



European
Commission

Management Plan 2021

DG Defence Industry and Space

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INTRODUCTION

DG Defence industry and space: Making the EU more secure, sustainable and resilient

The Directorate-General for Defence Industry and Space (DG DEFIS), one of the newer DGs of the Commission, develops and carries out the Commission's policies on defence industry and space.

This **annual DG DEFIS management plan** outlines the key deliverables for 2021, in line with the DG DEFIS strategic plan and intervention logic (Annex 1) for the period 2020-2024. The outputs contribute to achieve the following four out of the six main political priorities of the von der Leyen Commission: 'A European Green Deal', 'A Europe fit for the digital age', 'A stronger Europe in the world' and 'Promoting our European way of life'.

The main priorities of DG DEFIS for 2021 will be the following:

- To achieve adoption by the European Parliament and the Council of the Regulation for the new EU Space Programme and of the European Defence Fund (EDF);
- To roll out the implementation of the European Defence Fund, including through outreach actions to raise awareness and boost confidence;
- To support the integration of the defence internal market through the enforcement of the defence procurement and transfers directives; and continue actions supporting the competitiveness, innovativeness and resilience of the European defence and the civil aeronautics industries;
- To propose a new initiative on integrated, secure and autonomous space connectivity, building on the new GOVSATCOM component of the EU Space Programme;
- To ensure continuity of EU space services provision for EGNOS, Galileo and Copernicus in the transition towards the new EU Space Programme Regulation; to closely monitor the Galileo second generation developments and agree on a timeframe for future deployment of new Copernicus satellites, enlarging the Sentinel family with new capabilities;
- To start the implementation of the new GOVSATCOM component, with the evaluation of the procurement of its terrestrial segment (the hubs) launched in October 2020;
- To ensure continuity of EU Space Surveillance and Tracking (SST) services delivery (in particular collision avoidance) and to start preparatory projects for the development of an EU Space Traffic Management (STM) initiative;

- Further highlights in 2021 will be the adoption of two Commission Communications with major DG DEFIS contributions: the Action Plan on Synergies between Civil, Defence and Space Industries and the update of the Industrial Strategy. Implementation of DG DEFIS actions following from those Communications will start in 2021;
- In the area of research and innovation and entrepreneurship, the adoption of the first Horizon Europe Cluster 4 “Digital, Industry and Space” work programme covering the years 2021-2022, the launch of the CASSINI entrepreneurship initiative, and the implementation of the In-Orbit Demonstration and Validation (IOD/IOV) and the space quantum communication infrastructure activities;
- To implement activities related to the recovery of the Aerospace and Defence industrial ecosystem from the COVID-19 crisis and inform about the opportunities and relevance for Member States under the Recovery and Resilience Facility.

The main challenges in the context of 2021:

- **Coronavirus pandemic - leading to an unpredictable context**

As a consequence of the coronavirus pandemic and the ensuing reduction of economic activity, the global, national or EU context has become less predictable in the coming years. The aerospace and defence ecosystem is hard-hit with a drop in the turnover for aeronautical industry (almost 50%), space and defence (25%), as well as cancellation of domestic and export orders.

- **Ensure the successful take-up of the new European Defence Fund**

In 2021, DG DEFIS will start with the implementation of the European Defence Fund. Challenges relate to ensuring the timely roll-out of the programme. As this is a new Programme for stakeholders, challenges also relate to receiving attractive proposals with impact on the EU capability landscape and being attractive for entities of all sizes and from all Member States. Organisational and logistical challenges include setting up and running of evaluation of proposals processes, under COVID-19 circumstances.

PART 1. Delivering on the Commission's priorities: main outputs for the year

The Commissions' ambition for **greener and sustainable, more digital and connected, resilient societies** are at the core of the DG DEFIS plans. Likewise, **reinforcing strategic autonomy** and **security in Europe**, whilst fostering a spirit of **international cooperation** are underlying concepts to the DG DEFIS missions. In this section, the DG DEFIS contributions to four of the von der Leyen Commission headline ambitions are set out in more detail.

A. A European Green Deal

The specific objective in this section focuses on the space domain, nevertheless, it is important to keep in mind that all DG DEFIS policy domains contribute to the European Green deal.

DG DEFIS is responsible for the **civil aeronautics industry**, which is particularly struck by the COVID-19 pandemic and challenged by the transition to carbon neutrality. DG DEFIS will intensify the dialogue with industry and regulators on a coordinated policy response, putting the aeronautics industry on a path towards quick recovery and sustainable growth.

In the area of defence, DG DEFIS will propose in 2021 funding topics under the European Defence Fund Regulation for defence-oriented solutions contributing to energy resilience and the reduction of the defence environmental and carbon footprint.

Specific objective 1.1: Reliable data and services of the EU Space Programme are cornerstones for the monitoring of, and transition to climate-neutrality and ecological sustainability

DG DEFIS is proactively targeting legislative initiatives and measures under the Green Deal, as presented in the Commissions' 2021 Work Programme, to ensure mention of and contribution by the EU Space Programme in EU cross-sectoral strategies, e.g. the strategy for Sustainable and Smart Mobility to modernise our transport sectors, the strategy to Decarbonising energy and management of smart energy grids, the Farm to Fork strategy supported with precision farming applications for the sustainability of food systems, the EU Biodiversity Strategy for 2030 and the New EU Forest Strategy (MSFD¹ descriptors, Natura2000 sites, World Forest protection etc.).

Copernicus, the EU's Earth Observation system, contributes to the Commissions' ambitions on fighting climate change with its unique capability to **monitor greenhouse gas**

¹ Marine Strategy Framework Directive

emissions. The Copernicus climate change service data is used by international bodies to track trends towards achieving the **United Nations Sustainable Development Goals (SDG)** and to feed into the various reporting's, e.g. the EUROSTAT SDG reporting.

In 2021, **the Copernicus European State of the Climate Report** and **Ocean State Report** will be issued, peer-reviewed by established international experts. EU leadership in ocean matters is promoted through the development of a GEO BluePlanet initiative with the EU4oceanObs project². DG DEFIS, DG RTD and DG MARE, strive for the creation of a G7 coordination centre **for ocean observation**.

The EU Space Programme complements the EU Biodiversity Strategy for 2030. Copernicus services support systemic changes and public actions in favour of zero pollution for air and coastal areas, or for conservation of nature for example with the development of a Copernicus MSFD³ catalogue (dedicated monitoring of the Good Environmental Status). The Atmosphere service, especially useful to **monitor pollution, will continue reporting on the effects of the COVID-19 pandemic**.

Based on **sectoral data exploitation**, environment actions such as the **“Shared Space- and Non-Space Data for Agriculture”** action will be launched. It is a large scale real-world digital testing environment for integrating sustainability solutions based on space data and services (Copernicus and Galileo). This will test and promote data sharing and cross-fertilisation and the scaling up of solutions proposed by the downstream sector and by other EU initiatives (from various DGs, Member States, private actors etc.).

The **‘Destination Earth’ project** (part of the Digital Europe Programme), a project ‘in simulation’ run by DG CNECT, will be set-up to provide access to space Earth observation data and information products by Copernicus services. ‘Destination Earth’ aims to develop a dynamic, interactive, computing and data intensive “Digital Twin of the Earth”: a digital multi-dimensional replica of the Earth system.

Communication

Communication activities are strongly impacted by the coronavirus pandemic, either by being postponed or simply cancelled. DG DEFIS is adapting its strategy towards more online events. One of the key targets is to **communicate on the concrete benefits and contribution of the EU Space Programme components to the European Green Deal**.

The EU Space Programme will continue to be promoted in the context of the United Nations Sustainable Development Goals (SFGs), including with the contribution to a touring exhibition and a multimedia platform on “Space for our Planet”. DG DEFIS presence in environment-related events will be reinforced. Based on the positive experience of the ‘one month, one policy campaign’ on “EU Space in support of the EU Green Deal” launched in

² funded under the Foreign Partnership Instrument

³ Marine Strategy Framework Directive

November 2020, DG DEFIS will continue to promote stories related to the contribution of the EU Space Programme for reaching the green deal objectives.

