

## SATELLITE-BASED SERVICES FOR A COMPETITIVE, AUTONOMOUS, SAFE AND RESILIENT EUROPE

Position Paper

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25







## EXECUTIVE SUMMARY

In this position paper Space Y offers an input to the general debate about the future of the European downstream space sector from the distinctive perspective of the European industrial players. The paper addresses European policy makers with the aim of providing feedback useful to shape the future policy framework of the European Union for its downstream space sector.

We consider that the current political context requires immediate targeted actions to safeguard the strategic autonomy and competitiveness of Europe with respect to critical sectors relying on space technologies, such as energy, telecommunications, aviation, and defence, to name but a few.

### EUROPE NEEDS A COHERENT INDUSTRIAL STRATEGY FOR THE EUROPEAN DOWNSTREAM SPACE SECTOR THAT ENSURES EUROPE'S AUTONOMY THROUGHOUT THE SPACE VALUE-ADDING CHAIN, FROM LAUNCHERS TO RECEIVERS AND CHIPSETS.

We ask that such strategy is supported by a consistent budget in the next Multi-annual Financial Framework of the EU, reflecting the important investments made by Europe in its Space Programme and allowing these to produce tangible benefits for the European citizens, through the creation of jobs and economic opportunities and the provision of enhanced and secured public services.

The paper lists the challenges identified by the European downstream space industry, SMEs in particular, to compete on the global market, and explains how a weak European space downstream industry entails risks for sectors that are crucial for Europe's safety, autonomy and economic resilience.

We provide insights that we hope will be useful to implement measures to overcome the challenges identified and propose actions to foster user uptake and promote European excellence and know-how.

We stress the need for a **cooperative approach** to conceive and implement an industrial strategy for the European downstream industry and propose measures to foster European excellence throughout the value chain and in all sectors to which space can provide an added-value.

Europe must strengthen its position in the global space economy and create the conditions to shape a European way to compete in a highly innovative and dynamic sector.

This cannot be achieved without federating the interests of the European downstream space industry players and without involving them in all new developments in the EU Space Programme.

The members of Space Y are prepared to contribute shaping an industrial strategy for the European downstream space sector that will create value for Europe and ensure Europe's autonomy, safety and resilience in the next decades.





# STRUCTURE OF THE POSITION PAPER



**SECTION I** introduces the critical **role of the downstream space industry**.

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**SECTION II** highlights the **challenges** faced by the European downstream space sector to achieve its full potential.

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**SECTION III** contains a proposition on the **way forward** envisaged by Space Y, outlining measures to overcome the challenges faced by the European downstream space industry identified in Section II.

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**SECTION IV** asks for a comprehensive **strategy** to support the European downstream space industry and lists the actions that should be undertaken to build such strategy.

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**SECTION V** provides **conclusions** and a synthesis of the key messages of this position paper.

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**ANNEX I** includes **examples** of use of satellite data from the Space Y members.

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**ANNEX II** briefly introduces the **Space Y** network's mandate and objectives.



# INTRODUCTION

As we move towards the definition of the next Multiannual Financial Framework (MFF) of the EU, it is imperative to take into account the evolving needs and priorities of Europe's downstream space sector.

This sector, which includes the use of space data and technologies for applications such as satellite communications, Earth observation and navigation services, plays a crucial role in driving innovation, economic growth and societal benefits, boosting the economy and ensuring the security of the EU and of European Member states and citizens.

The European Union has made significant investments in space infrastructure and services and is currently expanding its Space Programme, with a particular focus on developing new capabilities, especially in secure communications.

It is vital that equal efforts are made to support the exploitation of such infrastructure by European companies downstream to develop efficient, competitive and usable services that foster:

- The creation of value in a multitude of sectors
- The economic growth of Europe
- The recovery of the important investments made and foreseen in the EU Space Programme.

In this position paper, **Space Y**, an organisation representing the interests of the European downstream space industry [1], provides recommendations on key priorities that should be taken into account when deciding on the allocation of funds under the forthcoming MFF.

The recommendations advocate for support to the sector, in order to enable the downstream industry to continue contributing to Europe's strategic goals in areas such as digital transformation, secure infrastructure, environmental sustainability, mobility, defence, crisis and emergency preparedness, among others.

Space Y's recommendations aim at:

- Fostering the development and **uptake** of space-based services in all sectors where they can have an added-value
- Sustaining the **competitiveness** of the European space downstream industry (which will have positive effects also on the upstream sector) to place Europe at the forefront of the global space economy
- Ensuring the **autonomy and resilience** of the European downstream space value chain for both defence and civil applications.

By addressing these priorities, the next MFF can make a significant contribution to the development of the European downstream space sector and ensure that it remains a key driver of innovation and economic progress.

**Space Y looks forward to working with policymakers and stakeholders to shape a forward-looking and impactful MFF that meets the needs of the space industry and of the European society at large.**

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[1] The Space sector's activities can be divided into Upstream and Downstream. While the Upstream focuses on sending objects such as satellites into space and on space exploration, the downstream sector uses the data from the upstream to develop and commercialise services, applications and terminals for a variety of different uses (e.g. agriculture, transport, and environmental monitoring, among many others). The Downstream accounts for the greatest growth in the space sector and is where the funds invested in the upstream infrastructure generate value for society. European autonomy is not achievable without a sustainable presence of European companies in the whole downstream space value chain (e.g. services, terminals, chipsets).

# I.

## THE ROLE OF THE DOWNSTREAM SPACE INDUSTRY

**Number of economies and public services rely on space**, including transport, telecommunications, understanding of climate change, defence and security.

Most of Europe's critical **infrastructure**, such as dams, bridges, power plants, airports, energy grids, and transport systems could not operate safely without data from satellites. In addition, in the future satellites will be essential to enable **Quantum Internet**.

These services translate the potential of Copernicus, Galileo, IRIS<sup>2</sup> and GOVSATCOM into tangible benefits that impact nearly every aspect of daily life.

Soon, the EU Space Surveillance and Tracking (SST) component of the Space Programme will also provide new opportunities for commercial companies to develop services downstream.

**BY HARNESSING THE RAW POTENTIAL OF SPACE TECHNOLOGY, THE INDUSTRY PROVIDES ESSENTIAL SERVICES FOR OUR MODERN SOCIETIES.**



Some of the sectors of application of satellite-based services and data



The EU Space downstream industry contributes to the European economy, society and environmental well-being, playing a key role to enhance **user uptake**.

Indeed, the downstream industry **translates user needs** into technical specifications, turning them into products and services and hence **filling the communication gap** between space/research and end users.

Moreover, the downstream sector accounts for the largest share of the space economy (80% in 2020 according to the Space Foundation).

A report by McKinsey & Company estimates that the global space economy, worth \$630 billion in 2023, will be worth \$1.8 trillion by 2035. This includes both applications traditionally in the realm of space (i.e. for launchers, satellites, broadcast television and GNSS) and applications across a variety of non-space industries, which account for about 50% of the total.

This means that advancements made by the space downstream industry offer **opportunities** to create new economic activities in Europe and with them hundreds of thousands of jobs.

