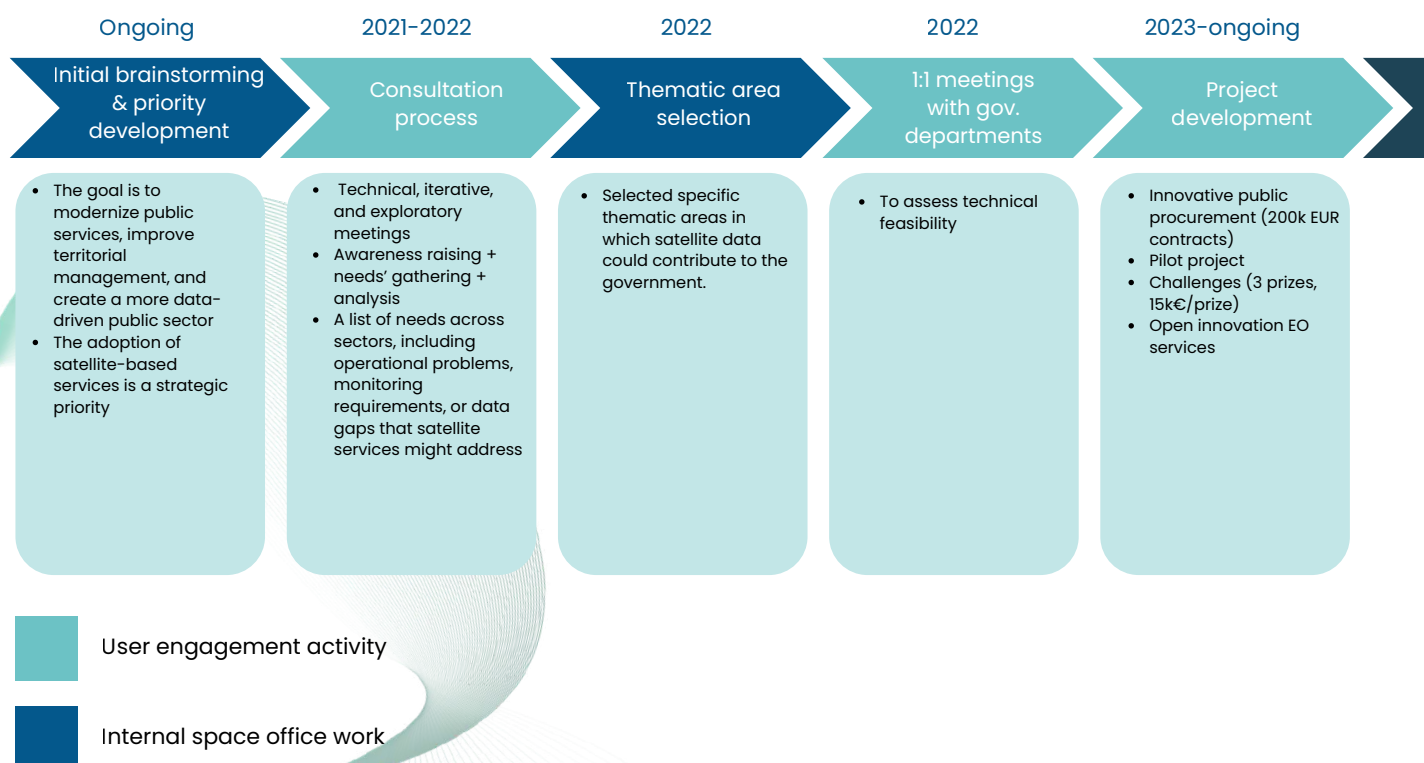
Once the long list of departmental needs was established and the priorities identified, the government of Catalonia launched the following funding programmes:

- Innovative public procurement (a total of 3 contracts), for when: the need is well-defined, the technology is mature, departments are ready to engage in a full procurement process, and the challenge can lead to a near-market solution.
- Pilot project, for when needs were promising but immature, the technology required testing, departments needed exploratory work before procurement.