General objective 1: A European Green Deal		
Specific objective 1.1 <i>Reliable data and services of the EU Space Programme are cornerstones for the monitoring of, and transition to climate-neutrality and ecological sustainability</i>		<i>Related to spending programme(s) EU Space Programmes (Copernicus, Galileo and EGNOS)</i>
Main outputs in 2021:		
External communication actions		
Output/ Result	Indicator	Target
Organisation of online events promoting the role of the EU Space Programme for the Green deal	- Number of events organised - Number of participants	- 4 workshops - 1.000 participants
Launch of a partnership to organise a touring exhibition on “Space for Our Planet” and a multimedia platform to promote portrait as real life insights of the UN SDGs.	- Number of events organised - Number of participants	- 4 different locations - 3.000 participants
Promotion of the benefits of EU Space data in international fora	- Number of events - Number of participants	- 5 events - 5.000 participants
Animation of a dedicated webpage on Europa on DG DEFIS contribution to ‘A European Green Deal’	- Number of visits	- 5.000 visits
Other important outputs		
Output	Indicator	Target
ESTAT SDG annual report	EUROSTAT SDG indicators based on Copernicus for SDG 15, 14	Q3 2021
Annual European State of the Climate Report	Adoption by the Commission	April 2021
Annual Ocean State Report n°5	Publication in the Journal of operational oceanography	Q4 2021
Development of the FPI project EU4OceanObs related to the G7 centre for future of seas and GEO Blue Planet	Workshops and international meetings	December 2021
Launch of the EU Space Programme Sustainability Solutions Testing and Scaling up environment	Number of solutions tested	First semester 2021

B. A Europe fit for the digital age

The specific objectives in this section are focused on space, and on synergies between space and defence industries. To be noted, like for other sectors, digital technologies create opportunities as well as vulnerabilities for the European defence sector. Apart from contributing to the general objective of ‘A Stronger Europe in the World’, the European

Defence Fund addresses the objective of making ‘Europe fit for the digital age’ with notable examples on digital transformation, information superiority and cyber. For example, the published European Defence Industrial Development Programme (EDIDP) calls seek for project proposals for defence capabilities supported by artificial intelligence. In 2021, new calls under the European Defence Fund that contribute to the digital age objectives will follow and a specific skills-related action will be launched to support the future innovativeness and resilience of the defence and aerospace and defence ecosystem. In addition, DG DEFIS will help to implement the aerospace and defence partnership set up under the **Commission’s Pact for Skills** of November 2020. Stakeholders under this partnership have commitments to a number of actions to ensure further availability of qualified skills for this ecosystem; many of which relate to digital technologies.

Reinforcing industrial Strategic Autonomy

DG DEFIS will be leading or contributing to the implementation of several actions of the **Action Plan on Synergies for Civil, Defence and Space Industries** and the **update to the Industrial Strategy (led by DG GROW)**, both due to be adopted in Q1 2021⁴. The Action Plan will explore new opportunities for innovation, growth and job creation arising from synergies and cross-fertilisation with civil industries, which could contribute to securing strategic value chains, improving the resilience of existing industries and achieving economies of scale. The aerospace and defence industrial ecosystem is under analysis by DG DEFIS, with regular consultations with stakeholders to set out a mapping of dependencies and their risk for EU societies – **strategic autonomy observatory** –, as well as potential mitigation measures in a toolbox.

DG DEFIS is giving priority to the **screening of Foreign Direct Investments**, which, based on the collective work of several Commission services, and also contribute to reinforcing Europe’s strategic autonomy.

Civil aeronautics industry

DG DEFIS will continue overseeing and accompanying the development of the emerging market of civil drones. The DG contributes closely with DG MOVE and EASA²⁴ to the development of a regulatory framework ensuring the safe operation of drones. It is in particular responsible for following-up the implementation of the drone harmonisation legislation set by Chapter II of Regulation (EU) 2019/945.

Specific objective 2.1: Modern and well-functioning EU space-enabled services to support the Union’s priorities

⁴ CWP 2021 Initiative

New EU Space Programme

The **first work programme** to be adopted in Q2 2021 as a Commission Decision, will set out the detailed objectives, activities and budget spending plans for 2021 to ensure continuity of EU space services provision for EGNOS, Galileo and Copernicus. The new governance for the EU Space Programme will be implemented through the **Financial Framework Partnership Agreement (FFPA)** between the Commission, the European Union Agency for the Space Programme (EUSPA) and the European Space Agency (ESA). The preparations of **contributions agreements** to entrust tasks to EUSPA, ESA and other entities started in 2020 and will be finalised in 2021.

DG DEFIS will launch three studies in 2021. The first **study on Space Value Chains Resilience** will focus on establishing a list of critical raw materials for the European space sector and evaluating industrial policies of relevant third countries putting at risk EU strategic autonomy in space. The study will inform DEFIS industrial policy making in this regard and the envisaged JRC projects related to strategic autonomy in space. The second **study on Space Exploration and Space Resource Use** will analyse the long-term opportunities and risks of the EU related to, inter alia, strategic and economic costs of not exploring space; the relevance for future competitive advantage of EU high-tech industry and resilience of EU space value chains; the implications for ensuring autonomy in access to space and international legal framework for space. The third study **“Study aiming to develop a methodology assessing the impact of EU space industry on the EU economy”** will address the need of explaining the economic, social and environmental benefits of the EU Space Programme. This last study is also aligned with the Portuguese Presidency’s interest in ensuring regular impact measurement of EU new space on EU economy.

Technological sovereignty and EU space service improvements

Following the adoption of the Galileo second generation implementing act in 2020, the contract for the first batch of the second generation satellites will be placed in early 2021. This will become the first building block for the **implementation of the Galileo second Generation**, including new services and a substantial enhancement of the current ones, fundamental to answer the growing user needs as well as to keep Galileo at the forefront of the GNSS systems in the global context. New Galileo services will include authentication and an increase of user accuracy to the level of two decimetres. In addition to the contracts for satellites, the ground segment and overall system activities for Galileo next Generation will be developed and be contracted in 2021 (under the frame of Phase B2 contracted activities).

In 2021, the Copernicus programme will reach an important milestone when the High Priority Candidate Missions (HPCM)⁵ will be decided by the Commission (with the technical support of ESA) supported by Member States. The preparation of the carbon dioxide monitoring mission (CO₂M), will continue with the Preliminary Design Review of the CO₂ instrument. The development and integration of the satellite will start early 2022. In addition, DG DEFIS is accelerating follow-up activities carried out by ESA in preparation of the **next generation Sentinel satellite missions**, to be launched after 2030. The Commission-ESA Mission Advisory Groups will define the scope of the missions in compliance with the users' requirements established by the SWD (2019)394 from 2018.

Patent protection

In the course of work on the Galileo Programme, several new technical inventions were developed. The inventions have a potential of improving speed and accuracy of Galileo services. To obtain an enforceable intellectual property right for the Union, it is necessary to seek protection of the inventions by filing applications for patent protection. A Commission decision by delegation will be adopted by DG DEFIS in 2021 to allow JRC to implement and apply for registration of the inventions as patents at the European Patent Office.

Data management

With the launch of the Copernicus Data and Information Access Services (DIAS) in 2018, the Commission pioneered the use of **Big Data exploitation** capacities. Copernicus is fully digitalised with Earth Observation data in data cubes, some Analysis-Ready Data (ARD) and Earth system models running on High Performance Computing (HPC) from the Copernicus marine, atmosphere, climate change and emergency services. In 2021, the evolution of DIAS, as part of an Integrated Data Management strategy, will be considered to strengthen Copernicus as a 'system of systems' empowering users with better access and exploitation capacities.


Copernicus **will interact with the KCEO (Knowledge Centre for Earth observation)**, led by DG JRC, to prepare Copernicus knowledge hubs federating data, products and user services around major policies and directly contributing to the Green Deal. The six Copernicus services will evolve to enable cross-service repositories to ease the user access to key information on selected topics, such as biodiversity, health, coastal zones, Arctic, Energy, SDGs, cultural heritage. The cooperation between the Copernicus Marine Service and DG MARE EMODNET programme will be strengthened in view of common data catalogue per policy.

⁵ Missions to support the Green Deal implementation during the new Multi Annual Financial Framework 2021-2027

DG DEFIS joined forces with ESA and created the ‘**Rapid Action Coronavirus Earth observation’ dashboard**, also known as RACE. This platform measures the impact of the coronavirus lockdown and monitor post-lockdown recovery. In 2021, RACE platform will be further promoted and improved by developing more indicators to gauge the social, environmental and economic impact of the crisis.

Communication

The EU Space Programme plays a crucial role in bringing forth Europe’s digital transformation and **building confidence** in it. In order to ensure close monitoring of activities implemented by the respective Entrusted Entities of the EU Space Programme as well as by partners such as the European Space Agency and Eumetsat, DG DEFIS will continue to organise and chair regular coordination meetings of the so-called **Ecosystem Team Network**, gathering all stakeholders to communicate the overall strategy, provide guidance, identify potential synergies and measure efficiency of implemented actions. A series of events will be organised⁶, gathering industry representatives, start-ups and developers to inform them about the evolution of the EU Space Programme. The main objective is to keep ensuring **a permanent dialogue with the different target audiences**. To this end, DG DEFIS will ensure the promotion via physical or virtual booths and dedicated side events/sessions at important tech fora such as Vivatech2021 (Paris), Web Summit 2021 (Lisbon), and Slush 2021 (Helsinki). In light of the coronavirus pandemic, a [dedicated webpage to promote EU Space actions](#) was created for the coronavirus pandemic.