**A HEALTHY AND COMPETITIVE SPACE DOWNSTREAM SECTOR IS NEEDED TO ENSURE THAT THE INVESTMENTS MADE UPSTREAM RESULT IN TANGIBLE BENEFITS FOR SOCIETY AND TO GRANT THE COMPETITIVENESS AND SUSTAINABILITY OF THE WHOLE SPACE SECTOR.**

# THE SPACE-BASED APPLICATIONS

## GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS), EARTH OBSERVATION (EO), SATELLITE COMMUNICATIONS (SATCOM), AND SPACE SURVEILLANCE AND TRACKING (SST)

### **Global Navigation Satellite Systems (GNSS)**

provide essential positioning, navigation and timing services that are critical to the efficiency and safety of land, sea and air travel. Beyond everyday personal navigation, GNSS technology plays a critical role in the operation of autonomous vehicles, drones and advanced supply chain management systems.

GNSS enhances global trade and improves the overall mobility of people and goods while reducing its cost and environmental impact. In addition, GNSS is crucial to ensure secure timing and synchronisation of modern telecommunication networks.

**Earth observation (EO)** provides crucial data for environmental monitoring, agriculture and urban planning, among others.

Satellites, equipped with advanced sensors, capture detailed images and data of the Earth's surface, atmosphere and oceans that can be used for number of applications.

### **Satellite Communication (SatComs)**

**services** are essential for connecting remote and underserved regions, bridging the digital divide and promoting inclusive economic growth. These services enable global broadcasting, internet access and mobile communications, ensuring that information can be disseminated quickly, securely and efficiently, regardless of geographical barriers.

The reliability and coverage of satellite communications are essential for disaster response and recovery, facilitating coordination and communication and ensuring remote control of critical infrastructure when terrestrial networks are compromised. In the future, satellites will be essential for connecting quantum devices and distributing secured keys.

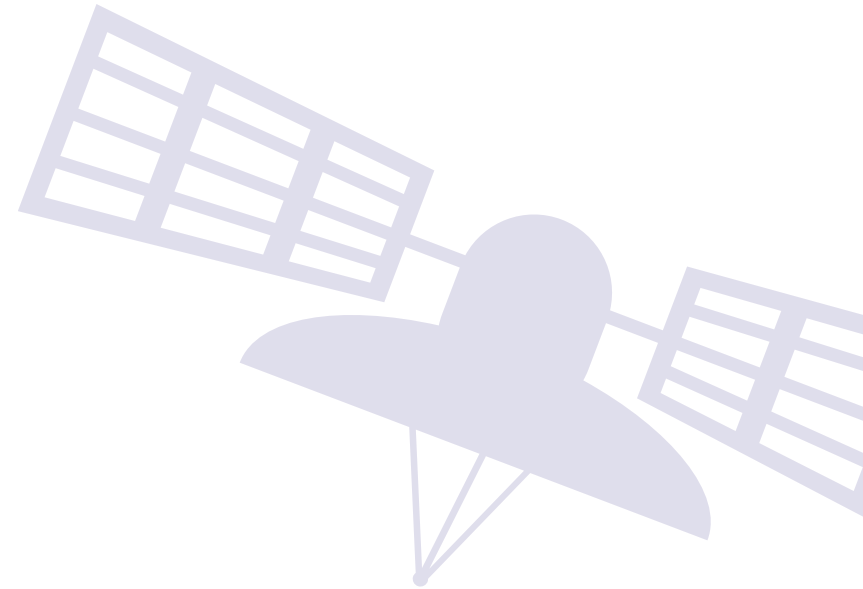
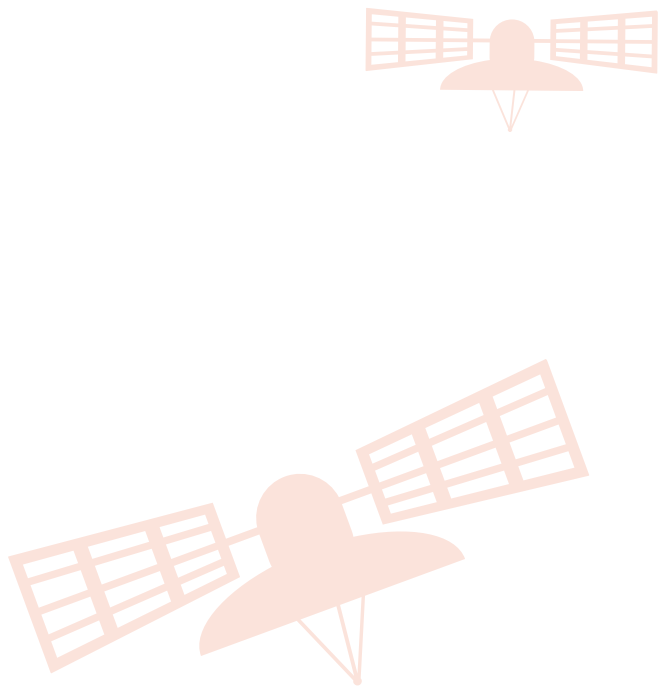
### **Space Surveillance and Tracking (SST)**

ensures, through a network of ground-based and space-based sensors, surveying and tracking of space objects to avoid collisions and damage caused by the re-entry of space debris into the Earth's atmosphere.

SST systems are crucial to secure the safety and security of downstream services relying on satellites.







## INSIGHTS FROM EUSPA

### EO and GNSS Market Report (EUSPA 2024) Secure SATCOM Market and User Technology Report (EUSPA 2023)

The **Global Navigation Satellite Systems (GNSS)** global downstream market revenues are expected to grow from around €260 billion (2023) to almost €600 billion in 2033, with the devices market to grow from €70 billion to almost €120 billion and the added-value service market to soar from €190 billion to more than €460 billion.

On the Supply side, GNSS revenues are concentrated among companies in the U.S. (30%) and Europe (25%, far from the achievable objective of 33% set by Galileo Services in its position paper of 2019).

The **Earth Observation (EO)** global market is expected to grow to almost €6 billion in 2033, of which almost €5 billion are represented by value-added EO services.

For such services, while the North American EO industry is still prominent, Europe is leading in analysis, insights & decision-support (mainly through SMEs).

Considering **Satellite Communications**, data services are expected to grow from €14.8 billion (2021) to €46.7 billion (2031) – with a 10-year CAGR of 12%.

Moreover, the demand for Secure SATCOM services is expected to grow by a factor of 14 over the 2025-2040 period.

## II. CHALLENGES FACED BY THE DOWNSTREAM SPACE INDUSTRY

The global space downstream market is expected to continue growing in the years to come, with developments that should be beneficial to all sub-sectors of the European economy.

**Despite the proven capabilities of the European downstream space industry in terms of vision, technological innovation and user engagement, this struggles to compete on the global market.**

For example, EU companies only have a 25% share of the global GNSS supply market, and just a 10% share of the global microchips market.

