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Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the safety, resilience and sustainability of space activities in the Union

{SEC(2025) 335 final} - {SWD(2025) 335 final} - {SWD(2025) 336 final}

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

• Reasons for and objectives of the proposal

Space activities are quickly expanding worldwide, spurred by a growing demand for space-based data and space services and by a reduction in the cost of satellite manufacturing and launching. The space economy has also attracted new market players.

To flank this expansion in space activities and the growing involvement of new commercial actors in cross-border space activities, 13 Member States have passed national space legislations. This reflects international law commitments requiring supervision of space activities. The resulting patchwork of regulatory approaches is leading to a fragmented internal market. This fragmentation is likely to increase as more Member States plan to set up legal frameworks for space activities.

Disparities in national approaches to protecting the safety, resilience and environmental sustainability of space infrastructure can adversely impact the provision of space-based data and space services in the Union. This ultimately affects the competitiveness of the space industry in the Union and the functioning of cross-border value chains. The general objective of this initiative is to support the development and functioning of the internal market for the space sector. Specifically, the initiative aims to:

- establish a Union legal framework for the provision of space-based data and space services by Union space operators to foster innovation and create a stable, predictable and competitive business environment;
- ensure the trackability of space objects and reduce the generation of space debris, thereby enhancing the safety of space activities;
- create a risk assessment framework that is tailored to the specific cybersecurity needs of space infrastructure, thereby enhancing the resilience of space activities;
- create a common method for calculating the environmental impact of space activities in the Union, thereby enhancing the sustainability of space activities.

The initiative is expected to provide the legal certainty needed by the Union space operators to carry out space activities and foster the competitiveness of the space industry, while addressing the risks arising from the exponential growth in space activities and safeguarding the long-term use of space.

The political guidelines for the European Commission 2024-2029[(1)], as well as the Draghi report on the future of European competitiveness, identify space as a key strategic sector for the Union[(2)] and recommend establishing a common Union legislative framework for a functioning internal market for space, in the short-term. The Commission has identified the proposed EU Space Act as a key priority in two recent Joint communications: the EU Approach for Space Traffic Management and the EU Space Strategy for Security and Defence[(3)]. This legislative initiative echoes Member States' calls for action to establish an

(1) Political Guidelines for the next European Commission 2024−2029, presented by Ursula von der Leyen on 18.7.2025; https://commission.europa.eu/document/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en.

(2) The future of European competitiveness: Report by Mario Draghi from 9.9.2024.

(3) Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council, JOIN(2022)4final from

internal market for space activities through a coherent and stable regulatory framework. In recent Council Conclusions, Member States have recognised the need to avoid the fragmentation of the internal market for space services and products and to enhance the global competitiveness of the Union space industry[4]. They acknowledged the relevance of Union action in ensuring equal treatment of space operators and a level playing field for the Union space industry[5]. The importance of establishing a legal framework to safeguard the long-term sustainability of space has also been recognised by national parliaments[6]. The space industry, including small and medium-sized enterprises (SMEs), has also expressed support for a clear and predictable legal framework[7].

- **Consistency with existing policy provisions in the policy area**

The United Nations Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space (OST) governs the global regulatory framework for outer space, emphasising the principle of state responsibility. It requires states to authorise, supervise and be liable for their space activities. However, the lack of specific binding technical rules to implement the general OST obligations has led to diverse authorisation requirements as Member States have pursued different regulatory approaches.

Today, 13 Member States have national space laws in place. Other Member States are in the process of drafting space legislation or are updating existing laws, to cope with the emergence of new commercial entrants and their expanding activities. The lack of coordination between the different regulatory approaches has led to a fragmented regulatory landscape whereby emerging obstacles may impede the functioning of the internal market in space services and space-based data in the Union.

The proposed EU Space Act harmonises the legal framework across the Union, integrating requirements laid down by national space legislations to avoid overlap, duplication and conflicts and to improve the functioning of the internal market.

- **Consistency with other Union policies**

First, as regards resilience, the Union has enacted legislation on cybersecurity (NIS 2 Directive) and physical resilience of critical entities (CER Directive) which reinforce the resilience of ground infrastructure supporting space services.

While NIS2 addresses the ground segment operators, on the one hand, and the electronic communication providers, on the other hand, neither NIS 2 nor CER Directive cover Union-owned assets operating in the context of the Union Space Programme. Thus they do not provide for a complete risk management framework for all segments of space infrastructure or for all space operators.

15.2.2022 and the Joint Communication to the European Parliament and the Council on Space Strategy for Security and Defence JOIN(2023)9final from 10.3.2023.

(4) Council Conclusions on the 'EU Space Strategy for Security and Defence', 14512/23 adopted on 13 November 2023; https://data.consilium.europa.eu/doc/document/ST-14512-2023-INIT/en/pdf.

(5) Conclusions on ‘Space Traffic Management: state of play‘ 15231/23 adopted on 8 December 2023; https://www.consilium.europa.eu/en/press/press-releases/2023/12/08/space-traffic-management-council-adopts-conclusions-on-the-current-state-of-play.

(6) https://www.assemblee-nationale.fr/dyn/16/dossiers/loi_europeenne_espace.

(7) Notably position papers by Eurospace (association representing the views of more than 80 space companies, including primes); SME4Space (association defending the views of more than 800 companies, including 90 start-ups); YEESS (recently created association, representing the views of 13 New Space companies).

The proposed EU Space Act fills this gap by setting out specific and explicit cybersecurity rules applicable to all space operators and assets of space infrastructure thereby creating a tailored resilience baseline for the space sector. Public and private space sector stakeholders will acquire clarity on their legal obligations, needed to ensure the resilience of space infrastructure and space missions. Moreover, as Member States are carrying out the transposition and implementation of NIS2, an imminent need arises to align such new rules with the specific requirements for the space sector. The proposal ensures a clear articulation with the general cybersecurity framework at Union level. Since the EU Space Act becomes '*lex specialis'* in relation to the cybersecurity measures of Union space operators qualifying as essential or important entities in NIS 2, such space operators would apply the resilience chapter thus avoiding any duplicative requirements.

Second, as regards safety matters, the proposed EU Space Act ensures synergy with Union safety policies and legislation. When space activities affect several Member States, coordination with air traffic management is achieved via Regulation (EU) No 2019/123, optimising European network functions. Incidents at the intersection of aviation and space activities are systematically reported via the mandatory Union reporting scheme set up under Regulation (EU) 376/2014. Looking ahead, any future rules for high altitude operations may include definitions for launch vehicles, thereby ensuring comprehensive regulatory coverage for these emerging areas.

Third, in line with the European Green Deal[(8)] and the Union's sustainability objectives[(9)], the proposed EU Space Act helps reducing the environmental footprint of space activities and allows addressing in future potential new commitments of the Union under international conventions concluded in the area.

Methodologies for evaluating the impacts of space activities, for example the Life Cycle Assessment (LCA) or the environmental related Union policies and tools, such as the Product Environmental Footprint (PEF)[(10)], are clearly underdeveloped today[(11)]. Moreover, none of the general sustainability or environment-related frameworks, such as the Environmental, Social and Governance (ESG) framework[(12)], considers any of the specific and particularly complex environmental impacts of space activities.

Building on the PEF approach, the proposed EU Space Act therefore puts forward the development and mandatory use of a space-specific LCA methodology.

2. LEGAL BASIS, SUBSIDIARITY AND PROPORTIONALITY

• Legal basis

The legal basis for this proposal is Article 114 of the Treaty on the Functioning of the European Union (TFEU) which provides for the adoption of measures to ensure the establishment and functioning of the internal market.

While the Treaty specifically provides for a legal basis in respect to measures relating to space policy (Article 189 TFEU), that legal basis cannot be used for this initiative. Article 189

(8) The European Green Deal - European Commission (europa.eu).

(9) 2050 long-term strategy - European Commission (europa.eu).

(10) Recommendation on the use of 'environmental footprint' methods - European Commission (europa.eu).

(11) This is obvious for impacts regarding, for instance, the burning of propellant, the disposal of rocket stages, the environmental risk at re-entry and impacts of nuclear power sources integrated in space missions.

(12) Directive - 2022/2464 - CSRD Directive - https://eur-lex.europa.eu/eli/dir/2022/2464/oj.

TFEU covers only measures that promote joint initiatives, support the research and technological development or coordinate efforts for the exploration and exploitation of space. It explicitly excludes any harmonisation of Member States' laws and regulations.

However, in accordance with established case-law, Article 114 TFEU can be used as a legal basis for the establishment and functioning of the internal market in space services and space-based data[13]. In this regard, Member States' divergent approaches may make it more difficult for space operators to conduct space activities, in particular to carry out cross-border operations which require them to obtain multiple authorisations from several Member States (for example authorisation in the State where operations take place and where a spacecraft is launched).

The proposed EU Space Act brings about targeted harmonisation on key aspects of safety, resilience and environmental sustainability addressed in the authorisation for space activities. It would ensure the establishment and functioning of the internal market in space services and space-based data generated through the use and operation of space infrastructure. Member States would recognise authorisations for space activities issued by other Member States, as regards the key matters covered by this Regulation. However, they would at the same time retain the possibility of imposing stricter requirements where that is objectively necessary to safeguard the safety, resilience or environmental sustainability of spacecraft operation or of launches in their territories, for space missions carried out by Union space operators authorised in other Member States.

The proposed EU Space Act would bring about more homogeneous and consistent authorisation requirements across the internal market, which in turn would help make the Union's space industry more competitive. The EU Space Act would enable Union space operators to carry out activities across multiple jurisdictions without hindrances and would bring about the needed legal certainty. This would encourage investment in the sector making it easier also for 'New Space' companies to scale up. In the same vein, the new technologies driven by the requirements set out in the legislation (i.e. ISOS, debris and tracking related technology, as well as dark and quiet skies) would stimulate the industrial innovation in the sector and contribute to the long-term safety, sustainability and resilience of space activities.

- **Subsidiarity (for non-exclusive competence)**

Member States have taken disparate approaches to the safety, resilience and environmental sustainability of space activities. Action at Union level is essential to bring about targeted harmonisation on several key aspects currently unequally covered by national authorisation requirements.

The establishment of a framework at Union level would increase the common level of safety, resilience and environmental sustainability of space activities, generating significant added value, compared with individual action at Member State level.

In particular, action at Union level would: (1) establish a level-playing field across the Union, through the approximation of the authorisation requirements relating to safety, resilience and environmental sustainability; (2) smoothly integrate the new rules into the current space legislations to avoid overlap, duplication and conflicts, improving the functioning of the internal market; (3) ensure that authorisations for space activities granted in one Member State are recognised in other Member Stated; (4) provide for better and more homogeneous

(13) Affaire C-376/98, RFA c. Parlement et Conseil [2000] Rec. p. I-8419, Affaire C-380/03, RFA c. Parlement et Conseil, Rec. [2006] I-1157.

protection of all space infrastructure assets across the Union, helping to ensure that such infrastructure deliver space-based data and space services safely and securely; and (5) ensure consistency in the evaluation of the environmental impact of space activities.

A common approach at Union level would at the same time establish the Union as a global standard setter in a field urgently calling for long-term solutions.

- **Proportionality**

As outlined in the accompanying impact assessment, the proposal does not go beyond what is needed to achieve the objectives pursued by this initiative and does not impose disproportionate costs that could harm the competitiveness of the Union space industry.

Union action would create a common baseline for the safety, resilience and environmental sustainability aspects of space activities in the Union, while (a) being proportionate to the specific risks of each orbit, altitude or to specificities raised by non-critical space missions; (b) remaining technology neutral; and (c) fully respecting Member States's prerogatives as regards national security.

The proposal minimises undue burdens by streamlining constellation authorisations (e.g. single authorisation per constellation rather than per satellite). A lighter safety regime applies to Very Low Earth Orbit space missions, whose rapid atmospheric re-entry naturally limits debris, while the resilience obligations scale according to space operator size, mission criticality, and propulsion use.

- **Choice of the instrument**

Article 114 of the Treaty on the Functioning of the European Union empowers the European Parliament and the Council to adopt regulations and directives.

The Commission has decided to put forward a proposal for a regulation to ensure a consistent level of implementation throughout the Union. This will prevent divergences from hampering the provision of space activities and space-based data within the internal market, guarantee legal certainty and transparency, ensure a uniform protection of rights and obligations for all EU and third country providers of space services in the internal market and enable a consistent implementation in all Member States.

3. RESULTS OF EX-POST EVALUATIONS, STAKEHOLDER CONSULTATIONS AND IMPACT ASSESSMENTS

- **Ex-post evaluations/fitness checks of existing legislation**

Not applicable

- **Stakeholder consultations**

In drafting the proposal, in line with the Better Regulation guidelines, the Commission has consulted extensively with all relevant stakeholders. It carried out a targeted consultation and an open public consultation, issued a call for evidence, ran specific surveys on the three main areas coved by the proposal and held four stakeholders workshops. The input was integrated into the study supporting the Commission’s preparatory work.

a) Targeted stakeholder consultation

The targeted stakeholder consultation ran from 29 September to 2 November 2023. It targeted the space industry covering entities such as academic/research institutions, business associations, spacecraft manufacturers, space operators, airlines or air navigation service providers, consumer organisations, environmental organisations, non-governmental

organisations (NGOs), public authorities, trade unions, and the public. Contributions were sent from 27 EU Member States (47% of the respondents) and several third countries such as Canada, Japan, Norway, Switzerland, the United States, and the United Kingdom (5%). The origin of the rest of the responses (49%) was not specified.