General objective 2: A Europe fit for the digital age		
<i>Specific objective 2.1: Modern and well-functioning EU space-enabled services to support the Union's priorities</i>		<i>Related to spending programme(s): EU Space programme (Copernicus, Galileo and EGNOS)</i>
Main outputs in 2021:		
New policy initiatives		
Output	Indicator	Target
 Action Plan on Synergies for Civil, Defence and Space Industries	Adoption of the Action Plan	Q1 2021
DEFIS contribution to updated EU industrial strategy	Adoption by the Commission	Q1 2021
External communication actions		

⁶ In the context of the coronavirus pandemic, most of these events will be organised under the format of webinars or online conference

Output/ Result	Indicator	Target
Promotion of the potential of EU Space data at tech events	- Number of events - Number of participants	- 3 events: 5.000 participants
Contribute to the promotion of the Knowledge Centre for Earth Observation purposes	- Number of events - Number of participants	- 2 events: 500 participants
Animation and promotion of the RACE dashboard	- Number of visits	- 50.000 visits
Organisation of Copernicus Communication Expert Group (Copernicus Ecosystem Team) to coordinate activities implemented by Entrusted Entities and Partners	- Number of meetings - Number of KPIs factsheets - Number of detailed reports	- 5 meetings - 4 quarterly factsheets - 1 analytical report covering a 12 month period
Animation of a dedicated webpage on EU Space contribution to coronavirus	- Number of visits	- 15.000 visits -
Other important outputs		
Output	Indicator	Target
Implementing decision of annual work programme for the EU space programme	Adoption by the Commission	Q2 2021
Agreement on the FFPA, preparation and approval of the Commission implementing act as foreseen in the EU space regulation	Adoption by the Commission	2021 (and once Space Regulation enters into force)
Preparation and agreement on the contribution agreements between the Commission and EUSPA, the Commission and ESA, and EUSPA and ESA which will further detail the entrusted activities.	Adoption by the Commission	2021 (and once Space Regulation enters into force)
Preparation of new contribution agreements with other Entrusted Entities for the implementation of Copernicus in the 2021-2027 period	Adoption of implementing decision(s)	- Q1 2021: Negotiations - Q2 2021: Final text - Q3 2021: Adoption of implementing decision(s) (and endorsement by the competent management committees) - Q4: Signature of agreements
Organisation and set up of the Programme Committee as foreseen in the Space Regulation. The Programme Committee shall meet with different configurations and will assist the Commission in implementing the EU Space Programme	Number of meetings	5 meetings in 2021
Launching 1-year study on Space Value Chains Resilience.	Launching the study	Q1 2021
Launching 1-year study on Space Exploration and Space Resource	Launching the study	Q2 2021

Use.		
Launching 1-year study aiming to develop a methodology assessing the impact of EU space industry on the EU economy	Launching the study	Q4 2021
Common product catalogue between EMODNET and CMEMS, and technical coordination	Bi-annual steering committee, publication of MSFD catalogue	- June 2021 - November 2021
Launch Copernicus Integrated Data Management activity	Number of Meetings of the Integrated Data Management Steering Group	- December 2021

Specific objective 2.2: EU Space Programme maximises socio-economic benefits

Framework conditions for market uptake

In 2021, DG DEFIS will continue **promoting the use of space data, information and services in EU policies and legislation**, in particular in the initiatives proposed in the Commission work programme 2021. Standards covering the use of Galileo and EGNOS signals in different applications areas and market segments is a powerful tool for ensuring the use of these signals. Standards are also vital to ensure the interoperability of Galileo and EGNOS signals and receivers using them not only with other navigation systems, but also with other technologies. **Delegated Regulation (EU) 2019/320** requires smartphone compatibility and interoperability with Galileo during emergency calls to the European emergency number 112. The Delegated Regulation will start to apply in March 2022 and the priority for 2021 will be to provide guidance to Radio Equipment Directive Notified Bodies carrying out the conformity assessment procedure, so as to make sure that smartphone manufactureres comply fully with the requirements.

Standardisation in **Space Traffic Management (STM)** has become a central issue in the field of Space Situational Awareness. STM is an example of the strategic importance of developing and promoting **standardisation at international level** in line with EU interests. It will protect the EU assets in space, support the Union's open strategic autonomy and reduction in technological dependencies. The importance of the need for increased European coordinated approach to space traffic management was underlined in the Council Conclusions⁷. In order to launch an effective discussion at the level of the Member States, DG DEFIS will propose an initiative. It will aim to establish a **European position for preparing the EU to further discussions in international**

⁷ Orientations on the European contribution in establishing key principles for the global space economy, Council Conclusions of 11 November 2020: <https://www.consilium.europa.eu/media/46730/st12851-en20.pdf>

standardisation fora. It will as well pave the way to the foundations of a future European Space Traffic Coordination.

Research and innovation – Horizon 2020 and Horizon Europe

DG DEFIS is at the forefront of designing and implementing research and innovation actions in order to foster the development of innovative and competitive European upstream and downstream space sectors. In 2021, it will continue the implementation of the last call of Horizon 2020 (e.g. initial development of alternative atomic clocks for Galileo satellites) and will be adopting financing decisions for actions above EUR 2.5 million.

DG DEFIS will participate actively in the shaping of the Horizon Europe as far as the space research and innovation are concerned. DG DEFIS is in charge of developing the space research part of the **Horizon Europe Cluster 4 “Digital, Industry and Space”**, and set out the detailed objectives, activities and budget spending plans. In 2021 the first work programme of the Horizon Europe Cluster 4 covering the years 2021-2022 will be adopted.

DG DEFIS will award in 2021 the **European Innovation Council (EIC) Horizon Prize to develop a European Low Cost Space Launch solution** which has a value of EUR 10 million and for which the deadline for submission is 1 June 2021. The prize is financed via Horizon 2020. The challenge is to develop a European technologically non-dependent solution for launching light satellites into Low-Earth Orbit (LEO), which will enable dedicated low-cost launches with committed schedule and orbit.

The roll out of the **In-Orbit Demonstration and Validation (IOD/IOV)** initiative, funded under Horizon 2020 Union programme, and intended to support the space research community and accelerate the deployment of innovative technology in space by testing them under real conditions, will continue in 2021. Regular flight opportunities to validate innovative space technologies will be provided over the period 2021-22.

Supporting SMEs and start-ups

To create a vibrant European New Space industry, the Commission’s **CASSINI Space Entrepreneurship Initiative** will include actions to improve business skills among entrepreneurs and facilitate access to finance for growing companies in 2021-2027:

- CASSINI Business Accelerator, CASSINI Hackathons & Mentoring, and CASSINI Prizes (Horizon Europe);
- CASSINI Seed and Growth Funding Facilities⁸ – equity investments to early stage start-up and scale-up companies (EU Space Programme and InvestEU budgets);

⁸ The CASSINI Seed and Growth funding facility is a follow-up to the InnovFin Space Equity Pilot which will have reached in Q1 2021 its 1st closing with the full EUR 100 million deployed.

- CASSINI Matchmaking with industry and venture capital (EU Space Programme budget).

Communication

The network of ‘ambassadors’ of the EU Space Programme will be reinforced.

Further synergies will be built between the network of Copernicus Relays, the network of Copernicus Academy and the recently created Galileo Info Centres. The objective is to ensure that members of these networks that play an important role in promoting the benefits of the Programme at regional and international level, to SMEs and local public authorities, complement communication efforts accompanying the transition to a single EU Space Programme. DG DEFIS will also liaise with local and national public stakeholders, and strengthen the links with associations such as NEREUS⁹ and the #Euregions working closely with DG REGIO. Additional efforts will be invested in promoting the EU Space Programme in mainstream media, and in raising awareness about the potential of EU Space data for downstream businesses, and notably promoting the new space entrepreneurship initiative “CASSINI”.

Global systems with global reach

Promoting the international outreach and uptake of the EU Space Programme and strengthening Europe’s role as **a strong global space actor** implies a range of international engagements with third countries, international organisations, and concluding administrative arrangements and international agreements with key partners. DG DEFIS is working in close cooperation with the EEAS (and relevant EU delegations) and other Commission DGs, to drive forward coordinated actions to support **space economic diplomacy**.

In the field of Earth Observation, international cooperation enhances the Union’s capacity to monitor implementation of global agreements such as the Paris Climate Agreement and the UN Sustainable Development Goals, which has an intrinsic value to the EU in terms of reputation enhancement. The growing use of Copernicus data by the international scientific community (e.g. organisations such as the World Meteorological Organisation (WMO), the United Nations Framework Convention on Climate Change (UNFCCC), United Nations Environment Programme (UNEP), etc.) **reinforces the EU’s voice in international climate change talks and negotiations**. In addition to implementing the existing Copernicus cooperation arrangements, a number of new ones,

currently under preparation could be concluded during the year¹⁰, based on reciprocity and the EU's strategic interests.

Numerous bilateral agreements and administrative arrangements¹¹ have also been signed **in the field of satellite navigation**, namely to **support the uptake** of Galileo and EGNOS services worldwide and/or to promote **technical cooperation with key international players**. Multilateral partnerships offer the opportunity for the EU to influence the introduction of compatible and, as needed, interoperable new services thereby promoting solutions and standards developed by EU industry for Galileo and EGNOS. Discussions are ongoing to expand cooperation with strategic international partners, including for the Galileo Public Regulated Service where strategic alliances play a crucial role. Negotiations should be finalised with Norway, advanced with the US and prepared with Canada and possibly other priority countries. DG DEFIS will continue negotiating agreements for the extension of EGNOS services to the Eastern and Southern neighbourhoods and explore the expansion of EGNOS system coverage to other regions. Negotiations will also start with eligible third countries to allow their participation to (relevant parts of) the EU Space Programme (e.g. Norway, Iceland, UK).