Such percentages do not reflect the economic efforts made by the EU in its Space Programme, nor the ambitions of the diverse ecosystem of companies exploiting satellite-based data in Europe.

The challenges faced by the European downstream space industry include value-chain gaps, market fragmentation, lack of users' awareness, barriers to entry, complicated procurement processes, complex data analytics, limited access to budget and venture capitals, and workforce availability.

THESE FACTORS LIMIT THE DEVELOPMENT AND UPTAKE OF NEW  
DOWNSTREAM SERVICES, LEADING TO LOWER PRODUCTION VOLUMES AND  
HIGHER UNIT OR SERVICE COSTS FOR USERS.

### ► GAPS IN THE VALUE CHAIN

**Securing the space value chain is vital to enable and secure number of critical operations and infrastructure. Today, the European space value chain is depending on foreign countries for some of its key elements, such as launchers and microchips.**

While the EU implements its secure satellite communication programme and increasingly secured protocols, communication terminals are still mainly manufactured in the U.S. and China.

This means that European companies risk missing the race for the developments needed to deploy IRIS<sup>2</sup> at the terminal and chip level.

Not only does this threaten the position of the European downstream industry in the global market, but it also leaves room for gaps in the security of our governments' critical satellite communication services, and it could eventually jeopardise the overall scope of the IRIS<sup>2</sup> programme.

### ► MARKET FRAGMENTATION

**The downstream sector consists of a variety of applications (i.e. GNSS, EO, SatCom, and SST) and space-related enterprises, providing products, information and services in number of markets which are subject to different regulations and trends, varying among countries.**

This makes it difficult to federate the interests and needs of the actors involved and to consider the space downstream sector as a single ecosystem or market.

In addition, many products and services resulting from R&D investments fail to reach the market and, especially for what concerns EO-based products, require a high degree of customisation.



### ▶ **COMPLEX DATA ANALYTICS**

**The possibility of turning the increasing volume of data produced by the EU Space Programme into valuable and actionable information represents an immense commercial opportunity and, at the same time, a harsh challenge.**

The current “data-as-a-service” approach of the EU Space Programme, providing raw Earth observation data to the public, is an important first step to foster user uptake.

Nevertheless, because of the high amount of EO data needed, for many companies and public administrations it is costly to develop insights, software and simulation tools on their own, which also increases the costs of such products.

### ▶ **BARRIERS TO ENTRY**

**Several potential users show reluctance to workflow changes, envisaging medium-high investments in equipment and software needed to exploit satellite data and services.**

As a result, European workflows and equipment fall behind technological advancements, diluting the intended benefits for society of the advancements of the EU Space Programme upstream.

While standardisation and certification can potentially foster market adoption and the competitiveness of the European industry, such processes often take several years.

### ▶ **LACK OF USERS' AWARENESS**

**Many potential users of space-based services are unaware of the benefits and capabilities of such technologies, and of the competitive advantages of the EU Space Programme services, such as their increased robustness and trustability.**

This lack of awareness limits market demand and slows the adoption of innovative solutions that could drive growth and improve services.

### ▶ **COMPLEX PUBLIC PROCUREMENT PROCESSES**

**The European public sector context often features complex bureaucratic processes for funding and procurement, which can limit rapid engagement with innovative SMEs.**

While the European Innovation Council and programmes under Horizon Europe have made strides in improving funding for innovative projects, the agility and scale of U.S. procurement and funding initiatives still highlight a notable gap.

Efforts to facilitate cross-border or joint procurements of space-based services among public administrations still fail to overcome the barriers posed by the different levels of digitalisation in public administrations and the legal and administrative requirements for public procurement existing in Member States.

The fact that procurement processes are often local prevents mass production, the exploitation of economies of scale to reduce the costs, and the emergence of leaders among the European downstream industry.

► **DIFFICULT ACCESS TO BUDGETS, VENTURE CAPITALS AND HIGH-RISK INVESTMENTS**

European companies, particularly SMEs, face challenges in accessing funding and loans for high-risk projects. This affects their capacity to invest in R&D and bring new technologies to market, ultimately hindering their competitiveness vis-à-vis foreign companies.

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As an example, in the U.S., government support mechanisms for SMEs, especially in high-tech sectors, include initiatives such as the Small Business Innovation Research and Small Business Technology Transfer programmes, in which the U.S. government acts as an anchor customer, ensuring that SMEs have initial buyers for their innovations.

Agile procurement practices in the U.S., such as rapid contracting and simplified processes, further facilitate participation by smaller firms (see previous point).

Finally, various agencies, such as the U.S. Small Business Administration, offer loans and guarantees tailored to SMEs, which provide a safety net and encourage risk-taking in innovation.

► **RESTRICTED ACCESS TO SATELLITE-BASED DATA DURING CRISIS SITUATIONS**

Access to satellite-based data from commercial operators in critical regions is governed by stringent EU security policies and regulatory frameworks, often limiting it to certified users authorised by governmental bodies, such as the European Union Satellite Centre (SatCen).

Other institutions directly governed by the European Commission, such as the European Maritime Safety Agency (EMSA), Frontex, and the Emergency Response Coordination Centre (ERCC), which address security-related issues but lack national representatives on their boards, may not have the same level of access during crisis situations.

Similarly, European space downstream industry players, who may need high-resolution or security-sensitive information to support their clients in crisis-affected areas, are typically subject to restrictive access rules based on specific licensing agreements and certification requirements.

► **DIFFICULTIES IN RECRUITING AND RETAINING SKILLED PERSONNEL**

**The sector faces challenges in attracting and retaining a skilled workforce.**

The shortage of skilled workers in Europe results from various factors, including the recent increase of staff turnover since the COVID pandemic, the attractiveness of large companies from other continents, and the acquisition of the most promising European start-ups by non-European corporations.







## III. SPACE Y'S PROPOSED WAY FORWARD

### IN A NUTSHELL

The developments made by the European space sector upstream offer number of **opportunities** to create new services and devices that could strengthen Europe's security, autonomy and economic stability, support and enhance the provision of several public services, and allow for the creation of new jobs in the downstream industry and in all industries related to the digital economy in the EU.

TO ACHIEVE AUTONOMY,  
THE EUROPEAN INDUSTRY  
MUST BE PRESENT  
THROUGHOUT THE WHOLE  
VALUE CHAIN, FROM  
SATELLITES TO SERVICES.

There is a need to **federate the efforts** among the key stakeholders in Europe to optimise the development of a competitive space downstream industry, building on the distinctive advantages offered by the European Copernicus, Galileo and EGNOS programmes, and on the new developments in SST and secure satellite communications, notably with the deployment of GOVSATCOM and IRIS2, including the European Quantum Communication Infrastructure (EuroQCI) [1].

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[1] The European Quantum Communication Infrastructure (EuroQCI) initiative aims to build a secure quantum communication infrastructure that will span the whole EU, including its overseas territories. It was launched in 2019 via the EuroQCI Declaration, which has now been signed by all 27 EU Member States.