As these projects were launched only recently, it is not yet possible to report on concrete outcomes or impacts. Some examples of selected projects are:



The summary of the IEEC public sector user engagement process:



On governance models: In Catalonia, user engagement is strongly rooted in public procurement and regional governance. The Catalan government directly funds and commissions satellite-based solutions through the ICGC, IEEC and i2cat for its own public administrations, which makes engagement inherently demand-driven and closely tied to service development. Needs are articulated through innovation-oriented procurement processes rather than broad consultations, which ensures that engagement leads directly to operational outcomes.

On lessons learned: Experience from the government of Catalonia confirms that user engagement must extend beyond pilot identification. Early projects often focused on launching pilots but paid limited attention to follow-up, long-term continuity, and uptake at political and decision-making levels. Sustained involvement throughout the project lifecycle is essential to ensure pilots mature into operational services embedded in public sector workflows.

Clear communication of practical value and management of expectations is critical: satellite technologies are rarely standalone solutions and should be combined with complementary capabilities such as drones or other data sources. Pilots must address not only technical feasibility, but also organisational, contractual, and procurement aspects to ensure administrations can deploy, operate, and sustain services. While resource-intensive, these engagement and needs-gathering processes are essential to match public sector needs with the most appropriate technology mix rather than focusing solely on space.

Cross-cutting lessons learned

- User-centric approaches are key.
- Engagement should follow a progression from dialogue to action: engage, demonstrate, implement.
- Continuous capability development is necessary as technologies evolve.
- Regional strategies can provide innovative and scalable frameworks.
- Maintaining continuous, reliable data availability is critical for robust operational services.



3.3. The French National Centre for Space Studies

The French National Centre for Space Studies is a programmatic agency, field centre and space operator encompassing all of the functions required to shape and execute the French government's space strategy, and to deploy public policies that rely on the space sector (land management, agriculture, health, telecommunications, natural disasters, defence, etc.).

Motivation and objectives of the CNES efforts of public sector user engagement:

In 2021, the French government launched France 2030, a €54 billion national investment plan to accelerate innovation, industrial competitiveness and ecological transition across strategic sectors, including space. The space pillar of France 2030 is supported by a budget of approximately €1.5 billion, with a significant share allocated to launchers and orbital demonstrators. Within this broader framework, the France 2030 Space Component, operated jointly by CNES and Bpifrance [19], aims to accelerate the development of high-value space products and services, strengthen the competitiveness of the French space sector, and support public procurement of innovative solutions relying on space data. One of its specific aims is to increase the adoption of innovative services based on satellite data by French public authorities.

Public sector user engagement process:

Within that context, CNES collected the needs from the public actors (state administrations, local authorities, public institutions, delegated public-service bodies) for satellite data and space-based applications/services, as well as manages the funding of public procurement contracts. To this aim, CNES published an **expression of interest call for public sector needs for space data and related services**. The main aim was thus to identify the needs of French public actors, and to select use cases suitable for public procurement financed under France 2030, in accordance with (or to support) the main public policies, enabling users to test innovative solutions in operational conditions before launching their own long-term procurement. Overall, the initiative aimed to:

- Improve public-sector efficiency through innovative space solutions.
- Support the digital transformation of the State via sustainable use of satellite-based services.
- Facilitate adoption of satellite data by non-expert public authorities.
- Support innovative French space companies and open future commercial/export opportunities.
- Support French public policies

[19] Bpifrance is a French public sector investment bank.

CNES published a questionnaire (*Annex 7*), assessing the current level of awareness and use of satellite or space-enabled solutions of the respondents, identifying whether they already relied on such data, for what purposes, and through which providers. The core of this call focused on the explicit expression of unmet operational needs, asking users to describe their activities, objectives, and potential applications of spatial data, thereby ensuring that inputs were grounded in real public-service workflows rather than technology-driven ideas.