In total, 333 contributions were received, and 65 accompanying documents were submitted, of which 170 were from organisations, 153 from individuals, and the rest were anonymous contributions. Among the organisations, 62% were micro, small, or medium-sized enterprises.

Both the replies to the survey and the position papers received, including those from industry associations, showed broad support for an EU Space Act. In particular, there is broad consensus among the European space industry that the EU Space Act would provide a clear and common framework that harmonises the disparate key rules on space activity in the Union. This is seen as particularly valuable as enabling organisations to easily expand abroad and offer their services in multiple Member States. Moreover, the introduction of an EU Space Act is seen as an opportunity for the Union to take the lead in setting global standards for making space safer, more resilient and more sustainable.

At the same time, the industry stressed that the EU Space Act should aim to keep it competitive by including companies from third countries that place products or services on the Union market in its scope. Industry representatives and associations also raised concerns on the potential burden and additional costs that the EU Space Act could impose on start-ups and SMEs, and called for supporting measures to offset this impact.

b) Public consultation

The public stakeholder consultation ran from 4 October to 28 November 2023. The survey contained 11 questions of a general nature on safety and security risks to space activities, and questions on potential measures at Union level. In total, 44 contributions were received, from individuals, organisations, academic/research institutions, public authorities, business associations, and NGOs.

The survey showed strong stakeholder support for an EU Space Act. Respondents highlighted the inadequacy of the current national and international space laws, emphasising the need for a comprehensive regulatory framework. Most stakeholders advocate for a combination of binding and voluntary measures to ensure safe, resilient, and sustainable space operations, with broad recognition of the importance of international cooperation.

- **Collection and use of expertise**

The Commission relied on external expertise to draw up the impact assessment report:

- Deloitte and Roland Berger provided consultancy support for the impact assessment report;
- Cyberinflight and RHEA Group contributed with expertise on space cybersecurity;
- The Commission held two workshops with European space law experts on 16 February 2023 and 13 November 2023;
- Euroconsult conducted a study on the European space industry and market;
- The Commission engaged with various stakeholders (e.g. The European Union Agency for the Space Programme (EUSPA), other Commission departments, the European Space Agency (ESA,) and industry associations) to gather comprehensive data to support the Impact Assessment.

- **Impact assessment**

In line with its 'Better Regulation' policy, the Commission conducted an impact assessment for this proposal. The Commission's Regulatory Scrutiny Board issued a positive opinion with reservations on 22 February 2024 for the impact assessment[14]. It considered the following policy options.

- Policy option 1: the Commission would facilitate the codification of non-binding measures between industry and Member States through a co-regulation approach. Co-regulation combines legislative and regulatory measures with actions taken by the actors most concerned, drawing on their practical expertise. In addition, it promotes the development of labels by the industry.
- Policy option 2: adoption of a binding Union framework.
- Policy option 2+: adoption of a binding Union framework referred to in option 2, paired with non-binding and support measures.
- Policy option 2++: policy option 2 and 2+ with international bilateral agreements to foster a global approach to space safety, resilience and the environmental impact of space activities.

Based on the assessment and comparison of all options, option 2+ 'Adopt a binding framework at Union level, paired with non-binding measures' was ranked as the preferred option. This result is also in line with the preferred option selected by stakeholders (including SMEs) in the targeted consultation.

Overview of economic impact

The implementation of a regulatory framework for the space sector entails several costs and benefits for both the public and private sectors.

For the public sector, Member States with established space programs already assess many of the requirements being envisaged, in line with UN treaty obligations. Such Member States host most of the European space sector and their rules would only require minor adjustment resulting in minimal administrative burden (1-2 full-time equivalent (FTEs)). By contrast, Member States with no space legislation typically host emerging space activities. In this case, adjustment costs for new requirements would still be limited (up to 4 FTEs).

In relation to the technical assessment for fulfilling the Union authorisation requirements Member States may choose to rely on the technical assessment provided by ESA and the Union Agency for the Space Programme (EUSPA or 'the Agency').

For the private sector, costs vary depending on the company. Satellite operators may face an increase of up to 10% in manufacturing costs for satellite platforms, depending on the space mission requirements. Launch service providers will incur additional expenses, with large-scale providers potentially paying up to EUR 1.5 million for heavy launchers (Ariane 64 class) and SMEs up to EUR 200 000. Risk management costs for companies are estimated at 10% of their IT budgets, and authorisation requirements per product line will cost approximately EUR 100 000. Implementing the product environmental footprint category rules (PEFCRs) will cost EUR 4 000-8 000.

Despite these costs, regulatory simplification is expected to yield significant advantages. The ability to market a single product across 27 Member States streamlines the access and reduces

(14) Links to the summary sheet and the positive opinion of the RSB will be included after their publication.

administrative hurdles enabling faster time to market. A shift from individual satellite authorisation to constellation authorisation alone is projected to save satellite operators EUR 68 million over the next decade. Additionally, extending the life of satellites in low earth orbit from 5 to 6 years is estimated to have an annualised economic impact of EUR 1.3 billion. Companies will gain a global competitive advantage, benefiting from high cybersecurity standards that reduce the cyber-related risks, with manufacturers potentially saving EUR 320 million per year. In the long term, the proposed EU Space Act is expected to sustain the Union space industry (calculated at 20% of a projected EUR 700 billion market by 2031), while fostering the emergence of new business segments, such as active debris removal, on-orbit servicing, assembly and manufacturing, and encryption technologies.

Overview of social impact

Relative to the other options, the preferred option would bring along substantial benefits in terms of increased compliance, given the binding nature of the envisaged measures (paired with non-binding and support measures). It would protect access to space-based services for the public, enhance trust in and reliance on, space systems services and space-based data, and improve the governance through harmonised authorisation conditions. Additionally, it would also protect astronomers and indigenous communities by reducing light pollution, and contribute to innovation, growth and competitiveness in the space sector.

Overview of environmental impact

The preferred option would have a positive environmental impact due to the mandatory requirements covering the deorbiting of satellites and a common LCA. Based on the PEFCR, the authorisation requirement would provide an overview of the different environmental impact categories. It would also facilitate access to sustainable finance for the Union space industry.

- **Regulatory fitness and simplification**

A common regulatory framework would enhance the competitiveness of the Union space industry by (1) reducing the administrative burden and costs for companies which would no longer have to comply with multiple uncoordinated requirements across the Union; (2) increasing the reliability of Union space companies through enhanced resilience and safety, giving them a global competitive advantage.

Enhanced integration of the internal market would also open the door to new markets for SMEs, expanding the size of the relevant Union market and fostering innovation. This would also attract more private investment, contributing to the scaling up and growth of the New Space industry in the Union (mostly start-ups, scaleups and SMEs in need of larger fund-raising).

The objective of the proposed initiative is to create a common level playing field at Union level, ensuring that Union space operators do not suffer from distortion of competition by space operators established outside the Union and benefiting from less stringent standards. The possibility to have mutual recognition could ultimately enhance the market share of Union space operators.

The costs for industry and particularly SMEs would derive from the need to meet technical and operational requirements, coupled with additional costs for administrative checks and enforcement. Overall, these alterations are likely to increase the administrative burden and costs across the industry, including for SMEs. Manufacturing costs could rise by 3% to 10%. This impact could be mitigated by: (i) the effect of the supporting measures and (ii) the proportionality embedded in the rules (to take account, for example the size of the companies,

the criticality of the mission or the orbit). The initiative would also entail operational benefits for SMEs, namely increased revenues due to longer satellite lifetime.

- **Fundamental rights**

The obligations fully respect the freedom to conduct a business (Article 16 of the Charter of Fundamental Rights of the European Union). A common regulatory framework would enhance legal certainty and foster an environment conducive to innovation and competition in the space sector. The requirements pursue legitimate objectives of general interest ensuring the safety, resilience and environmental sustainability of space activities. In addition, they are limited to what is necessary and proportionate, with safeguards to guarantee that any impacts on the activities of space operators remain limited and consistent with the principle of proportionality enshrined in Article 52(1) of the Charter.

4. BUDGETARY IMPLICATIONS

A detailed overview of the proposal's implications on the European Union budget is provided for in the 'Legislative Financial and Digital Statement' linked to this proposal.

The proposal has an impact on competent authorities at national level (i.e. those responsible for issuing relevant licences for the conduct of space activities). These impacts are described in more detail in the overview of economic impact and the impact assessment.

5. OTHER ELEMENTS

- **Implementation plans and monitoring, evaluation and reporting arrangements**

The specific objectives of the initiative would be monitored on an annual basis. The proposal would be evaluated five years after it has entered into force to assess the impact on and reaction of the market, in particular SMEs.

- **Detailed explanation of the specific provisions of the proposal**

TITLE I General provisions

Title I (Articles 1-5) lays down the general rules concerning the subject matter of the regulation. These rules cover the authorisation, registration and supervision of space activities in the Union, orbit traffic management, governance and enforcement aspects and the establishment of a Union space label. Article 2 ('Scope') specifies which space services providers and space objects the Regulation applies to, including third country operators providing space services or space-based data in the Union. Title I also establishes the principle of free movement for space-based data and space services within the Union and contains a clause preserving Member States' competence regarding national security. Lastly, it sets out key definitions used throughout the Regulation.

TITLE II Authorisation and registration for space activities

Chapter I (Articles 06-10) lays down the conditions that Union space operators must meet to obtain authorisation to carry out space activities. Member States' national competent authorities (NCAs) oversee the process of granting authorisation to Union space operators, and inform the Agency of all authorised space operators. The Agency registers all space operators in the Union Register of Space Objects (URSO), including third country space operators for which a decision is taken by the Commission as referred to in Chapter III. A simplified authorisation procedure and its subsequent renewal or withdrawal, is introduced for launching a satellite constellation. Light regimes and specific exemptions are laid down for certain categories of Union space operators, in line with the proportionality principle.

Chapter II (Articles 11-13) sets out the authorisation procedure for Union space operators intending to operate or launch Union-owned assets. The Commission issues the authorisation (upon a technical assessment proposal of the Agency), carries out ongoing supervision and suspends or withdraws an authorisation in relation to Union-owned assets in the circumstances set out in the Regulation.

Chapter III (Articles 14-23) sets out the rules for the registration of third country operators and international organisations providing space-based services in the Union. It includes specific derogations for launch services provided by third country entities, third country governmental entities, as well as a single market emergency clause. Third country space operators and international organisations providing space services or space-based data in the Union shall be registered in the URSO upon demonstrating compliance with the technical requirements laid down in the Regulation. The Agency shall also draw up a separate list of all primary providers of space-based data in the Union. Space operators established in a third country for which the Commission has adopted an equivalence decision are presumed to comply with the requirements of the Regulation. Third country operators shall designate a legal representative in the Union to guarantee an effective cooperation with the competent authorities, the Commission and the Agency.

Chapter IV (Articles 24-27) lays down rules on the set-up of the URSO, the e-certificate and the provision of space-based data and space services in the Union. The Agency will issue e-certificates attesting the conformity of space-based data and space services provided by third country entities and international organisations with the requirements of the Regulation. Contracts for the provision of space-based data and space services in the Union must be accompanied by an e-certificate, and primary providers of space-based data notify the Agency of any suspected irregularities.

TITLE III Governance aspects

Chapter I (Articles 28-39) sets out in Section 1 main governance principles for Member States as regards the authorisation and supervision of space activities and the market surveillance. Each Member State should designate or set up a competent authority endowed with sufficient resources and powers to oversee compliance of Union space operators. NCAs are to have supervisory, investigatory, corrective and sanctioning powers.

Section 2 lays down procedures for Member States that intend to designate qualified technical bodies (QTBs) for space activities. Those Member States shall appoint an authority to assess, designate and monitor the QTBs. This can be the national accreditation body (NAB) designated at national level, tasked with ensuring that such bodies meet and maintain the technical competence required to assess the compliance with the technical requirements of Title IV of the Regulation. Member States shall inform the Commission about their QTBs. Section 3 sets out the procedure for applying to become a QTB for matters covered by Title IV and the applicable requirements. Member States shall ensure that the decisions adopted by QTBs can be appealed against.

Chapter II (Articles 40-57) sets out the governance at Union level, detailing the roles and responsibilities of in Section 1. The Agency is granted new tasks in particular to support and assist the Commission in the authorisation and supervision of Union space operators of Union-owned assets, in the registration of third country space operators and international organisations providing space-based data and space services in the Union. The Agency shall establish and manage the needed databases (URSO and the Union contact list database for high-interest event alerts) and issue the e-certificates.

The Agency shall set up dedicated internal structures (Compliance Board and Board of Appeal) to support and assist the Commission in the authorisation and registration of space operators and third country space operators, as well as to support Member States with no QTBs, through technical assessment processes. The Agency would support the Commission in the exercise of supervisory powers over Union space operators and third country providers. The Board of Appeal would safeguard the defence rights against decisions adopted by the Agency. The new tasks shall be financed through a system of registration fees. Section 2 specifies the powers of the Agency and the Commission regarding operators of Union-owned assets and regarding third country space operators.

TITLE IV Technical requirements

Title IV contains the requirements which the different categories of space service providers must comply with, revolving mainly around the matters of safety, resilience and environmental sustainability.

Chapter I (Articles 58-73) lays down rules for the safety and sustainability in space, covering the launchers (Section 1) and the spacecraft (Section 2). The safety rules aim to reduce collision risks, mitigate the creation of debris in orbit, and ensure safe launch and re-entry, with specific procedures and technical requirements for space operators.