DG DEFIS will continue to promote the EU Space Programme's operational needs and strategic interests through different **international and multilateral fora**, such as the International Telecommunications Union (for frequencies), International Committee on GNSS, COSPAS-SARSAT, the Group on Earth Observations (GEO), and the Committee on Earth Observation satellites (CEOS), among others.

Depending on the evolution of the COVID-19 situation, DG DEFIS will resume its **space dialogues with key international partners** (e.g. United States, Japan) and launch new ones with emerging new partners, such as Australia and Canada.

DG DEFIS will continue its collaboration with DG DEVCO to support the second phase of the "GMES¹² and Africa" initiative, with the effective contribution of the Copernicus Land and Marine services and selected partners in developing countries to maximise the use of Copernicus data. Similarly, cooperation with DG DEVCO will continue on launching and managing the third support activity of the Joint Programming Office (JPO) in Africa; on preparing the critical design review phase for a Satellite-based Augmentation System (SBAS) extension in the ASECNA region¹³ in Africa; and preparing the next phase for an EGNOS V3 coverage of Africa.

¹⁰ E.g. Canada, Japan, Argentina, Indonesia, Vietnam, Bangladesh, Panama, Thailand, Holy See, the Philippines, United Nations Environment Programme (UNEP), Food and Agriculture Organisation (FAO), and the World Meteorological Organisation (WMO).

¹¹ Administrative arrangements in preparation with some Latin American countries.

¹² Global Monitoring of Environment and Security – precursor to the Copernicus programme

¹³ Agence pour la sécurité de la navigation aérienne en Afrique et à Madagascar (ASECNA)

General objective 2: A Europe fit for the digital age

Specific objective 2.2: EU Space Programme maximises socio-economic benefits

Related to spending programme(s) EU Space programmes (Copernicus, Galileo and EGNOS)

Main outputs in 2021:

External communication actions

Output/ Result	Indicator	Target
Launch of a communication campaign to promote the CASSINI initiative	<ul style="list-style-type: none"> - Set-up of dedicated webpages on DEFIS website - Number of events - Number of participants - Number of media mention - Number of social media metrics 	<ul style="list-style-type: none"> - Set-up in Q1 2021 At least: <ul style="list-style-type: none"> - 2 events - 200 participants - 10 media mentions - 10% increase month on month
Promotional area at the US Space Symposium 2021	Number of participants	2.000 participants
Co-organisation of the European Space Week 2021	<ul style="list-style-type: none"> - Number of participants - Media coverage 	<ul style="list-style-type: none"> - 1000 participants - 20 mentions in media
Organisation of side events at the Dubai World Expo	<ul style="list-style-type: none"> - Number of side events - Number of participants - Number of visits at the promotional corner 	<ul style="list-style-type: none"> - 2 side events - 100 participants - 2.000 visits
Animation of a dedicated webpage on Europa on DG DEFIS contribution to 'A Europe fit for the digital age'	Number of visits	5.000 visits
Development of the Network of Copernicus Relays, including the number of videoconferences to exchanges on best practices with their respective actions, dissemination of targeted newsletters,	<ul style="list-style-type: none"> - Number of members - Number of videoconferences - Number of participants at the Annual General Assembly - Number of events organised by the Copernicus Relays - Total number of participants at their events 	<ul style="list-style-type: none"> - 120 members - 11 videoconferences - 250 participants - 200 events - 25.000 participants

Other important outputs

Output	Indicator	Target
Horizon Europe Cluster 4 Work Programme 2021-2022	Adoption of the Work Programme	Q2 2021
Launch of CASSINI initiative	Launch of CASSINI hackathons, business accelerator, seed and growth fund, and matchmaking activities.	Q3-Q4 2021
Joint declaration on space/Earth Observation cooperation during the EU-Africa Summit of 2021	Workshop declaration	Q4 2021
Administrative arrangement for DG	Adoption by the Commission	Q1 2021

ECHO funding of the Copernicus EMS service		
Administrative arrangement with DG DEVCO funding of the Copernicus land service	Adoption by the Commission	Q2 (TBC) 2021
Cooperation arrangements/agreements with international partners on Copernicus	Number of signed arrangements	December 2021
Technical cooperation with Canada on ocean matters	Technical meeting and implementation	December 2021
Technical cooperation with NASA/USGS on Sentinel-2 and Landsat	Workshop	Q4 2021
Implementation of Global Action for Space	Support to space diplomacy worldwide; Development of on-line EU Space platform; organisation of webinars and workshops; coaching service for EU space companies.	Starting Q2 2021-2023

C. A stronger Europe in the world

International cooperation

International cooperation is recognised as an important dimension of the EU space programme securing its operational integrity and performance, supporting the larger EU foreign policy agenda and opening up opportunities for EU companies in foreign markets. **Economic diplomacy** in particular is as an important element of the international portfolio and the toolbox supporting the space ecosystem in exploring business development opportunities in third countries. Specific activities to be implemented in close cooperation with EU Delegations in the world, in close cooperation with the EEAS, will include: targeted trainings for Delegation staff, promotion of EU space industries (upstream and downstream), intelligence gathering on issues of interest for EU Space policies, with support and involvement of interested Member States as appropriate.

DG DEFIS will implement a **Foreign Partnership Instrument-funded Global Action on international outreach activities concerning space** which will cover the period 2021-2023¹⁴. This action is expected to start in Q2 2021 and will help create ground for new cooperation on space with strategically important third countries and organisations.

DG DEFIS will also prepare a proposal for a Council decision on the declaration by which the European Union accepts the rights and obligations laid down in the Agreement on the

¹⁴ EUR 6 million funded through the EU Foreign Partnership Instrument (FPI)

rescue of astronauts, the return of astronauts and the return of objects launched into outer space, by the Convention on International Liability for Damage Caused by Space Objects, and by the Convention on the Registration of Objects Launched into Outer Space. The Regulation establishing the EU Space Programme includes a call on the Commission to explore the possibility for accession of the European Union to the relevant UN Treaties and Conventions as this would confirm the European Union being a responsible actor in the field of space and reinforce its position as a leader in navigating global challenges.

In the area of the Arctic, a region of growing strategic and geo-political importance for the EU, DG DEFIS is seeking to reinforce the role that EU space enabled services can play in support of the **EU Arctic Policy** and the new **communication**¹⁵, expected in Q4 of 2021. Overseeing the work of a **Polar Expert Working Group**, the user needs and requirements for Earth Observation (Copernicus) from various Arctic stakeholders are being collected. The needs serve as a basis for developing future Copernicus services relevant for the Polar Regions. Similarly, Galileo and EGNOS also enhance safety and mobility in the Arctic against the backdrop of increased transportation in the region and further projected increases in the future. The new initiative will provide secure communication services to stakeholders in the region, serving the EU's strategic interests and user needs.

Military mobility

DG DEFIS coordinates the Commission's activities contributing to improved military mobility within Europe. In October 2020, the Commission and the High Representative of the EU for foreign affairs and security policy jointly issued the second progress Report on the implementation of the Action Plan on Military Mobility from June 2019 to September 2020. DG DEFIS closely cooperated with EEAS/MOVE. By the end of summer 2021, the third joint progress report will be presented.

Specific objective 4.1: Fostered innovation capacity and competitiveness of the European defence industry and strengthened EU defence supply chains due to increased cross-border R&D cooperation involving in particular SMEs and mid-caps

DG DEFIS will be implementing a mix of policy tools to foster **the sustainable competitiveness of the EU defence industry** and the **development of the European defence market**, together with that of the aeronautics and drone industry. This include measures ensuring the coherence between its own policy tools and other defence-relevant initiatives.

First, as regards legislative tools, the priority in 2021 will be to ensure the proper implement of the Directive on **transfers of defence-related products** within the Union

and the Directive on **defence and security procurement** in order to contribute to the building of an open and competitive European defence equipment market. In particular, it will continue to carry out a thorough monitoring of Member States' defence procurement programs and of substantiated complaints while continuing to engage constructively with Member States to facilitate a better implementation of the directive.

Second, as regards funding tools, the priority will be to **continue implementing the European Defence Industrial Development Programme (EDIDP), the Preparatory Action on Defence Research (PADR) and to roll out the upcoming European Defence Fund (EDF).**

The EDIDP is a pilot programme of the upcoming EDF, in particular aimed to prepare its **capability development window**. With a budget of €500 million for 2019-2020, it was created to complement, leverage and consolidate collaborative efforts by companies in developing defence capabilities to respond to security challenges, as well as to foster the competitiveness, efficiency and innovation capacity of the defence industry throughout the Union. Year 2021 will be marked by the execution and management, by DG DEFIS, of the funded projects under 2019 calls. In addition, following 2020 calls, proposals were submitted by December 2020 and will be evaluated in the beginning of 2021. The award decision is expected in June 2021.