Additional questions examined adoption conditions, such as expected benefits, technical requirements, availability of existing solutions, long-term financing capacity, internal resources, and potential market opportunities. Overall, the questionnaire placed strong emphasis on user-driven validation, scalability across public actors, and the feasibility of transitioning from pilot use to sustained operational deployment.

120 public entities filled it, submitting a total of nearly 200 requests. Out of those, CNES realised that 75% of public authorities were already familiar with the use of space data. The requests were then selected on the basis of certain selection criteria – which aimed at making sure that only the most relevant, impactful, and feasible public-sector needs are chosen for funding and transformed into actual public procurement contracts under France 2030. The criteria were the following:

Primary Criteria (CNES)

- Existence of a significant public need, aligned with a public policy priority, long-term, and possibly shared across multiple public actors.
- Relevance and added value of using space data to address the need.
- Innovative nature of the proposed service compared to existing solutions.
- Commitment of the public user, including willingness to test and provide feedback.

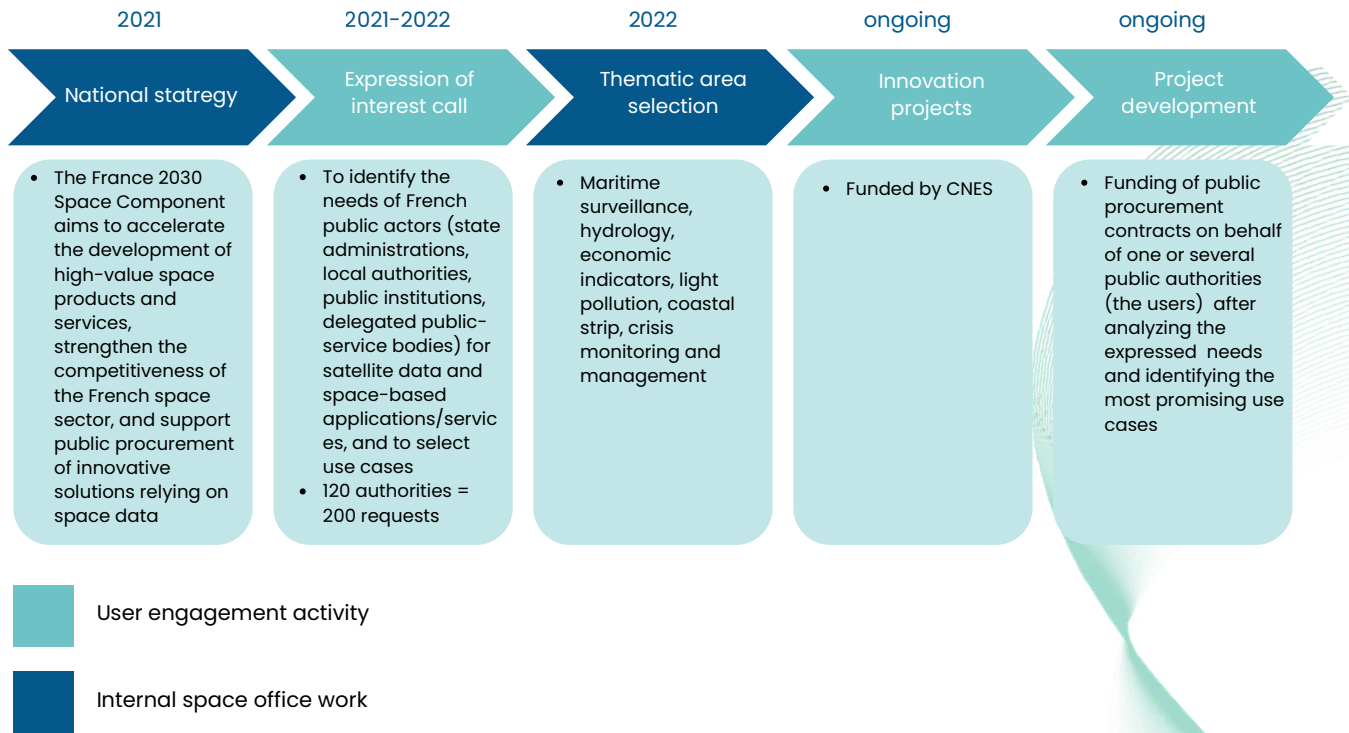
Additional Criteria (France 2030 governance)