Under Section 1, launch operators must coordinate with authorities and traffic service providers to mitigate the risk of collisions during launch and re-entry. They are required to install flight safety systems and implement space debris control measures. Detailed methods for calculating collision avoidance windows, casualty risk thresholds, and coordination procedures are to be adopted by the Commission through implementing acts.

Under Section 2, spacecraft operators must ensure the trackability of spacecraft and subscribe to collision avoidance services. They must manage re-entry coordination and maintain a certain level of manoeuvrability. Further obligations include the need to draw up space debris mitigation plans, limit light and radio pollution and meet additional safety and debris-mitigation standards for large constellations. Space operators may request mission extensions, if they continue to satisfy end-of-life and space debris requirements. Space operators must ensure that suppliers' manufacturers comply with the design and manufacturing requirements laid down in this chapter.

Chapter II (Articles 74-95) lays down general principles applying to the risk management for space infrastructure and the requirement to carry out risk assessment, building on existing legislation on cybersecurity and physical resilience of critical entities. Space operators shall be required to take comprehensive, proportionate and all-hazard measures to manage all risks to space infrastructure. These measures extend throughout the entire lifecycle of a space mission (from design and manufacturing to launch, operation, and disposal) covering both digital and physical threats.

While the space sector should remain part of the NIS 2 ecosystem, cyber rules that are tailored for the space sector, laid down in this Chapter, should apply to Union space operators identified in points (8) and (11) of Annex I of NIS 2, to avoid duplication and fill the gaps in the coverage of the space sector. Space operators shall carry out risk assessments, identifying vulnerabilities, implementing remediation measures and adapting risk scenarios to each space mission's specificity. Space operators should establish and maintain comprehensive policies for information security management, ensure strict access control rights and the physical protection of space assets. Further rules are laid down on detection and monitoring of incidents, implementation of cryptography, backup protocols, preparation of comprehensive business continuity policies and response and recovery plans. Space operators subject to the

simplified risk management regime should apply lighter measures while ensuring the resilience of critical assets and functions. Union space operators shall report significant incidents of Union-owned assets to the Agency. A Union Space Resilience Network (EUSRN) shall facilitate the cooperation between the Commission, the Agency, and the national competent authorities regarding the monitoring and handling of significant cyber incidents and alignment of resilience measures with other Union cybersecurity frameworks.

Chapter III (Article 96-100) relates to environmental sustainability. It requires space operators to calculate the environmental footprint (EF) throughout the space mission lifecycle, including the design, manufacturing, operations, and end-of-life stages, unless they meet the conditions for an exemption. Space operators must submit an environmental footprint declaration (EFD) as part of their authorisation application, together with supporting EF studies and data, verified through a certificate which shall be issued by a qualified technical body for space activities. They are required to obtain all relevant data from their suppliers, send aggregated and disaggregated datasets to the Commission for inclusion in the EF database, and keep them up to date.

Chapter IV (Article 101) refers to in-space operations and services (ISOS) requirements. Spacecraft shall be equipped to receive in-space servicing via dedicated interfaces. The Commission will detail the design principles for these interfaces and may set further debris-removal conditions for threatening objects.

Chapter V (Article 102-103) lays down orbital traffic rules, including rules on how collision avoidance manoeuvres should be carried out under high-interest event alerts. It introduces a 'right of way' approach, designed to facilitate the resolution of collisions between multiple manoeuvrable spacecraft.

Chapter VI (Article 104) empowers the Commission to request European standardisation organisations to draft standards or adopt implementing acts to lay down common specifications for certain technical requirements.

TITLE V Equivalence decisions, international agreements and rules for international organisations

Title V (Articles 105-108) enables the Commission to grant equivalence decisions to third-country space operators and frames the rules applicable to international organisations, depending on the type of asset. The Union shall endeavour, as appropriate, in accordance with Article 218 TFEU, to conclude agreements with international organisations that operate Union-owned assets.

TITLE VI Supporting measures

Chapter I (Articles 109-111) lays down a set of supporting measures to help offset part of the implementation costs, notably for start-ups, scaleups and SMEs, and support the implementation of the Regulation. The supporting measures include capacity-building measures (e.g. production of guidance materials), technical assistance (e.g. the establishment of a pool of independent experts that will support space operators in compiling the technical dossiers), and funding a digital solution (i.e. one-stop information portal).

Chapter II (Articles 112-113) introduces a 'Union space label framework' for awarding a Union space label to space operators that voluntarily intend to meet higher requirements on safety, resilience and environmental sustainability, in addition to those laid down in the Regulation.

TITLE VII Transitional and final provisions

Title VII (Articles 114-120) contains the provisions regarding the power of the Commission to adopt delegated and implementing acts and the professional secrecy. It also foresees a review clause, transitional periods and the date of entry into force and application.

2025/0335 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the safety, resilience and sustainability of space activities in the Union

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 114 thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national Parliaments,

Having regard to the opinion of the European Economic and Social Committee[1],

Having regard to the opinion of the Committee of the Regions[2],

Acting in accordance with the ordinary legislative procedure,

Whereas:

(1) Space-based data and space services have become an important part of the Union's economy and the daily life of citizens. They are used in sectors which are key for the functioning of the internal market, including those covered by Directive (EU) 2022/2557 of the European Parliament and of the Council[3] on the resilience of critical entities and Directive (EU) 2022/2555 of the European Parliament and of the Council[4]on measures for a high common level of cybersecurity across the Union.

(2) Space-based data and space services provide invaluable contributions to a vast range of domains, such as internet connectivity, satellite television, navigation management and environmental monitoring. They enable applications for scientific purposes or security and defence operations, like search and rescue missions, communications for command-and-control purposes and reconnaissance capabilities. Space-based data and space services increasingly support the implementation of public policies of Member States and advance the Union's political agenda and its path to the digital and green transitions.

(3) The space sector of the Union has been witnessing structural changes over the past decade. These were partly triggered by an increased demand for space services and access to space becoming more accessible due to technological advancements and reduction of costs. Space activities, previously concentrated in few Member States and

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(1) OJ C [...], [...], p. [...]

(2) OJ C [...], [...], p. [...]

(3) Directive (EU) 2022/2557 of the European Parliament and of the Council of 14 December 2022 on the resilience of critical entities and repealing Council Directive 2008/114/EC (CER Directive) (OJ L 333 164, 27.12.2022. p.164, ELI: https://eur-lex.europa.eu/eli/dir/2022/2557/oj).

(4) Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2 Directive) (OJ L 333, 27.12.2022, p. 80, ELI: https://eur-lex.europa.eu/eli/dir/2022/2555/oj).

dominated by large established industrial players, have gradually opened towards new market entrants. The emergence, across most Member States, of the so-called 'New Space' market actors, most of which private companies, has allowed an expansion of the Union space market, while revealing at the same time the inherently cross-border nature of space activities.

(4) Such cross-border dimension of space activities is reflected by the transnational procurement of assets of space infrastructure, whereby products, components and systems of different segments of space infrastructure, as well as the relevant technology and expertise are pooled together by, or from, several Member States. At the same time, Member States rely on each other's capabilities when carrying out spacecraft launches. In the same vein, the launch and re-entry operations expose the innate transboundary dimension through the impact which space activities have on the airspace of several Member States.

(5) The structural changes witnessed by the Union space sector, the growth of the space activities and the increased role of private actors in carrying out space activities have in turn expanded the national regulatory interventions. 13 Member States have already enacted legislations regulating the space activities while several others carry out preparations to enact similar legislations.

(6) National regulatory interventions are driven by the legitimate needs of Member States to frame the way their space activities are carried out. Member States fulfil their responsibilities stemming from Article VI of the United Nations (UN) Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (OST) as they bear, pursuant to that Treaty, an international responsibility and liability for all national activities carried out in outer space by governmental agencies or non-governmental entities. The OST calls for national activities to be carried out in conformity with its provisions, explicitly requiring that activities in outer space carried out by non-governmental entities be subject to authorisation and continuing supervision by the appropriate State party to the OST.

(7) However, neither the OST nor any other international treaty of the UN regulatory framework for space provide for specific and detailed rules to address the emerging risks associated with the increase of space activities. The Long-term Sustainability Guidelines adopted by the UN provide a framework of actions for national and regional entities to ensure the future protection of orbits. However, other than these non-binding guidelines, the congestion of orbits, the risk of collision, the risk of disruption of space services due to cyberattacks perpetrated on space infrastructure as well as the environmental impact of space activities constitute a growing reason for concern for the safety, resilience and environmental sustainability of space activities, for which there is no legislation at international level thus leaving a regulatory gap.

(8) Moreover, the international space treaties date back to a time when space law was in its infancy and lay the foundation for a general framework of general principles and obligations. In the absence of updated and detailed technical norms to address emerging safety, resilience and sustainability risks, Member States have pursued their own regulatory and authorisation approaches, with different rules covering satellite operations, launch sites and operations, launchers and satellites onboard.

(9) These approaches share a common objective, namely setting out the authorisation conditions to address the risks mentioned above. Member States are thereby acknowledging the importance of preserving the safety of orbits and the resilience of

space infrastructure, with due regard to the optimal and sustainable use of outer space. Such national space legislations however vary as to the extent and depth of the specific requirements to address the risks to the safety, resilience and sustainability of space activities. In this regard Member States approaches vary from minimalist to detailed normative stances. Diverging national requirements may lead to the fragmentation of the internal market and decrease legal certainty needed by Union space operators.

(10) As a result, various fragmented space activities frameworks emerge across the Union, triggered by a variety of norms with discrepancies in their level of detail also resulting in a lack of coordination among Member States.

(11) Fragmentation in the conditions of authorisation in relation to key elements of space infrastructure, such as spacecraft, or to cyber risk management rules when providing space services, or to the environmental impact of space activities, can adversely impact the freedom to provide space-based data generated by space infrastructure and the provision and deployment of space services in the Union.

(12) Typical assets of space infrastructure, such as spacecraft, which do not fulfil the specific requirements laid down in some legislations may be prevented from being used in the internal market of space services. Some Member States have for instance chosen to impose for safety reasons more stringent requirements on the design of satellites, in respect to satellites authorised for launch according to the legislation of other Member States. This divergence may not only render more difficult the cross-border trade for a company supplying satellites but Member States taking a strict stance on safety authorisation requirements may choose to not allow launches from their territory of satellites authorised for operation in Member States subject to less stringent safety requirements. In a similar vein, where surveillance and tracking requirements before and after the launch of satellites, or where specific cyber risk management rules were put in place only in some Member States, the provision of space services, such as the operation and launch services across the internal market might be adversely impacted.

(13) Ultimately, such barriers may adversely impact the provision of space-based data and space services across the Union. Since space services rely on space-based data generated through, and using, the assets of space infrastructure, the provision of space services depends on the levels of safety and resilience of the assets of space infrastructure.

(14) Requirements entailing higher costs, such as design requirements to avoid proliferation of space debris, or risk assessments aimed at ensuring the cybersecurity on the various segments of space infrastructure, may prompt Union space operators to seek establishment in jurisdictions with less stringent authorisation requirements.

(15) The cross-border nature of space activities in the Union is likely to intensify considering the growing number of Union space operators as well as the rising number of companies developing launcher solutions and of Member States planning to develop launch capabilities. Against this background, diverging conditions across the national authorisation regimes are likely to create more barriers in the space sector, with impact on the continuity of the supply of space-based data and provision of space services which in turn support many areas of activity in the internal market, including critical sectors and infrastructure.

(16) Therefore, to safeguard and improve the functioning of the internal market, a set of uniform, effective and proportionate mandatory rules which harmonise key aspects for

space services in the context of authorisation of space activities should be established at Union level, to ensure unhindered provision of space-based data and space services across the internal market.

(17) By laying down technology neutral key requirements, innovation should be stimulated by offering to the space services providers access to current and potential new markets, resulting in an increased choice for end users.

(18) Only in limited cases, considering the strategic importance for the Union or Member States to have access to certain space services, the Commission should grant a derogation from the requirements laid down in this Regulation for launch services where this is justified by a public interest. Implementing powers should be conferred on the Commission to grant a derogation to the respective third-country launch operator where the public interest condition is met.

(19) At the same time, swift action in cases of emergency or crisis might be necessary, exceptionally and on a temporary basis, to make use of space-based data or space services provided by space service providers which have not been registered in the Union.

(20) Space services providers established in the Union should be subject to an authorisation regime, to address key safety and resilience aspects of typical space services which relate for instance to the operation of spacecraft, the provision of launch services and the operation and maintenance of launch sites. Union space operators of Union-owned assets should be authorised by the European Union Agency for the Space Programme ('the Agency') established by Regulation (EU) 2021/696 of the European Parliament and of the Council[5], while Union space operators operating assets other than Union-owned assets should be authorised by Member States.

(21) Space services providers established in the Union providing advanced space services such as collision avoidance (CA) space services or in space services and operations (ISOS) support the typical space services and play a role in the protection and long-term sustainability of assets of space infrastructure. Therefore it is appropriate to subject this category of emerging space services providers to a limited set of rules. This would enable the development of new applications and markets in the space sector (in-space economy).