Furthermore, under the EDIDP, two projects have been proposed by the Commission to receive a direct award from EDIDP: ESSOR (European Secure Software defined Radio) and MALE RPAS (European Medium-altitude Long Endurance Remotely Piloted Aircraft system). The consortia submitted proposals and their eligibility is currently being conducted. Subject to a positive opinion of the Programme Committee, DG DEFIS will proceed with preparing an award decision for adoption in early 2021. It is foreseen that the Organisation for Joint Armament Cooperation (OCCAR) will be in charge of the implementation and the monitoring of these two projects. The Commission signed a **Contribution Agreements with OCCAR** to this effect and in 2021, DG DEFIS will oversee their implementation.

PADR (2017-2019), which is an ongoing action to **prepare for the upcoming research window of the EDF**, will be continued. By early 2021, all 18 projects selected for funding following the publication of 10 calls for proposals over the three year duration of the PADR, will have started. Through a delegation agreement, 15 projects are managed by the European Defence Agency while three projects with a high disruptive potential in a defence context, such as **artificial intelligence and quantum technologies**, will be managed directly by the Commission.

2021 constitutes the first year of the roll-out of the new EDF. The first **annual work programme for the EDF 2021-2027** will be adopted, expected to cover priorities in line with the priorities identified in the Capability Development Plan (CDP). The calls for 2021 will be organised and published thereafter. A lessons-learned exercise, based on the experience of the EDIDP and PADR, will continue. The results will be taken into account in

relevant documents to be prepared in 2021, such as the work programme, call texts and submission forms and guidance documents.

Communication

The inclusion of non-traditional defence actors in defence R&D activities will be a key focus. Accompanying tools to **implement skills and SME defence industry related actions will rely in particular on** the following **communication and outreach activities**¹⁶:

- Organise a virtual EDF Info Day is planned in the first half of 2021. This will allow potential applicants to get a detailed overview of the calls, the eligibility criteria, etc.
- National EDF Info Days “Roadshows” are envisaged throughout 2021 and beyond where DG DEFIS will provide experts and national governmental actors (possibly in cooperation with national defence associations/clusters) the opportunity to host the events.
- DG DEFIS will co-organise four European thematic conferences in the 2nd half of 2021 within the existing network of the European Network of Defence-related Regions i.e. on drones (Le Havre, FR), advanced materials for defence applications (Gothenburg, SE), skills for aerospace and defence (Rzeszow, PL) and soldier of the future (Copenhagen, DK). Matchmaking opportunities will be foreseen at each of these hybrid events.
- DG DEFIS will be present at important defence-related fairs and salons to increase its visibility and raise awareness among SMEs and other stakeholders about the EDF as well as the supporting tools that are at their disposal including those aimed at opening up the internal market for defence products. DEFEA, the Defence Exhibition in Athens (May 2021) has already been identified. By essence, DG DEFIS participation may be turned into an online format pending on the evolution of the COVID-19 pandemic situation.
- A handbook on “The Defence Transfers Directive, Handbook for SMEs”, in EU official languages will be developed, explaining the benefits of certifying companies.
- Social media presence will be stepped-up to regularly inform stakeholders about DG DEFIS defence-related activities.

¹⁶ In view of the COVID-crisis specific attention will be given to organising events in a virtual or hybrid way

General objective 4: A Stronger Europe in the World

Specific objective 4.1:

Fostered innovation capacity and competitiveness of the European defence industry and strengthened EU defence supply chains due to increased cross-border R&D cooperation involving in particular SMEs and mid-caps

Related to spending programme(s) European Defence Industrial Development Programme, EU Space Programmes (Copernicus, Galileo and EGNOS)

Main outputs in 2021:

External communication actions

Output/ Result	Indicator	Target
Increase awareness of the achievements of PADR and EDIDP, as precursors of EDF	- Number of online views of media releases - Number of engagement on social media	- 500.000 engagements on social media channels
Publication of a handbook dedicated to defence-related SMEs	- Number of readers	- 5.000 readers
Organisation of virtual EDF Info Day	- Number of attendees	- 1.000 attendees
Organisation of national EDF Info Days throughout 2021	- Number of attendees	- 1.000 attendees
Organisation of thematic conferences	- Number of events - Number of attendees	- 4 events - 400 attendees
Promotion of EU's defence industry initiatives at fairs	- Number of attendees	- 2.000 attendees

Other important outputs

Output	Indicator	Target
EDIDP 2020 competitive calls - award decision - Commission Implementing Decision	Adoption by the Commission	June 2021
Commission Implementing Decision on the annual work programme for the European Defence Fund 2021	Adoption by the Commission	Q2 2021
Issue third implementation report on the Action Plan on Military Mobility (Joint Report COM/HR)	Adoption by the Commission	Q3 2021
Validation of the findings of the Polar Expert Working Group III	Approved final report from the Working Group	March 2021

D. Promoting our European way of life

Specific objective 5.1: Security actors have access to EU autonomous tools, space-enabled services, and technologies, needed to build resilience to security threats, safety hazards and crisis situations

Hybrid threats

Following the publication of the new EU Security Union Strategy, DG DEFIS together with EEAS will coordinate the implementation of the initiatives laid down in the Strategy, most prominently, the mainstreaming of the hybrid considerations into policy making, creation of a restricted online platform for Member States' reference on counter-hybrid tools and measures at EU level, development of the hybrid resilience baselines, improving situational resilience and the review of the EU operational protocol for countering hybrid threats (EU Playbook).

In the current geopolitical context, the nature of hybrid threats is quickly evolving and represents a complex challenge for both the EU and the Member States, undermining our unity, democratic values and decision-making process. Countering hybrid threats is mainly a national responsibility. However, as the threats are cross-border and common to all Member States – targeting public opinion, infrastructure and much more – they must increasingly be addressed at the EU level and in line with a whole-of-government approach. DG DEFIS is responsible for the overall coordination of Commission services activities with regards to EU's ability to prevent, detect, respond, and build resilience to hybrid threats.

Secure communications and cyber security

Preparatory activities of the **GOVSATCOM** component to design, develop, deploy and validate the ground segment of GOVSATCOM by 2023 are continued. In 2021, the Commission will prepare **implementing acts for the definition of the characteristics of the GOVSATCOM service portfolio, operational requirements and security requirements**.

Based on the GOVSATCOM component, DG DEFIS (together with DG CNECT) will be working towards complementing the Union's satellite navigation (Galileo/EGNOS) and Earth Observation programmes (Copernicus) with a third initiative: a novel multi-orbital satellite secure communications system. **A secure and resilient global connectivity capability** is Europe's own reply to geopolitical and cybersecurity threats and the compelling digitisation of the economy. It aims to provide ubiquitous high-speed broadband capacity including dead zones, and reliable governmental communication services to support protection of critical infrastructures, surveillance, external actions and crisis management. Using quantum and 5G technologies and a fully European supply chain, the initiative will offer business opportunities to the whole industrial tissue in Europe, large enterprises, SMEs and start-ups.

In October 2020, DG DEFIS published a call for tender¹⁷ for a mission consolidation study (cost at EUR 7 million) for a proposed space-based satellite secure communications system to suggest specifications for its mission, architecture, frequencies, cost, governance and business model. **This consolidation study will be completed in December 2021.**

The European Commission launched a new initiative based on quantum technology to counter the threats of quantum computing to cybersecurity. 25 EU Member States committed to working together, with the European Commission and the European Space Agency, towards the development and deployment within the next ten years, of **an EU-wide quantum communication infrastructure (EuroQCI)**. DG DEFIS is working jointly with DG CNECT to foster the necessary technological development and use this initiative as a stepping stone towards the planned **secure and resilient global connectivity capability**. DG DEFIS is also considering the use of quantum technologies in and/or for space, for example in the context of the development of a multi-orbital satellite secure communication system or the use of quantum sensors on-board satellites such as **quantum gravimeters**.

In 2021, the European Commission will carry out **three studies on system design and on critical technologies** needed to allow the European Union to be non-dependent in this field. The development and use of quantum technologies in space requires a prior investment to develop and mature key components used on-board satellites or on ground. A number of calls for proposals will be launched under Horizon Europe for such purpose.

Safety and security (dual use) related services

With the operational **Space Surveillance and Tracking (SST)** capacity and in the near future, a reinforced **Space Situational Awareness (SSA)**¹⁸ component as proposed under the new EU Space Programme, the Union will also have an increasingly autonomous way to monitor and protect its space assets. This is a major and tangible contribution to the strategic autonomy and resilience of the Union.

In 2021, DG DEFIS intends to propose the adoption of **two implementing acts** for ensuring the implementation of the Space Regulation. The first implementing act will detail the procedure for the **establishment of the future EU SST Partnership**. It will aim to ensure that the criteria and the conditions listed by the Space Regulation are properly understood by the Member States. The second implementing act will tackle the security aspects of SSA. It will lay down the **general security requirements** to which the technical specifications, operational procedures and accreditation activities will comply in the SSA sub-component. In line with the EU Space Regulation, in 2021 Member States will have to

¹⁷ <https://etendering.ted.europa.eu/cft/cft-display.html?cftId=7094>

¹⁸ The SSA component will cover EU SST, Space Weather and Near Earth Objects (NEO), as well as an overall strengthening of security requirements when developing EU space systems.

submit a **Partnership's proposal for providing the EU SST services** to the European Commission. The proposal will have to be accepted or rejected by a Decision of the European Commission.