- Market potential of future commercial solutions (domestic and export).
- Industrial impact, including support for France's space and non-space ecosystems.
- Contribution to resilience and sovereignty.
- Environmental benefits, especially for monitoring or supporting environmental policies.

Based on the requests received, CNES identified six thematic areas, including: maritime surveillance, hydrology, economic indicators, light pollution, coastal strip, crisis monitoring and management. From those six thematics, it launched specific innovation projects related to the specific thematic areas, which are all in progress. From expressed needs from users, the space-based services are delivered by one or several companies, as demonstrated in the example below on the crisis monitoring and management area [20]:



The summary of the CNES public sector user engagement process:



Lessons learned: Insights from CNES underscore the importance of combining contact with management and concrete discussions with operational personnel [RF1] to align strategic and practical perspectives.

[20] This is one example, additional ones can be found in Annex 6.

3.4. The Slovak Space Office

The Slovak Space Office is composed of two key stakeholders. First, the *Ministry of Education, Development, Research and Youth of the Slovak Republic* responsible for inter-ministerial political coordination and multilateral international cooperation (ESA, European Union, United Nations). Second, the *Slovak Investment and Trade Development Agency* (“SARIO”) covers the implementation part of the agenda, especially developing the space ecosystem, local and international partnerships.

Motivation and objectives of the SSO efforts of public sector user engagement:

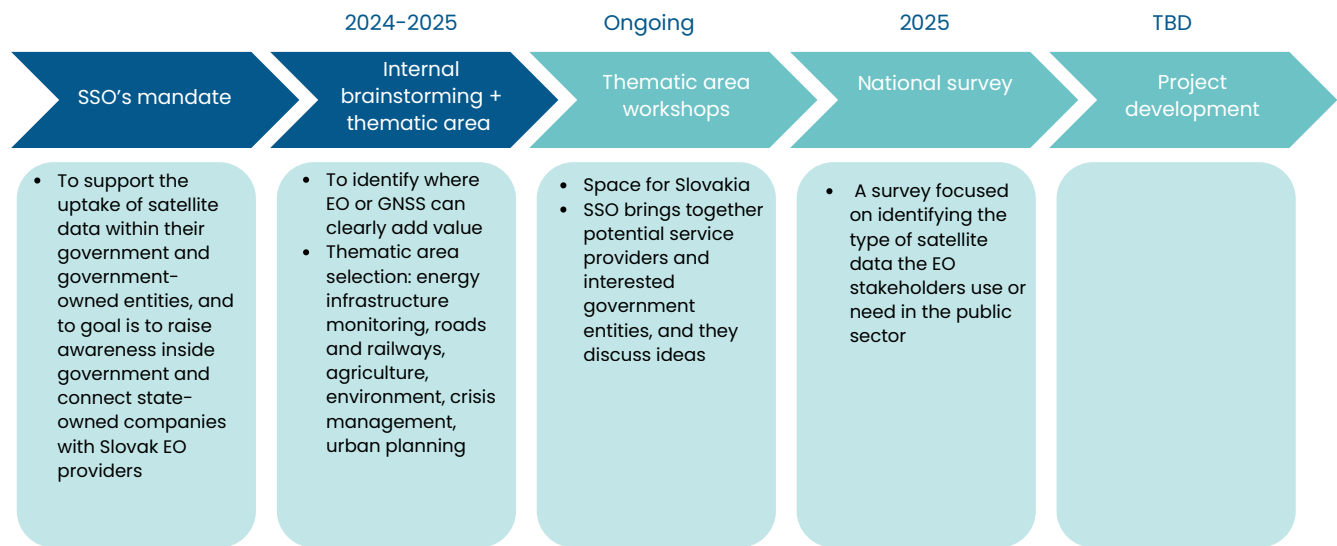
One of the main objectives of the SSO is to support the uptake of satellite data within their government and government-owned entities, and to raise awareness inside government as well as connect state-owned companies with Slovak EO providers. In addition, SSO wants to prevent ministries buying foreign solutions simply because they are not familiar with the existing expertise of the local companies.