(22) Primary providers of space-based data play a key role as intermediaries between the upstream and downstream sectors as they channel space-based data from space operators towards the various subsequent uses of such space-based data, for the benefit of the entire economy and citizens. In that respect, although the substantive rules which apply to space operators should not apply to them, they still play an important role in the space sector, by ascertaining that the space-based data which they pass down in the value chain originates from space operators that are compliant with this Regulation. Therefore, the Agency should draw-up a list of such primary providers of space-based data in the Union. In light of their role of intermediary, primary providers of space-based data are best placed to receive alerts or complaints about potential irregularities in respect to the use in the Union of space-based data, to directly alert their suppliers or bring to the knowledge of the Agency or the relevant competent

[5] Regulation (EU) 2021/696 of the European Parliament and of the Council of 28 April 2021 establishing the Union Space Programme and the European Union Agency for the Space Programme and repealing Regulations (EU) No 912/2010, (EU) No 1285/2013 and (EU) No 377/2014 and Decision No 541/2014/EU (OJ L 170, 12.5.2021, p. 69 ELI: ttp://data.europa.eu/eli/reg/2021/696/oj)

authority in the Member State where they are established, any allegations about space-based data potentially originating from unregistered or non-compliant space operators, which may be in use in the internal market.

(23) In order to create equal conditions for operating in the internal market, the rules for all space services providers within scope of this Regulation, including Union space operators, should apply to the extent space-based data and space services are provided in the Union.

(24) Therefore, to ensure that no space operator is given an advantage by not being subject to the rules laid down by this Regulation, it is appropriate to ensure a uniform treatment of all space operators, including third-country space services providers, such as third- country spacecraft operators, third-country launch providers, third-country primary providers of space-based data, if they are providing space-based data or space services in the Union.

(25) This Regulation should thus apply to space services providers, irrespective of their place of establishment, if the space-based data or space services are provided in the Union, thereby demonstrating a substantial connection to the internal market, preventing the risk of circumvention of rules to the disadvantage of Union consumers and businesses, and safeguarding the efficiency of the objectives pursued by this Regulation.

(26) All space services providers established in a third country should designate in writing one or more legal representative(s) in the Union, depending on their commercial needs and organisational requirements. Such legal representatives in the Union should be endowed with all necessary powers and resources to cooperate with the relevant authorities, the Commission and the Agency, on all aspects that are needed for the receipt of information and of decisions related to the compliance with, and enforcement, of this Regulation.

(27) Certain third-country jurisdictions may adhere to high levels of safety, resilience and environmental sustainability of space activities and as such apply safety, resilience and environmental sustainability requirements similar to those laid down in this Regulation.

(28) In these cases, a mechanism of equivalence is to ensure the recognition of a level of protection comparable to what is required under this Regulation. Thus, where an assessment has been carried out by the Commission, in relation to the applicable legal framework of a third country and the legally binding rules applicable in that third country, deemed to be equivalent to the requirements laid down in this Regulation, the compliance of the space services providers established in that third country should be established on that basis. Such space services providers should be able to provide space-based data and space services in the Union based on an equivalence decision to be adopted by the Commission

(29) Space services providers established in a third country for which an equivalence decision has not been adopted should be required to undergo checks to establish compliance with the requirements laid down in this Regulation. To promote convergence of supervisory approaches, the Agency should carry out the technical assessments needed for the Commission to establish compliance and allowing the Commission to decide, based on technical assessments, on the registration of space service providers in the Union and on any supervisory measures. For this purpose, a Register should be set-up at Union level.

(30) The Union should seek gradually to conclude mutual recognition agreements with third countries.

(31) In order to comprehensively cover all assets of space infrastructure and avoid gaps, this Regulation should also apply to assets operated by international organisations engaging in space activities, such as the European Space Agency (ESA) or the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT). Such international organisations, considering their extensive technical, scientific and operational expertise, as well as their dedicated infrastructure and capabilities in the space domain, are key partners to the Commission, the Agency and the Member States, in particular in the context of implementing components of the Union Space Programme, conducting joint procurement or programmes of Members States.

(32) To achieve regulatory coherence in the context of the harmonisation entailed by this Regulation, such international organisations, when operating their own assets, should be subjected to Union law, upon appropriate conditions regarding the means of application and enforcement of Union law to them, which should be laid down in international agreements concluded between the Union and respectively each of such international organisations. Where such international organisations operate Member States assets, enforcement of the rules laid down by this Regulation should be ensured by the competent authorities. Where such international organisations operate Union-owned assets, enforcement should be ensured in accordance with the provisions of the contribution agreements concluded by the Commission to that effect.

(33) ESA is an international organisation with extensive expertise in the space domain and an important partner in the implementation of the Union Space Programme. ESA develops and operates, in accordance with dedicated agreements, assets of space infrastructure for the Union Space Programme and the Union Secure Connectivity Programme. ESA also develops space missions on behalf of Member States within its mandatory activities and optional programmes, and provides, at the request of one or more Member States, assistance to national projects in the space domain. ESA is also a central driver for developing technical standards for space activities. The conditions for the implementation of this Regulation to ESA should be further defined in an agreement with due regard to ESA's status and institutional framework.

(34) The rules laid down in this Regulation should cover both Union-owned assets, as referred to in Regulation (EU) 2021/696 and Regulation (EU) 2023/588 of the European Parliament and of the Council[6], and assets of Member States, whether owned or operated by governmental or commercial operators, including dual-use assets placed under civil control and when used for civil purposes.

(35) As regards Union-owned assets, space services providers should obtain authorisation from the Agency to operate such Union-owned assets that comply with the requirements on safety, resilience, and environmental sustainability.

(36) In order to preserve the competences of the Member States, this Regulation should not apply to space objects that are exclusively used to enable defence or national security objectives, irrespective of the entity carrying out such space activities. Space objects

[6] Regulation (EU) 2023/588 of the European Parliament and of the Council of 15 March 2023 establishing the Union Secure Connectivity Programme for the period 2023-2027 OJ L 79, 17.3.2023, p. 1-39 (ELI: http://data.europa.eu/eli/reg/2023/588/oj).

that are only partially used for defence purposes should be excluded from the scope of this Regulation when they need to be placed under a Member State operation and control, for defence purposes, only for the duration of the respective space mission carried out by the military forces. In such cases, it is for each Member State to determine, owing to the circumstances of the case, whether such space object would fall under the above mentioned exclusion.

(37) This Regulation should be thus without prejudice to the competences of Member States as regards all matters pertaining to national security, which also extends to cases where Member States need, for the purposes and the exercise of such national security competence, to execute specific space operations, for instance by taking control of a space object under their jurisdiction.

(38) Considering the existing regulation of radio spectrum under International Telecommunications rules, and of national and EU law in compliance therewith, and in particular Decision 676/2002/EC of the European Parliament and of the Council[7], Directive (EU) 2018/1972 of the European Parliament and of the Council[8], and Decision no 243/2012/EU of the European Parliament and of the Council[9], this Regulation should not cover aspects related to the allocation or the authorisation of radio spectrum. Moreover, where an entity which is an electronic communications network and services provider only acts as a mere user of a facility offered by a space operator, it should only qualify as a primary provider of space-based data under this Regulation. If an electronic communications network and services provider also operates or controls a satellite, a launch or a launch infrastructure, it should qualify as a space operator under this Regulation.

(39) This Regulation is without prejudice to Union competition rules, including antitrust, merger and State aid rules.

(40) The minimum key harmonised rules on the safety, resilience and sustainability of space activities laid down in this Regulation should integrate the authorisations issued by competent authorities or, as appropriate, the regimes laid down by Member States for governmental entities carrying out a national space programme. The specific character of certain entities, should be acknowledged, such as governmental space agencies which carry out national space programmes, which may not necessarily be subject to authorisations in the same way as other space services providers. Consequently, Member States should ensure, as regards these entities, an appropriate supervision that respects and implements the principles of separation of roles and absence of conflict of interest.

(41) To enable seamless authorisation processes across the internal market and create equal treatment of all Union space operators the overall duration of authorisations should be 12 months, with the possibility to suspend the deadlines applicable in the authorisation

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(7) Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) (OJ L 108, 24.04.2002, p. 1–6, ELI: http://data.europa.eu/eli/dec/2002/676(1)/oj)

(8) Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code, (OJ L 321, 17.12.2018, p. 36–214, ELI: http://data.europa.eu/eli/dir/2018/1972/oj)

(9) Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme (OJ L 81, 21/03/2012, p. 7–17, ELI: http://data.europa.eu/eli/dec/2012/243(2)/oj)

process, with a view to take into account the need for further clarifications and assessments.

(42) Member States should remain free to carry out any exchanges with potential applicants in advance of their formal authorisation processes, according to national rules. Such preliminary and informal exchanges would enable applicants to better understand and ensure compliance with the requirements laid down in this Regulation and in national legislation, as applicable, including any relevant legislation of other Member States, where, for instance, multiple authorisations are required across the internal market, considering the criteria of nationality or establishment, the place of operation and of launching.

(43) The competent authorities of a Member State should accept and recognise the authorisations issued by the competent authorities of other Member States, as regards the matters which are covered by this Regulation. At the same time, full transparency of national requirements that may be laid down by Member States should be ensured, including for stricter requirements that may be necessary to safeguarding the safety, resilience or environmental sustainability of an operation or a launch carried out on their territories in respect to a space mission carried out by space operators authorised in their own Member State of establishment. Such information should be provided through a common Information Portal.

(44) In light of the technical complexity and the length of the preparation of a space mission, applicants should have sufficient time to provide any required information or clarification. Thereby a suspension of the deadlines applicable, in the processes for authorisations, to the competent authorities, should be also foreseen.

(45) Conformity of space objects with the requirements of this Regulation should be presumed both for space services providers established in the Union, since such conformity has been verified by the national competent authorities when issuing the authorisation, and for space service providers established in a third country for which a decision of equivalence has been granted by the Commission.

(46) Once compliance with the requirements laid down in this Regulation has been established, the registration in the Union Register of Space Objects (URSO) and the issuing of an electronic certificate (e-certificate) - proving that the space-based data has been generated by space objects which are compliant with this Regulation and respectively that the space services are based on the use and operation of space objects compliant with this Regulation - should enable the free provision of the space-based data and space services across the Union. The Agency should issue to registered space services providers the individual e-certificates.

(47) Consolidated lists of all space services providers registered in URSO, established in the Union and in third countries, should be made accessible to the public, through the URSO website, thereby ensuring transparency on all space services providers registered in the Union. Any person could verify the source of the space-based data with a view to ascertain, at any given moment, that the space services provided in the Union make use of data that has been generated by space objects compliant with the requirements of Union law.

(48) A specific standard for the e-certificate should be developed, at the request of the Commission, and should be in place by the date of application of this Regulation. The e-certificate would establish the link between a given space object and the space-based

data that has been generated through its use, guaranteeing the integrity of such space-based data.

(49) In order to match increased customer demand for satellite offerings, reap the benefits of technological advances and associated cost reductions, and secure better access to capital, the authorisation processes for the launch of satellite constellations should be streamlined. Under certain conditions, and subject to a set of safeguards, a simplified authorisation procedure should be available, leading to the issuing of a single authorisation valid for the entire satellite constellation.

(50) Recognising the specific nature and objectives of research spacecraft, which remain instrumental in advancing scientific knowledge and technological capabilities, this Regulation should establish certain exemptions for such categories, with a view to accommodating their specific needs and characteristics, while at the same time ensuring the safety and sustainability of the orbits.

(51) Space operators should benefit from dedicated exemptions from the rules laid down in the different areas covered by this Regulation. When carrying out research space missions, they should be exempted from certain rules on safety. Similarly, space operators that qualify as small-sized enterprises or are research or education institutions should apply a simplified risk management focusing on critical assets and addressing main risks. In-Orbit Demonstration and Validation (IOD/IOV) space missions should also be exempted from the calculation of the environmental footprint (EF) of space activities.

(52) Ensuring safe, resilient, sustainable and cost-efficient access to space is key to obtaining a variety of services and supporting the scientific research, while aligned with key principles and rights enshrined in the OST. At the same time, launch operators may also require time adapt to the new launch safety measures. This Regulation should provide for an appropriate mechanism to ensure access to space while the industry adapts to the new safety baseline put in place at Union level.

(53) The congestion of certain orbits, triggering an enhanced risk of collision of satellites and proliferation of space debris, as well as the geopolitical threat-landscape featuring an enhanced risk to the cybersecurity of space infrastructure, along with the risk of physical contact in space, such as proximity and disturbances, constitute challenges of a global nature which many space-faring nations have started to address.

(54) From micro to heavy launchers, the launcher market has evolved. New capabilities are developed, such as re-usability of, for example, the first stage and boosters of the launch vehicles. More Member States are developing launch capabilities and thus intensifying access to space.

(55) Access to space is crucial for EU's strategic autonomy. However, an increased launch traffic also has consequences for the safety for the launch and re-entry and for safety in the air and on ground. The increased space launch traffic might also generate a negative impact on the economic, environmental and efficient performance of the Single European Sky. The risk of disruption of the air and maritime traffic should be minimised in agreement with the relevant authorities and air traffic service providers. Coordination between the relevant authorities and the competent air traffic service providers at national level contributes to limit the impacts of traffic disruption and the risk of collision. When space launches affect more than one Member State, timely coordination between space operators and the European Network Manager is needed. This coordination should include an assessment of the European airspace closure size,

duration and impacted air routes. Only at a later stage adequate cost sharing mechanisms for the use of the airspace should be established. This will incentivise the safe and sustainable use of airspace for all users. Furthermore, the stages of launch and re-entry may also create a risk for on-ground casualty which needs to be limited through close coordination with the impacted relevant authorities and traffic service providers. The increasing risk of collision with aircraft during the transition phase of space launch and re-entry can be support by well-established aviation safety methodologies and best practices on risk assessment.