## USER NEEDS MUST REPRESENT THE FOUNDATION OF NEW DEVELOPMENTS IN THE SPACE SECTOR.

To ensure that funds are allocated and spent coherently, the European downstream industry, which is in contact with users and aware of their operational needs, must be involved in the design and development of space services upstream from the early specification phases and throughout their development and deployment.

The involvement of the European downstream industry shall be also secured in strategic initiatives taken at the EU and national levels where space-based data and services can play a strategic role. This includes initiatives in application sectors such as transport, agriculture, infrastructure management, and aviation.

To guarantee that the investments incurred in the space infrastructure fuel the European economy and support the implementation of European strategies at application level, it is crucial that the next MFF increases budgets made available to European companies in the downstream space sector.

## WE NEED A COHERENT EUROPEAN STRATEGY FOR THE DOWNSTREAM SPACE SECTOR, WITH ASSOCIATED BUDGET AND MEASURES.

Space Y estimates that in the 2028 – 2034 period, the budget to be allocated to projects and initiatives aimed at supporting the space downstream sector only should be of €6,25 billion, to be distributed among the different EU Space programme's components and related initiatives.

Such funds could be made available under existing EC programmes and initiatives dedicated to space, and under programmes and initiatives targeting non-space sectors, and where the EU Space Programme can enable innovation. Targeted support shall be granted to SMEs to help them compete on international markets.

In addition to increased budgets, the downstream space sector needs to be sustained by ad-hoc measures to **foster user uptake**. These should include initiatives (e.g. certification and standardisation procedures and an “analytics-as-a-service” approach to the provision of EO data) to **accelerate time to market** of innovative products and services based on satellite data and signals, and measures to **facilitate procurement** of such services by public administrations across Member States.

## OUR PROPOSED MEASURES TO OVERCOME THE CHALLENGES FACED BY THE EUROPEAN DOWNSTREAM SPACE INDUSTRY

### ► SUPPORTING THE AUTONOMY AND RESILIENCE OF THE EUROPEAN DOWNSTREAM VALUE CHAIN

The European downstream space industry shall be duly involved in the design and implementation of new upstream space services, R&D and innovation technology programmes, in order to anticipate the required evolutions at user application level, take action to fill the existing gaps in the European value chain, and start the promotion of these services as early as possible.

**Specific initiatives should be launched to support research, development and commercialisation of advanced technologies, services, terminals, and chipsets,** while keeping the costs competitive and affordable for the final users.

**Policies and regulations should be designed to sustain the use of space technologies made in Europe and developed with European funding.** As an example, products made in Europe could be given priority at least in public procurements and in regulatory applications.

### ► DEVELOPING AN INDUSTRIAL STRATEGY FOR THE DOWNSTREAM SPACE SECTOR

**Advancing downstream activities demands a comprehensive ecosystem strategy at EU level, alongside customised support measures.**

To this end, the space downstream industry is ready to work with the European institutions in the design and implementation of a strategy that takes into account **user uptake, industry competitiveness and European security and autonomy.** More details on the actions needed to implement such strategy can be found in the next section of this position paper.

**EU regulations at application level should further be adapted to foster market adoption of products and services derived from the EU space programme and to create a critical mass in specific sectors** benefitting from space products and services in Europe (e.g. transport, infrastructure management, etc.).

**A critical mass of potential users should be targeted** when procuring equipment and services, requiring federation and coordination initiatives at European level. This would reduce costs in the short term, and ultimately increase the competitiveness of the European industry.





## ▶ ADOPTING AN “ANALYTICS-AS-A-SERVICE” APPROACH TO SUPPORT DATA USE

To facilitate the shift from today's “data-as-a-service” approach to an “analytics-as-a-service” approach, the EU institutions should not only provide raw data to the public, but also multiply activities in which they act as anchor customers for data analytics.

Not only would this support business ideas and the European data analytics community, but it would also fasten the availability of innovative applications to the public and their use for essential activities, such as **climate-related initiatives**.

The public taking a bigger share in the downstream analytics value chain will not harm the industry, but would instead **foster innovation**, by reducing the uncertainties which are inherent to innovation for the industry itself. Furthermore, this could allow the industry to reach out to new user communities.

An example of how such approach could be implemented is the Luno procurement programme established by the U.S. National Geospatial Intelligence Agency. With a value of approximately \$300 million, Luno will leverage commercial EO and EO-based analytics to enhance its global economic monitoring capabilities. Similar initiatives could be implemented at EU level.

## ▶ FEDERATING USER NETWORKS TO RAISE AWARENESS

In addition to the yearly organisation of the EU Space Week and User Consultation Platforms, actions must be launched to enable direct interactions between the space downstream industry and final users.

These interactions should allow the downstream industry to gather final users' operational needs and to turn such needs into applications, systems and services, including suggestions for evolutions in the upstream services.

**Awareness raising targeted actions, training and real-time demonstrations shall be frequently organised** in the more strategic domains for Europe, targeting a European-wide audience. To this end, European institutions could launch an initiative to support the **federation of networks of users** existing at local and regional levels towards a European dimension.

**A catalogue of space-based products and services made in Europe could be compiled and promoted** by European institutions, for example during diplomatic missions and within the EU missions aimed at fostering European businesses in third countries.

**Potential end users shall be involved since the very beginning in the design of new EU space systems and programmes** and be regularly consulted to discuss their evolving needs and programme's progresses.

## ► USING CERTIFICATIONS AND STANDARDS TO FOSTER THE UPTAKE OF INNOVATIVE SERVICES

**Certifications, standards, and pioneering standardisation processes at both EU and national levels would facilitate the integration of satellite-based services into users' workflows.**

As an example, data certification standards for decision-support systems based on Earth observation would ensure their reliability and accuracy, boosting trust and adoption by end users. Data quality and accuracy standards for EO commercial data would help meeting the needs of high-stakes industries such as insurance, critical infrastructure, security and defence.

Another example would be an update to the 5G NR (New Radio) standards (e.g. the ETSI - European Telecommunications Standards Institute Release 18) to better integrate satellite communications with terrestrial 5G networks and navigation infrastructure, which would significantly foster user uptake.

To decrease the costs of certification and standardisation of new products resulting from EU-funded projects, such costs could be included in project budgets, with the aim of accelerating time to market for innovations based on space data and signals.

**The participation of the European Space Downstream Stakeholders in Standardisation and Certification Boards** would help reducing the time needed to integrate previously-certified systems with satellite-based solutions, ensuring that compliance with standards becomes a booster rather than a barrier for the European industry.

**Taking advantage of its direct contact with final users, the industry can foster the integration of standardised and certified space-based services into the workflows of intended users, while also demonstrating the efficiency and potential benefits of satellite systems for their operations.**

The downstream space Industry is available to support potential users to invest in hardware and software compatible with the capabilities of the EU Space Programmes.

## ► HARMONISING PUBLIC PROCUREMENT PROCESSES, WHILE INCREASING THEIR AGILITY TO RESPOND TO LOCAL NEEDS

**Procurement processes need to be made more agile and to be more responsive to the needs of the individual public institutions procuring them.**

There is need to **harmonise legal frameworks** to establish uniform and consistent procurement laws across Member States to streamline uptake processes.