Public sector user engagement process:

In Slovakia there are two ongoing initiatives: Space for Slovakia by SSO and the Slovak Ministry of Environment’s initiative on satellite data.

- **Space for Slovakia:** SSO internally brainstorm sectors where EO or GNSS can clearly add value: energy infrastructure monitoring, roads and railways, agriculture, environment, crisis management, urban planning. The initiative deliberately focuses on areas where use cases are well established and solutions already exist among Slovak service providers, in order to avoid engagement in sectors where uptake remains limited. Following the identification of priority thematic areas, the SSO has begun organising thematic workshops that bring together public authorities and potential service providers to exchange needs, ideas, and existing solutions. A first workshop has already taken place.
- **Slovak Ministry of Environment’s initiative:** An initiative aimed at better understanding public sector demand for satellite data, including the distribution of a survey to relevant EO stakeholders to identify the types of satellite data currently used or needed within public administration. At the time of writing, no further information on the survey results or subsequent actions is available.

The summary of the SSO public sector user engagement process:



-  User engagement activity
-  Internal space office work



3.5. Lechner Knowledge Center in Hungary

Lechner Knowledge Center is a Hungarian state-owned company that manages and analyses the national geospatial databases, offering data services to public administration, urban planning and agricultural purposes, as well as to the general population. As such, it provides support to user engagement efforts of the Hungarian government. Most space activities having recently been transferred to the Ministry of National Economy, two delegates were retained from outside the ministry due to their long-standing roles, contracts and expertise.

Motivation and objectives of the Lechner Knowledge Center's efforts of public sector user engagement:

The main motivations for encouraging the use of satellite data across government include improving operational efficiency by reducing the need for field inspections and optimising administrative workloads, for example in the processing of agricultural compensation claims. Satellite data are also seen as a valuable tool for crisis response, particularly in addressing droughts, floods, and other extreme water-related events. Cost-effectiveness is another key driver, as EO can partially replace or reduce on-site inspections through the use of EO-based evidence. In addition, satellite data support strategic, long-term planning in areas such as land use management, crop planning, and water retention strategies. These motivations are closely linked to broader efforts to advance the digitalisation of public administration, especially within agricultural and water management authorities.

Public sector user engagement process:

The Center mainly contributes to the user engagement process by identifying potential government entities that could use satellite-based applications, by raising awareness and by providing actual technical solutions to them.

Government entities who could benefit from satellite data are identified primarily through existing operational cooperation and long-term institutional relationships, especially with ministries and agencies already working with geospatial information, such as agriculture, water authorities, disaster management, and the state treasury.

In many cases, governments are not aware that satellite-based solutions are applicable to their work, so the approach is to demonstrate concrete, already-available use cases. Showing these examples often leads institutions to recognize additional applications themselves. To build interest and confidence, providers deliberately combine high-resolution imagery and orthophotos, which have strong visual impact, with long-term satellite time series. While medium-resolution data is often perceived as insufficient by local authorities, high-resolution products help convince decision-makers of the practical value of EO solutions.