(56) Launch activities are inherently risky and can cause irreversible damage if not managed properly. Rules should consequently be laid down to ensure that launchers are trackable and undergo a risk assessment which identifies and sets-up several measures to mitigate, to the extent possible, the associated risks.

(57) Projections show that, even without any new launches, collision between space objects already in space will become a big source of debris. The risk of collision between space objects would ultimately put an already congested Low Earth Orbit (LEO) under pressure, which creates a risk for the future access to space. In terms of mass, most space debris come from parts of launch vehicles (rocket bodies). Meanwhile, the number of spacecraft in orbit is rapidly growing due to the developments of satellite constellations.

(58) To protect the space environment, there is a need to ensure that launch vehicles and spacecraft produce the least amount of debris. Prevention of debris is also in line with the prevention approach as a first stage in the waste hierarchy established by the Waste Framework Directive[10]. Consequently, obligations at the design phase, as well as during the orbital lifetime, should be provided for. This necessity is also recognised at international level, where several standards have been adopted by the International Standardisation Organisation (ISO). Therefore, the authorisation to carry out space activities should be linked to the submission by space operators of specific space debris plans to demonstrate how the launch vehicles and spacecraft would limit debris creation.

(59) Spacecraft CA space services require the capacity of the spacecraft to precisely transmit its position. Trackability requirements should be developed to enhance the public services provided by the Union Space Surveillance and Tracking Partnership (EU-SST) and to save time and money used by such tracking services to determine the orbital position precisely. The ability to track spacecraft should be ensured both at spacecraft and at ground segment level.

(60) Due to increased debris and traffic in orbit, the use of a CA space service is a must-have for all spacecraft. Such requirement is necessary for ensuring the day-to-day station keeping of the spacecraft. A mandatory subscription to a CA space service should be at the very core of the space safety requirements. As a result, the entity in charge of delivering the CA space service would need to demonstrate certain capabilities.

(61) Furthermore, having an entity in charge of the CA service for all spacecraft in the Union should improve the coordination of responses to a High Interest Event Alert

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(10) Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312 22.11.2008, p. 3, ELI: http://data.europa.eu/eli/dir/2008/98/2024-02-18)

('HIE alert'), also limiting the risk that such an alert triggers different reaction strategies, which in themselves could potentially lead to a collision.

(62) Developed as part of the SSA component, under Regulation (EU) 2021/696 of the European Parliament and the Council, the EU-SST Partnership, or any successor entity, using their sensors and well-developed know-how, has demonstrated its ability to manage a high number of spacecraft and therefore suitability to be the Union CA space services provider entity, in charge of the CA space service.

(63) Generation of debris should be best avoided through requiring capacities to perform CA manoeuvres and to move satellites to graveyard orbits. As a result, all spacecraft should be endowed with a recurrent manoeuvrability capability, except for spacecraft placed below 400 km, since the atmospheric drag would, in such case, ensure in a natural manner, a short orbit lifetime of that spacecraft.

(64) It is common practice that spacecraft operators be granted authorisation to extend a space mission. However, when applying for an extension, Union spacecraft operators should be required to submit revised space debris mitigation plans, to ensure that the enhanced mission duration does not risk creating debris.

(65) Due to increased orbital traffic, astronomers encounter light and radio frequency disruptions in their astronomical campaigns. Such disruptions have a direct impact on research and planetary defence capabilities. As a result, mitigation measures should be developed to protect the dark and quiet sky.

(66) Constellations are an asset for the efficient deployment of space services, to the benefit of citizens and companies. However, due to their large number, their effect on the space environment is more significant than the impact of a single spacecraft. In addition, any catastrophic event occurring in the intra-constellation could trigger the Kessler event, rendering access to space impossible in the future. As a result, specific obligations should be imposed to constellations varying according to the size of a constellation.

(67) To ensure the efficiency of the key requirements laid down for the safety and sustainability in space, further technical elements should be specified in order to guarantee legal certainty for space operators.

(68) To date, the cybersecurity of the space sector has been only partly addressed at Union level through a general applicable framework as laid down by Directive (EU) 2022/2555. The current cybersecurity regime does not comprehensively cover all types of actors and services which are relevant for the space sector. Therefore, cybersecurity requirements should be established as regards the providers of non-public electronic communications networks and services, the entities falling below the size-cap of medium-sized enterprises under Article 2 of the Annex to Commission Recommendation 2003/361/EC[(11)] and research and education institutions and should equally cover observation data and launches using launchers outside the Union.

(69) At the same time, the cybersecurity baseline across the whole space sector seen in its entirety lacks alignment and coherence. While the resilience of Union-owned assets has been achieved under the components of the Union Space Programme, lower levels of protection may apply to part of the assets from national space infrastructure. Such

(11) Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (OJ L 124, 20.5.2003, p. 36, ELI: http://data.europa.eu/eli/reco/2003/361/oj).

divergence would only continue to grow and generate asymmetries. In addition, the Union Space Programme operates in an increasingly intertwined architecture integrating national commercial satellites payloads. Thus, the space infrastructure of Member States should adequately level-up to higher levels of resilience to also avoid endangering the security of Union-owned assets and the functioning of the Union Space Programme and ultimately avoid adversely impacting the delivery of space-based data and space services supporting activities as well as critical entities and sectors across the internal market.

(70) The current imbalance is not only caused by the fact that space programmes have been developed under parallel tracks (Union and Member State levels). It is also linked to the absence of a common baseline for cybersecurity and risk management tailored to the specific needs of space infrastructure. While only some Member States adopted a normative approach, the level or depth of such requirements varies across the internal market. The resilience of the space infrastructure depends in many cases on the financial capabilities and ultimately on the willingness of companies to adhere to good risk management practices and integrate cybersecurity into their design and operation of space missions.

(71) To address such gaps and imbalances, a bespoke resilience baseline should be laid down for all the space sector. These rules should apply to the entirety of space infrastructure across the Union, covering Union-owned assets as well as national governmental and non-governmental assets. All ground, space and links segments of space infrastructure should be coherently covered, as well as the digital and physical, both space and ground-based systems and subsystems, with a view to cover all relevant risks, such as cyber and electronic interferences risks as well as physical risks.

(72) As this Regulation increases the level of harmonisation of the risk management applicable to the space sector, this higher level constitutes an increased harmonisation also in comparison with the requirements laid down in Directive (EU) 2022/2555. Consequently, this Regulation should constitute lex specialis in respect to Article 21 of Directive (EU) 2022/2555. At the same time, the space sector should preserve a strong relationship with the Union horizontal cybersecurity framework laid out in Directive (EU) 2022/2555, to ensure full consistency with the cybersecurity rules and strategies adopted by Member States and institutional set-up created by that Directive. The gap between the resilience baselines applicable to Union-owned assets and to assets of Member States assets should thus be closed. More stringent risk management requirements targeted to the space sector should thus be introduced for the space sector to achieve an increased harmonisation in comparison with the current requirements laid down in Directive (EU) 2022/2555.

(73) Ensuring the cybersecurity of space infrastructure is paramount throughout all phases of design, development and operation of space infrastructure. As a result robust risk management measures should be put in place throughout the lifecycle of space missions with due regard to all key phases. Adequate protection for all assets, systems and data, from design and manufacturing, throughout launch and operation and until the end-of-life stages should be achieved.

(74) The risk management carried out by Union space operators should revolve around risk assessments to be carried out at segment, system and component levels, based on risk scenarios, covering at least the critical assets, such as engineering systems, flight software, telemetry/telecommand unit, mission control centres, or spacecraft control

centres. The list of categories of critical assets, operations and stages, throughout the lifecycle of space missions, for which such risk scenarios are to be developed by Union space operators, as well as the risk scenarios and threat modelling methods in support of such risk assessments, should be developed by the Commission.

(75) In accordance with the principle of proportionality, this Regulation should acknowledge the specific position of space operators which are small-sized enterprises or research or education institutions. Such categories, by virtue of size, resources, and extent of activities, may have a lesser impact. The imperative objective in this case is to ensure the protection of critical functions and assets, and to address core risks, such as the risk of loss of control of assets with propulsion and capacity to emit interference.

(76) To ensure a common approach for the operation of all space infrastructure, basic rules for the identification and management of assets and the management and control of access rights, should be laid down, to safeguard accesses at the ground segment and the control of the space segment. Key elements to safeguard the resilience of assets should be set out, in particular addressing the resilience of the network and information systems, taking into account the need to maintain an effective technical control of the space segment.

(77) Key minimum principles should be laid down on Union space operators to ensure sound encryption practices, through the definition of a cryptographic concept to address specific cybersecurity needs of the space missions, a bespoke policy for the management of cryptographic keys, as well as end-to-end authentication of links between satellite control centres and the space segment.

(78) Union space operators should set-up key measures to enable swift and effective business continuity and response and recovery measures to ensure effective response to incidents and safeguard the continuity of critical operations of space missions.

(79) To achieve a high level of resilience of the space infrastructure, and in line with current practices, Union space operators should be required to regularly test systems, considering the risk assessments which have been carried out. Such testing may include the performance of threat-led penetration testing upon safeguards regarding the conditions to carry out such testing and the criteria to be met by the testers.

(80) The complexity of the supply chain in the space sector may pose specific cybersecurity risks, in light of the multiple sources that are used for the acquisition of components. The latter are often procured worldwide and may lack the needed integrity checks, especially when integrating or assembling components into various systems of space infrastructure. To address such risks, Union space operators should establish a supply chain risk management framework with dedicated strategies aimed at reducing risks in the supply chain, by deploying software integrity and authenticity controls, setting-out the criteria for choosing the software products, having due regard to the cybersecurity of the network and information systems temporarily interconnected, such as in the context of the provision of maintenance or support.

(81) This Regulation should be an integral part of the general Union framework for the resilience of critical entities. As regards the Union-owned assets, and in accordance with Regulation (EU) 2021/696, Member States were required, in the context

of Council Directive 2008/114/EC[12], now succeeded by Directive 2022/2557, to ensure, for the protection of ground infrastructure located on their territory that is part of the Union Space Programme, measures which are at least equivalent to those laid down in the context of the transposition of that Directive. To ensure full coherence with the current Union rules on the resilience of critical entities and to preserve the full continuity in the relationship between the general updated resilience regime and the harmonised rules in the area of space, in the context of this Regulation, a similar approach should be taken as regards the relationship between Directive (EU) 2022/2557 and this Regulation. Thus, in respect of the physical resilience of the ground segment, all Union space operators should apply the measures laid down in this Regulation, ensuring they are at least equivalent to those measures taken pursuant to Directive (EU) 2022/2557. Moreover, it should be clarified that Union space operators, as defined and covered by this Regulation, may be identified as critical entities under Directive (EU) 2022/2557, when they are operators of the ground based infrastructure referred to in point (10) of the Annex to that Directive. That Directive hence covers space operators in scope of this Regulation insofar as they are identified by Member States as critical entities. On the other hand, this Regulation should cover all space operators, whether or not identified as critical entities under that Directive. Finally, it should be clarified that the ground segment as defined and covered by this Regulation is to be understood as covering the ground based infrastructure referred to in that Directive.

(82) Directive (EU) 2022/2557 sets out key minimum harmonisation rules aimed at enhancing the resilience of critical entities and improving the cross-border cooperation between competent authorities. Directive (EU) 2022/2557 should remain the foundation for the physical resilience of critical entities operating ground based infrastructure in scope of that Directive and covered by this Regulation. For these entities, this Regulation should apply without prejudice to and in complementarity with Directive (EU) 2022/2557. The resilience of the critical entities in scope of Directive (EU) 2022/2557 should be ensured in accordance with that Directive. The critical infrastructure that these entities operate may comprise control centres, antennae, testing facilities, sites, including launch sites, physical equipment and components, hardware, systems and subsystems part of space infrastructure, engineering systems, power systems and propulsion systems.

(83) Moreover, according to Directive (EU) 2022/2557, where a critical entity has carried out other risk assessments or has drawn up documents pursuant to obligations laid down in other legal acts relevant for the critical entity's risk assessment, that entity may use those assessments and documents to meet certain requirements set out in Directive (EU) 2022/2557. Directive (EU) 2022/2557 lays down in this regard an explicit possibility for a competent authority under that Directive to declare, in the exercise of its supervisory functions, and under certain conditions, that such assessment is compliant, in whole or in part, with the relevant obligations under that Directive.

(84) Thus, considering the strong linkages between this Regulation and Directive (EU) 2022/2557, competent authorities established under these two acts should cooperate to enhance synergies of their respective actions, notably when risk assessments carried

[12] Council Directive 2008/114/EC of 8 December 2008 on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection (OJ L 345, 23.12.2008, p. 75 ELI: http://data.europa.eu/eli/dir/2008/114/oj).

out under this Regulation by Union space operators in scope of that Directive are used to demonstrate compliance with certain requirements of that Directive.

(85) As regards the physical resilience of the space segment, this Regulation acknowledges that ISOS would contribute to enhancing the level of resilience and life duration of assets in space.

(86) Further to setting key rules on incident handling and investigation, an incident reporting mechanism by Union space operators of Union-owned assets, in the context of the Union Space Programme, should be established, filling existing gaps in the incident reporting. The Agency should acquire access to information on significant incidents for all components of the Union Space Programme through the security monitoring centre structure established in the context of the Union Space Programme, providing support and around-the-clock monitoring of the relevant systems' security. To achieve coherence with the general framework on cybersecurity, such mechanism should be aligned with the incident reporting laid down by Directive (EU) 2022/2555.