It would be also recommended to improve efficiency and transparency by driving **digitalisation of procurement tools** at the European Level.



## ► UNLOCKING ACCESS TO BUDGETS, VENTURE CAPITALS AND HIGH-RISK INVESTMENTS

The EU should significantly increase the budget allocated to the downstream space sector compared to the previous budget's allocations. This increase would reflect the growing strategic importance of data-driven applications and services and of space for Europe's autonomy, security and resilience.

Such funds could be made available under existing EC programmes and initiatives dedicated to space, notably the European Space Programme, the Fundamental Elements funding scheme and Horizon Europe's Cluster 4, and under other programmes, like the Cohesion Fund, the Connecting Europe Facility, the Digital Europe programme, InvestEU (with increased funds for the Cassini initiative), the European Regional Development Fund, the European Agricultural Fund for Rural Development, and the Programme for Environment and Climate Action.

When looking at the specific components of the EU Space Programme and related initiatives, we recommend allocating the following budgets to the downstream:

- **€1,5 billion for Copernicus downstream services and applications**, allowing private companies to fully exploit the increased data availability offered by the Copernicus Data Space Ecosystem (CDSE) and to capitalise on new services, such as on-demand production for Sentinel-2, advanced tools for data analytics, and federated access to complementary datasets. Increased budgets for Copernicus would also support ongoing discussions to create a dedicated service for governmental users.
- **€2 billion for Galileo and EGNOS downstream applications**, enabling downstream companies to exploit the advancements in EGNOS V3 and to capitalise on the deployment of Galileo's second-generation satellites for advanced applications, and of Low Earth Orbit (LEO) satellites.

- **€2,25 billion for products and services related to the deployment of GOVSATCOM and the exploitation of IRIS<sup>2</sup> downstream**: increased support to the downstream space sector is particularly urgent for Europe to compete in the satellite communications race, where SpaceX's Starlink largely dominates the commercial market (with \$3 billion revenues from U.S. government contracts in 2025 only). **European companies shall be rapidly supported to produce user terminals able to keep the level of security promised by IRIS<sup>2</sup>**, at least for governmental and military applications. The full deployment of GOVSATCOM will also require user terminals that are compatible with IRIS<sup>2</sup> and a long-term R&I plan to address future technological advancements and evolving user needs, ensuring that the system remains adaptable and scalable.
- **Up to €0,5 billion for SSA/SST downstream services**: further investments are also needed to support downstream start-ups and SMEs to build services based on SSA/SST, i.e. for infrastructure management, power plants, avionics, transport safety, etc.

**Access to funds shall be increased for SMEs** building products and services related to the exploitation of space-based data and signals. To this end, the EU should establish programmes in which EU institutions act as anchor customers for innovation.

**Special loans and guarantees should be made available for SMEs** contributing to the exploitation of space data and signals.

## ► FACILITATE ACCESS TO SATELLITE-BASED DATA OVER CRITICAL AREAS

**A fit-to-purpose right to demand satellite-based data over critical regions should be accorded to public and private entities, including a list of certified stakeholders, a number of identified cases in which the request for data can be received, and specifying cases in which high-resolution or very-high resolution data can be provided.**

A specific framework should be defined at the EU level on the “right-to-share” the satellite-based data produced by private operators over crisis zones. This shall result from discussions with the relevant national authorities and should aim at improving data acquisition and dissemination processes across Member States, preventing delays in critical decision-making processes.

## ► INVOLVING THE INDUSTRY IN THE CREATION OF SKILLS USEFUL TO EXPLOIT SPACE DOWNSTREAM

**European initiatives, such as the large-scale Skills Partnership in the space sector within the Pact for Skills and the European Space Career Launchpad are welcomed by Space Y.**

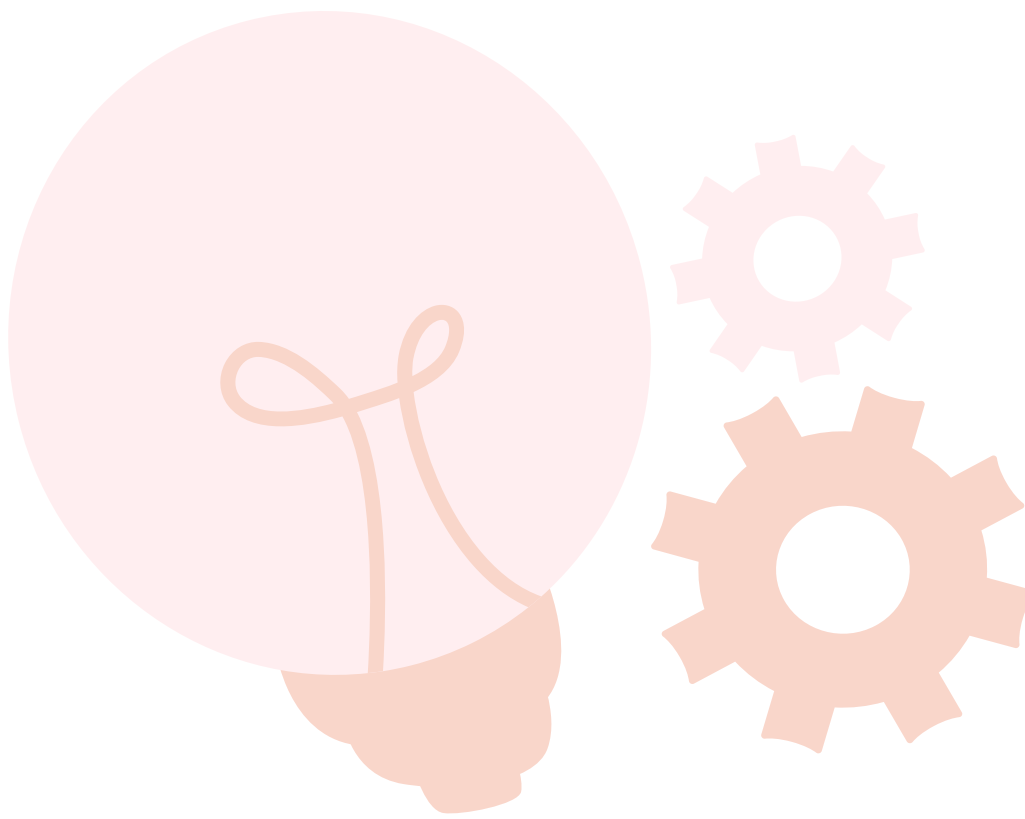
These initiatives need continued implementation to address staffing challenges and must effectively involve the industry.

The EC should promote the integration of **educational programmes into high school curricula** to provide pupils with the basics of satellite navigation, communication, user terminal design and imagery processing (including GIS tools).

**European PhD and Public-Private internships** should be encouraged to favour the early engagement of educated resources into the sector.







## IV. TOWARDS A EUROPEAN STRATEGY FOR THE DOWNSTREAM SPACE INDUSTRY

To maximise user uptake, competitiveness, and EU autonomy and resilience, a joint effort is required from all European institutions, in particular the EU Parliament, the Council of the EU, the European Commission, the EIB, and EUSPA, in addition to ESA, to work in close cooperation with the European space downstream industry.