Timing data from global satellite navigation systems (GNSS) is already used for timing and synchronisation in many different applications, including in critical infrastructures. However, the critical infrastructures in Europe that use satellite navigation for timing and synchronisation currently depend largely on GPS. The use of Galileo signals for timing and synchronisation services could bring improved availability, resilience and redundancy to counter both intentional and unintentional disruption of timing and synchronisation operations and could gradually decrease dependence of European critical infrastructures on foreign satellite navigation systems. In this context, the European Commission is carrying out an impact assessment on the possible use of Galileo signals for timing and synchronisation of critical infrastructures. In 2021, the **proposal for a legislative initiative on the use of Galileo in critical infrastructures** that depend on satellite navigation for timing and synchronisation will be prepared.

When it comes to **personal safety**, the **Galileo's Search and Rescue service** reduces drastically the time to detect emergency distress beacons from up to three hours to just ten minutes. As the location of the distress beacon is determined more accurately, people lost at sea or in the mountains can be rescued more quickly. In 2021, the coverage ensured by Galileo system will be increased over the Indian Ocean Area following the deployment of an additional Ground Station (MEOLUT) in La Reunion Island.

Galileo is introducing an **Emergency Warning service** in its portfolio of services, for broadcasting alerts to population at threat (natural or man-made hazards). This service is a direct contribution to the United Nation's programme for Disaster Risk Resilience, for which one key target is to "**substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030**". Dialogue will be maintained with the Member's States civil protection entities, DG ECHO's services, and international partners (e.g. Japan) to freeze the service characteristics. The start the initial service which is foreseen by end 2023.

The **Copernicus emergency service**, the marine service and the security service will keep supporting actions of the European Union, at local, national and international level, in case of major natural disasters and distress at sea. In 2021, the Copernicus Border Surveillance service will focus on the European Border and Coast Guard standing corps that is being established. The Copernicus marine service will deploy new features for early detection of cyclones and the detection of icebergs to secure routes in the Arctic.

Access to space and satellite launches in 2020

EU autonomous access to space is a priority of EU space policy. The Space Strategy for Europe first identified the need for autonomous, reliable, and cost effective access to space. Access to space underpins all space activities, and it is therefore essential to master the technology and operational capability to launch satellites. The EU Space Programme Regulation reflects this need by promoting the procurement and aggregation of launching services at EU level and the development of space launch technologies and systems. In respect to the former, the Commission intends to negotiate a contract for the supply of aggregated launches services to Arianespace. The purpose is to aggregate the orders of launch services for both Copernicus and Galileo programmes. This will be win-win for the EU industry and the EU itself by offering predictability, visibility and reinforcing EU's role in the global scene. In addition, DG DEFIS will intensify the dialogue with ESA, Member States, national space agencies and EU launcher industries to jointly define a common roadmap for the next generation of launchers and technologies ensuring an EU autonomous access to space, based on innovative, competitive, resilient and sustainable EU launcher value chains.

On the programmatic launches, the current planning assumes that the next Galileo satellites shall come out of the production chain by March 2021 for a **Galileo launch** planned tentatively mid of 2021. As the programme intends to use the Ariane-6 launcher in a near future, the development of a specific dispenser to carry the Galileo satellites on-board Ariane-6 has also been initiated in 2019 and shall continue in 2021.

Building on the successful launch in November 2020, the Copernicus programme will proceed with the commissioning of the Sentinel-6 Michael Freilich satellite' and **prepare renewals for next generation of Copernicus satellites**, to be launched between 2026 to 2030. In 2021, the Commission and ESA will agree on the scope of the deployment schedule. A key priority is the continuation of existing Sentinel missions and the start of the **Copernicus CO₂ Mission** (CO₂M) with a first satellite launch (out of three expected) by 2025.

Communication

In order to reinforce existing partnerships with the national and regional Search and Rescue (SAR) authorities, DG DEFIS will further engage with EU-wide promotional activities such as the "Galileo SAR meet" and webinars to collect feedback. A back-to-back symposium will be organised in partnership with Belgian authorities in September 2021, in Koksijde (Belgium). This action is expected to offer increased visibility of not only the Galileo, but also strengthening collaboration with EU actors in the fields of maritime surveillance (EMSA, GSA/EUSPA, etc..) and secure communication (GOVSATCOM), as the deciding authorities are almost always the same for these sectors. DG DEFIS will stage a mind catching **real-time demonstration event** (like the previous #operationSharkBait in 2019) to draw attention on EU's achievements in terms of Space-based life saving services. This exercise will be livestreamed to maximise its impact.

General objective 5: Promoting our European way of life

Specific objective 5.1: Security actors have access to EU autonomous tools, space-enabled services, and technologies, needed to build resilience to security threats, safety hazards and crisis situations

Related to spending programme(s): EU Space programme (Copernicus, Galileo and EGNOS), EU Defence programme

Main outputs in 2021:

New policy initiatives

Output	Indicator	Target
Prepare proposal for a European initiative on the use of Galileo in Critical Infrastructures that depend on satellite navigation for timing and synchronisation	Draft ready for adoption by College	December 2021
Proposals for implementing acts defining the characteristics of the GOVSATCOM service portfolio, operational requirements and security requirements	Adoption by College	December 2021
Proposal for an implementing act for the establishment of the future EU SST Partnership	Adoption by College	December 2021
Proposal for an implementing act laying down the security aspects of Space Situational Awareness	Adoption by College	December 2021
Proposal for the Decision of the Commission regarding a proposal of Member States providing EU SST services	Adoption by College	December 2021
Communication from the Commission on space traffic management	Adoption by College	December 2021

External communication actions

Output/ Result	Indicator	Target
Organisation of the "Galileo SAR Meet" competition and symposium	<ul style="list-style-type: none"> - Number of attendees (physical and online) - Number of engagement/impressions on social media -Number of events -Number of journalists following the event 	<ul style="list-style-type: none"> - 1.000 participants - 500.000 engagements/impressions on social media channels - 1 edition in 2021 - 15 journalists
Organisation of the SAR live demonstration	<ul style="list-style-type: none"> - Number of attendees (physical and online) - Number of engagement/impressions on social media -Number of events -Number of 	<ul style="list-style-type: none"> - 100.000 participants - 1 million engagements/impressions on social media channels - 1 live demonstration organised - 30 journalists/influencers

	journalists/influencers following the event	
Animation of a dedicated webpage on Europa on DG DEFIS contribution to 'Promoting our European way of life'	Number of visits	5.500 visits
Communication actions to launch the new EU Space Programme components SSA and GOVSATCOM	<ul style="list-style-type: none"> - Number of events - Number of participants - Media coverage 	<ul style="list-style-type: none"> - 2 events - 150 participants - 50 media mentions
Other important outputs		
Output	Indicator	Target
Negotiations with Arianespace on the framework programme for launchers	Adoption by the Commission (conclusion of the framework contract)	Q2 2021
Commissioning of the Sentinel-6 Michael Freilich satellite	In Orbit Commissioning Review, delivery of data	Q3 2021
Joint COM-ESA programmatic decision (related to the Copernicus Space Component)	Adoption of updated Work Programme	Q4 2021
3 studies in the context of the EuroQCI and connectivity initiatives Roadmap on quantum gravimeter for Earth Observation.	Finalisation of studies	Q3-Q4 2021
	Adoption of roadmap on quantum gravimeters.	Q1 2021
Mission consolidation study for the space-based satellite secure communications system	Final report of the study	December 2021
Renewal of the contribution agreements for the Copernicus security services with FRONTEX, EMSA, SATCEN	Adoption by the Commission	Q2 2021
Renewal of the co-delegation agreement for the Copernicus emergency service with JRC	Adoption by the Commission	Q2 2021

PART 2. Modernising the administration: main outputs for the year

The internal control framework¹⁹ supports sound management and decision-making. It notably ensures that risks to the achievement of objectives are taken into account and reduced to acceptable levels through cost-effective controls.

DG DEFIS has established an internal control system tailored to its particular characteristics and circumstances. The effective functioning of the service's internal control system will be assessed throughout the year and be subject to a specific annual assessment covering all internal control principles.

E. Human resource management

DG DEFIS will establish in 2021 its local HR strategy; in consultation with the management, the HR Business Correspondent will develop this strategy around the following core values: enabling people, improving working conditions, learning and development. This strategy will naturally take into account the future evolution of the COVID-19 situation and its impact on the organisation of work.

Enabling People

Depending on the evolution of the sanitary conditions, an Away Day will take place as soon as possible to allow DG DEFIS staff to better know each other, improve staff awareness of the DG objectives and enhance the inter-unit collaboration. This event will also allow staff to re-connect (and connect for the newcomers) after the long teleworking periods of 2020.

More generally, DG DEFIS wants to retain its talents and enable everyone to unlock their full potential by matching people's competencies and aspirations with corporate business needs. The HR Business Correspondent team will therefore focus on allocating human resources taking due account of the Commission's work programme and DG DEFIS's policy priorities.

Quotas for staff and budget for external staff will be managed by the HR Business Correspondent in close cooperation with Senior Management to allow for some flexibility and reactivity to changing needs. In order to reach its objectives and due to its specific needs – technical, operational, legal, financial etc. - DG DEFIS will promote internal mobility and flexible staff allocation. In relation to gender balance, when selecting middle managers, the DG will adhere to the quantitative DG-specific targets for female first appointments to middle management functions.

