

Annual Activity Report 2020

DG Defence industry and Space

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THE DG IN BRIEF

DG DEFIS Mission Statement

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

The Directorate General for Defence industry and Space (DG DEFIS), newly created on 1 January 2020, develops and carries out the Commission's policies on defence industry and space.

EU competences and obligations for defence industry action are conferred under the TFEU Title XVII Industry, and in particular Article 173(3), and Title XIX Research and development, and in particular on Article 182(4), Article 183 and the second paragraph of Article 188 thereof; and for space, under Article 189 TFEU and Article 4 (3)TFEU.

DG DEFIS is responsible for a total budget of EUR 22,596 million (for the period 2014-2020) through:

- the European Defence Industrial Development Programme (EDIDP) and the Preparatory Action on Defence Research (PADR), largely implemented through direct management by the Commission (grants and procurement); these are the precursors of the European Defence Fund (EDF);
- the **EU Space Programmes** mainly implemented through indirect management with the European GNSS Agency (GSA), the European Space Agency (ESA) and other entrusted entities;
- **Horizon 2020** for Space, managed directly by DG DEFIS and the Research Executive Agency (REA) in close cooperation with DG RTD, as well as through indirect management with GSA and ESA.

In 2020, a key priority was the consolidation of the new DG DEFIS structure and team. A major re-organisation was handled with a transition from the administrative structure of DG GROW towards a new, separate one. DG DEFIS is organised around 3 directorates, 11 units and a security taskforce, with a total of 219 staff at the end of 2020.

Given that the majority of the DG DEFIS budget is managed indirectly via entrusted entities, the Directorate-General has to rely on external control systems. These external control systems are validated by external independent auditors that perform pillar assessments (based on the common terms of reference of the Commission). These pillar assessments and the implementation of their critical recommendations are a pre-requisite before the signature of a contribution agreement with any entrusted entity. This allow DG DEFIS to rely on the external control systems of these entities, which become part of the accountability chain of the DG.

In addition to the inherent risks related to the direct and indirect spending modes, DG DEFIS has to take account of other risks related to factors that are beyond the control of DG DEFIS, like technical risks (space activity) or extraordinary events such as the COVID-19 pandemic and Brexit.

EXECUTIVE SUMMARY

This Annual Activity Report is a management report of the Director-General of DG DEFIS to the College of Commissioners. Annual Activity Reports are the main instrument of management accountability within the Commission and constitute the basis on which the College takes political responsibility for the decisions it takes as well as for the coordinating, executive and management functions it exercises, as laid down in the Treaties¹.

A. Key results and progress towards the achievement of the Commission's general objectives and DG's specific objectives

The work of DG DEFIS in 2020 followed the <u>2020 Management Plan</u>, which in turn follows the intervention logic of the DG's <u>Strategic Plan 2020-2024</u>, in order to achieve the specific objectives of DG DEFIS and contribute to achieving the general objectives of the Von der Leyen Commission.

A major achievement was the political agreement reached in December 2020² between the European Parliament and Council on the Commission proposals for the new EU Space Programme and the European Defence Fund. Final approval of the legal texts by the European Parliament and the Council is expected in spring of 2021.

The consolidation of DG DEFIS as a new service of the Commission largely took place in 2020, together with the transition from the existing programmes towards the new single EU Space Programme and the European Defence Fund under the new Multiannual Financial Framework (MFF).

Tailored internal and external communication activities were deployed under each general objective. Online presence and a range of 'virtual' events underpinned the success of many actions and contributed to strengthen the cross-sectoral uptake, to increase awareness about the DEFIS portfolios and to ensure EU presence as a credible actor at the global stage.

A European Green Deal

Specific objective 1.1: The 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 committed to making the EU more sustainable, including by maximizing the take-up of EU space-enabled services in cross-policy EU legislative initiatives.

Copernicus, the EU Earth Observation system, continued throughout 2020 to provide robust and reliable Earth monitoring data, supporting the EU goals for 2050 climate-neutrality and sustainability. The Copernicus climate change service provided continuous and reliable

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¹ Article 17(1) of the Treaty on European Union

² Final political trilogue on the European Defence Fund on 14 December 2020 and final political trilogue on the Proposal for a Regulation establishing the Space Programme of the Union and the European Union Agency for the Space Programme on 15-16 December 2020.

information on key indicators such as temperature, sea ice and CO_2 levels. The number of users of this service steadily increased since its start in 2018, and reached almost 60.000 users by end of 2020. Ongoing Copernicus activities were adapted to the COVID-19 pandemic, seeking to identify possible environmental factors affecting the spread of the disease such as humidity, temperature or wind, as well as the impact on the environment of the reduction of human activities due to lock-down of cities/countries.

Galileo and EGNOS, the EU satellite navigation systems, enabled throughout 2020 optimal routings in any mode of transport and thereby contributed to the reduction of CO_2 emissions. A notable achievement in 2020 was that the ICAO (International Civil Aviation Organization) adopted international standards that include the use of Galileo signals, so that all airplanes can navigate globally on the basis of European technology and space infrastructure.

The uptake of EGNOS continued to show a steady growth in the number of landings at European airports, allowing for more efficient definition of flight routes and landing procedures and supporting the European airports towards performance-based navigation that will be required by 2024. The number of published EGNOS-based precision approach landing procedures (both APV-I and LPV-200) increased to 690 by the end of 2020³.

A Europe fit for the digital age

The COVID-19 crisis presented a number of challenges. The New Industrial Strategy for Europe (March 2020) highlighted the green and digital transition and called for reinforced strategic autonomy. DG DEFIS focused on the specific needs for the recovery of the aerospace and defence industry and is seeking to identify strategic dependencies in the industrial value chains. Two virtual workshops were organised with more than 200 industry and institutional stakeholders. The first workshop focussed on the impact of the COVID-19 crisis and the second one on the range of programmes and measures relevant to the resilience and strategic autonomy of the aerospace and defence industry⁴.

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

Continuity of EU space services provision for EGNOS, Galileo⁵ and Copernicus was ensured with excellent results, in particular with respect to the committed performance levels. Emphasis was placed on the follow up of the recommendations of the Galileo inquiry board to build on the resilience of the system.

The evolution of the EU space systems is essential to keep up with technological and global developments. While for the Copernicus programme key system evolution decisions are expected in 2021, the Galileo second generation implementing act was adopted on 17 December 2020. This accelerates the roll out of a range of new Galileo features and

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³ Figures correspond to the total number of instrumental runway ends in EU Member States, including in Norway and Switzerland

⁴ First workshop: https://www.copernicus.eu/en/events/events/online-workshop-impact-covid-19-pandemic-eu-aerospace-and-defence-ecosystem

Second workshop: https://www.copernicus.eu/en/events/events/online-workshop-2-impact-covid-19-pandemic-eu-aerospace-and-defence-ecosystem

⁵ https://www.gsc-europa.eu/electronic-library/galileo-service-performance-reports

services to provide more powerful signals, improved authentication capabilities and offer higher accuracy.

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

The number of Copernicus, Galileo and EGNOS users is steadily increasing. This means that EU space-enabled services are more and more used in the digital and green transformations, for example by modernising transport, enabling precision farming and influencing human behavior in the cities and rural areas to become 'greener' and more 'sustainable'. Today, there are already more than 2 billion Galileo enabled smartphones in use and the number of registered users downloading Copernicus data and information have increased by 100.000 in the reporting year, reaching a total of 400.000 registered users by end of 2020.

The development of standards for Galileo receivers led to the adoption of a Commission Implementing Decision standardisation request⁷. It seeks to ensure compatibility and interoperability of smartphones placed on the EU Internal Market with Galileo signals to provide accurate location during calls to the European emergency number 112. This initiative will directly benefit EU citizens in times of distress.

To support SMEs and start-ups in space, the new Space Entrepreneurship Initiative "CASSINI" was set-up, with actions starting in 2021. A Pact for Skills was formed by Aerospace and Defence manufacturing stakeholders to upscale the existing Skills Blueprint.

An innovation highlight under the Horizon 2020 Space activities, was the first ever European experimental launch of more than 50 satellites for more than 20 different customers, with a successful lift off on 2 September 2020 under the so called 'In-Orbit Demonstration and Validation (IOD/IOV) initiative'.

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 midcaps

The precursor to the European Defence Fund, the European Defence Industrial Development Programme (EDIDP) was successfully rolled out in 2020 and 16 projects were retained for funding. The projects are covering capability development areas in all five military domains (land, naval, space, air, space, and cyber) and support the future EU defence capabilities landscape, notably based on enhancing industrial competitiveness and technological sovereignty⁸.

The final selection of projects under the Preparatory Action on Defence Research (PADR)

⁶ Worldwide users registered on European Copernicus data access portals.

⁷ Commission Implementing Decision C(2020) 6628 of 2 October 2020

⁸ The list of awarded 2019 EDIDP call can be found on the following webpage: https://ec.europa.eu/info/publications/european-defence-industry-results-calls_en

proposals was completed and resulted in three grant agreements in support of disruptive technologies for defence for collaborative research projects. In view of the COVID19 pandemic, and to ease the burden on the defence industry and their financial supply chains, the Commission adopted a decision to pre-finance all projects with up to 90% of costs.

On the basis of experience gained under the EDIDP and PADR, preparatory works on the European Defence Fund (EDF) first annual work programme and discussions with key partners were conducted in 2020 and will be continued.

The <u>second implementation report on the Action Plan on Military Mobility</u> (Joint Report DEFIS/ EEAS/MOVE) was adopted on 19 October. The implementation of the linked Action Plan continues.

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

A public consultation was performed on the possible use of Galileo signals for timing and synchronisation seeking to gradually decrease dependence of European critical infrastructures on foreign satellite navigation systems. The analysis for this initiative continues in 2021.

When it comes to Safety and security (dual use) related services, the Galileo unique functionality to its Search and Rescue service, the Return Link, was launched. It provides an automatic acknowledgment message back to users. The Copernicus Emergency Management Service supported partners during major disasters that unfolded throughout the year.

Preparatory actions of the GOVSATCOM component started with the launch of the procurement of its terrestrial segment (the hubs). On the basis of GOVSATCOM, and as part of Europe's response to geopolitical and cybersecurity threats, a contract was signed for a study on a possible new initiative on secure space connectivity, in close coordination with DG CNECT.

A highlight was the successful Copernicus Sentinel 6A satellite launch in November 2020, bringing the total number of Copernicus satellites in orbit to 8 and allowing further service reinforcements. These are making it possible to provide improved and high-precision measurements of the sea level, with evident relevance for climate change observations.

The fourth annual progress report on the implementation of the 2016 Joint Framework on countering hybrid threats and the 2018 Joint Communication on increasing resilience and bolstering capabilities to address hybrid threats was adopted. DG DEFIS, together with EEAS, also presented to the Member States a mapping of countering hybrid threats measures and documents at EU level⁹.

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⁹ SWD (2020) 152 final

When it comes to the civil aeronautics industry, DG DEFIS is working closely with DG MOVE and EASA to further the development of a regulatory framework to ensure safer operation of drones. In 2020, the scope of Regulation (EU) 2019/945, laying down requirements for the design and manufacturing of drones intended for use in operations that do not require prior approval from national aviation authorities, was extended. Regulation (EU) 2020/1056 covers the broad domain of leisure and low-risk professional applications.

B. Key Performance Indicators (KPIs)

1. Number of users of the Copernicus Climate Change Service

Result indicator: Number of users of the Copernicus Climate Change Service

Source of data: ECMWF, https://climate.copernicus.eu/

Baseline	Interim	Milestone	Target	Latest
(2019) ¹⁰	(2022)	(year)	(2024) The number of users is growing at a very fast rate. Daily up-to-date status can be followed here (end of the page): https://climate.copernicus.eu/ The indicated number of users corresponds to 'registered' users of the Copernicus climate change service	known results (2020)
28 000	70 000	•••	80 000	60.000

 $^{^{10}}$ The Copernicus Climate Change Service started operations in June 2018. The baseline is based on the number of registered users available by 2019.