(87) Moreover, as regards the reporting of significant incidents affecting the space infrastructure of Member States, this Regulation should be without prejudice to any of the incident reporting requirements currently laid down by Directive (EU) 2022/2555 or Directive (EU) 2022/2557. Consequently, the reporting rules under these two Directives should continue to fully apply to Union space operators that are as essential or important entities, and respectively critical entities, under those Directives.

(88) The supervisory authorities established by Directives (EU) 2022/2555 and (EU) 2022/2557 may be different from the competent authorities designated or set-up under this Regulation. With a view to enhancing the understanding and awareness of such competent authorities as regards the magnitude and impact of the significant incidents affecting the space infrastructure, Union space operators should report significant incidents affecting national assets of space infrastructure to the competent authorities under this Regulation which in turn should pass on related summary information to the Agency.

(89) Coordination and regular exchanges between the Agency and the national competent authorities should be established to streamline the incident reporting in the space sector and achieve consistent approaches across the Union in relation to the handling of significant incidents affecting space infrastructure. The Union Space Resilience Network (EUSRN) should play an important role in building such consistency and ensuring coordination with the relevant structures established by the general cybersecurity and resilience frameworks laid down by Directives (EU) 2022/2555 and (EU) 2022/2557, in particular with the computer security incident response teams network and the European cyber crisis liaison organisation network (EU-CyCLONe) set-up under Directive (EU) 2022/2555, for instance providing situational updates or where significant incidents of space infrastructure may impact sectors and services falling in the scope of those Directives. In particular, the workings of the EUSRN would also be instrumental in steering proposals for solutions to streamline the cyber incident reporting across the space sector, to align to the simplification approach in the context of NIS 2, thereby paving the way for full convergence of the space and cyber sectors, for the benefit of the entire space community

(90) Preserving the resilience of space infrastructure and space activities is a core element of the single market for space-based data and services. At the same time, and considering the importance of space to a great array of applications (civil, security, defence), the resilience measures laid down in this Regulation should be able to also

support other initiatives, such as in the context of the monitoring of space threats in the development of the EU Space Threat Response Architecture. Enhanced awareness of the Agency over incidents reported by all space operators and coordination with relevant cyber authorities would allow the Union Space Resilience Network to help contributing to the identification and reporting of events related to space systems that constitutes a threat to the Union and to Member States, allowing them to act and coordinate pursuant to the Council Decision (CFSP) 2021/698 on the security of systems and services deployed, operated and used under the Union Space Programme, which may affect the security of the Union.

(91) A voluntary information sharing regarding cyber threats and cyber-attacks, electronic interferences, such as jamming or spoofing, indicators of compromise, adversarial tactics, techniques and procedures, vulnerabilities, threat-actor-specific information, as well as the exchange of good cybersecurity practices and recommendations would raise the overall level of resilience of space infrastructure. It is therefore important to set the conditions for such information sharing which contributes to enhancing the capacity of space operators to prevent incidents and contain the impact thereof.

(92) Union space operators should exchange such information through information sharing arrangements that duly protect the potentially sensitive nature of the information shared and are governed by specific rules of conduct, in full respect of business confidentiality, of rules on the protection of personal data, in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council[13], and of competition policy. The Commission should play an active role in facilitating such arrangements, by supporting and promoting the establishment of an EU Space Information Sharing and Analysis Centre also building on the experience of other sectors.

(93) Harmonised rules on environmental sustainability should be laid down to achieve the internal market potential and promote the environmental sustainability in the space sector, preventing market fragmentation and advancing the transition to a just, climate-neutral, resource-efficient and circular economy.

(94) A shift towards circular economy-based and sustainable practices in space should support the long-term sustainable use of resources in space activities. By starting to embrace the circular economy principles, the space industry should adopt more sustainable practices known to be effective, while also drive innovation towards new products with reduced environmental impact. In this regard ISOS should also be key to facilitating this shift toward sustainability and a circular economy in space.

(95) Since this Regulation is part of the Union comprehensive efforts to establish a robust policy framework for environmentally sustainable products, services and business models, it should complement the measures laid down in the Eco-design for Sustainable Products Regulation and the Circular Economy Action Plan framework. The Environmental Footprint studies in the context of this Regulation should in this sense support the development of improved eco-design practices and contribute to mapping energy and materials flows in the Union space sector, including strategic and/or critical raw materials and enabling higher supply chain resilience.

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(13) Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1- 88, ELI: http://data.europa.eu/eli/reg/2016/679/oj).

(96) Space operators should consequently be required to calculate the environmental footprint of their space activities throughout the lifecycle of space missions. A certificate should be issued by a qualified technical body for space activities carrying out the verification and validation of the calculation of the environmental footprint of space activities, to attest it.

(97) To limit the environmental impact of space activities and to encourage their sustainability, the Commission should develop a detailed methodology for calculating the environmental footprint of space activities, based on scientifically sound assessment methods or international standards, such as those outlined in the Commission Recommendation on the use of Environmental Footprint methods, with a view to facilitating comparison among space systems.

(98) At the same time, the integrity of the environmental claims cannot be substantiated without having reliable, comparable and verifiable information. Data should meet high standards of accuracy. Standardised data on the environmental impact of space activities should feed into a centralised database at Union level which should store environment footprint-related data, thereby facilitating transparency and encouraging collaboration and data sharing regarding the Life Cycle Assessment (LCA) for space activities. The ownership by the Union of the derived datasets should be without prejudice to the ownership of Union space operators, third-country space operators and international organisations of data included in the aggregated and disaggregated datasets transmitted to the Commission environment footprint-related database. Neither derived datasets nor aggregated datasets when published by the Commission, may allow to re-engineer or decompile the data in such a manner as to identify the origin of the data.

(99) Any ISOS should be conducted in a safe, responsible and peaceful way, respecting the rights of other Member States and third countries to explore and use the outer space. The new area of ISOS, with its related applications and capabilities, should be beneficial for the future development of the Union space ecosystem, contributing to the creation of new markets (in-space economy), fostering sustainability and increasing the resilience, adaptability, and scalability of space infrastructure, as well as alleviating risks related to space debris.

(100) While the ISOS technology is inherently dual use, a transparent framework based on key principles should alleviate the risk of capability and technology misuse in the context of providing ISOS. With first in-space operations and services already available in the Union, such as for inspection and transportation, it is necessary to foster in parallel the research and development of ISOS technology and demonstrate dedicated technologies and services in space.

(101) ISOS space missions could be of complex nature and therefore require detailed preparation. A servicer spacecraft performs rendezvous and proximity operations with the specified level of autonomy and conducts typical operations, such as, for instance, docking, robotic and refuelling operations. The risk of collision between a servicer spacecraft and a client spacecraft or the debris object should be prevented and mitigated through appropriate actions, such as preparing the future spacecraft for receiving in-space services.

(102) As regards collision avoidance and orbital traffic rules, to ensure efficient collision avoidance space services, Union spacecraft operators and the Union CA space services provider should cooperate, in particular in the event of a HIE Alert.

(103) Since competent authorities deliver the authorisations to Union space operators, for all phases of a space mission, access to data is needed for each individual authorised spacecraft, until the end-of-life. To fully leverage on existing capabilities, the competent authorities should rely on the capabilities of the EU-SST Partnership to perform the monitoring during the on orbit and end of life phases.

(104) Any efficient reaction to a HIE Alert between two different spacecraft necessitates a dialogue between the involved spacecraft operators. To ensure that such dialogue can be initiated quickly, the CA space services provider should serve as facilitator, by holding the different points of contacts for Union spacecraft operators.

(105) Due to the increasing number of HIE alerts, Union spacecraft operators should be able to react to such alerts more frequently. Upon receipt of a HIE alert, the collision avoidance space service provider would propose a list of actions to the Union spacecraft operator. To facilitate the response time for the collision avoidance service provider, a standardised procedure on rules of the road should be established.

(106) Member States play a key role in the enforcement of this Regulation. To take into account the inherent differences among institutional structures at national level, and to safeguard existing arrangements, Member States should designate or establish one or more competent authorities which shall be responsible at national level for controlling the application of this Regulation. Where Member States have in place more than one competent authority, only one such authority should, for the purposes of this Regulation, act as a single point of contact for that Member State, to facilitate communication with the Commission.

(107) It is necessary to enhance the convergence of powers at the disposal of competent authorities, to allow an effective enforcement of this Regulation across the internal market. Common minimum powers coupled with adequate resources should guarantee supervisory effectiveness. The competent authorities should therefore be entrusted with a minimum set of supervisory and investigative powers in accordance with national law. When exercising their powers under this Regulation, competent authorities should act objectively and impartially and remain autonomous in their decision-making. The members of the competent authorities should refrain from taking any action which is incompatible with their duties and should be subject to confidentiality rules.

(108) Member States should take all necessary measures to ensure that the provisions of this Regulation are implemented, including by laying down effective, proportionate and dissuasive penalties for the infringement of the rules. When assessing the amount of fines, Member States should, in each individual case, consider all the relevant circumstances of the specific situation, with due regard to, in particular, the nature, gravity and duration of the infringement, the permanence of the damages caused or any previous infringements.

(109) Competent authorities should cooperate with each other and exchange good practices on the application of this Regulation including through for instance providing mutual assistance and joint investigations carried out in full respect of national procedures.

(110) Technical assessment related to the safety, resilience and environmental sustainability of space activities require specialised knowledge of such areas. Competent authorities should, in most cases, rely on the technical knowledge and expertise of technical bodies which are able to carry out assessments and verifications to ascertain that the

requirements laid down in this Regulation are met, so that the authorisations to carry out space activities can subsequently be issued by the competent authorities.

(111) Acknowledging the need for preserving flexible arrangements, Member States should remain free to choose to rely on the support of the Agency or international organisations with technical expertise for carrying out such technical assessments.

(112) Member States intending to establish and use qualified technical bodies for space activities should make use of the accreditation system provided for in Regulation (EC) No 765/2008 of the European Parliament and of the Council[14] when designating a notifying authority for the assessment and monitoring of qualified technical bodies for space activities.

(113) To ensure a consistent level of quality, expertise and integrity in the performance of the technical assessment on matters covered by this Regulation, it is necessary to lay down requirements, as regards the competence, independence and absence of conflict of interest of such bodies. The notifying authorities of Member States should rely on the electronic notification tool developed and managed by the Commission in the context of notified bodies for other areas of internal market (NANDO information system).

(114) The competent authorities established under this Regulation shall take duly account of technical assessments and opinions issued by national competent authorities, single point of contacts or computer security incident response teams established under Directive (EU) 2022/2555, with a view to ensure supervisory convergence and create a culture which observes the supervisory powers of authorities under Directive 2022/2555.

(115) Adapted governance structures of the Agency are essential for an effective exercise of tasks granted by this Regulation. A Compliance Board should be established and entrusted to carry out all needed technical assessments that would allow the Commission to decide on the authorisation and supervision of Union space operators of Union-owned assets and on the registration and the ongoing supervision of third country operators providing space-based data and space services in the Union.

(116) To ensure sound and independent functioning of the Agency, the Members of the Compliance Board should act independently and in the interest of the Union. They should not seek, follow or take instructions from a government of a Member State, from Union institutions, bodies, offices or from any public or private entity. Furthermore, practical arrangements for the prevention and the management of conflict of interest should be laid down in the Rules of Procedure.

(117) Where the need arises to discuss matters relating to tasks or aspects of interest to Union Agencies or bodies, or directly related to third countries or international organisations regarding assets of space infrastructure of such third countries or international organisations, or where the Compliance Board needs clarifications or information from a relevant third country supervisory authority on aspects where the Compliance Board has to ascertain compliance with this Regulation of space services providers established in third countries, participation as observers should be possible,

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[14] Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93 (OJ L 218, 13.8.2008, p. 30, http://data.europa.eu/eli/reg/2008/765/oj).

subject to further arrangements laying down the conditions of participation of the representatives of such third countries or international organisations through conclusion of relevant agreements.

(118) To leverage the specific competences, technical skills and expertise of the national competent authorities and the qualified technical bodies for space activities, the Compliance Board should draw on national supervisory and technical capabilities in the form of setting-up dedicated subcommittees on matters of safety, resilience and environmental sustainability, and pooling dedicated multidisciplinary joint teams to carry out the technical checks.

(119) For the purposes of detecting infringements of this Regulation, as regards the Union-owned assets and the space services providers established in third countries, it is necessary for the Commission and the Agency to have effective powers, tools and resources that guarantee full supervisory effectiveness. Therefore, the Commission and the Agency should have the power to request information and carry on investigations and on-site inspections. The Commission should acquire supervisory powers and require Union space operators of Union-owned assets and space services providers established in third countries to bring infringements to an end and to impose fines and penalty payments.

(120) In relation to the powers of investigation and inspection, access to the premises of Union space operators of Union-owned assets and of space services providers established in third countries may be necessary where space services providers to whom a request for information has been made fail to comply with it, or where documents which the request for information relates to, would be removed, tampered with, or destroyed. Such access should be based on the agreement of the third country entity and the relevant third country authority.

(121) The respect of the defence rights of space services providers established in a third country should be ensured throughout the entire process of registration and monitoring of ongoing compliance by the Agency, notably by providing a right to submit reasoned statements for the purposes of the preliminary assessments related to registration, and a right to appeal the decisions of the Agency before its newly established Board of Appeal.