Beyond awareness raising, the Centre provides concrete technical support to public authorities by directly embedding satellite-based solutions into existing governmental workflows and information systems, such as the *Agricultural Risk Management System*. This includes the adaptation of EO products to operational requirements, support in data integration, and guidance on interpretation and use. In addition, the Centre facilitates access to satellite data through shared platforms, including national EO information systems and tools such as the Copernicus Browser.

3.6. The Department of Electronic Communications



DEPARTMENT OF ELECTRONIC COMMUNICATIONS
DEPUTY MINISTRY OF RESEARCH, INNOVATION AND DIGITAL POLICY



The Department of Electronic Communications of the Deputy Ministry Research, Innovation and Digital Policy has responsibilities in radiocommunications, electronic signatures, information society and space policy issues in the Republic of Cyprus.

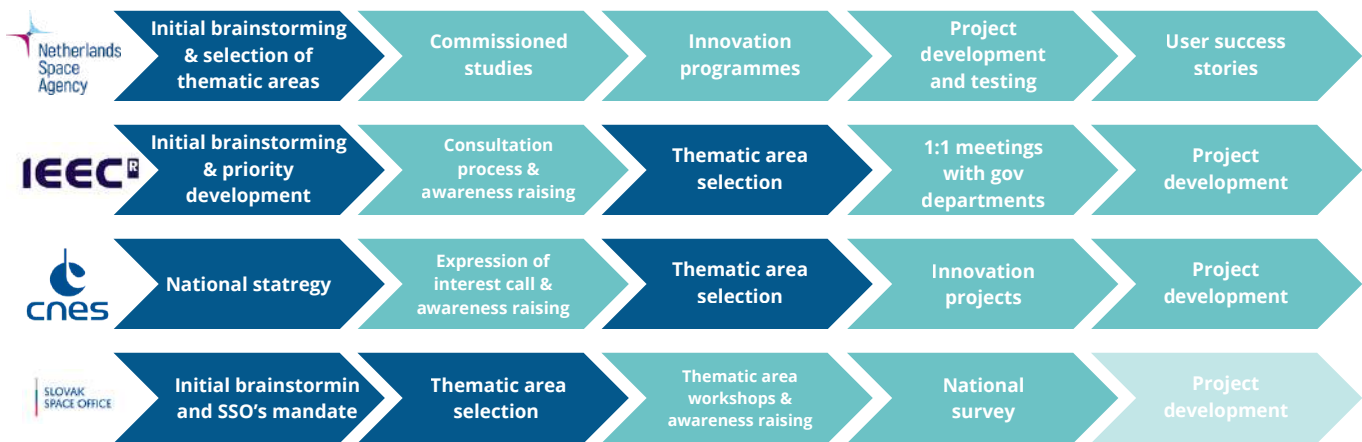
Prior to becoming an ESA associate member, Cyprus was an ESA PECS country and thus received funding from ESA for dedicated PECS calls. For instance, PECS call for research and preparatory activity (e.g., feasibility studies/demonstrators, conceptual design work, competitive landscape survey, user requirements and breadboard-based demonstrators). This aimed to prepare Cyprus to participate in ESA optional programmes or the initial steps of a product development for Space, with potential for use on future ESA missions or commercial missions.

As part of such PECS call, ESA awarded a feasibility study project to the *ERATOSTHENES Centre of Excellence in Cyprus* [21] a research centre, aspiring to provide innovative services aligned with the latest advancements in EO, remote sensing and geospatial technologies. The aim of their feasibility study was to collect government needs related to satellite applications through dedicated workshops. The study was just recently concluded, however, at the time of writing, its final results were not yet available.

[21] Their page is available [here](#).

3.7. Summary of the Findings

Despite differences in institutional mandates and levels of maturity, the interviews show that these organisations generally follow a similar engagement pathway. This typically starts with awareness raising, followed by the systematic identification of user needs, the co-development of projects with public authorities, and, where successful, the consolidation of outcomes into operational services and documented success stories. These success stories, in turn, are reused as awareness-raising tools to engage additional users. While the organisations are at different stages of implementation and scale, the findings highlight a broadly shared, iterative approach to fostering public sector uptake of satellite-based services across Europe.