2. Availability, accuracy, and continuity of services provided by Galileo and EGNOS separately

Result indicator: Availability, accuracy, and continuity of services provided by Galileo and EGNOS separately¹¹ **Source of data:** Galileo and EGNOS Programmes

Baseline (2020)	Interim Milestone		Target (2024)	Latest known results (2020)		
	(2022) (year)					
Galileo availability: 77%	•••		Galileo availability: 99.5%	98.60% for E1/E5a signals in (Sept. 2020)		
 Galileo accuracy: Horizontal positioning accuracy <= 7.5m (95%), Vertical positioning accuracy <= 15m (95%) 			 Galileo accuracy: Horizontal positioning accuracy <= 4m Vertical positioning accuracy <= 8m 	Horizontal accuracy = 1.80m (95%) Vertical accuracy = 3.13m (95%) (Sept. 2020)		
Galileo continuity: Not presently defined			Galileo continuity: Will be defined in the applicable issue of the Open Service Service Definition Document (OS SDD)	No figure for continuity has yet been defined		
 APV-I¹²: Over 99% of the EU territories with more than 99% of availability. LPV-200¹³: over 90% of the EU territories with more than 99% of availability. 			 EGNOS availability: APV-I: Over 99% of the EU territories with more than 99% of availability. LPV-200: over 95% of the EU territories with more than 99% of availability. 	APV-I: 98% of the EU territories with more than 99% of availability. LPV-200: over 90% of the EU territories with more than 99% of availability		
EGNOS accuracy: Horizontal (95%): 2 m, Vertical (95%): 3 m	•••		EGNOS accuracy: Horizontal (95%): 1.5 m, Vertical (95%): 2.5 m	EGNOS accuracy: Horizontal (95%): 2 m, Vertical (95%): 3 m		
 APV-I: over 90% of the EU territories with better continuity than 5*10-4 / 15 sec. LPV-200: over 80% of the EU territories with better continuity than 5*10-4 / 15 sec. 			 APV-I: over 95% of the EU territories with better continuity than 5*10-4 / 15 sec. LPV-200: over 85% of the EU territories with better continuity than 5*10-4 / 15 sec. 	APV-I: over 90% of the EU territories with better continuity than 5*10-4 / 15 sec. LPV-200: over 80% of the EU territories with better continuity than 5*10-4 / 15 sec.		

 $^{^{11}}$ This indicator is also reported under the Programme Statement for the EU Space Programme, as part of the annual draft general budget of the European Union

 $^{^{12}}$ APV-I = Approach procedure with vertical guidance, category 1.

¹³ LPV-200: Localizer Performance with Vertical guidance to a decision altitude of 200ft

3. Number of start-ups supported by EU space programmes, including CASSINI initiative and R&D actions

Result indicator: Number of start-ups supported by EU space programmes, including CASSINI initiative and **R&D** actions

Source of data: Contractors organising the activities and participating partners

Baseline	ne Interim Milestone		Target	known results (2020)	
(2020)	(2022) (year)		(2024) The target was set by estimating the impact of the upcoming actions for start-up and scale-up companies under CASSINI, notably CASSINI Business Accelerator, CASSINI Matchmaking, CASSINI Prizes and CASSINI Seed and Growth Funding Facility		
0	22	•••	60	N/A (initiative not yet started)	

4. Number of legal entities supported by the European Defence fund

Result indicator: Legal entities involved in EDF¹⁴

Source of (data: Europea	in Commission					
Baseline	Interim Mi	lestone	Target	Latest known results			
(2020)	(2022)	(year)	(2024)	(year)			
0	Increase		increase	N/A			
				(initiative not started)			

¹⁴ This indicator is also reported under the Programme Statement for the European Defence Fund, as part of the annual draft general budget of the European Union. This indicator does not reflect on the outcome of the two ongoing precursor programmes PADR and EDIDP, supporting defence research and capability development, on which the EDF is based. The EU supported 267 legal entities through PADR and EDIDP by 2020.

5. Number of operational safety and security (including dual-use) related services from the EU Space Programmes

Result indicator: Number of operational safety and security (including dual-use) related services from the EU Space Programmes

Source of data: DG DEFIS, EU Space Programmes

Baseline	Interim Milestone		Target	Latest known results (2020)		
(2020)	(2022)	(year)	(2024)			
 EGNOS Safety of Life (SoL) service GALILEO Search and Rescue (SAR) service Copernicus security service¹⁵/ emergency service Space Surveillance and Tracking (SST) 	 GALILEO Public Regulated Service (PRS) EGNOS Safety of Life (SoL) service GALILEO Search and Rescue (SAR) service Copernicus security service/emerg ency service Space Surveillance and Tracking (SST) 		 GALILEO Public Regulated Service (PRS) EGNOS Safety of Life (SoL) service GALILEO Search and Rescue (SAR) service Copernicus security service/emergency service Space Surveillance and Tracking (SST)Space Weather (SWE) Near Earth Objects (NEO) GOVSATCOM (Governmental Satellite Communications) 	 GALILEO Public Regulated Service (PRS) EGNOS Safety of Life (SoL) service GALILEO Search and Rescue (SAR) service (with return link feature since 2020) Copernicus security service/ emergency service Space Surveillance and Tracking (SST) 		

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¹⁵ (1) Copernicus Maritime Surveillance Service, (2) Copernicus Border Surveillance Service, (3) Copernicus Support to EU External Actions

C. Key conclusions on Financial management and Internal control

In accordance with the governance arrangements of the European Commission, (the staff of) DG DEFIS conducts its operations in compliance with the applicable laws and regulations, working in an open and transparent manner and meeting the expected high level of professional and ethical standards.

To ensure the achievement of policy and management objectives, the Commission has adopted a set of internal control principles, based on international good practice. The financial regulation requires that the organisational structure and the internal control systems used to implement the budget be set up in accordance with these principles. DG DEFIS has assessed its internal control systems during the reporting year and has concluded that it is effective and the components and principles are present and functioning well overall, but some improvements are needed as minor deficiencies were identified related to the internal control principles 1, 5, 6 and 13. We refer to AAR section 2.1.3 for further details.

In addition, DG DEFIS has systematically examined the available control results and indicators, including those for supervising entities to which it has entrusted budget implementation tasks, as well as the observations and recommendations issued by the internal auditor and the European Court of Auditors. These elements have been assessed to determine their impact on management's assurance about the achievement of the control objectives. Please refer to Section 2.1 for further details.

In conclusion, management has reasonable assurance that, overall, suitable controls are in place and working as intended; risks are being appropriately monitored and mitigated; and necessary improvements and reinforcements are being implemented. The Director General, in his capacity as Authorising Officer by Delegation has signed the Declaration of Assurance.

D. Provision of information to the Commissioner

In the context of the regular meetings during the year between the DG and the Commissioner(s) on management matters, the main elements of this report and assurance declaration, have been brought to the attention of Commissioner Thierry Breton, responsible for the Internal Market.

E. Specific actions on COVID-19

In 2020, Europe was strongly impacted by the COVID-19 pandemic. The Commission has proposed a strong and coordinated response to the health crisis as well as to the impact on Europe's economy and society. COVID-19 has also posed challenges as regards performance, control, audit and assurance in relation to the 2020 EU budget. In an exercise coordinated at corporate level, all Commission services have promoted the consistent and rigorous protection of the EU budget ensuring that appropriate mitigating measures were put in place.

To reconcile the national dimension of the Member States' recovery and resilience plans with the cross-border nature of the activities handled by DEFIS, it became important to pursue a country specific approach and adapt the internal working processes within DG DEFIS. Particular efforts were undertaken to communicate to Member States the potential of the Recovery and Resilience Facility for the DEFIS ecosystems.

Reinforced controls at internal EU borders between Member States generated traffic jams (in particular for lorries), affecting the functioning of the Single Market. However, freight circulation needed to continue to ensure access to food, medical equipment, medicines and other essential goods. In response to President von der Leyen's request, Copernicus observations were successfully used to identify and monitor these traffic jams and reduce disruptions to a minimum.

Given the severe societal and socio-economic consequences, DG DEFIS and the European Space Agency also joined forces and created the 'Rapid Action Coronavirus Earth observation' dashboard – also known as RACE. The dashboard uses Earth Observation satellite data, mainly from Copernicus, and allows for the monitoring of key environmental parameters such as air and water quality changes, economic and human activities including industry, shipping, construction, traffic, as well as agricultural productivity. A dedicated webpage was created to promote EU Space actions for the coronavirus pandemic: https://www.euspace-programme.eu/coronavirus.

DG DEFIS strictly followed the rules issued by DG HR on the COVID-19 and all staff of DG DEFIS started teleworking in March 2020. The HR BC informed about the procedures to be followed for essential staff willing to work in the office (pre-information to management, specific follow-up by each unit, guidance on social distancing). Together with the DEFIS communication team and the HR BC, the Director General organised several meetings for all staff to present challenges and achievements if the DG, and allow to colleagues to interact with each other.

1. Key results and progress towards the achievement of the Commission's general objectives and DG's specific objectives

A. European Green Deal

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

The EU space programmes and in particular, Copernicus, the EU Earth Observation system, provide robust and reliable monitoring data, supporting the EU to stay on track towards achieving the EU 2050 climate-neutrality and sustainability objectives. DG DEFIS contributed in 2020 to **cross-policy legislative initiatives** under the EU Green Deal to ensure the inclusion of EU space-enabled services as enablers of systemic changes towards sustainability:

- the strategy for Sustainable and Smart Mobility to modernise and green our transport, in particular the aviation sector;
- the strategy to Decarbonising energy and A new Circular Economy Action Plan, with Copernicus allowing for environmental impact monitoring across the raw materials life cycle;
- the Farm to Fork strategy, supported with precision farming applications for the sustainability of food systems and modernisation of practices (in agriculture, fisheries and aquaculture);
- the EU Biodiversity Strategy for 2030, with the Copernicus Land Monitoring Service providing information products to monitor land cover in and outside Europe, including protected and high biodiversity value areas;
- the New EU Forest Strategy, supported by the Copernicus Land and Emergency services for protecting our environment, strengthening the Forest Information System for Europe and contributing to World Forest Observatory;
- the EU strategy to reduce methane emissions, with the improved indirect air surveillance and the monitoring of methane emissions via the Copernicus Atmosphere Monitoring Service (CAMS) for detecting and monitoring global super emitters;
- The Common EU approach for Ocean Observation, with the Copernicus Marine Environment Monitoring Service providing Ocean Monitoring Indicators.

DG DEFIS also contributed to the scoping and formulation of topics in the European Green Deal Horizon 2020 call (EUR 1 billion) to ensure that Copernicus and Galileo/EGNOS data and services are used in the projects.

The Copernicus climate change service that routinely monitors the Earth's climate, provided throughout 2020 **continuous and reliable information** on key indicators such as temperature, sea ice and CO_2 levels. The number of users is steadily increasing since 2018, when this service started its operations, and has reached almost 60.000 users by end of 2020.

Under the Copernicus Atmosphere Monitoring Service (CAMS), detailed **reports and maps** on air quality, especially useful to monitor pollution, were issued. Earth Observation data combined with ground based observation and advanced numerical models were used to continually monitor air quality in Europe and worldwide and to observe the impacts on local and regional air quality of lockdowns due to the pandemic.

Galileo, the EU's satellite navigation system, provided throughout 2020 high accuracy positioning and navigation signals that are essential for transport solutions. Use of satellite navigation services enables determination of **optimal routes** for cars, public transport, buses or boats by providing accurate positions. Shorter, more efficient journeys result in lowering the amount of time a vehicle engine is engaged. In turn, this allows for significant reduction of the fuel and thus contributes to the reduction of CO2 emissions. It is estimated that multiplying this effect across the whole of the EU leads to 34 million tonnes reduction from 2008 to 2030 in terms of the amount of CO2 produced. ¹⁶

In air transport, using EGNOS, Europe's regional satellite-based augmentation system, for efficient definition of flight routes permits reduced fuel burn and reduced CO_2 emissions. The uptake of EGNOS services showed a further increase in the number of airports with EGNOS landing procedures in 2020, which reaches a total of 373 airports. In November 2020, a major achievement was reached when the ICAO (International Civil Aviation Organization) approved new standards and recommended practices paving the way for the development of new dual frequency multi-constellation satellite based augmentation systems that will rely also on Galileo signals. With route planning optimised thanks to satellite navigation, operators can predict arrival times of incoming flights more accurately. This means that landing and take-off activities can be managed more efficiently by air traffic controllers and less time is spent by incoming planes circling airports waiting for a runway to become available, minimising the use of additional jet fuel. As such, it is estimated that the total savings amount to 17 million gallons of jet fuel. This corresponds to a CO2 emission reduction of 214 kilo tonnes up to CO2030.