(122) All Agency and Commission powers should be exercised in full respect of the fundamental rights and by observing the principles recognised in the Treaty on the Functioning of the European Union (TFEU) and the Charter of Fundamental Rights of the European Union, in particular the right to respect for private and family life, the protection of personal data, the right to freedom of expression and information, the freedom to conduct a business, the right to property, the right to consumer protection, the right to an effective remedy, the right of defence. Accordingly, this Regulation should be interpreted and applied in accordance with those rights and principles.

(123) Furthermore, a set of procedural rules should be envisaged in carrying out investigative powers. Where the Agency or the Commission find serious indication of existence of facts liable to constitute one or more infringements to this Regulation, they should carry out investigations in full respect of the rights of defence of the concerned Union space operator or third country space services provider. In the context of adopting interim measures, where urgent action is needed to prevent an imminent and significant damage, the Agency and the Commission may set shorter deadlines for the space operator concerned to comment and offer the opportunity to comment only in writing.

(124) To effectively protect the rights of defence in respect to all decisions of the Agency, for reasons of procedural economy and to reduce the burden on the Court of Justice of the European Union, the Agency should provide natural and legal persons with the possibility to appeal decisions taken under the powers conferred on the Agency by his Regulation and addressed to them, or which are of direct and individual concern to them.

(125) A Board of Appeal should be therefore established to ensure that the parties affected by decisions adopted by the Agency have recourse to the necessary remedies. The Board of Appeal should be independent from any regulatory and administrative structure of the Agency and should not be bound by any instruction. The decisions of the Board of Appeal should be subject to appeal before the Court of Justice of the European Union.

(126) This Regulation should rely on the current European standardisation framework, based on the New Approach principles, set out in Council Resolution of 7 May 1985 on approach to technical harmonization and standards and on Regulation (EU) No 1025/2012 of the European Parliament and of the Council[15]. Since this Regulation is the first regulatory approach at Union level in the area, a balanced and gradual approach should be taken also as regards standardisation. The technical requirements needed for the deployment of the e-certificate by the Agency, as well as for the dark and quiet skies, should be developed through the standardisation process. The Commission should consequently request the European standardisation organisations to develop standards in relation to such essential requirement. The Commission should be empowered to adopt implementing acts establishing common specifications for these essential requirements in limited circumstances taking into account the role and functions of standardisation organisations.

(127) With a view to creating a common approach for Union space operators willing to go further than the baseline mandated by this Regulation in relation to safety, resilience or environmental sustainability of space activities, a Union Space Label Framework should be established.

(128) The Union Space Labelling Schemes should bridge the current gaps resulting from the coexistence of different standards or undeveloped practices, thereby helping to building a common approach. A Union Space Labelling Scheme should be developed with the involvement of Member States, the Union Space Label Group (EUSLG) and the Stakeholder Space Label Group (SSLG), under the lead of the Commission, supported by the Agency. The EUSLG should consist of representatives of competent authorities in the space sector and other relevant national authorities while the SSLG should consist of representatives from industry organisations and academia.

(129) Following such a request, the Agency should prepare candidate schemes for the specified scope and subject matter, without undue delay. The Agency, through public consultations, should evaluate any likely impact of the Commission request on the

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(15) Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council Text with EEA relevance (ELI: http://data.europa.eu/eli/reg/2012/1025/oj)

market, especially any potential impacts on SMEs and small mid-caps, on innovation, barriers to entry to market, or entailing costs.

(130) A pool of experts should be selected to evaluate the technical requirements for each individual Labelling Scheme. The pool of experts should be composed of representatives from academia and from the Union collision avoidance space services provider designated by this Regulation, ensuring the absence of conflict of interest between the experts, the labelling scheme content, and the applicants.

(131) With a view to facilitating and accompany the implementation of the requirements laid down by this Regulation, a set of supporting and accompanying measures should be in place until, and throughout, its implementation. These measures would consist in the provision of guidance and assistance to space operators in the preparation of technical dossiers for authorisation or registration on matters covered by this Regulation, as well as of a set of measures for capacity building and funding.

(132) The Commission should develop the criteria and the methodology to assist competent authorities in evaluating the security risk assessments, thus facilitating the comparability of supervisory reviews, and specify what constitutes a severe operational disruption of space activities carried out, or of services provided by a space operator. The use of cryptographic products should be further specified by the Commission, through delegated acts to be developed for cryptographic products to be certified under the future Union cybersecurity certification schemes, on the basis of Regulation (EU) 2019/881 of the European Parliament and of the Council[16], to guarantee the protection of the telemetry and telecommands.

(133) In the area of environmental sustainability, the Commission should further specify, by implementing acts, rules including a specific methodology for the calculation and verification of the environmental footprint of space activities.

(134) In order to ensure that the regulatory framework duly reflects evolutions in the technical progress or new commitments of the Union under international conventions, and can thus be adapted as necessary, the power to adopt acts in accordance with Article 290 TFEU should be delegated to the Commission to amend the order of preference for the removal of spacecraft in LEO, acknowledge the technological progress as regards in-space operations and services, supplement the requirements of, and the elements included in, the security risk assessments, the requirements for the physical resilience, the detection systems and mechanisms of the ground stations, the protection of the network and information systems, the backup needed to ensure adequate survivability of the space segment and to facilitate quick recovery from incident and the supply chain risk management. The power to adopt acts in accordance with Article 290 TFEU should be delegated to the Commission to supplement this Regulation by specifying the use of certified cryptographic products and key management products or services for protecting the telemetry and telecommands, by specifying the criteria for severe operational disruptions of space activities or services, by specifying for ISOS the operational mode and the requirements needed for active debris removal, by specifying the amount of fees charged by the Agency and the way in which they are to be paid, by specifying the imposition of fines and periodic penalty

(16) Regulation (EU) 2019/881 of the European Parliament and of the Council of 17 April 2019 on ENISA (the European Union Agency for Cybersecurity) and on information and communications technology cybersecurity certification and repealing Regulation (EU) No 526/2013 (Cybersecurity Act) (Text with EEA relevance ELI: http://data.europa.eu/eli/reg/2019/881/oj)

payments, by specifying the criteria for the composition and the expertise of staff composing the joint examination teams to the Technical Boards, and by specifying the areas benefiting from co-funding. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level, and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016. In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.

(135) To ensure uniform conditions for the implementation of this Regulation, implementing powers should be conferred on the Commission to grant, on the basis of a detailed assessment, equivalence decisions, to grant derogations for launchers where a public interest condition is met, to allow a third country public entity to provide space services or space-based data in the Union until the conclusion of international agreements, to develop measures for launch collision avoidance, casualty risk at launch and re-entry, launcher space debris mitigation, spacecraft trackability, orbital traffic rules, spacecraft positioning in orbit, spacecraft space debris mitigation, spacecraft constellations, to specify the content and templates for reporting of significant incidents, to specify the method of calculation and verification of the EF of space activities and the templates and content for the reporting as regards the Environmental Footprint Declaration, to specify the design principles for SSIs and Composable and Exchangeable Functional Satellite Modules for ISOS, to lay down the common specifications covering the technical requirements for the e-certificate and for the dark and quiet skies, to lay down templates for the Union Space Label Schemes and to adopt new or amended Union Space Labelling Schemes. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council[17].

(136) The Commission should adopt immediately applicable implementing acts where, in duly justified cases relating to crises or emergencies in the single market, imperative grounds of urgency require, for a temporary period, the use of space-based data or services not registered with URSO.

(137) Since the objectives of this Regulation, namely to establish a single market for the space sector, through harmonised common rules that are meant to address key risks to space infrastructure and space services and thereby ensure the safety, resilience and environmental sustainability of space activities, cannot be sufficiently achieved by the Member States and can rather, by reason of the scale or effects be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve those objectives.

(138) Compliance with the environmental sustainability rules by space operators which are small-sized enterprises or research or education institutions should be required 48

[17] Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13, ELI: http://data.europa.eu/eli/reg/2011/182/oj).

months from the date of entry into force of this Regulation while the requirements related to the provision of ISOS should apply 60 months from the date of entry into force of this Regulation.

(139) Moreover, this Regulation duly considers the length of the space mission preparation and the technical and complex constraints of the different milestones throughout the engineering and manufacturing stages of the spacecraft. A transitional period appears necessary to accommodate such constraints related to the technical adjustments required in the preparatory phases of a space mission, in the context of the critical design review stage.

(140) Space operators should be provided with a sufficient time to adapt to the requirements laid down in this Regulation. This Regulation should therefore apply 24 months after its entry into force.

HAVE ADOPTED THIS REGULATION:

Title I
GENERAL PROVISIONS

Article 1

Subject matter

1. This Regulation lays down rules for the establishment and functioning of the internal market of space-based data and space services.

2. To achieve a high common level of safety, resilience and environmental sustainability of space services through the operation and use of space infrastructure generating space-based data, this Regulation lays down harmonised rules on:

   (a) authorisation, registration and supervision of space activities carried out by space services providers established in the Union, and respectively, registration and supervision of space activities carried out by international organisations and space services providers established in third countries when providing space-based data or space services in the Union, with respect to matters of safety, resilience and environmental sustainability of space activities;

   (b) orbit traffic management rules, through the provision of collision avoidance services;

   (c) governance and enforcement aspects;

   (d) establishment of a Union Space Label and capacity-building measures.

Article 2

Scope

1. This Regulation applies to the following space services providers:

   (a) space operators;

   (b) collision avoidance space services providers;

   (c) primary providers of space-based data;

   (d) international organisations.

2. The provisions of Title IV, Chapters I and V, do not apply to orbits further than the geostationary Earth orbit (GEO).

3. This Regulation does not apply to:

(a) space objects exclusively used for defence or national security purposes, irrespective of which space services provider carries out the space activities;

(b) space objects that have been temporarily placed for defence purposes under a military operation and control, for the duration of the respective space mission;

(c) the authorisation or management of radio spectrum governed by Decision 676/2002/EU, Directive (EU) 2018/1972 and Decision no 243/2012/EU;

(d) assets launched before 1 January 2030.

4. The requirements laid down in Title IV, Chapter I, regarding the design and manufacture of space objects shall apply to space objects where their operation generates space-based data that are used in the Union or enables the provision of space services in the Union.

Article 3

Free movement

1. Member States shall not restrict, for reasons related to the safety, resilience and environmental sustainability, as covered by this Regulation, the provision of space-based data and space services in the Union by space services providers registered in the Union register of space objects referred to in Article 24.

2. Notwithstanding paragraph 1, where a Union space services provider intends to operate in, or launch from, a Member State other than the Member State of establishment, Member States may, when issuing the respective authorisations for operation or launch, impose stricter requirements on safety, resilience or environmental sustainability in relation to the respective space mission, insofar as such requirements are objectively necessary to safeguard the safety, resilience or environmental sustainability of the respective operation or launch subject to authorisation on their territories.

3. Member States shall provide all the relevant information regarding the requirements referred to in paragraph 2 through the Information Portal established in accordance with Article 110.

Article 4

National security clause

This Regulation shall be without prejudice to the responsibilities of Member States for safeguarding national security and other essential State functions.

Article 5

Definitions

For the purposes of this Regulation, the following definitions shall apply:

(1) ‘space object’ means a human-made object sent to outer space, including a spacecraft and the launch vehicle orbital stage;

(2) ‘spacecraft’ means a space object designed to perform a specific function or space mission, such as providing services of communications, navigation or observation, or providing in-space operations and services, including a satellite, the launcher upper stages, or the re-entry vehicle;

(3) ‘constellation’ means a group of space objects consisting of at least 10 operational spacecraft, but not more than 99 of those spacecraft, working together for a common space mission, subject to a predefined orbital deployment plan;

(4) ‘mega constellation’ means a constellation that contains at least 100 operational spacecraft, but not more than 999 of those spacecraft;

(5) ‘giga constellation’ means a constellation that contains at least 1000 operational spacecraft;

(6) ‘GEO protected region’ means a segment of the spherical shell defined by the following: lower altitude = geostationary altitude minus 200 km upper altitude = geostationary altitude plus 200 km -15 degrees ≤ latitude ≤ +15 degrees geostationary altitude (35.786 km is the altitude of the geostationary Earth orbit);

(7) ‘mini-satellite class’ means a class of satellites with a weight equal or superior to 201 kg and inferior to 600kg;

(8) ‘space mission’ means a user defined mission to be achieved by a space object;

(9) ‘space infrastructure’ means any asset or set of assets, systems and sub-systems or parts thereof, used to carry out space activities, through the interaction and operation of the ground, space and link segments;

(10) ‘ground segment’ means the segment of space infrastructure located on Earth, situated within or outside the territory of the Union, encompassing the ground-based infrastructure referred to in the Annex to Directive (EU) 2022/2557, and including ground stations, terminals, terrestrial-based equipment needed to communicate with space objects and supporting the carrying out of space activities, mission control centres and other ground control centres, generic ground infrastructure, ground networks, auxiliary facilities, such as the spacecraft assembly testing and integration (AIT) facilities, launchpad and related infrastructure needed for carrying out launch activities;

(11) ‘space segment’ means the segment of space infrastructure located in outer space, including space objects, space stations, space probes, crewed space transportation systems and onboarded hardware and software in the information systems and other onboarded material or equipment;

(12) ‘space-based data’ means data received from outer space, including but not limited to data of interception, of localisation, of transmission of a signal generated by a space object, or observation data, and which originate from the Earth, a celestial body, a space object or from outer space;

(13) ‘space activities’ means a set of operations when carrying out activities in outer space, in particular:

(a) operation and control of space objects, including for re-entry;