¹⁹ [Communication C\(2017\)2373 - Revision of the Internal Control Framework](#)

Improvement of working conditions

Ensuring that people's efforts and commitment are supported by good working conditions is one of the core values of our HR strategy.

Following the lessons learnt from the COVID-19 crisis and the two periods of full lockdown that the staff experienced in 2020, DG DEFIS will keep on contributing to HR reflections on the working environment for a more dynamic and interconnected framework. The DG will continue working with the relevant services of the Commission to invest in adapted IT devices and ensure that technology matches the tasks. It will promote virtual and e-learning opportunities for colleagues (i.e. webinars, e-learning modules). Following the experience gained during the lockdown periods, the way recruitment interviews are being conducted will slightly change through increased use of virtual means (video and phone interviews).

Sustainable behaviour

In order to reach the general Commission objectives of sustainability, DG DEFIS will aim at promoting the following actions:

- Plastic waste reduction in particular with the end of cafeteria take-away cups;
- Use of water fountains;
- Implementation of the EC Guidelines for sustainable meetings and events;
- Implementation of the specific guidelines circulated in 2020.

Corporate campaigns will be handled in close partnership with OIB and DG GROW, with which DG DEFIS shares its building.

Objective: DG DEFIS employs a competent and engaged workforce and contributes to gender equality at all levels of management to effectively deliver on the Commission's priorities and core business

Main outputs in 2021:

Output	Indicator	Target
Reaching quantitative DG-specific targets for first female appointments to middle management functions.	Female first appointment to middle management positions	At least 1 by 2022
Promote virtual and e-learning opportunities for colleagues (i.e. webinars, e-learning modules)	Number of virtual and e-learning trainings followed by DEFIS staff	10 % of trainings followed by virtual means

Staff's emotional, cognitive and physical connection to the job, organisation and the people within it	Staff Engagement Index ²⁰	62,5% in 2021
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Internal communication actions

Output/ Result	Indicator	Target
Maintenance and animation of DG DEFIS intracomm website	- Number of visits	- 5.000 visits
Publication of weekly internal newsletters 'DEFIS BUZZ'	- Number of recipients and readers	- 200 readers per edition
Publication of DEFIS Policy Briefs	- Number of editions - Number of recipients and readers	- 6 editions - 200 readers
Organisation of a DG DEFIS Away-day	- Number of participants and satisfaction survey	- At least 60% of participants
Organisation of regular meeting(s) of the Director-General with the staff	- Number of meetings - Number of participants and quality of interactions	- 4 meetings - 175 participants each
Promotion of EMAS and organisation of EMAS events to promote corporate campaigns	- Number of events	- At least 1

F. Sound financial management

Following the adoption of its control strategy, DG DEFIS will ensure that the objectives set in the table below are met. Moreover, the tight supervision (through both budgetary and cost control) of entrusted entities supporting the implementation of DG DEFIS programmes will continue in the next MFF.

DG DEFIS will support and contribute to developing a corporate common approach in financial management, through eProcurement, the Public Procurement Management Tool (PPMT) and the management of expert groups (AGM, RegExp,...).

All the above actions and controls will ensure that DG DEFIS can manage adequately the risks related to the legality and regularity of the underlying transactions, taking into account the multiannual character of the programmes, as well as, the nature of the payments concerned. The main control objective is to ensure that the estimated risk at closure is below 2% of the relevant expenditure (materiality threshold).

Objective: The authorising officer by delegation has reasonable assurance that resources have been used in accordance with the principles of sound financial management and that cost-effective controls are in place

²⁰ DG DEFIS was created end of 2019 by the transfer from DG GROW of Directorates I and J. The staff engagement index for these two directorates was 60% in 2018 and was taken as baseline for DG DEFIS.

which give the necessary guarantees concerning the legality and regularity of underlying transactions

Main outputs in 2021:

Output	Indicator	Target
Effective controls: Legal and regular transactions	Risk at payment	< 2 % of relevant expenditure
	Estimated risk at closure	< 2 % of relevant expenditure
Effective controls: Safeguarded assets	Percentage of write-off of the value of the assets due to inventory mismanagement	<1% of the total value of the assets
Effective Ex-post controls	Audits planned in the Annual Audit plan	100 % execution before the year-end
Efficient controls - Legal time to execute the payment	Time to pay	< 2 % of payments (in terms of payment value) are delayed
Efficient controls - Target date to register invoices within 7 calendar days	Time-to-register	< 1 % for invoices registered outside the 7 calendar days
Economical controls - Cost of controls of procurement process	% of overall cost of control in comparison to the total commitment appropriations consumed at the end of the year	Less than 10%
Economical controls - Cost of control of supervision process for entrusted entities	% of overall cost of control in comparison to the total annual amount delegated excluding any remuneration paid	Less than 5%
Follow-up on ECA –IAS audit recommendations	Number of critical recommendations from ECA-IAS overdue for more than 6 months	None at 31.12.2021

G. Fraud risk management

Following the creation of DG DEFIS, the anti-fraud strategy of the DG was established in 2020. This strategy was elaborated based on the methodology provided by OLAF. This is the basis for developing a strong anti-fraud culture within the Directorate-General.

DG DEFIS will emphasise ethics and fraud prevention through proportionate and targeted preventive ex-ante controls. The unit responsible for risk management and anti-fraud will ensure that middle management is well aware of the importance of developing an anti-fraud culture. In addition, as indicated in the anti-fraud strategy, all newcomers will be invited to attend a mandatory training on fraud awareness and ethics.

Furthermore, the unit responsible for risk management and anti-fraud will ensure that any recommendations from IAS or OLAF are timely implemented and will exchange best practices by participating in existing Commission anti-fraud networks (FPDNet/OLAF). In the DG, a fraud risk assessment will be performed annually within the risk assessment exercise.

Moreover the unit will work with ESA and EUSPA to assess their level of development of anti-fraud measures/policies.

Objective: The risk of fraud is minimised through the application of effective anti-fraud measures and the implementation of the Commission Anti-Fraud Strategy (CAFS)²¹ aimed at the prevention, detection and correction²² of fraud

Main outputs in 2021:

Output	Indicator	Target
Raise fraud awareness and knowledge on ethics – all staff	Training session for all staff on the importance of high standards of ethics and on the role of IDOC in disciplinary affairs.	Organise once a year a training session for DG DEFIS staff
Raise fraud awareness and knowledge on ethics - newcomers	Training session to be organised in collaboration with DG HR and OLAF	Organise once a year a training session for DG DEFIS newcomers

H. Digital transformation and information management

DG DEFIS' responsibilities under this area are to a large extent shared with the Directorate-General Internal Market, Industry, Entrepreneurship and SMEs (GROW). In order to reach economies and efficiencies on resources, a Memorandum of Understanding (MoU) was signed between DG DEFIS and DG GROW, applicable as from 1 January 2020. The objective of the MoU is to ensure business continuity in the two DGs with a smooth transition considering the most efficient use of existing staff resources, as well as the necessary synergies and efficiencies in terms of strategic horizontal services.

An Information Resource Manager (IRM) was appointed in the last quarter of 2020 to support collaborative working methods and to implement the Commission data governance and principles in DG DEFIS. In close cooperation with DG GROW, the digital transformation of DG DEFIS has been further pushed forward. DG DEFIS will complete their data inventory in 2021, with the support of JRC.

DG DEFIS will secure operations of available tools under his responsibility, as follows:

IT tools under development:

1) SUE (exchange of EU confidential info)

²¹ Communication from the Commission 'Commission Anti-Fraud Strategy: enhanced action to protect the EU budget', COM(2019) 196 of 29 April 2019 – 'the CAFS Communication' – and the accompanying action plan, SWD(2019) 170 – 'the CAFS Action Plan'.

²² Correction of fraud is an umbrella term, which notably refers to the recovery of amounts unduly spent and to administrative sanctions.

DG DEFIS participates in this corporate initiative that will prepare a classified IT system. The target system should handle end-to-end communication, meaning that all secured areas of the Commission and other users should be equipped with the system²³. SUE will be able to support the Foreign Direct Investment (FDI) Screening Regulation, The European Defence Fund (EDF) and its precursors, the Preparatory Action on Defence Research (PADR), the European Defence Industrial Development Programme (EDIDP) and other exchanges of information up to SECRET UE/EU SECRET level.

In addition, it will include links with the corporate tool eGrant suite that will be adapted to the needs of DG DEFIS' programmes (allowing to handle sensitive documents).

2) E-CERTIS system (owned by DG GROW)

E-CERTIS system is an online mapping service for criteria, issuers and evidence in the EU, to be used for future defence procurements.

3) CEMS Mapping Website Revamp

The Copernicus Emergency Management service (CEMS) is one of the core services of the Copernicus programme²⁴. CEMS is managed by JRC in the frame of two cooperation agreements with DG DEFIS (AA Copernicus II and related cross-sub delegation).