Preparatory coordination works to ensure the contribution of the Copernicus programme to the **Destination Earth¹8** project (led by DG CNECT) took place. This project aims to reinforce Europe's industrial and technology capabilities in digital modelling of the Earth's physical resources and related phenomena such as climate change, water/marine environments, polar areas and the cryosphere, etc. on a global scale to speed up the green transition and help plan for major environmental degradation and disasters. Copernicus will be providing reference data and information by integrating the DIAS (Copernicus Data and Information Access Services) to the digital core platform.

Communication

In the context of the coronavirus pandemic, communication activities were strongly

¹⁶ European Commission's Internal Study. "Analysis of the Environmental Impact of the EU Space Programme", (2020), page 88

¹⁷ European Commission's Internal Study "Analysis of the Environmental Impact of the EU Space Programme", (2020), page 88

¹⁸ https://ec.europa.eu/digital-single-market/en/destination-earth-destine

impacted, either by being postponed or simply cancelled¹⁹. DG DEFIS deployed strong efforts to turn as many planned events as possible into online events. Workshops and webinars were focused on the concrete benefits and the contribution of the EU Space Programme components to the European Green Deal. Two online platforms were created, one under Copernicus.eu and one under Europa.eu, promoting the use of Space data for a Green Recovery in the post-Covid19 context²⁰. Additionally under Europa.eu, a dedicated page on the EU Green deal was created as one of DEFIS top priorities. The EU Space Programme contribution for the United Nations Sustainable Development Goals was promoted with a set of new materials published on the following website: www.copernicus.eu. Workshops promoting different aspects of EU Space contribution to the EU Green Deal were organised i.e. on Copernicus for anthropogenic Co2 emissions. Campaigns were also launched on social media like the so-called Green Month Campaign run on CopernicusEU Twitter account.

B. Europe fit for the digital age

Reinforcing industrial Strategic Autonomy

Under the new industrial strategy for Europe, essential for the green and digital transitions, DG DEFIS focused in 2020 on an initial mapping of the space and defence industry ecosystems and their value chains. Two virtual workshops were organised with stakeholders to discuss the impact of the COVID-19 crisis on competitiveness, investment, research and development, skills and employment, as well as the resilience of key technologies and strategic value chains²¹.

The EU framework for screening of foreign direct investment²² became fully operational as of 11 October 2020. With sectors at the cutting-edge of technology or central to the provision of security for EU citizens in its remit, DG DEFIS has purposefully engaged in the analysis of the first cases notified at the end of 2020, providing its specific expertise to ensure that foreign direct investments do not pose issues for projects or programmes of interest to the whole EU and do not threaten security or public order in the EU or its Member States.

A main instrument to strengthen the European defence technological and industrial base which contributes to the Union's strategic autonomy is the European Defence Fund (EDF) and its precursor programmes.

¹⁹ This covers all the communications activities and plans as outlined under each General Objective

²⁰ https://www.copernicus.eu/en/coronavirus

²¹ First workshop: https://www.copernicus.eu/en/events/events/events/online-workshop-impact-covid-19-pandemic-eu- aerospace-and-defence-ecosystem

Second workshop: https://www.copernicus.eu/en/events/events/online-workshop-2-impact-covid-19-pandemiceu-aerospace-and-defence-ecosystem

²² under the Commissions' General Objective 'An Economy that Works for People'

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

Technological sovereignty and EU space service improvements

Continuity of EU space services provision for EGNOS, Galileo and Copernicus was ensured throughout 2020, with excellent results with respect to the committed performance levels. In order to remain at the cutting edge of technology and provide the best possible and most relevant services, the evolution of the EU space systems is essential. The **Galileo Second Generation (G2G) implementing act** was adopted on 17 December 2020, setting out the level of ambition, which is proportionate to the level of funding under the MFF 2021-2027.

Work on the development of innovative upgrades and new services continued, seeking to increase the number and the quality of **Galileo services** available to the public. This includes the Emergency Warning Service, which will provide warnings to users in a geographical area in case of natural disasters or other critical situations; the High Accuracy Service, providing positioning accuracy of 20 cm; and Authentication Services, to ensure the authenticity of signals processed by Galileo receivers, which is needed for road tolling and will enable many other innovative applications.

Following on from the Galileo service incident in July 2019, the lessons learned resulted in a number of recommendations to the programme for improvements both in the system design and the operational procedures.

All six **Copernicus services** are operational and provided throughout 2020 full, free and open information products to EU, national and regional institutions, as well as to the private sector to support atmosphere monitoring, marine environment monitoring, land monitoring, climate change monitoring, emergency management and security. Services continuity was assured over the reporting year without interruptions and with a high level of satisfaction from users, even though the ground segment operations and the services faced the difficulty to operate remotely due to the COVID-19 crisis. The system demonstrated its robustness and agility and the entrusted entities stood ready to support the Commission in this time of crisis, providing both up-to-date environmental information and feedback on economic and logistics impacts due to the crisis. Copernicus produced data that became even more relevant during the COVID-19 pandemic.

Data management

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In 2020, DG DEFIS supported the progressive cloudification of the production infrastructure of Copernicus Sentinel data in order to increase its scalability and responsiveness. The data and information access services are continuously improving to offer better access to the Sentinel data and Copernicus service information as well as data exploitation tools.²³

²³ ESA-DIAS: 60.000 registered users; Copernicus Open Access Hub : 400.000 registered users see the statistics on the ESA dashboard: https://scihub.copernicus.eu/reportsandstats/

DG DEFIS worked closely with JRC and other Commission Services in the set-up of the **Knowledge Centre for Earth Observation** (KCEO), a virtual entity bringing together experts and knowledge from different locations inside and outside the European Commission. This will ensure the uptake of Copernicus within user DGs in support of a wide range of sectorial policies. In 2020, two Commission-wide consultations with Commission services were conducted in June and December in preparation for the official KCEO launch event, now planned for April 2021.

New EU Space Programme – Governance

Co-legislators agreed on the EU Space Regulation in December 2020. The final adoption is expected in the first half of 2021, which will pave the way for the implementation of the Regulation and the establishment of the new EUSPA, the European Union Agency for the Space Programme. In anticipation of the final adoption by the European Parliament and the Council, preparatory work for the establishment of the new governance framework continued in 2020. Negotiations for setting up a Financial Framework Partnership Agreement (FFPA) between the Commission, the European Union Agency for the Space Programme (EUSPA) and the European Space Agency (ESA) were started in 2020, and will be concluded in 2021. Likewise, negotiations on the new contribution agreements with entrusted entities for the implementation of Copernicus in the 2021-2027 period started and will be continued in 2021.

Annual work programmes set out the detailed objectives, activities and budget spending plans to ensure continuity of EU space services provision for EGNOS, Galileo and Copernicus. A Commission Implementing Decision on the financing of the European satellite navigation programmes (EGNOS and Galileo) and the adoption of the work programme for 2020, was adopted on 7 July 2020²⁴. The Commission Implementing Decision on the financing of the Copernicus Programme and on the adoption of the work programme for 2020, had been adopted on 26 November 2019²⁵.

Communication

A dedicated webpage was created to promote **EU Space actions for the coronavirus pandemic:** https://www.euspace-programme.eu/coronavirus.

Given the severe societal and socio-economic consequences, DG DEFIS and the European Space Agency joined forces and created the 'Rapid Action Coronavirus Earth observation' dashboard – also known as RACE – which was unveiled during an online press event on 5 June 2020. The dashboard uses Earth Observation satellite data, mainly from Copernicus, and allows for the monitoring of key environmental parameters such as air and water quality changes, economic and human activities including industry, shipping, construction, traffic, as well as agricultural productivity. This tool is widely used with 107.300 visits over a six-month period (June to December 2020), and helps to measure the

²⁴ C(2020) 4429 final

²⁵ C(2019) 8388 final

impact of the coronavirus lockdown and monitor post-lockdown recovery. The tool will be continued and further improved.

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

Users of space-enabled services

Since several years, a number of activities were undertaken to ensure that the **right framework conditions** are in place to allow for the market uptake of Galileo, EGNOS and Copernicus. The setting of such framework conditions is particularly important in sectors which are either highly regulated and/or where safety and security play a primordial role. In 2020, the focus was, on the one hand, on policy activities that promote the use of the data, information and services delivered by the EU Space Programme across various sectors of the EU economy; and on the other hand, on influencing the **development of standards** as a powerful tool for ensuring the use of Galileo and EGNOS signals in different applications areas and market segments.

In this context, the European Commission adopted in October 2020 a Commission Implementing Decision on a **standardisation request for development of harmonised standards**, addressed to the European Telecommunications Standards Institute (ETSI)²⁶. The standardisation request accompanies the Delegated Regulation 2019/320 and aims at ensuring compatibility and interoperability of smartphones placed on the EU Internal Market with Galileo signals in order **to provide accurate location during calls to the European emergency number 112**.

The market uptake activities led to positive results - the number of Copernicus, Galileo and EGNOS users is steadily on the increase, transforming our societies to become 'smarter' whilst modernising transport, enabling precision farming and influencing human behavior in the cities and rural areas to become 'greener' and more 'sustainable'. Nowadays, chipsets processing Galileo signals are widely available and there are already **more than 2 billion Galileo enabled smartphones in use.** It is also positive that the number of registered users downloading Copernicus data and information have increased by 100.000 in the reporting year, **reaching a total of 400.000 registered users** by end of 2020²⁷.

Supporting SMEs and start-ups

In 2020, DG DEFIS defined the **new Space Entrepreneurship Initiative "CASSINI",** which will aims to increase the number of successful start-ups and growth-stage companies in the various space market segments in Europe. Specific actions were defined, focusing on improving business skills and professional networks, access to risk financing including a EUR 1 billion seed and growth funding facility, as well as innovation

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²⁶ C(2020) 6628 final - Commission Implementing Decision of 2.10.2020 on a standardisation request to the European Telecommunications Standards Institute as regards hand-held mobile phones in support of Directive 2014/53/EU of the European Parliament and of the Council in conjunction with Commission Delegated Regulation (EU) 2019/320

²⁷ Worldwide users registered on European Copernicus data access portals.

competitions with a monetary prize, and were included in the programming documents prepared in 2020. These actions will be rolled out in 2021.

Initiatives in the area of defence to support SMEs and skills development included:

- **Defence SMEs actions** to support the activities of the European Network of Defense-related Regions (ENDR).
- **Defense skills actions** to support the European Defence Skills Partnership (EDSP)²⁸ through events, brochure, newsletter and website.
- Support to the implementation of the **European Defence Skills Strategy 2020- 2024**²⁹ with a pilot project launched on how to set up a European Vocational and Educational Training (VET) platform for the defence sector.
- Actions under Erasmus+, for defence skills under the Blueprint initiative, included a
 EUR 4 million EU contribution project, bringing together 30 partners from industry,
 academia and research to collaboratively build training and related activities for the
 defence sector, which kicked-off in January 2020 for a duration of 4 years.
- Under the 2020 Skills Agenda, Aerospace and Defence manufacturing stakeholders formed a partnership and entered the Pact for Skills among the first industrial ecosystems at a high level conference with Commissioners Breton and Schmit on 10 November 2020.

Research and innovation – Horizon 2020 and Horizon Europe

In 2020, DG DEFIS continued the implementation of Horizon 2020 and adopted financing decisions for actions above EUR 2.5 million. The detailed objectives, activities and budget spending plans are outlined in the Horizon 2020 work programme covering the period 2018-2020, in the section on 'Leadership in Enabling and Industrial Technologies - Space'³⁰.