JOINTLY, WE MUST DEFINE  
AND IMPLEMENT A  
STRATEGY AT EU LEVEL TO  
ENSURE THE SUSTAINABLE  
DEVELOPMENT OF THE  
DOWNSTREAM SECTOR AND  
ITS INDUSTRY.

This strategy must include the following actions:

- Identify strategic sectors (e.g. critical infrastructure, transport, environment and defence) from both political (e.g. autonomy, security) and economic perspectives.
- Identify critical technologies and assess them against existing technologies and skills in Europe to identify existing gaps.
- Set up appropriate mechanisms to fill technology and skill gaps (e.g. support to industrialisation, R&D and educational initiatives and programmes to stimulate the interest of the youngsters towards the use of satellite data).
- Identify investment and funding needs at all levels, from R&D to industrialisation and commercialisation phases, across different strategic sectors.



- Evaluate available public and private funding instruments at EU and national levels, highlighting existing gaps and rooms for improvement.

- Evaluate the potential for EU institutions to increasingly act as anchor-customers not only to benefit from the potential of downstream applications, but also to prove their effectiveness.

- Set up mechanisms to support European downstream companies moving from not-scalable project-based business models, to scalable commercial services.

- Identify areas where support for standardisation can benefit the business and competitiveness of European industry players.

- Identify areas where the update or creation of new regulations could foster market adoption for services (based on the progresses of the EU Space Programme), and strengthen the competitiveness of the European downstream industry.

- Encourage the creation of a European network of users in strategic domains, federating existing local networks or fostering the creation of new ones when necessary.

- Set up appropriate frameworks for the industry to interact with final users, with the aim of gathering operational needs, raising awareness, and demonstrate products and services.

- Implement targeted communication strategies and communication tools to raise awareness among user networks in different domains.

- Ensure the involvement of the downstream industry in the design, development, standardisation, certification, and evolution of upstream infrastructure and services.

- Foster cooperation between national and European procurement agencies to increase the consistency and homogeneity of procurement procedures across Europe, to make contractual processes more agile and to encourage the combination of procurement methods.

- Foster the federation and coordination at European level of both public and private procurement needs and initiatives, at least by market domain, also involving governmental service providers, to achieve a critical mass when procuring equipment and services.

- Define a Space industrial policy for the whole European space sector that properly addresses the needs of the European downstream space industry.



## V. CONCLUSIONS

The space downstream industry is critical for modern economies and public policies, providing essential services in strategic sectors such as transport, telecommunications, environmental monitoring, and security, among others.

A healthy and competitive space downstream sector in Europe is needed to ensure that the investments made in the European space sector upstream result in benefits that are perceived by the European citizens, thanks to the development and use of products and services that increase the competitiveness of current businesses, boost entrepreneurship, and enhance public services and quality of life in Europe.

**To do so, the EU must ensure that the European space downstream sector is properly supported under the next MFF with a dedicated industrial strategy and budget to meet its objectives.**

The strategy shall be designed and implemented in collaboration with the industry and all relevant stakeholders. It must aim at enhancing user uptake, European industry competitiveness, and European security and autonomy, leveraging on the EU Space Programme.

- **Fostering user uptake** means adapting EU regulations to foster the use of space-based data and services at application level, streamlining and harmonising procurement processes, and implementing specific initiatives to better identify user needs and improve product development made in Europe, with the aim of creating a critical and engaged mass of users.
- **Sustaining the competitiveness of the European downstream space industry** means creating policy and legal systems that favour the entry of European actors into the market. It also implies increasing the access of SMEs to funds to design and implement innovative space-based services, for example through programmes in which European institutions act like anchor customers. In addition, it requires unlocking venture capitals for European companies willing to embark in high-risk R&D projects to extend the reach of satellite-based services. Finally, it needs continued efforts to develop the skills needed by the European space downstream industry, including initiatives also aimed at upskilling and reskilling the current workforce.
- **Ensuring the autonomy and resilience of the European space value chain** requires involving the European downstream space industry in the overall development of new space capabilities upstream, in order to identify gaps, and to put in place measures to fill them, i.e. through ad hoc schemes to support research, development and commercialisation of advanced technologies and services throughout the whole downstream space value chain.





**BY FOSTERING INNOVATION AND PROMOTING THE USE OF SPACE-DERIVED DATA AND SERVICES, THE EU CAN OPEN UP NEW OPPORTUNITIES TO ENHANCE EUROPEAN COMPETITIVENESS AND ECONOMIC SUSTAINABILITY.**

Space Y estimates that the implementation of a European industrial strategy for the downstream space sector for the period 2028-2034 would need a dedicated budget of €6,25 billion, to be distributed according to identified gaps in the downstream value-chain for each component/initiative of the EU Space Programme.

This investment is imperative for Europe to be able to compete on the global market for space downstream applications, and to ensure that the efforts made to build our EU Space Programme are not jeopardised.

The current political and environmental contexts require urgent actions to ensure the sovereignty of Europe for the operation of its critical infrastructure and services, while ensuring the competitiveness of the products and services made in Europe.

The political and business stakes are very high and it is therefore crucial to increase the involvement, autonomy, and competitiveness of the European industry and to guarantee that European downstream players can respond to European strategic challenges in all application domains.

Sustaining the development of an autonomous European space value chain will enhance the competitiveness of the European downstream space industry, while also benefitting the European economy more in general, through the creation of jobs and economic opportunities in the digital and high-tech sectors, as well as in all sectors where space data proved to have an added-value.

Furthermore, supporting the use of space-based data and services would increase the efficiency of public administrations and improve the management and provision of public services, resulting in tangible benefits for the European society.

The European downstream space industry is eager to work with European institutions and all relevant stakeholders to ensure that space acts as a driver for innovation, safety, sustainability, and economic well-being in Europe.

**SUPPORTING EUROPE'S DOWNSTREAM SPACE SECTOR IS CRUCIAL TO ACHIEVE AN ACCEPTABLE LEVEL IN EUROPEAN AUTONOMY, AND IT IS ESSENTIAL TO DRIVE ECONOMIC GROWTH, IMPROVE SOCIETAL WELL-BEING, AND MAINTAIN STRATEGIC COMPETITIVENESS.**

By addressing value-chain gaps and market fragmentation, increasing investments, fostering innovation, and facilitating interactions with the users, Europe can ensure that global leaders will emerge within its downstream space industry.

Europe's downstream space sector respectfully asks the European institutions to consider this set of recommendations for the next EU financial period.