4. Public User Perspective

In the 2015 Eurisy's Satellite for Society analysis [22], it was found that from the public sector users viewpoint, satellite services are valued mainly as better, more effective alternatives to existing methods, rather than as tools for solving entirely new problems. Most respondents (69%) [23] reported choosing satellite solutions because they enhanced the quality, efficiency, or accuracy of their current services. In addition, over half (53%) indicated that satellite-based tools replaced, fully or partially, older technologies or procedures they had previously relied on to achieve the same objectives.

While these findings reflect the situation at the time of the study, subsequent technological advances, expanding data availability, and growing digital maturity within public administrations suggest that the role of satellite-based services may have evolved in recent years, with increasing potential to enable new types of applications in decision-making processes. In light of this and in order to further understand public sector users' perspective related to the uptake of satellite data, Eurisy conducted interviews with the following public sector users:

- **Cyprus Audit Office**
- **German Central Command for Maritime Emergencies**
- **The UK Environment Agency**

For the purposes of this project, a questionnaire for public sector users was prepared, attached as *Annex 3* to this report. Questionnaires filled in with answers from the above-mentioned entities are attached as *Annex 4* to this report.

[22] "Satellites for Society: Reporting on operational uses of satellite-based services in the public sector".

[23] Of the above-mentioned 2015 study.

4.1. Cyprus Audit Office



In 2014, the Cyprus Audit Office integrated satellite imagery in an audit of the country's beaches to detect illegal buildings, activities that do not comply with the National Beach Usage Plans, and anthropogenic and natural phenomena that contribute to coastal erosion.

The Cyprus Audit Office views satellite data primarily as a practical, reliable, and cost-efficient tool that strengthens its core mandate: ensuring compliance, safeguarding public assets, and protecting the environment. Their adoption of satellite imagery was motivated by a concrete operational need, verifying the integrity of Cyprus's coastal protected zone during a major 2014 audit.

As the Cyprus Lands and Surveys Department processed satellite imagery, the end-user, Cyprus Audit Office was able to use the outputs directly, without additional training. Satellite imagery provided a level of precision, allowing auditors to detect unauthorised structures with confidence while significantly reducing the need for field visits, motivating them to repeat the audit in 2026 using the same method, viewing satellite imagery as a straightforward, high-value instrument for monitoring compliance.

The Cyprus Audit Office's experience shows very limited external engagement during the adoption of satellite data. They were not approached by any national space agency, space office, or coordinating body, nor did they receive proactive outreach from institutions responsible for promoting satellite solutions.

4.2. German Central Command for Maritime Emergencies



The CCME was created in 2003 to coordinate Germany's maritime incident response. The country has operated surveillance aircraft for maritime monitoring since 1986. In 2004–2005, Germany joined other member states in discussions with EMSA (European Maritime Safety Agency) that led to the establishment of EMSA's CleanSeaNet service, an oil spill and vessel detection service based on satellite data.

The satellite imagery they use is highly valuable as a first alert, providing a rapid overview of the situation. Aircraft offer higher resolution but can only observe up to around 40 km on each side, covering far less area than satellite imagery. Thus, before deploying response assets, detections must be verified to confirm whether the observation is truly an oil spill or another phenomenon. The service has been continuously enhanced through user-driven improvements. Early operations involved a two-hour delay between satellite overpass and data reception. This was subsequently reduced to 30–60 minutes to enable aircraft crews to review high-resolution imagery, provide feedback, and adjust flight paths.

Knowledge about satellite operations and applications was developed through numerous workshops with officers from DLR (German Aerospace Center), ESA, and experts from the Kongsberg satellite station, providing extensive guidance and input.