In 2020, the last calls for proposals of Horizon 2020 Space were evaluated by REA and GSA and resulted in 58 new projects, funded at EUR 142.9 million. Most projects were launched in 2020, while 8 reserve list projects still remain to be launched in early 2021.

A fruitful collaboration under Horizon 2020, supporting European innovation, unfolded with the first ever European launch of more than 50 satellites for more than 20 different customers, with a successful lift off on 2 September 2020. This was an experimental launch which was successfully rolled out under the so called 'In-Orbit Demonstration and Validation (IOD/IOV) initiative'. More regular flight opportunities to validate innovative space technologies will be continued over the period 2021-22.

On the Horizon Europe preparations, a Strategic Research and Innovation Agenda (SRIA) on competitiveness and access to space was endorsed in January 2020 by a stakeholders' consultation platform and the Space Policy Expert Group subgroup on Technology.

²⁸ The EDSP was set up under the Blueprint for Sectoral Cooperation on Skills initiative introduced by the 2016 Agenda for Skills and supported by the European Defence Action Plan.

²⁹ Initiative funded under the <u>COSME programme</u>, the EU programme for the Competitiveness of Enterprises and SMEs

³⁰ Commission Implementing Decision C(2020)1862

Global systems with global reach

Many regions worldwide represent significant **commercial and strategic potential** for the European space industry, with considerable interest from a range of countries in Africa, Latin America, and the Gulf region to use geo-positioning in their respective aviation sectors. Most notably, the preliminary technical work to define the system architecture required for extending EGNOS coverage to ASECNA31 was finalised in 2020. At the same time, the Commission and the Joint Programme Office32 (JPO) agreed to promote Galileo/EGNOS across Africa via a third Support Action. Negotiations to progress on various international agreements to extend EGNOS coverage in Ukraine, Tunisia, and Algeria, amongst others were pursued

DG DEFIS continued to engage in different international and multilateral fora, namely the ITU33 for frequencies, UN ICG34, COSPAS-SARSAT35, and GE036, etc. Notably, CE0S37 endorsed - in their 'Global Roadmap' – the use of Copernicus to monitor CO2 emissions from space. This endorsement gives the EU's Earth Observation capabilities a clear 'thumbs up' by the International Earth Observation community and reinforces the EU's position as a global leader in space. It is worth noting that the pandemic impacted the planned timeline for concluding numerous Copernicus administrative arrangements. These arrangements are expected to be concluded in 2021.

A 'Global Action on Space' to cover the period 2021- 202338, co-managed by the EU Foreign Policy Instrument (FPI) and DG DEFIS, was approved in the 2020 FPI annual work programme (activities will start in Q3/Q4 2021). This action will support DG DEFIS' space economic diplomacy efforts across more than 40 countries, enabling **new market uptake opportunities** in strategically important markets worldwide.

Communication

Communication activities are key to further **promote the benefits of the EU Space** Programmes towards new sectors and end-users. DG DEFIS worked closely with other DGs to encourage the use of space data, information and service in support of EU policies and exceeded the communication goals as set out for 2020.

³¹ ASECNA, the Agency for Air Navigation Safety in Africa and Madagascar, is an international public organization composed of 18 Member States; 17 African States and France (Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Congo, Ivory Coast, Equatorial Guinea, France, Gabon, Guinea-Bissau, Madagascar, Mali, Mauritania, Niger, Senegal, and Togo).

³² The Joint Office of EGNOS-Africa Program, commonly called JPO (Joint Program Office) EGNOS-Africa, results from the implementation of the Africa-EU Joint Strategy that calls for the provision of satellite navigation services in the Infrastructure Development -.See www.gnss-africa.org

³³ International Telecommunications Union

³⁴ International Committee on GNSS

³⁵ The International Cospas-Sarsat Programme is a satellite-aided search and rescue initiative. It is organized as a treaty-based, non-profit, intergovernmental, humanitarian cooperative of 45 nations and agencies

³⁶ the Group on Earth Observations

³⁷ the Committee on Earth Observation satellites

³⁸ EUR 6 million funded through the Foreign Partnerships Instrument (FPI)

On the spotlight was the **In-Orbit Demonstration and Validation (IOD/IOV)** launch campaign on 2 September, targeted at European citizens, and informing about this one of a kind space innovation initiative. Efforts were also focused on building synergies between existing networks i.e. the Network of Copernicus Relays³⁹, the Network of the Copernicus Academy⁴⁰ and the Galileo Info Centres which were created in 2020; one in Chile⁴¹ and one in Brazil⁴². The members of these networks play a significant role in promoting the benefits of the Programme at regional and local levels, to Small and Medium-sized Enterprises and local public authorities.

The 2020 edition of the **European Space Week**, organised by the European Commission and the GSA, under the auspices of the German Presidency of the Council of the EU, fully online for the first time took place between 7-11 December was a big success with over 3,500 participants from more than 100 countries around the world. Topics ranged from updates on the current status and future plans for the EU space programme, success stories from Horizon 2020 projects using EU Space data and insights into its successor Horizon Europe, to three plenary sessions which provided more information about the future of the EU Space Programme, its implementation and user support and uptake, and a presentation of the Copernicus Sentinel-6 Michael Freilich first data.

A webpage dedicated to DEFIS contribution to 'A Europe fit for the digital age' was launched in Q4 2020 to promote the latest news related to this general objective⁴³.

C. 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 midcaps

The award decisions for the 9 **European Defence Industrial Development Programme (EDIDP)** 2019 calls were adopted with the Commission Implementing Decisions C(2020)4067 and C(2020)4068 on 15 June 2020. 16 projects were retained for funding after the evaluation of 40 project proposals. The selected projects are covering capability development areas in all five military domains (land, naval, space, air, space, and cyber) and supporting the future EU defence capabilities landscape, notably based on enhancing industrial competitiveness and technological sovereignty. The selection process for the EDIDP 2019 budget was finalized⁴⁴ by signing the last grant agreement with beneficiaries in December 2020. Projects are planned to run until the end of 2026.

42 https://galileoic-brazil.com

³⁹ https://www.copernicus.eu/en/opportunities/public-authorities/copernicus-relays

⁴⁰ https://www.copernicus.eu/en/opportunities/education/copernicus-academy

⁴¹ https://galileoic.cl/en/home/

⁴³ https://ec.europa.eu/defence-industry-space/supporting-europe-fit-digital-age_en

⁴⁴ The list of awarded 2019 EDIDP call can be found on the following webpage: https://ec.europa.eu/info/publications/european-defence-industry-results-calls_en

In 2020, the final selection of projects under the **Preparatory Action on Defence Research (PADR)** were completed (2019 budget). Following an award decision of 16 June, three grant agreements on disruptive technologies for defence under the Preparatory Action on Defence Research (PADR) for collaborative research projects were implemented by the Commission. The funded projects will focus on technologies with a high disruptive potential such as artificial intelligence and quantum technologies in a defence context. In view of the COVID-19 pandemic, and to ease the burden on the defence industry and their financial supply chains, the Commission adopted a decision to pre-finance all projects with up to 90% of costs.

Inter-institutional negotiations for a final adoption by the European Parliament and the Council of the Regulation establishing the EU Defence Fund were successful. In parallel, preparatory works on **the annual European Defence Fund (EDF)** Work Programme for 2021 were conducted in 2020 in close coordination with the Member States and will be continued. The goals is to define categories of action for research and development for which calls for proposals will be launched during the duration of the EDF.

Military mobility

DG DEFIS coordinates the Commission's activities contributing to improved military mobility within Europe. A second report on the implementation of the Action Plan on Military Mobility was issued on 19 October 2020. This was a joint report established by EEAS and the Commission services. The implementation of the Action Plan is progressing well thanks to close and continuous cooperation between the Commission services, the EEAS, EDA and full involvement of Member States.

Communication

Strong efforts were deployed on social media, promoting the achievements of PADR and EDIDP, as precursors of EDF, with excellent results and beyond expectations i.e. almost 130 000 views on twitter and 3000 engagements.

A webpage dedicated to EU defence industry policies was launched in Q4 2020⁴⁵, also used as a platform to promote the latest news related to this ecosystem⁴⁶.

A series of communication materials were developed in the context of the publication of the results of PADR (8 factsheets) and EDIDP (16 factsheets) to accompany the communication campaign⁴⁷. These materials were widely used and promoted by experts and journalists.

⁴⁵ https://ec.europa.eu/defence-industry-space/eu-defence-industry_en

⁴⁶https://ec.europa.eu/defence-industry-space/commission-welcomes-political-agreement-european-defence-fund-2020-12-14 en).

⁴⁷ https://ec.europa.eu/info/publications/european-defence-industry-results-calls_en.

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

Brexit-related challenges

In 2020, DG DEFIS had to exclude the UK already during the transition period from participating in certain security-related and sensitive activities. A Commission Decision under Article 127(7) (b) of the Withdrawal Agreement48 was adopted, providing for a security derogation under: the European Global Navigation Satellite Systems (GNSS - Galileo and EGNOS and notably the Galileo Public Regulated Service); SST; a limited number of security sensitive space activities under Horizon 2020; and one security sensitive EDIDP call.

Safety and security (dual use) related services

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. Following the better regulation principles, a twelve-week on-line open public consultation⁴⁹ was conducted in 2020 on the possible use of Galileo in critical infrastructures. The consultation complements data collection on the design, production and use of timing and synchronisation devices with the views of voluntary stakeholders and other interested parties such as consumer associations, trade unions, consumers, workers, citizens, environmental NGOs, etc. The results will feed in to the preparations of an impact assessment on the possible use of Galileo signals for timing and synchronisation of critical infrastructures, expected to be rolled out in 2021. The use of Galileo 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.

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. Since January 2020, Galileo introduced a next generation unique functionality to **Search and Rescue** service, called the

⁴⁸ C(2020)6634 of 2 October 2020: Internal Commission Decision on the application of Article 127(7)(b) of the Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community to certain information exchanges, procedures and programmes which grant access to security-related sensitive information.

⁴⁹https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/2093-European-initiative-on-the-use-of-Galileo-in-Critical-infrastructures/public-consultation

Return Link⁵⁰, which provides an automatic acknowledgment message back to users in distress informing them that their request for help has been received.

The **Copernicus Emergency Management Service** remained at the forefront of operations and supported major disasters throughout the year. To mention but some examples: the mapping of the extent of floods and the damages in Alpes-Maritimes (France) or in the Piedmont Region (Italy), the immediate mapping of the impact of the two massive explosions in Beirut (Lebanon) on 4 August 2020 caused by a deadly industrial accident⁵¹, and the rapid mapping of the vulnerable region around the Chernobyl nuclear power plant (Ukraine) which was threatened by an outbreak of wildfires in April.

The **Copernicus Security Service** provided essential services with: (1) The Copernicus Border Surveillance service (CBS), which contributed to saving lives at sea and increased the efficiency of Frontex surveillance operations; (2) The Copernicus Maritime Surveillance service (CMS), which actively supported customs and law enforcement authorities and thereby several successful drug seizures and arrests; (3) The Copernicus Service in Support to EU External Action (SEA), with successful evolution projects that demonstrated clear added-value in the areas of law enforcement (Illegal smuggling, Illegal mining), environmental crime (Illegal waste) and transportation safety and security.

Secure communications and cyber-security

GOVSATCOM (secure satellite communications for governmental users) preparatory activities in 2020 included the consolidation of user needs through the establishment of a dedicated consultation platform, as well as the launch of the procurement for a ground infrastructure (the so called 'hubs') for pooling and sharing existing satellite communication capacities. A procurement for a study on a possible new initiative – a secure and resilient global connectivity capability for Europe – was launched and awarded.

DG DEFIS is working jointly with DG CNECT on the new generation technologies towards developing a fully-fledged policy to define and implement the innovative initiative EU-QCI, an EU-wide quantum communication infrastructure.

Space Surveillance and Tracking (SST) is the EU's capacity to detect, catalogue and predict the movements of space objects orbiting the Earth. In 2020, the Commission continued to support the SST consortium and started to prepare the establishment of the future SST Partnership.

Access to space and satellite launches in 2020

A highlight in 2020 was the successful **Copernicus Sentinel 6A satellite launch** that allows for further service reinforcements and makes it possible to provide improved and high-precision measurements of the sea level, with evident relevance for climate change observations. Copernicus counted 8 satellites in orbit by the end of 2020.