## REFERENCES

Business Research Insights, Satellite Communication Terminal Market Size, Share, Growth, and Industry Analysis, By Type (C Band, X Band, S Band, Ku Band, Ka Band and Others), By Application (Military and Civil), Regional Insights, and Forecast To 2032, April 2024 ([LINK](#))

Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions "Towards a more resilient, competitive and sustainable Europe" (COM(2023) 558 final, Brussels, 27 September 2023 ([LINK](#))

Draghi M., The Future of European Competitiveness – Part A, A competitiveness strategy for Europe, September 2024 ([LINK](#))

Erwin S., Starlink set to hit \$11.8 billion revenue in 2025, boosted by military contracts, in Space News, 16 December 2024 ([LINK](#))

European Union Agency for the Space Programme (EUSPA), EUSPA EO and GNSS Market Report, Luxembourg, Publications Office of the European Union, 2024 ([LINK](#))

European Union Agency for the Space Programme (EUSPA), Secure SATCOM Market and User Technology Report, Luxembourg, Publications Office of the European Union, 2023 ([LINK](#))

Letta E., Much more than a market – Speed, Security, Solidarity, Empowering the Single Market to deliver a sustainable future and prosperity for all EU Citizens, April 2024 ([LINK](#))

Moranta S., The Space Downstream Sector: Challenges for the Emergence of a European Space Economy, Études de l'Ifri, Ifri, March 2022 ([LINK](#))

Next Move Strategy Consulting, Wireless Electric Vehicle Charging Market, August 2023 ([LINK](#))

PwC, Main Trends & Challenges in the Space Sector 4th Edition, 2024 ([LINK](#))

Regulation (EU) 2023/1781 of the European Parliament and of the Council of 13 September 2023 establishing a framework of measures for strengthening Europe's semiconductor ecosystem and amending Regulation (EU) 2021/694 (Chips Act) (Text with EEA relevance), 13 September 2023 ([LINK](#))

World Economic Forum, Space: The \$1.8 Trillion Opportunity for Global Economic Growth, 2024 ([LINK](#))



## ARTICLES AND POSITION PAPERS FROM SPACE Y/ GALILEO SERVICES

Is Europe Capitalising on the Investments in Space?, Press Release, Space Y, 24 January 2023

Galileo Services evolves into Space Y, Press Release, Space Y, 27th January 2021

Letter to European Commission President Jean-Claude Juncker, Galileo Services, 6th April 2018

Success of Galileo: Growth of the European GNSS downstream industry, Article, Galileo Services, the Parliament Magazine, Issue 468, 22 January 2018

EU Space Economic diplomacy: Views from the GNSS Downstream Industry, Position Paper, Galileo Services, 1st October 2017

A Space Strategy for Europe – Input from Industry for a Successful GNSS Market Uptake, Position Paper, July 2016

Europe must succeed in the Global Navigation Market Race, Position Paper, Galileo Services, September 2015

Is Europe ready to make Business on Galileo, Galileo Services, The Parliament Magazine, 7 March 2016





# ANNEX I

## EXAMPLES OF USE OF SATELLITE DATA FROM THE SPACE Y MEMBERS

### CRITICAL INFRASTRUCTURE

#### PROTECTING THE EU CRITICAL INFRASTRUCTURE FROM CYBERATTACKS THANKS TO A SPACE-BASED QUANTUM KEY DISTRIBUTION (QKD) SERVICE

With the increasing sophistication of cyber threats, traditional encryption methods are no longer sufficient, putting critical infrastructure at risk. A leak in hospitals' communications could expose thousands of patients to fishing, ransomware attacks and data breaches. Power grids would risk blackouts and equipment damage, transport systems could face service disruptions and security threats, financial institutions banking disruptions and data theft, while government and military operations would face numerous risks, including espionage and sabotage.

Space-based quantum key distribution (QKD) provides an advanced, secure solution to protect these vital services, ensuring the resilience and security of the EU's critical infrastructure. Indeed, space-based QKD uses quantum physics to encrypt data, making it invulnerable to cyberattacks. The use of satellites helps to overcome the distance limitations and signal loss associated with terrestrial fibre, ensuring secure communications on a global scale.

#### ENHANCING TRANSPORT INFRASTRUCTURE MONITORING WITH SATELLITE DATA

Ensuring timely and accurate maintenance of rail and road networks is critical for safety and functionality. Traditional survey methods include the deployment of staff on-site, which is costly, resource-intensive and sometimes inaccurate, potentially leading to accidents, costly repairs, and service disruptions. For example, undetected soil movements or infrastructure weaknesses can lead to road collapses or train derailments, threatening public safety and causing significant economic losses.

Satellite imagery and GNSS infrastructure allow for the monitoring of soil movements with an accuracy of a few centimetres per year. They provide data that can be used to assess the impact of ground displacements on the transport infrastructure and to better plan maintenance works where they are most needed, saving both time and resources.







# MARITIME

## USING GNSS AND EO DATA TO NAVIGATE AUTOMATED VESSELS IN INLAND WATERWAYS

The European Green Deal calls for a substantial shift of freight transportation by road to inland navigation and rail. The EC Sustainable and Smart Mobility Strategy also sets the objective of increasing inland waterway transport and short-sea shipping of 25% by 2030 and of 50% by 2050.

Autonomous vessels can help achieving these goals by reducing fuel and personnel costs while improving safety. However, it is essential that they operate reliably and safely.

Traditional navigation methods risk inaccuracies that can lead to accidents, e.g. collisions, grounding due to incorrect depth readings, and inefficient routing, with delays and increased operating costs.

By using GNSS for high-precision, real-time positioning and Earth Observation data to monitor river banks and depths, autonomous vessels can navigate with greater safety and accuracy. GNSS minimises the risk of navigation errors, environmental damage and disruption to inland waterway transport, ensuring the effective and safe use of these advanced vessels.

Satcoms are also crucial to ensure secured connectivity and data transfer.

## INCREASING PRECISION AND SAFETY FOR HARBOUR MANOEUVRES USING EGNOS

In 2022, EU ports handled 3.5 billion tons of cargo. Navigating busy ports is complex due to dense traffic, confined spaces, variable conditions, and intricate infrastructure. Accurate and reliable positioning is crucial for safe manoeuvring, and indeed all passenger and cargo ships with a gross tonnage of more than 500 tonnes rely on GNSS for navigation.

Still, conventional GNSS solutions can be limited in coverage and precision, leading to risks such as collisions, grounding, and inefficient docking manoeuvres. These issues can result in costly damage, delays, and safety hazards. EGNOS improves GNSS positioning, increasing its accuracy and reliability, hence providing greater precision for docking and undocking procedures. EGNOS can significantly reduce the risk of accidents, prevent damage to infrastructure, and optimise port operations, ensuring smoother and safer maritime activities.

## USING GNSS TO IMPROVE PORT MAINTENANCE WITH UNCREWED SURFACE VESSELS

Europe's ports are vital gateways, 74% of goods (in volume) entering or leaving Europe go by sea. Port authorities face challenges in maintaining their infrastructure and the surrounding environment. Traditional survey methods to do this include the use of divers, who are exposed to dangerous underwater conditions, and large survey vessels equipped with sonar systems, which pose safety risks, can disrupt port operations, and have high carbon emissions.