4) Local_Eval_EDIDP

This tool provides support to the evaluation of proposals received under the European Defence Industrial Development Programme (EDIDP) calls. One of the missions of DG DEFIS is to implement the European Defence Industrial Development Programme (EDIDP) over the period of 2019-2020 (EUR 500 million) in direct management. The mission of the unit in charge includes all the aspects related to the preparation of calls, the evaluation of proposals including the appointment of external independent experts, the preparation of grant agreements and the management of grants. Considering the mere nature of the sector and the sensibility of the information processed, the unit is dealing with a large volume of sensitive or classified information. This has a significant impact on the creation, processing, storage and administration of documents. Hence, the evaluation process and all related proceedings are classified minimum at the level of RESTREINT UE/EU RESTRICTED. This level could be higher in order to match the classification level of the proposals (if required). The corporate tool SEP cannot be used to this end, because the management of classified information is not supported.

²³ The system should ensure automatic registration of the files in line with the classified registry requirements of Decision (EU, Euratom) 2015/444.

²⁴ <https://www.copernicus.eu/en>

Reuse of existing tools²⁵:

The possible adaptation (partially or fully) for using the corporate eGrant suite (e.g. SYGMA, COMPASS, SEP, EMI) for the management of the European Defence Fund is being analysed with the concerned DGs.

To ensure rigorous implementation of the data protection rules, the DG DEFIS data protection contact point will in close cooperation with DG GROW Data Protection Coordinator (DPC), focus efforts on three areas:

- Increase awareness at all levels of DG DEFIS staff, focusing on the needs of every type of actor and on the practical implementation e.g. the most recurrent and risky activities, such as public procurement, meetings and events, consultations, IT tools, international transfers and on data subject procedures;
- Promote the use of unit inventories to improve continuous compliance monitoring and in particular the implementation of the Commission's Data Protection Action Plan (C(2018) 7432 final) to be updated in 2021;
- Inform about the latest corporate developments.

DG DEFIS will continue working on mapping the degree of implementation per Unit (to target awareness actions) and on ensuring that DEFIS IT systems comply with the data protection rules.

Objective: DG DEFIS is using innovative, trusted digital solutions for better policy-shaping, information management and administrative processes to forge a truly digitally transformed, user-focused and data-driven Commission

Main outputs in 2021:

Output	Indicator	Target
Issue a joint DEFIS/GROW modernisation plan	Work on the modernisation plan is ongoing	2021
Appoint an Information Resource Manager (IRM)	The staff to whom this task is appointed.	2021
Establish a DG DEFIS key data assets inventory	Percentage of DG DEFIS key data assets	- 25%
Increase staff awareness in DG DEFIS on personal data protection rules.	- Percentage management attending awareness raising activities. - Percentage of staff attending awareness raising activities.	- Management: 40%. - Staff: 40%.
Map degree of implementation of data	- Number of records due. - Number of privacy statements due.	- Percentage of records prepared. - Percentage of privacy statements prepared.

²⁵ As part of EC Digital Strategy Action Plan on Reusable Solutions Platform.

protection procedures		
DEFIS IT systems complying with data protection rules.	- Number of DEFIS IT systems.	- Percentage of DEFIS IT systems complying with data protection rules.

I. Sound environmental management

In 2019, the staff occupying the Breydel building were among those with the highest use of paper in all Commission buildings, with a print/staff of 5029,1 against a building average of 3768,7. Although at present no precise information can be attributed to the space and defence units, it is proposed to adopt actions to encourage more paperless practices among staff. This will also allow to establish a baseline for DG DEFIS during its first years of operation.

Whilst in DG GROW, in 2018 the space and defence units from Directorates I and J had an impact of about 4TCO2/staff emissions for missions, which is three times higher than the Commission average (1,3 TCO2/eq)²⁶. Considering that in 2020 there have been a limited number of missions, it is proposed to establish a baseline for DG DEFIS during its first years of operation, which promotes videoconferencing/virtual events as an alternative to missions, when possible.

Following the introduction of environmental requirements in the Financial Framework Partnership Agreement to be signed with the European Space Agency (ESA) and the EU Agency for the Space Programme (EUSPA), and in light of the results of the study on “Analysis of the environmental impact of the EU Space Programme”, specific actions will be envisaged to assess the footprint and reduce the environmental impact of the EU Space Programme.

To maximise the impact of space data, services and applications in support of the EU Green Deal, the use of environmentally-oriented actions supported by the Union EU Space Programme and Horizon Europe will be encouraged.

In addition, as already mentioned above (paragraph E on “Human Resources Management”), plastic waste reduction (end of cafeteria take-away cups), use of water fountains and implementation of the [EC Guidelines for sustainable meetings and events](#), as well as implementation of the specific guidelines circulated in 2020 will be promoted via internal communication channels. Corporate campaigns will be handled in close partnership with OIB and DG GROW, with which DG DEFIS shares its building.

²⁶ Based on extrapolation of data provided by the Commission’s carbon footprint analysis (by HR.D.02), including business travel.

Objective: DG DEFIS takes full account of its environmental impact in all its actions and actively promotes measures to reduce the related day-to-day impact of the administration and its work

Main results and outputs in 2021:

Output	Indicator	Target
Paperless working methods at DG/service level (such as paperless working: e-signatories, financial circuits, collaborative working tools) and staff awareness actions to reduce office paper use.	% of staff informed	Address all DG staff
	% of Ares e-signed documents	Establish a baseline for the first year of operation 1 action per year
Analysis of DG/service's missions trends /patterns. Develop a mission policy that promotes videoconferencing/virtual events.	Yearly CO ₂ (t) emissions from DG/service's missions Mission policy and process document	Establish a baseline for DG DEFIS Address all DG staff
Implementation of the <i>EC Guidelines for sustainable meetings and events</i> , e.g. reduce/eliminate single-use plastics, gadgets/gifts	Number of events	At least 1 event
Gradual introduction of GPP criteria in contracts and monitoring of the process	Impact of GPP-relevant contracts with green criteria (relevant value in EUR, where possible, enabled footprint reduction)	Establish a baseline for the first year of operation
Encourage the use of actions underpinning the use of space data, services and applications in support of the EU Green Deal.	Number of calls Number of projects funded Overall amount in EUR	Establish a baseline for the first year of operation

J. Example(s) of initiatives to improve economy and efficiency of financial and non-financial activities

In order to reduce environmental impact and following the efforts made in 2020, digital solutions are strongly encouraged in DG DEFIS whenever possible and appropriate. In close cooperation with DIGIT, investments in modern and secured equipment, allowing for holding professional videoconferencing instead of traveling worldwide intensively for negotiations. Here are some concrete examples of actions:

- Reduction of the number of missions together with a limited number of staff per mission

- Considerable reduction on mission budgets and reduction of carbon foot print of the DG
- Video conferencing investments
 - 4 meetings rooms will be equipped with new video-conference devices, in collaboration with SCIC
- Substitute traditional promotional materials with sustainable goodies.

K. Security and Information

DG DEFIS, ever since its creation, is challenged with the management of high volumes of significantly sensitive information. This information, if not adequately protected, can be undesirably disseminated and cause various degrees of damage to the Commission.

A comprehensive DG DEFIS Classification Guide will be prepared in close coordination with HR.DS and staffed for approval by the Director General. This will allow a standard classification of documents except those deriving from Programmes' Regulations and related security instructions whose classification is already standardised.

The dedicated **Security Personnel at all levels** in DG DEFIS will ensure that the actions identified are implemented.

The Local Security Officer and Deputies will monitor the correct implementation of security rules and regulations and advise on best practices to be implemented. The LSO will ensure with HR.DS that the local actions fit in the overall Commission Security Framework.

Senior management is regularly made aware of the security status in the DG.

In 2021, all staff in DG DEFIS will have to be in possession of a valid security clearance or have started the process to obtain it.

Awareness and training have a crucial role in building a security mind-set. A plan fitting the needs of DG DEFIS will be established by April 2021. Should the COVID emergency continue beyond that date, the most suitable online trainings would be advertised to all staff.

The *securisation* of infrastructure must continue in order to achieve a comprehensive control of personnel allowed to enter DEFIS office space with particular regards the achievement of "closed door policy".

Objective: DG DEFIS is ensuring a high level of protection of the sensitive and classified information it manages

Main results and outputs in 2021:

Output	Indicator	Target
Establish a DG DEFIS Classification Guide	- All Directorates and Units classifying documents	- DEFIS Management staff

	according to the same guide.	
Organise comprehensive security training	<ul style="list-style-type: none"> - Percentage of management attending awareness raising activities. - Percentage of staff attending awareness raising activities. 	<ul style="list-style-type: none"> - Management: 40%. - Staff: 90%.
Staff security clearance	<ul style="list-style-type: none"> - Percentage of staff with personal security clearance or in the process of being security cleared 	<ul style="list-style-type: none"> - all DEFIS staff: 95 %
Installation of electronic door handles in all directorate office spaces (compliant with HR.DS requirements) that can ensure full audit of entries.	<ul style="list-style-type: none"> - Percentage of equipped doors 	<ul style="list-style-type: none"> - 75%

ANNEX 1 – Illustration of DG DEFIS Intervention logic, as outlined in the DG DEFIS Strategic plan for 2020 -2024