 ${}^{51}\underline{https://www.copernicus.eu/en/news/news/observer-copernicus-emergency-management-service-delivers-}{official-monitoring-beirut}$

⁵⁰ https://www.gsc-europa.eu/galileo/services/search-and-rescue-sar-galileo-service

Due to the COVID-19 pandemic, the manufacturing activities for the production of the next Galileo satellites were impacted, resulting in accumulated delays of several months. Nevertheless, the next Galileo satellites will come out of the production chain by the first quarter of 2021 for a **Galileo launch** planned in Q4 2021. By 2020, the Galileo constellation included 22 operational satellites in orbit.

Hybrid threats

DG DEFIS is responsible for the overall coordination of the Commission services' activities with regards to EU's ability to prevent, detect, respond, and build resilience to hybrid threats.

The **fourth annual progress report** on the implementation of the 2016 Joint Framework on countering **hybrid threats** and the 2018 Joint Communication on increasing resilience and bolstering capabilities to address hybrid threats⁵² was released in parallel with the adoption of the **new EU Security Union Strategy** in July 2020⁵³. In addition, as requested in the Council conclusions from December 2019 on complementary efforts to enhance resilience and counter hybrid threats, DG DEFIS, together with EEAS, presented to the Member States **a mapping of countering hybrid threats measures** and documents at EU level⁵⁴.

The EU Security Union Strategy addressed countering hybrid threats in the context of evolving security threats and announced a series of additional measures. In 2020, DG DEFIS coordinated actions to progress on such measures, such as the mainstreaming of hybrid considerations into all EU policy making, the identification of sectoral hybrid resilience baselines, the development of an online platform for Member States references on counter-hybrid tools and measures at EU level, increased situational awareness and review of EU operational protocol for countering hybrid threats (EU Playbook) in line with the EU crisis response system.

Civil aeronautics

DG DEFIS is responsible for the competitiveness of the **civil aeronautics industry**, on which Europe's industrial and technological autonomy in defence and space relies for a large part (civil aeronautics represents 50% of the turnover of the aerospace and defence ecosystem). The aeronautics supply chain is one of the hardest hit by the COVID-19 pandemic, with more than 40% drop in its production rates. As part of the Commissions' response, DG DEFIS strongly contributed to the development of policies to support this sector.

The DG works closely with DG MOVE and EASA⁵⁵ on the development of a regulatory framework ensuring the safe operation of **civil drones**. DG DEFIS is, in particular, responsible for the development and the implementation of a product harmonization

⁵³ COM (2020) 605 final

⁵² SWD (2020) 153 final

⁵⁴ SWD (2020) 152 final

⁵⁵ European Union Safety Aviation Agency

regulation (CE marking), the Commission delegated Regulation (EU) 2019/945 laying down requirements for the design and manufacture of drones intended for use in operations that do not require prior approval from national aviation authorities. These operations cover the broad domain of leisure and low risk professional applications. In 2020, the scope of Regulation (EU) 2019/945 was extended to cover new applications with the adoption of Regulation (EU) 2020/1056.

Communication

COVID-19 impacted strongly on plans under this priority that were primary intended to promote the new EU Space Programme components SST and GOVSATCOM. Nevertheless, satisfactory results were obtained (social media) and press interest could be attracted. SSA and GOVSATCOM have frequently been promoted on social media account aiming at introducing the components and detailing the benefits to citizens. A detailed web presence has been on the steps hosted under the corporate website. A webpage dedicated to DEFIS contribution to this specific objective was also created.

The Sentinel-6A launch campaign event on 21 November was a big success, including a series of live briefing events on social media (Facebook) in four different languages (EN-FR-DE-IT), two press briefings (one on D-45 and one D-7) organised in close cooperation with US partners (NASA, NOAA) and a video message of Commissioner Breton⁵⁶.

The launch of Galileo Search and Rescue Return Link also benefited from a strong coverage and news have been regularly published on DEFIS website to promote <u>success stories</u>.

DEFIS also promoted concrete stories on the use of the Copernicus Emergency Service activations and the Galileo Search and Rescue service, informing citizens how these services, and the European Space programme more generally, are helping them in many aspects in their daily lives.

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https://ec.europa.eu/defence-industry-space/example-europes-strategic-autonomy-commissioner-breton-announces-successful-sentinel-6-launch-2020 en

2. Modern and efficient administration and internal control

This section explains how the DG delivered the achievements described in the previous section. It is divided into two subsections. The first subsection reports on the control results and other relevant information that supports management's assurance on the achievement of the <u>financial management and internal control</u> objectives⁵⁷. It includes the information necessary to establish that the available evidence is reliable, complete and comprehensive. It covers all activities, programmes and management modes relevant to the DG. The second subsection deals with <u>other aspects for a modern and efficient administration</u>: human resources, better regulation principles, information management and external communication.

2.1 Financial management and internal control

Assurance is provided on the basis of an objective examination of evidence of the effectiveness of risk management, control and governance processes. This examination is carried out by management, who monitors the functioning of the internal control systems on a continuous basis, and by internal and external auditors. The results are explicitly documented and reported to the Director-General. The following reports have been considered:

- the annual reports from Authorising Officers by Sub-Delegation (AOSDs), submitted by the Directors, which include the outcome of internal control monitoring within each Directorate:
- the reports from Authorising Officers by Delegation in other DGs managing budget appropriations in cross-delegation;
- the results of the DG's supervisory controls on the operational and financial reporting of these bodies:
- the contribution by the Head of Unit in charge of Risk Management and Internal Control, including the results of internal control monitoring at DG DEFIS;
- the reports on recorded exceptions, non-compliance events and any cases of 'confirmation of instructions' (Art 92.3 FR);
- the results of ex-post controls;

transactions

• the limited conclusion of the Internal Auditor on the state of internal control, and the observations and recommendations reported by the Internal Audit Service (IAS);

 the observations and the recommendations reported by the European Court of Auditors (ECA).

These reports result from a systematic analysis of the evidence available. This approach provides sufficient guarantees as to the completeness and reliability of the information reported and results in a complete coverage of the budget delegated to the

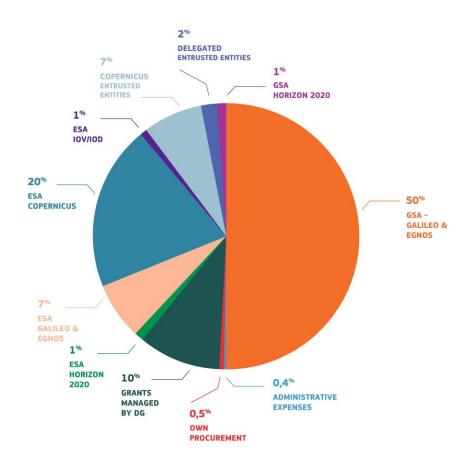
⁵⁷ Art 36.2 FR: a) effectiveness, efficiency and economy of operations; b) reliability of reporting; c) safeguarding of assets and information; d) prevention, detection, correction and follow-up of fraud and irregularities; and e) adequate management of risks relating to the legality and regularity of underlying

Director-General of DG DEFIS.

This section covers the control results and other relevant elements that support management's assurance. It is structured into (a) Control results, (b) Audit observations and recommendations, (c) Effectiveness of internal control systems, and resulting in (d) Conclusions on the assurance.

2.1.1 Control results

This section reports and assesses the elements identified by management which support the assurance on the achievement of the internal control objectives⁵⁸. The DG's assurance building and materiality criteria are outlined in AAR Annex 5. Annex 6 outlines the main risks together with the control processes to mitigate them and the indicators used to measure the performance of the relevant control systems. DG DEFIS transactions are carried out under both direct and indirect management modes. The following chart gives an overview of the types of payments made in 2020⁵⁹:



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⁵⁸ 1) Effectiveness, efficiency and economy of operations; 2) reliability of reporting; 3) safeguarding of assets and information; 4) prevention, detection, correction and follow-up of fraud and irregularities; and 5) adequate management of the risks relating to the legality and regularity of the underlying transactions, taking into account the multiannual character of programmes as well as the nature of the payments (FR Art 36.2). The 2nd and/or 3rd Internal Control Objective(s) (ICO) only when applicable, given the DG's activities.

The following table shows that in 2020, the largest part of DG DEFIS expenditure was implemented in indirect management through contribution agreements (especially for Space activities). In 2020, 88.87% of the expenditure was implemented in indirect management, 11.13% in direct management and 0.39% for administrative expenses.

Activity		Entity / Subsidy	Payments 2020	% on total payments	Main ICO Indicator
	Grants	DEFIS	189,062,434	10.37%	Time to pay; Time to grant; Overall cost of Control; No
Direct Management	Procurement	DEFIS	8,642,929	0.47%	Olaf Cases; Clean opinion on accounts; Detected or estimated error rate
	Delegation Agreements	ESA	516,902,636	28.34%	
		GSA	923,796,298	50.66%	
		MERCATOR	25,406,321	1.39%	
		ECMWF	56,384,762	3.09%	DA objectives achieved; Time to
		EUMETSAT	52,090,000	2.86%	pay; Overall cost of control; No
Indirect Management		FRONTEX	1,023,000	0.06%	Olaf Cases; Clean opinion on
		EMSA	9,855,000	0.54%	accounts; Detected or estimated
		EDA	14,000,000	0.77%	error rate
		EEA	12,043,000	0.66%	
		SATCEN - EAS	6,343,000	0.35%	
		OCCAR	1,057,261	0.06%	
Administrative Expenses		DEFIS	7,076,144	0.39%	
Total			1,823,682,784	100%	

DG DEFIS does not have to disclose any case of financing not linked to costs (Financial Regulation (FR) art 125.3⁶⁰), nor cases of derogations from the principle of non-retroactivity principle for grants" (FR art 193.2). The cases of 'confirmation of instructions' (FR art 92.3⁶¹) are listed in the DG DEFIS register of exceptions and non-compliance events. DG DEFIS has no signed Financial Framework Partnerships >4 years (FR art 130.4). DG DEFIS has to disclose cases of flat rates >7% for indirect costs decided by Commission Decisions (FR art 181.6⁶²) as both PADR and EDIDP finance indirect costs at flat rate 25%. This is included in the financing decision (for PADR) and EDIDP regulation.

1. Effectiveness = the control results and benefits

In order to be considered effective, controls are expected to meet the internal control objectives (to be detailed hereafter) and for each of those control objectives result in

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The authorising officer responsible shall report on financing not linked to costs pursuant to points (a) and (f) of the first subparagraph of paragraph 1 of this Article in the annual activity report referred to in Article 74(9).

⁶¹ An authorising officer by delegation or sub-delegation who receives a binding instruction which he or she considers to be irregular or contrary to the principle of sound financial management, in particular because the instruction cannot be carried out with the resources allocated to him or her, shall inform the authority from which he or she received the delegation or subdelegation about that fact in writing. If the instruction is confirmed in writing and that confirmation is received in good time and is sufficiently clear, in that it refers explicitly to the points which the authorising officer by delegation or subdelegation has challenged, the authorising officer by delegation or subdelegation shall not be held liable. He or she shall carry out the instruction, unless it is manifestly illegal or constitutes a breach of the relevant safety standards. The same procedure shall apply in cases where an authorising officer considers that a decision, which is his or her responsibility to take, is irregular or contrary to the principle of sound financial management or where an authorising officer learns, in the course of acting on a binding instruction, that the circumstances of the case could give rise to such a situation. Any instructions confirmed in the circumstances referred to in this paragraph shall be recorded by the authorising officer by delegation responsible and mentioned in his or her annual activity report.

The authorising officer responsible may authorise or impose, in the form of flat-rates, funding of the beneficiary's indirect costs up to a maximum of 7 % of total eligible direct costs for the action. A higher flat rate may be authorised by a reasoned Commission decision. The authorising officer responsible shall report in the annual activity report referred to in Article 74(9) on any such decision taken, the flat rate authorised and the reasons leading to that decision.

benefits. These benefits should be explained and quantified wherever possible.