GNSS allows uncrewed surface vessels to autonomously survey ports, improving safety, efficiency, and environmental sustainability. These vessels enhance seabed and quay wall monitoring and minimise disruption of port operations, while reducing carbon emissions by up to 95%. They allow for precise and frequent monitoring of seabed and quay walls, ensuring that ports remain functional and safe, which is crucial for the European economy and supply chain.



# ROAD AND AUTOMOTIVE

## ADVANCED GNSS SOLUTIONS TO ENABLE AUTONOMOUS DRIVING

Human error is the main cause of road traffic accidents, and autonomous vehicles are expected to improve road safety, efficiency, and environmental sustainability. It is estimated that in 2022 there were nearly 17,000 autonomous vehicles worldwide. This number is expected to grow to about 127,000 by 2030, with autonomous cars making up to 25% of sales. To comply with safety regulations, autonomous vehicles require high-precision and reliable positioning data.

GNSS technologies provide centimetre-level positioning accuracy, which is essential for the precise calculation of position, speed and heading in autonomous vehicles. Advanced GNSS correction services can further enhance the accuracy and reliability of these signals, providing an additional “integrity layer” to ensure trustable autonomous driving systems. Several sectorial and standardisation and certification organisations are working on such developments.

## USING GNSS TO ENSURE THE SAFETY OF AIRFLIGHTS

Nav aids (navigational aids) are a form of markers, signals or devices that aid an aircraft by guiding and navigating it to its destination. In aviation, the accurate calibration of Nav aids is critical to ensure the safety and efficiency of air travel. Traditionally, this calibration process involved complex and costly flight operations.

Traditional methods could result in calibration errors, potentially leading to navigational inaccuracies causing flight path deviations, near misses or even accidents.

# AVIATION

Using drones equipped with advanced GNSS devices to calibrate nav aids provides a more efficient and cost-effective solution compared to traditional methods. The GNSS technology embedded in the drones grants precise positioning and accurate calibration, significantly reduces the risk of navigational errors, ensures that aircraft are accurately positioned during flight, and improves overall air safety.

This technology minimises operational disruptions and safety hazards, making air travel more reliable and safer.





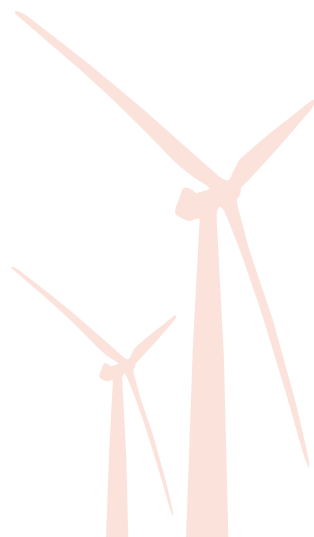
## ENERGY

### **GNSS TO IMPROVE ENERGY NETWORK SYNCHRONISATION FOR SMART GRID STABILITY**

The transition to green energy is being accelerated by geopolitical issues, climate change and rising energy demand. Smart grids are struggling to balance the variability of renewable energy, lengthy approval processes and climate-related extreme weather events.

In energy networks, accurate time synchronisation is critical for managing smart grids and coordinating power generation, transmission and distribution, ensuring grid stability and preventing outages by synchronising distributed energy resources.

GNSS technology is integrated into power grids to accurately measure power flows and detect faults or anomalies in the grid. This capability is critical to preventing blackouts and quickly restoring power in the event of an outage. For example, GNSS-based timing systems enable the synchronisation of phasor measurement units (PMUs), which are used to monitor the electrical waves on a power grid to ensure the stable operation of the power system.



## HEALTH

### **GNSS TO SUPPORT MOBILITY FOR VISUALLY-IMPAIRED PEOPLE**

The European Union (EU) is home to 100 million people with disabilities. The EC Strategy for the Rights of Persons with Disabilities 2021-2030 aims to improve the condition of persons with disabilities over the next ten years, ensuring that they can fully enjoy their rights, have equal opportunities and access to society and economy, can decide on where and how they live and can move freely in the EU.

GNSS is today embedded in apps allowing people with disabilities (e.g. the visually-impaired or people with mobility impairments, among others) to move autonomously within cities.

Such apps use GNSS to guide people around the road and transport network, to know which building and tourist attractions are accessible for people with disabilities, and to be informed of events that are relevant for them (e.g. obstructed roads or informative and ludic events).

The improved location offered by Galileo increases the reliability of such services and enhances the autonomy of their users.



# EMERGENCY MANAGEMENT

## **GNSS TO WARN THE PUBLIC ABOUT EMERGENCIES THROUGH BILLBOARDS IN PUBLIC SPACES**

In 2025 the Galileo Emergency Warning Satellite Service (EWSS) will be launched by the EC. The service will be disseminating alert messages to smartphones, or to any other navigation device able to receive Galileo signals, directly to the population of areas threatened by a looming natural or manmade disaster. Once operational, the EWSS will be offered free of charge to national civil protection authorities across the EU27.

This solution will help civil protection authorities to reach a greater number of people in case of emergencies or disasters. Indeed, Galileo-enabled chipsets in assets such as billboards or long-range acoustic devices (e.g. sirens) placed in public spaces, will allow civil protection authorities to alert the population in case of emergencies and disasters, and to inform them of what they should do to reduce damage, i.e. by indicating the best evacuation routes or the behaviours recommended by the authorities.

# CUSTOMER SOLUTIONS

## **PROVIDING A QUANTUM INFORMATION NETWORK TO EXCHANGE QUBITS BETWEEN THE QUANTUM DEVICES (QUANTUM COMPUTERS AND QUANTUM SENSORS) TO ENABLE THE FULL PERFORMANCES OF QUANTUM TECHNOLOGIES**

Satellites will be used to distribute quantum entanglement all over Europe and the world. Quantum devices (i.e. computers and sensors) are offering unprecedented performances as compared to classical technologies.

To achieve the full capability of this technology requires to communicate with Qubits, while classical internet communicates with bits.

Space will play a major role in these future quantum information networks by providing a quantum entanglement distribution service from space over large distances.





## **ANNEX II ABOUT SPACE Y**

Space Y (former Galileo Services) is the leading international industry association focused on the downstream (i.e. user applications and equipment) side of the European Space Programme.

Comprising the key space downstream industry players in Europe, Space Y's mission is to create value for Europe through the development of applications and the growth of the European downstream space sector.

An important role of the association is to stress the crucial message that the huge investments in space infrastructure must be based on real user needs, and on the tangible socio-economic benefits it will generate: this is why Europe invests in Space, and the fundamental focus of Space Y.

For more than 20 years, Space Y has worked in close collaboration with the key European decision makers: the European Commission (EC), the European Union Agency for the Space Programme (EUSPA), the European Parliament, the Council of the EU, the European Investment Bank (EIB), the European Space Agency (ESA) and national space agencies and institutions providing a unified voice on issues of importance to the industrial sector.

The association includes Oregin (the Organisation of European GNSS INdustry of equipment and services), a network with more than 100 member organisations. This federation provides an unrivalled platform for partnership and information exchange among its Members, and offers powerful support and wide representation to Institutions.

<https://www.spacey.eu.com>



OUR MEMBERS

















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