There were several challenges in using satellite data initially, particularly regarding procurement and expertise. Ordering sufficient satellite imagery was difficult, and discussions often arose over who would cover the costs, given the high price and limited availability, as satellites were also used for other purposes. Since EMSA took over the service, these issues have been largely resolved thanks to a dedicated budget.

This case demonstrates how deep engagement shapes a service's evolution. The organisation's operational feedback directly contributed to reducing data delivery delays, improving image resolution, and refining validation workflows for oil-spill detection.

4.3. The UK Environment Agency



The UK Environment Agency (EA), part of the *UK Department for Environment, Food & Rural Affairs (DEFRA)*, uses satellite-based and remote-sensing data for flood-risk assessment, flood-extent mapping, and post-event analysis.

The EA has been using satellite-based and remote-sensing data since around 2007, particularly for flood-risk assessment, flood-extent mapping, and post-event analysis. The International Disaster Charter and the Copernicus Emergency Management Service were activated for major flood events up until 2013–2014. After 2015, the availability of open Sentinel-1 and Sentinel-2 data significantly transformed operations, enabling regular in-house flood-extent mapping by the Agency's remote-sensing and GIS specialists.

In addition to satellite data, the EA has access to two light aircraft for aerial photography and, since 2014, has expanded its use of drones. Within the wider DEFRA group, organisations such as Natural England, Cefas (Centre for Environment, Fisheries and Aquaculture Science), and Forestry Research also rely on Earth observation. To coordinate efforts and share expertise, DEFRA established a Centre of Excellence for Earth Observation in 2015. This forum brings together specialists from multiple agencies to collaborate, exchange knowledge, and align approaches across their respective remote-sensing teams.

The EA generally recruits staff who already have solid training in GIS and remote sensing, often at Master's level. As a result, the current team is highly experienced, and only minimal internal training is needed.

While not a co-developer of specific satellite applications, the EA plays an important role as a very knowledgeable user, driving improvements through operational insights and clear articulation of technical requirements.

4.4 Summary of the Findings

From the conducted interviews, it follows that current public sector use of satellite-based services has been largely self-initiated, with interactions primarily limited to national authorities that provide satellite data, such as land or agricultural ministries. Engagement with national space offices and direct collaboration with service providers has so far been limited.

Looking forward, there is significant potential to expand these interactions, with national space offices playing a more active role in facilitating co-development of projects and fostering direct engagement between public authorities and service providers. This shift is expected to enhance the relevance, usability, and adoption of satellite-based solutions across government.

5. Conclusion

Wider public sector adoption of satellite-based services in Europe depends on sustained, user-centred engagement, where public authorities act not just as end users but as active partners shaping service design. While open data policies and technological advances have lowered entry barriers, persistent challenges, including limited awareness and trust, technical complexity, high costs, fragmented standards, weak inter-agency coordination, and gaps in skills and infrastructure, continue to constrain uptake.

Interviews with national space offices and public sector users reveal a broadly shared, iterative engagement approach: raising awareness, identifying user needs, co-developing projects with authorities, and consolidating successful initiatives into operational services and documented success stories, which in turn feed back into awareness-raising efforts. Despite variations in institutional mandates and maturity levels, this pathway is widely recognised as effective for fostering adoption.

Currently, public sector uptake remains largely self-initiated, with engagement primarily limited to authorities providing satellite data and minimal direct collaboration with service providers or national space offices.

Moving forward, there is substantial potential to enhance uptake by increasing the role of national space offices in facilitating direct engagement and co-development with service providers. Strengthening these interactions is expected to improve the relevance, usability, and long-term adoption of satellite-based solutions, enabling them to become integrated tools for governance, policy-making, and public service delivery.

For ease of printing and distribution, the annexes referenced in this report have been excluded from this edition. Members wishing to access the complete report, including all annexes, are invited to contact us and we will be pleased to provide a full copy.



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