Legality and regularity of the transactions

DG DEFIS is using internal control processes to ensure the adequate management of the risks relating to the legality and regularity of the underlying transactions it is responsible for, taking into account the multiannual character of programmes and the nature of the payments concerned. The control objective is to ensure that the residual error rate or the risk of error does not exceed 2 % (cumulatively by the end of the programme implementation or annually, depending on the distinct control system), as determined in the materiality criteria in Annex 5.

DG DEFIS's portfolio consists of segments with a relatively low error rate such as the Space programme managed through delegation agreements and Horizon 2020 grants (delegated to GSA) with a relatively higher error rate. The relatively higher level of error in Horizon 2020 grants is linked to the applicable funding model, which is based on the reimbursement of eligible costs. Most of the errors relate to incorrect claims for personnel costs that are mainly due to beneficiaries' lack of thorough understanding of the rules. New entrants and Small and Medium Enterprises (SMEs) are more prone to this type of error in comparison to other, more experienced beneficiaries. There is evidence that the simplifications introduced under Horizon 2020 along with the ever-widening experience are reducing the number of errors made by the beneficiaries, especially when compared to the Seventh Framework Programme. Notwithstanding these efforts, however, beneficiaries still make errors.

For the 2020 reporting year, no serious control issues were signalled by the operational units. Through the monitoring and supervision work, which includes regular contacts and monitoring of relevant management reports and audit reports, there are no indications that their reporting would not be reliable. In 2020, DG DEFIS set up its own control strategy⁶³.

DG DEFIS's relevant expenditure, estimated overall risk at payment, estimated future corrections and risk at closure are disclosed in the following page [see Table X].

The <u>estimated overall risk at payment</u> for 2020 expenditure amounts to EUR 9.2 million, representing 0.50 % of the DG's total relevant expenditure for 2020. This is the Authorising Officer by Delegation's (AOD) best, conservative estimation of the amount of relevant expenditure during the year not in conformity with the contractual and regulatory provisions applicable at the time the payment was made.

This expenditure will subsequently be subject to ex-post controls and a proportion of the underlying errors will be detected and corrected in subsequent years. The conservatively <u>estimated future corrections</u> for 2020 expenditure amount to EUR 0.1 million. This is the amount of errors that the DG conservatively estimates will be identified and corrected by controls planned to be carried out in subsequent years.

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⁶³ Ares(2020)3623032

The difference between those two amounts results in the <u>estimated overall risk at closure</u> of EUR 9 million, representing 0.50 % of the DG's total relevant expenditure for 2020.

In the context of the protection of the EU budget, the DGs' estimated overall risk at payment, estimated future corrections and risk at closure are consolidated at Commission level in the Annual Management Performance report (AMPR).

able X - Estimated risk at closure	1									
DG DEFIS 2020	Program	Scope: Payments made in 2020	Prefinancing made in 2020 [a]	Cleared prefinancing [b]	Relevant expenditure [c]	Average Error rate (range in %) [d]	Estimated overall risk at payment	Average Recoveries and Corrections [e]	Estimated future corrections	Estimated overall amoun at risk at closu [f]
		As per AAR annex 3 and ABAC DWH BO reports	As per ABAC DWH BO reports	As per ABAC DWH BO reports	(2)-(3)+(4)	Detected or estimated	(range in €) = (5) x (6)		(5)x (8)	(7)-(9)
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Administrative credits	DG DEFIS ADMIN	7,076,144	1,772,533	0	5,303,611	0.50%	26,518	0.07%	3,713	22,80
Own Procurement	Own procurement	8,642,929	4,700,700	1,539,319	5,481,548	0.50%	27,408	0.07%	3,837	23,57
Consider	EDIPT	174,767,669	174,767,669	0	0	0.50%	0	0.07%	0	
Grants	Other grants (1)	14,294,764	9,759,775	1,738,235	6,273,224	0.50%	31,366	0.07%	4,391	26,97
	ESA Copernicus	365,700,000	365,700,000	429,093,266	429,093,266	0.50%	2,145,466	0.00%	0	2,145,46
	ESA IOV/IOD	10,379,079	10,379,079	0	0	0.50%	0	0.00%	0	
	ESA GNSS Galileo	123,461,926	123,461,926	189,044,690	189,044,690	0.50%	945,223	0.00%	0	945,22
	ESA Horizon 2020	17,361,631	17,361,631	37,645,681	37,645,681	0.50%	188,228	0.00%	0	188,22
International organisations	MERCATOR (Copernicus)	25,406,321	25,406,321	28,001,635	28,001,635	0.50%	140,008	0.00%	0	140,00
	ECMWF (Copernicus)	56,384,762	56,384,762	54,714,886	54,714,886	0.50%	273,574	0.00%	0	273,57
	EUMETSAT (Copernicus)	52,090,000	52,090,000	43,350,122	43,350,122	0.50%	216,751	0.00%	0	216,75
	OCCAR	1,057,261	1,057,261	0	0	0.50%	0	0.00%	0	
	GSA Subsidy	35,449,479	35,449,479	35,811,398	35,811,398	0.50%	179,057	0.00%	0	179,05
	GSA EGNOS	171,276,248	171,276,248	149,082,552	149,082,552	1.29%	1,923,165	0.00%	0	1,923,16
	GSA GALILEO	704,494,577	704,494,577	477,646,815	477,646,815	0.50%	2,388,234	0.00%	0	2,388,23
	GSA H2020	12,575,993	12,575,993	15,120,470	15,120,470	2.95%	446,054	0.60%	90,723	355,33
Agencies	FRONTEX	1,023,000	1,023,000	8,391,983	8,391,983	0.50%	41,960	0.00%	0	41,96
	EMSA	9,855,000	9,855,000	9,374,509	9,374,509	0.50%	46,873	0.00%	0	46,87
	EDA	14,000,000	14,000,000	17,331,636	17,331,636	0.50%	86,658	0.00%	0	86,65
	EEA	12,043,000	12,043,000	12,250,080	12,250,080	0.50%	61,250	0.00%	0	61,25
	SATCEN -EAS	6,343,000	6,343,000	6,078,215	6,078,215	0.50%	30,391	0.00%	0	30,39
Total		1,823,682,784	1,809,901,955	1,516,215,492	1,529,996,321	0.6011900%	9,198,185		102,663.69	9,095,522

Footnotes related to Table X

- [1] Several heterogeneous grants related to space programmes, defence programmes and preparatory actions.
- (2) Payments made or equivalent, such as after the expenditure is registered in the Commission's accounting system, after the expenditure is accepted or after the pre-financing is cleared. In any case, this means after the preventive (ex-ante) control measures have already been implemented earlier in the cycle. In all cases of Co-Delegations (Internal Rules Article 3), the "payments made" are covered by the Delegated DGs. In the case of Cross-SubDelegations (Internal Rules Article 12), they remain with the Delegating DGs.
- [a] New PF actually paid by out the DG itself during the FY (i.e. excluding any PF received as transfer from another DG) The "Pre-financing" is covered as in the context of note 2.5.1 to the Commission (provisional) annual accounts (i.e. excluding the "Other advances to Member States" (note 2.5.2) which is covered
- "Pre-financings paid/cleared" are always covered by the Delegated DGs, even in the case of Cross-SubDelegations.
- [b] PF actually having been cleared during the FY (i.e. their 'delta' in FY actuals, not their 'cut-off' based estimated 'consumption')
 [c] For the purpose of equivalence with the EGA's acope or the EG tunds with potential exposure to L&R errors (see the EGA's A'R methodological Annex 1.1 point 15), also our concept or "relevant exposure" includes the payments made, subtracts the new pre-tinancing paid out [& adds the retentions made], and adds the previous pre-financing actually cleared [& subtracts the retentions (partially) released and any deductions of expenditure made by MS in the annual accounts] during the FY. This is a separate and 'hybrid' concept, intentionally combining elements from the budgetary accounting and from the general ledger
- [d] Although detected error rates following audits in 2020 for some international organisations were 0% (ESA and GSA), we used 0.5% as a conservative estimate, according to central services recommendation. This is also the case for the administrative expenditure, operating subsidies to agencies, as well as all entrusted entities not being audited in 2020. For GSA H2020, the common representative error rate for the Research Family was used
- [e] The historic average of recoveries and financial corrections (ARC) received from the central services is 0.07% for 2020. However, further to ECA/IAS recommendations, DG DEFIS adjusted this value for grant management expenditure and used as best estimation the difference between overall representative detected error rate and the residual error rate.
- Thie AOD considered that the ex-post future corrections would be 0.0% for DA with International organisations and Decentralised agencies involved in the Space programmes as we perfrom the clearing of the prefinancing after audits or desk checks. The 0,07% was applied to administrative expenditure, own procurement, other grants.

DG DEFIS has entrusted the majority of its budget implementation to international organisations, executive agencies and decentralised agencies. In all these cases, the Directorate-General's supervision arrangements are based on the principle of intensive controlling of the relevant entity and where applicable participation in the entities' steering committees.

The cost of controls is highly outweighed by their benefits. The European space programmes are major industrial programmes of significant size and complexity. It is the first time that the EU, in particular the Commission, implements such programmes.

For the ongoing European space programmes, the detected annual error rates are rectified via the future (annual) clearings on pre-financings, ensuring there is no error at the end of the programme.

Although the audited samples of financial transactions are not statistically representative, DG DEFIS considers that the error rates detected by its ex-post audits, are a reliable indicator for the non-audited transactions. Furthermore, based on its monitoring and supervision, the Directorate-General considers that the level of error remains relatively stable over the years. Therefore, the error rates detected previously on the 2019 costs for the non-audited international organisations in 2020, can be used as a reliable indicator for the error rate in 2020. In order to mitigate the risk that the actual error rate could be higher on the non-audited entities, DG DEFIS decided to apply a conservative approach and to declare an error rate of 0.5% for the budget delegated to these non-audited organisations in 2020. For more detail on legality and regularity of the transactions, see annex 7.

Fraud prevention, detection and correction

DG DEFIS has developed and implemented its own anti-fraud strategy since the 27 October 2020 on the basis of the methodology provided by OLAF. It will be updated every two years. Its implementation is being monitored and reported to the management annually, at the time of the AAR.

The AFS is an essential element in the development of a strong anti-fraud culture within the Directorate-General. DG DEFIS puts a strong emphasis on fraud prevention by encouraging proportionate and targeted preventive ex-ante controls.

The fraud risk assessment is integrated in the annual risk assessment exercise. As the Directorate externalised the majority of its budget implementation, the AFS has been targeted towards the supervision of the implementation of anti-fraud strategies by the DG DEFIS's entrusted entities. The updated Anti-Fraud Strategy was advertised on DG DEFIS Intranet.

DG DEFIS is an active member of OLAF's Fraud Prevention and Detection Network (FPDNet) and participates occasionally to the Research Directorate-General family's Fraud and Irregularities in Research Committee (FAIR). DG DEFIS followed up on OLAF's financial recommendations and there are no open recommendations.

The results achieved during the year thanks to the anti-fraud measures in place can be summarised as follows: the controls aimed at preventing and detecting fraud are similar to those intended to ensure the legality and regularity of the transactions and they are effective and no weakness has been identified in 2020.

On the basis of the available information, DG DEFIS has reasonable assurance that the anti-fraud measures in place are overall effective.

Other control objectives: safeguarding of assets and information, reliability of reporting

Reliability of reporting

DG DEFIS delegates most of its budget implementation to external entities. In addition to the pillar assessment of these entities prior to the delegation, it also relies on the declarations of assurance provided every year. These consist of signed declarations by the director of these entities, providing assurance on the overall sound financial management of the delegated resources whilst highlighting key issues and describing the efficient functioning, cost-effectiveness and benefits of the entities internal control systems.

As a result of the efforts deployed by the DG in the past, the reliability of the financial data provided by the entrusted entities under the space programmes in 2020, is considered reliable. All controls performed by DG DEFIS on ex-ante and ex-post level revealed overall no material misstatements on the accounts presented by the entrusted entities under the space programmes managed by DG DEFIS.

Valuation and Safeguarding of assets and information

The total asset value on the Balance Sheet at end 2020 is EUR 9 056 million. The non-current assets amount to EUR 7 242 million of intangible assets, property plant and equipment and long-term pre-financing. Furthermore, EUR 1 814 million of current assets consists of pre-financing managed and controlled in the context of the DG's direct and indirect management of space and defence related activities.

The property, plant and equipment balance (EUR 7 084 million) is the most material one in DEFIS Balance Sheet given hereafter. It includes the value of the assets generated by the implementation of space programmes (namely: EGNOS, Galileo and Copernicus). By end of 2020, the gross assets value of this programme are:

- EUR 5 270 million for Galileo;
- EUR 4 011 million for Copernicus; and,
- EUR 428 million for EGNOS (European Geostationary Navigation Overlay System).

Further information on these balances are provided in the notes to the balance sheet given in annex 3. The depreciation charge related to these space assets amounted to EUR 635 million for the year 2020. The accounting treatment of these assets is a complex task requiring tailored procedures and systems to ensure proper valuation and control.

During 2020, the controls performed on the data provided by ESA and GSA for the valuation of the space assets were maintained. Specific workshops on the operational

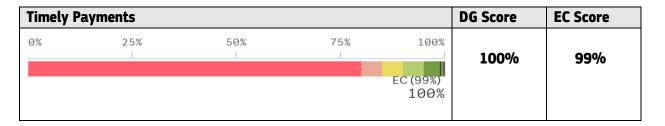
stages of asset development were organised by DG DEFIS to discuss per programme the costs to be capitalised and the stages of operational development.

Regarding site inspections, restrictions set on travels aimed at limiting the spread of COVID seriously impaired the roll out of inspections as previously planned. In spite of this, the European GNSS Agency (GSA) managed to carry out three inspections (2 for EGNOS and One for Galileo). Once the pandemic is brought under control -and travel restrictions are lifted- it is planned to resume these inspections.

2. Efficiency = the Time-to-... indicators and other efficiency indicators

DG DEFIS manages a large portfolio of heterogeneous activities in two domains, involving different ways of implementation. Based on an assessment of the most relevant key indicators and control results, DG DEFIS has assessed the efficiency of the control system and reached a positive conclusion.

Timely payments: In 2020, DG DEFIS ensured efficient processing of payments within the legal deadline. The corporate indicator **for timely payments**, reaches 100%.



Procurement: The average time to publication in 2020 is relatively high (210 days). This is explained by the vast timeframe taken by the launch and finalisation of two Framework contracts related to the Space programme due to their complexity.

Grants: The high level of the indicators (time to inform and time to grant mostly related to the PADR and EDIDP programme) can be explained by the following:

- There is a double comitology: award decision needed to be taken by College after ISC, which has a direct impact on the time to inform (at least 1 month delay).
- The restrictions imposed by the security classification of the information and the evaluation process (SNC or Restreint UE/EU Restricted): no possible use of eGrants or other corporate tools; proposals, grant agreements and other documents needed to be sent by post; only central evaluation possible.
- High complexity of both programmes: different funding rates within the same project, including a bonus system; eligibility criteria requiring complex assessment;
- The need of validation/input from Member States during GAP; use of lump sums for PADR calls, etc.;
- First year of implementation of EDIDP programme and first PADR call of proposals under direct management: need to develop new rules and procedures; participants not familiar with the programmes, which led to an important number of issues to solve (learning curve).

DG results for the reporting year							
Key DG indicator on control efficiency	Grants	Procurements					
Complaints received from unsuccessful economic providers		0					
Number of new cases received by the Ombudsman in 2020 relating to grant / procurement procedures	0	0					
Number of legal proceedings initiated by contractors or economic providers against the Commission relating to grant / procurement	0	0					
Number of instances of overriding of controls in relation to grant / procurement procedures	0	0					
Past due critical and/or very important audit recommendations	0	0					
Average time to publication of selection results (days)		210.0					
		100 % of all commitments and payments					
Coverage of first level ex ante controls		100 % of all tender documents and evaluation reports					
Coverage of second level <i>ex ante</i> controls		100 % of all tender documents and evaluation reports					
Average time to grant (TTG) (days)	157.5						
Average time to pay (TTP) (days)	19.0						
Average time to inform applicants of the outcome of the evaluation of the application (TTI) (days)	202.5						
Average days of suspension (days)	22						
Percentage of payments suspended in comparison to all payments executed	9.1%						

In the context of <u>Synergies and Efficiencies</u>, 2020 was the year of the creation of DG DEFIS and the set-up of all the procedures, which will be optimised whenever necessary. Efficient workflows for financial transactions are already in place in DG DEFIS to achieve optimal results in the most efficient way.

3. Economy = the cost of controls

Following the Commission central services' guidance, the cost of the controls at Commission level is assessed by the cost of the different control stages. The overall assessment for each management mode is obtained from the ratio between all those costs and the total amount paid in the year for the related management mode. The Full Time Equivalents (FTEs) used for the calculation have been estimated by unit 02 DG DEFIS and the average FTEs costs used are the average FTEs costs communicated by DG BUDG which include 'habillage' costs. The cost of control for assets are not reported as they are included in the supervision costs of entrusted entities.

Cost of control - direct management

The cost control for 2020 in direct management could be detailed as follows:

DG results for the reporting year - Direct management						
Common indicators on cost of control	Grants	Procurements				
Percentage of overall cost of control of grant / procurement process in	2.31%					
comparison to total expenditure <u>executed</u> during the year	1.25%	12.79%				
Overall cost of control (grant/procurement)	€ 2,362,175	€ 2,009,802				
Average number of ongoing contracts (grant/procurement) managed per full time equivalent	29.52	21.27				
Percentage of costs of control related to the evaluation and selection procedure in comparison to the total value of grants / procurement contracted	0.70%	3.7%				
Average value of ongoing grant / procurement agreements managed per full time equivalent	€ 10,155,567	€ 2,492,362				
Average project management costs per ongoing grant / procurement agreement	€ 18,464	€ 14,915				
Total Costs of ex post audits	€ 0					

In 2020, with few resources (FTEs), DG DEFIS managed a few calls for proposals/tender with important amounts.

The cost of control for the grants can be considered rather low, as at this stage, no final payments, implying more labour intensive work on verifications, have been made.

The overall cost of control on procurement is rather high due to the limited overall number of tenders handled.

The indicator for the cost of control on procurement might be perceived by the reader as rather elevated; however, the reader should also consider the following three facts. Firstly, the respective costs are legally necessary to reassure adequate level of controls, namely, to address legality and regularity requirements of complex procurements related to space. Secondly, the amount of the funds directly managed by DG DEFIS, i.e. the denominator of the indicators, is relatively low to the overall budget for 2020. Thirdly, but not least, DG DEFIS do not receive economies of scale as other DGs dealing exclusively and predominantly with direct management. As a result, it can be clearly demonstrated that the costs of DG DEFIS for direct management (2.31% overall) are, in fact, rather modest.

In summary, the level of control in direct management was cost-effective in 2020 for both procurement and grant processes.

Cost of control - indirect management

DG results for the reporting year - InDirect management									
Common indicators on cost of control	International Organisations and other entrusted entities								
Overall cost of control of supervision process	€ 5,848,533								
Percentage of overall cost of control of supervision process in comparison to the total <u>annual</u> amount delegated excluding any remuneration paid	0.42%								
Remuneration fees paid (to international organisations, agencies, EIF)	€ 212,383,653								
	ESA	Eumetsat	ECMWF	Mercator	EEA	Frontex	Satcen	GSA	
	€ 101,976,460	€ 5,812,516	€ 3,017,000	€ 2,813,403	€ 680,000	€ 405,000	€ 1,393,238	€ 96,286,035	
Percentage of cost of remuneration fees paid to entrusted entities in comparison to the total annual amount delegated excluding any remuneration paid	15.10%								
Percentage of costs of control related to the establishment or prolongation in comparison to the total annual amount delegated	0.36%								
Percentage of costs of control related to the reporting and subsequent monitoring of the execution in comparison to all payments executed	0.020%								
Total cost of ex post audits	€ 321,169								

Overall, the cost of monitoring and supervision controls for the implementation of the space programmes, represents 0.42 % (European Commission staff costs) of the total annual amount delegated. The cost of controls is highly outweighed by their benefits. The European space programmes are major industrial programmes of significant size and complexity. In its capacity as programme manager, the European Commission is responsible for the management and coordination of these programmes. It bears the responsibility for their implementation and operation to schedule, cost and performance. Furthermore, DG DEFIS owns the assets of the Copernicus and GNSS programmes on behalf of the EU. Considering the above responsibilities, DG DEFIS implemented controls at governance, technical, operational and financial levels to ensure that the technical and security requirements are fully respected.

The high percentage of 'cost of remuneration fees paid to international organisations and to entrusted entities is mainly due to the technical specificities of the European space programmes which are major industrial programmes of significant size and diversity. They can be implemented only through entities such ESA and GSA. The global cost of control in indirect management remains at the same level as in 2019.

The control strategy in indirect management is considered to be cost-effective overall.

In summary, DG DEFIS managed to keep the indicators stable or to improve them compared to those of last year assuring the adequate level of cost-effectiveness of the controls.

4. Conclusion on the cost-effectiveness of controls

Based on the most relevant key indicators and control results, DG DEFIS assessed the effectiveness, efficiency and economy of its control system and reached a positive conclusion on the cost-effectiveness of the controls for which it is responsible.

DG DEFIS has a stable control environment and its control strategy is consistent to previous years. Overall, DG DEFIS has good performance indicators and acceptable error rates among all its programmes. The overall cost of control can be considered acceptable given the fact that management of defence grants is a recent activity implying a learning phase.

DG DEFIS is of the opinion that the current control system is the best suited to fulfilling the relevant control objectives efficiently and at a reasonable cost. It represents a good balance between the invested efforts (internal control costs and remuneration fees), the obtained error rates (effectiveness of controls) and delivery of objectives (efficiency). The declaration of assurance (Section 2.1.5) includes no reservation for the expenditure categories or control systems concerned.

2.1.2 Audit observations and recommendations

This section sets out the observations, opinions and conclusions reported by auditors – including the limited conclusion of the Internal Auditor on the state of internal control. Summaries of the management measures taken in response to the audit recommendations are also included, together with an assessment of the potential material impact of the findings on the achievement of the internal control objectives, and therefore on management's assurance. The Directorate-General DEFIS is audited by both internal and external independent auditors: the Internal Audit Service (IAS) of the European Commission and the European Court of Auditors (ECA).

Internal Audit Service (IAS)

In 2020, the IAS launched the following assignments:

- Audit of the legality and regularity of payments and accounting for assets under closure of the Galileo and Copernicus 2014-2020 programmes
- Audit on the supervision of the implementation of the 2014-2020 programme for the European Geostationary Navigation Overlay Service (EGNOS) in Directorate-General for Defence Industry and Space

The final reports for these two audits were received in the beginning of 2021: no major findings were reported. The IAS concluded that DG DEFIS had the proper supervision processes for the monitoring of the EGNOS programme as well as a strong internal control system providing reasonable assurance on the payments and accounting for assets (Galileo and Copernicus programmes).

The non-major findings related to these two audits will be analysed by DG DEFIS and the proposed action plan subsequently sent to the IAS for review.

In its contribution⁶⁴ to the 2020 AAR process of DG DEFIS, IAS states that DEFIS Management has accepted all the recommendations issued in 2020, that it has not yet adopted action plans to address the residual risks identified by the auditors and that it has assessed a number of action plans as implemented which have not yet been followed up by the IAS. Therefore, IAS concludes that the internal control systems in place for the audited processes are effective.

European Court of Auditors (ECA)

ECA's Annual Report 2019

On 9 November 2020, the Court presented its Annual Report on the execution of the Commission's 2019 budget. Since DG DEFIS was created in January 2020, any comments by the Court on the different Space and Defence Programmes were related to the actions managed by Directorates I and J of DG GROW. The report mentions in its Chapter 2 - Competitiveness for growth and jobs – the programmes Galileo and EGNOS, without any specific comments either for these two programmes. There is no mention of the Earth Observation programme Copernicus or of the Defence actions.

ECA Statement of Assurance (DAS) 2019

The Court did not have any specific comment directly related to DG DEFIS on the transactions sampled in the frame of the Declaration of Assurances (DAS).

ECA Performance audit

The ECA continued in 2020 its audit started in 2019 on the performance of the uptake of services for Galileo and Copernicus. A first series of observations were sent to DG DEFIS at the end of 2020, to which the Commission replied. The draft report and the final stages of this audit (adversarial meetings) are planned for the end of February 2021 and beginning of March 2021.

2.1.3 Assessment of the effectiveness of internal control systems

The Commission has adopted an Internal Control Framework based on international good practice, to ensure the achievement of its policy and management objectives. Compliance with the internal control framework is a compulsory requirement.

DG DEFIS uses the organisational structure and the internal control systems suited to achieving its policy and internal control objectives in accordance with the internal control principles and has due regard to the risks associated with the environment in which it operates. During this first year of operations, DG DEFIS set up gradually an adapted internal control framework by putting priorities on essential elements of it. The fulfilment of all internal control principles will be realised in 2021, as some need fine-tuning.

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⁶⁴ Ares(2021)1222475

DG DEFIS has assessed the effectiveness of its internal control system, including the internal control processes in place at the level of its implementing bodies in accordance with the methodology established in the "Implementation Guide of the Internal Control Framework of the Commission". The assessment relies on extensive monitoring throughout the reporting year, supported by various information sources such as: an assessment of the functioning of the components and principles of the internal control framework set up by the DG; an assessment of audit findings and the implementation of recommendations (both from IAS and ECA); a register of detected exceptions, non-compliance events and internal control weaknesses, identified both by the management and by auditors in their audit reports; management assurance declarations outlining the control environment and any control issue; and annual risk assessment.

The functioning of the internal control system has been closely monitored throughout 2020 by the systematic registration of exceptions and non-compliances with the rules and procedures and of internal control weaknesses. The underlying causes behind these exceptions and weaknesses were analysed and mitigated if necessary. All related audit recommendations were either successfully implemented as reaffirmed by auditors in their follow-ups, are ready for review or are currently under implementation, mitigating any significant risks.

DG DEFIS's internal control assessment relies on a number of monitoring measures and sources of information to obtain a complete data set covering all aspects of DG DEFIS's operations. The Internal Control Monitoring Criteria (ICMC) are part of the building blocks for assurance on the functioning of the internal control system. These criteria are also the basis for the annual assessment of the DGs' internal control framework in the context of the Annual Activity Report. They provide a sound basis for effective internal control, allowing for regular monitoring and annual assessment.

Based on the above, the Head of Unit in charge of Risk Management and Internal Control reported on the state of internal control and provided her opinion to the Director-General. Taking into account all these elements, no issues were raised that may impact assurance. Concerning the overall state of the internal control system, the DG complies with the three assessment criteria for effectiveness, i.e. (a) staff has the required knowledge and skills, (b) systems and procedures are designed and implemented to manage the key risks effectively, and (c) there are no instances of ineffective controls that have exposed the DG to its key risks.

For the achievement of its objectives DG DEFIS largely relies on entrusted entities and regulatory agencies, as well as on close cooperation with various partners and international organisations.

As a consequence, the main inherent risk endangering the achievement of DG DEFIS policy objectives lies in the supervision of these entrusted entities. In view of the Space programmes, the Commission acting as a programme manager has the overall responsibility for the successfully building of Galileo and Copernicus systems, which by definition bear important inherent risk due to their complexity and technological

uncertainties. Irrespective of this risky environment, the DG is committed to deliver and tackle any challenge in this respect. As a result of the effective and timely implementation of mitigation measures, none of the prominent risks for the reporting year materialised.

To conclude, DG DEFIS has assessed its internal control system during the reporting year and has concluded that it is effective and the components and principles are present and functioning well overall, but some improvements are needed as minor deficiencies were identified relating to the internal control principles 1, 5, 6 and 13.

The following improvements and/or remedial measures implemented or envisaged are planned in 2021:

- Increase awareness on ethics and Anti-fraud by organising the necessary in house training together with OLAF;
- Review the job descriptions of the RMIC and other staff members involved in internal control;
- Continue the development of the intranet site giving better communication to staff on procedures, management plan, internal control...;
- Increase the follow-up of pending documents in ARES which needs to be filed.

2.1.4 Conclusions on the assurance

This section reviews the assessment of the elements already reported above (in Sections 2.1.1, 2.1.2 and 2.1.3), and the sub-conclusions already reached. It draws an overall conclusion to support the declaration of assurance and whether it should be qualified with reservations.

Overall Conclusion:

In conclusion, management has reasonable assurance that, overall, suitable controls are in place and working as intended; risks are being appropriately monitored and mitigated; and necessary improvements and reinforcements are being implemented. The Director General, in his capacity as Authorising Officer by Delegation has signed the Declaration of Assurance

2.1.5 Declaration of Assurance

I, the undersigned,

Director-General of DG DEFIS

In my capacity as authorising officer by delegation

Declare that the information contained in this report gives a true and fair view⁶⁵.

State that I have reasonable assurance that the resources assigned to the activities described in this report have been used for their intended purpose and in accordance with the principles of sound financial management, and that the control procedures put in place give the necessary guarantees concerning the legality and regularity of the underlying transactions.

This reasonable assurance is based on my own judgement and on the information at my disposal, such as the results of the self-assessment, ex-post controls, the work of the Internal Audit Service and the lessons learnt from the reports of the Court of Auditors for years prior to the year of this declaration.

Confirm that I am not aware of anything not reported here which could harm the interests of the institution.

Brussels, 31 March 2021

e-signed

Timo Pesonen

⁶⁵True and fair in this context means a reliable, complete and correct view on the state of affairs in the DG/Executive Agency.

2.2 Modern and efficient administration – other aspects

2.2.1 Human resources management

Human Resources Business Correspondent

The function of Human Resources Business Correspondent of DG DEFIS was created in parallel to the creation of the DG DEFIS in the beginning of 2020. The HRBC team managed the re-assignments of colleagues to the newly created units, and together with OIB and DG HR, the necessary moves were organised. The HRBC implemented all HR processes, monitored the measures linked to the COVID-19 crisis, and ensured the initial staffing reinforcement, notably for the Defence Industry Directorate, via seconded national experts from national defence administrations. A minor reorganisation was proposed at the end of 2020 and took place mid-March 2021 (creation of a HR Business Correspondent cell reporting to the Director General). The KPIs related to Human Resources are indicated in the Annex 9 of this report.

Due to the—pandemic and its lasting effects and constraints, DG DEFIS cancelled its Away-Day which it still intends to organise as soon as conditions allow. Instead DG DEFIS organised in 2021 regular on-line staff meetings for the whole DG, held by the Director-General, in order to present the key challenges and objectives of the DG and maintain an efficient staff awareness of key priorities. Virtual social events were also regularly organised (Christmas event for instance) as well as regular "on-line coffees", at the level of each unit.

Following the experience gradually gained during the COVID lockdown and in line with the requirements of DG HR, DG DEFIS handled its recruitments by video-conference. One of these recruitments allowed DG DEFIS to reach its objective of a first female appointment to a middle management function.

DG DEFIS staff was encouraged to participate to webinars and e-learning sessions—to be updated on Space and Defence matters. Finally, and in line with the requirements and advice provided by IT colleagues, the use of new on-line working tools (i.e. Teams, Signal etc.) was promoted to facilitate communication within the DG as well as with the external stakeholders (European Court of Auditors, European Space Agency etc.)

Internal Communication

An internal communication strategy might have begun from zero as DEFIS is a new DG, however ensuring business continuity was key for the implementation of already planned actions under the DEFIS portfolio.

A fresh graphical charter was created for DEFIS. A <u>DEFIS Buzz newsletter to</u> inform staff about weekly highlights and a DG DEFIS portal on MyIntracomm offering an interface for staff, proved important communication channels. Particular importance was placed in exchanging with DEFIS staff, especially in the context of the pandemic. Regular DEFIS staff meetings were organised every two months to take stock of the impact of health measures on working conditions, on policies falling within the portfolio of the DG, but also to allow an

open exchange with all colleagues. To ensure synergies and exposure with fellow Directorate-Generals, a new concept was introduced in Q4 2020 with the <u>DG DEFIS 1</u> month/1 policy campaigns, also promoted via channels such as the <u>DEFIS Policy Brief</u> and a series of <u>webinars – DEFIS Talks</u> promoted on the EU Learn platform.

2.2.2 Digital transformation and information management

Information management

An Information Resource Manager (IRM) was appointed in the course of 2020 to further push forward the digital transformation in DG DEFIS in close cooperation with DG GROW, to support collaborative working methods and to implement the Commission data governance and principles. Under a Memorandum of Understanding (MoU) signed between DG DEFIS and DG GROW⁶⁶, DG GROW provided support to DG DEFIS in its implementation of the document management policy of the Commission. This included for instance the improvement of document management practices inside DG DEFIS, as well the creation of its own filing plan, ensuring quality control and the organisation of trainings for keeping staff up-to-date.

In the context of Defence and Space, confidentially and security of information are of utmost importance and must be preserved. To that end and in close cooperation with other DGs, DG DEFIS focused on the re-use of existing tools such as the **eGrant Suite**⁶⁷ and to secure operations with the following corporate IT tools which are under development:

- 1) Exchange of EU confidential information (SUE), a corporate initiative that will develop a classified IT system.
- **2) E-CERTIS system** (owned by DG GROW): an online mapping service for criteria, issuers and evidence in the EU, to be used for future defence procurements.
- **3) CERTIDER** (owned by DG TRADE): register for certified defence-related enterprises.

Data Protection

Working closely with the shared Data Protection Coordinator for DEFIS/GROW, DG DEFIS contributed to the implementation of the Commission's Data Protection Action Plan through the following actions:

- Awareness raising activities to promote corporate initiatives i.e. the international Data Protection Day on the 28 January 2020;
- Organisation of internal DG events such as practical trainings on: 'Personal data protection aspects of procurement, grants and experts management' and on 'Personal data protection aspects of events management' organised in collaboration with EDPS; Information update sessions with DEFIS/GROW Data Protection Contact Points; Unit trainings on 'an introduction to basic principles of data protection in daily works';

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⁶⁶ Applicable as from 1 January 2020.

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

- Internal communication mailings/notes informing about the latest developments and reminding units about good practices;
- Advisory support for units was provided to improve compliance with obligations i.e. for the creation or update of records and privacy statements, as well as advice on the conformity of IT systems, IT projects and websites with data protection rules.

The current data protection legislation allows international transfers of personal data in principle if the EU standards for the protection of the rights and freedoms of the data subject are guaranteed also after the transfer. The recent invalidation of the EU-U.S. Privacy Shield (the Schrems II judgement C-311/18) poses concrete challenges for services transferring personal data to third countries or using international cloud services. DG DEFIS will continue to assess its processing activities in light of the requirements of the Schrems II ruling and will coordinate with relevant Commission services and IT governance bodies, as well as the Data Protection Officer, to be able to draw from horizontal approaches to similar situations. DG DEFIS coordinated by the Data Protection Officer, replied to a request from the European Data Protection Supervisor (EDPS) to all EU institutions to identify and map their international transfers and to report certain categories of transfers and are awaiting the EDPS' reaction. The goal is to minimise the risks linked to ongoing and future international transfers of personal data, notably by informing all data subjects of the legal situation in which such transfers take place, in order for operations undertaken by the Commission services to comply with EU data protection law.

2.2.3 Sound environmental management and example(s) of initiatives to improve economy and efficiency of financial and non-financial activities

Two EMAS correspondents (ECOR) were appointed dealing with the promotion of EMAS corporate campaigns and measures that can help reducing the environmental footprint of DG DEFIS. In 2020, specific guidelines to rationalise the number of missions, limit the number of staff per mission, increase the use of videoconferencing tools, to encourage plastic reduction and paperless working methods were issued.

2.2.4 Security of information

All personnel in DG DEFIS are either in possession of a valid security clearance or they have started the vetting procedure. A tailor-made awareness and training plan fitting the needs of DG DEFIS was established by September 2020 by the Security Task Force.