(b) launch services, including launch attempts;

(c) operation and maintenance of launch sites and facilities;

(d) activities in relation to the exploration of outer space, such as human spaceflight, space transport and conducting experiments, including of scientific nature, in outer space;

(e) activities in relation to the use and management of space objects in outer space, such as in-space operations and services (ISOS);

(f) operations that entail the monitoring of space debris;

(g) operations that entail the disposal of space debris;

(14) 'space services' means any of the following services:

(a) operation and control of a space object;

(b) provision of launch services, as well as provision of services of operation and maintenance of the launch sites;

(c) any of the services provided by a primary provider of space-based data;

(d) in-space services and operations (ISOS);

(e) collision avoidance space services;

(15) 'space services provider' means a provider of space services covered by this Regulation;

(16) 'space operator' means a public or private entity that operates the space infrastructure, by carrying out at least one of the following space services, based on authorisation or a specific regime for carrying out a national space programme:

(a) operation, control and return of a space object ('spacecraft operator');

(b) operation, control and monitoring of the launch process of a space object ('launch operator');

(c) operation, control and maintenance of facilities at the ground segment of space infrastructure used for the launch process ('launch site operator');

(d) operation and control of a space object for the purposes of provision of in-space operation and service, including to other space objects ('ISOS provider');

(17) 'Union space operator' means a space operator established in the Union, or controlled by a natural person or a legal person that is a space services provider established in the Union;

(18) 'control' means, for the purposes of point (17), the ability to exercise a decisive influence over a legal entity directly, or indirectly through one or more intermediate legal entities;

(19) 'third country space operator' means a space operator established in a third country which carries out any of the following:

(a) provides space services to Union space operators, or in relation to the space assets defined in points (20) and (21),

(b) acts itself as a primary provider of space-based data, or

(c) provides services to primary providers of space-based data;

(20) ‘Union-owned assets’ mean Union-owned tangible and intangible assets created or developed under the Union Space Programme referred to in Article 9(1) of Regulation (EU) 2021/696 and Article 1 of Regulation (EU) 2023/588;

(21) ‘governmental or non-governmental space assets’ means assets other than those defined in point (20), whether publicly or privately owned, operated by a public authority or a private party established in a Member State, including dual use assets placed under civilian control;

(22) ‘primary providers of space-based data’ means space services providers, established in the Union or in a third country, that initiate the first processing of space-based data which is technically sufficient to enable any subsequent provision of space-based data, as follows:

(a) providers of electronic communications services, where the space-based data concerned is communication;

(b) space services providers which ensure the first processing of observation data, before other processing thereof, where the space-based data concerned is observation data;

(23) ‘international organisation’ means an international organisation providing in the Union space services or space-based data generated by space objects placed on an orbit not further than GEO and operated by such international organisations;

(24) ‘collision avoidance space services provider’ means a provider of collision avoidance services, including the Collision Avoidance entity (CA entity) in the Union, or collision avoidance providers established in a third country;

(25) ‘research and education institution’ means a space services provider which carries out space activities for experimental purposes, whether or not exploiting the results of that research for commercial purposes;

(26) ‘small and medium-sized enterprises’ (‘SMEs’) means small and medium-sized enterprises as defined in Article 2 of the Annex to Commission Recommendation 2003/361/EC;

(27) ‘small mid-caps’ (SMCs) means enterprises as defined in Article 2 of the Annex to Commission Recommendation C(2025) 3500 final;

(28) ‘entities applying a simplified risk management’ means space operators that are small enterprises or research or education institutions and apply the simplified risk management referred in Article 10(3) and in Article 15(2);

(29) ‘launch vehicle’ means a system, part of the space segment, that is designed to transport one or more space objects into outer space;

(30) ‘launch vehicle orbital stage’ means a complete element of a launch vehicle that is designed to propel a defined thrust during a dedicated phase of the launch vehicle’s operation and achieve orbit;

(31) ‘launch service’ means a service intended to place a space object in orbit, including launch attempts;

(32) ‘launch site’ means a location on Earth, that is part of the ground segment of space infrastructure, from which the launch of a space object takes place;

(33) ‘high-interest events (HIEs)’ means close approaches with a high level of risk, potentially requiring collision avoidance manoeuvres to be performed by a space operator;

(34) ‘nominal operation’ means the execution of planned tasks or the functioning for which a spacecraft or a launch vehicle orbital stage was designed;

(35) ‘conjunction data messages’ means information about a conjunction between two space objects;

(36) ‘collision avoidance’ means the execution of collision avoidance manoeuvres to reduce the risk of collision in outer space;

(37) ‘delta V’ means the velocity increment necessary to reach a specific orbit or flight path;

(38) ‘object of interest’ means any object involved in any situation that could affect the other space objects or the situation on Earth;

(39) ‘re-entry’ means the permanent return of a space object into the Earth’s atmosphere;

(40) ‘disposal’ means a set of actions performed by a spacecraft or a launch vehicle orbital stage, with or without support of a servicer spacecraft, with a view to permanently reduce the risk of accidental fragmentation and to achieve long-term clearance of orbits;

(41) ‘disposal phase’ means the interval between the end of the space mission of a spacecraft or launch vehicle orbital stage and its end of life;

(42) ‘end of life’ means the instant when a spacecraft or a launch vehicles orbital stage is permanently turned off, nominally as it completes its disposal phase, re-enters the Earth’s atmosphere, or can no longer be controlled by a space operator;

(43) ‘end of mission’ means the phase when a spacecraft or launch vehicle orbital stage completes the tasks for which it has been designed, other than its disposal, becomes non-functional as a consequence of a failure, or is permanently halted through a voluntary decision;

(44) ‘passivation’ means the act of permanently depleting, irreversibly deactivating, or making safe all on-board sources of stored energy capable of causing an accidental fragmentation;

(45) ‘space debris’ means any space object, including spacecraft or fragments and elements thereof, in Earth’s orbit and lunar’s orbit, or re-entering Earth’s atmosphere or lunar’s exosphere, that are non-functional or no longer serve any specific purpose, including parts of rockets or artificial satellites, or inactive artificial satellites;

(46) ‘network and information system’ means the network and information system as defined in Article 6, point (1), of Directive (EU) 2022/2555;

(47) ‘security of network and information systems’ means security of network and information systems as defined in Article 6, point (2), of Directive (EU) 2022/2555;

(48) ‘critical infrastructure’ means critical infrastructure as defined in Article 2, point (4), of Directive (EU) 2022/2557;

(49) ‘mission control centre’ means the element in the ground segment dedicated to the control and monitoring of the execution of a space mission;

(50) ‘satellite control centre’ means the element of the ground segment dedicated to the control of the satellite platform configuration;

(51) ‘effective technical control’ means the assurance of a space operator that a space object only executes commands transmitted by authorized sources and that those commands are executed in the proper order and at the intended moment;

(52) ‘telemetry/telecommand’ means the links that transmit the telemetry from the space segment to the ground segment and the links that send the telecommand from the ground segment to the space segment;

(53) ‘resilience’ means the ability to prevent, protect against, respond and resist, mitigate, absorb, accommodate, and recover from an incident;

(54) ‘cyber threat’ means a ‘cyber threat’ as defined in Article 2, point (8), of Regulation (EU) 2019/881;

(55) ‘significant cyber threat’ means ‘significant cyber threat’ as defined in Article 6, point (11), of Directive (EU) 2022/2555;

(56) ‘incident’ means an event compromising any of the following:

(a) the availability, authenticity, integrity or confidentiality of the stored, transmitted or processed data, or of the services offered by, or accessible via, network and information systems, or

(b) the physical security of the assets of space infrastructure and of space operators;

(57) ‘incident handling’ means ‘incident handling’ as defined in Article 6, point (8), of Directive (EU) 2022/2555;

(58) ‘additional impact categories’ means categories of environmental information that fall outside the environmental footprint (EF) impact categories calculated and communicated alongside product environmental footprint (PEF) results;

(59) ‘aggregated dataset’ means a life cycle inventory (LCI) of multiple unit processes or life cycle stages, for which inputs and outputs are provided only at the aggregated level, horizontally or vertically;

(60) ‘environmental sustainability’ means the ability to preserve and protect the natural Earth environment over time, through appropriate practices and policies meeting present needs and without compromising the availability of resources in the future;

(61) ‘disaggregation’ means the process that breaks down an aggregated dataset into smaller horizontal or vertical unit process datasets;

(62) ‘derived dataset’ means a dataset obtained by combining, through mathematical operations, two or more datasets or by combining at least one dataset with substantial additional information or other datasets;

(63) ‘in-space operations and services (ISOS)’ means activities carried out in space (on orbit and in outer space), with a view to provide services on assets in the space segment and which include the performance of tasks such as inspection, rendezvous, docking, repair, refuel, reconfiguration, manufacturing,

assembling and disassembling, re-use, recycling, removal and transport of operational, non-operational and defective objects (debris) in space, with a servicer spacecraft with a high degree of autonomy, including platforms or larger structures;

(64) 'ISOS operation' means the execution of the planned ISOS tasks involving one or more space objects;

(65) 'ISOS servicer spacecraft' means a spacecraft specifically designed for the purpose of providing specific ISOS;

(66) 'client spacecraft' means a spacecraft that receives ISOS;

(67) 'competent authority' means a public authority established or designated as competent authority in accordance with Article 28;

(68) 'qualified technical body for space activities' means a technical body established in a Member State which performs technical assessment in relation to matters of safety, resilience and environmental sustainability covered by this Regulation and which has been notified to the Commission in accordance with this Regulation;

(69) 'technical assessment' means the process demonstrating that space services providers fulfil the technical requirements laid down in this Regulation;

(70) 'standard' means a standard as defined in Article 2, point (1), of Regulation (EU) No 1025/2012;

(71) 'common specifications' means a set of technical requirements, other than a standard, that provides means of complying with the requirements applicable to the e-certificate and the light and radio pollution;

(72) 'turnover' means the amount derived by an undertaking within the meaning of Article 5(1) of Council Regulation (EC) No 139/2004;

(73) 'Union Space Label' means a document issued by the European Union Agency for the Union Space Programme established in Article 1 of Regulation (EU) 2021/696 ('the Agency') attesting that a given space object has been evaluated for compliance with the specific safety, resilience, or environmental sustainability requirements laid down in a Union Space Labelling Scheme;

(74) 'Union Space Labelling Scheme' means a comprehensive set of rules, technical requirements, standards and procedures established at Union level that apply to the compliance check of products, processes, services, including testing and inspection activities carried out in relation to matters of safety, resilience or environmental sustainability;

(75) 'critical design review' means the stage in the engineering, manufacturing and development process, which determines that the systems and subsystems design and configuration satisfy all specified requirements of the space mission, in terms of performance, compatibility, product specifications, assessment of risks, preliminary test planning, adequacy of preliminary operation and provision of supporting documents, enabling to proceed to system implementation and integration.

Title II
AUTHORISATION AND REGISTRATION FOR SPACE ACTIVITIES

Chapter I
AUTHORISATION OF UNION SPACE OPERATORS

Article 6

Authorisation for carrying out space activities

1. Union space operators shall not provide space services unless they have obtained in a Member State an authorisation to carry out space activities which demonstrate compliance with the requirements laid down in Title IV, Chapters I to V, as applicable, depending on the category of space operator concerned.

2. A Member State shall recognise the authorisations issued by another Member State as regards the requirements laid down in Title IV, Chapters I to V.

3. An authorisation shall be issued by the competent authority of the Member State in which the applicant is established and, as applicable, by the competent authority of the Member State where that applicant intends to operate or respectively launch, if different from the Member State of establishment.

   The competent authorities of those Member States shall ensure coordination to facilitate their respective authorisation processes.

4. For the purposes of delivering an authorisation, a competent authority shall take into account the opinion issued by the qualified technical body for space activities in the context of technical assessments carried out in accordance with Article 8.

5. Union space operators intending to have recourse to the space services provided by a third country space operator or an international organisation shall demonstrate to the relevant competent authorities, in their application for authorisation, the registration in URSO of that third country space operator or international organisation, in accordance with Article 17 or Article 18, respectively.

   Where the procedure of registration in URSO has not been completed yet, the Union space operator shall coordinate closely with the third country space operator or international organisation, the relevant competent authority and the Agency, including by requiring updates on the status of the registration process.

   The Agency shall immediately provide such updates to avoid unnecessary delay in the authorisation process of the Union space operator.

6. Where the need for the provision of space services by a third country space operator or international organisation arises after an authorisation has been issued, such as in the case of ISOS, a Union space operator shall, without delay, inform the competent authority thereof, and provide it with the proof of registration in URSO of that third country space operator or international organisation.

Article 7

Authorisation process

1. An applicant shall apply for authorisation to the competent authority referred to in Article 6(3).

2. The application for authorisation shall contain a technical file with all necessary documentation and supporting evidence to demonstrate compliance with the requirements laid down in Title IV, Chapters I to V, as applicable.

3. In its application for authorisation, the applicant shall indicate to the competent authority which qualified technical bodies for space activities the applicant intends to use for the technical assessment of the requirements laid down in Title IV, Chapters I to V, as applicable.

4. Member States shall establish processes to allow competent authorities to transmit the technical file to qualified technical bodies for space activities indicated by the applicant, or to allow the applicant to address directly the qualified technical bodies for space activities.

5. A qualified technical body for space activities shall assess the fulfilment of the requirements laid down in Title IV, Chapters I to V, as applicable, and, within 6 months from the date of receipt of the technical file, shall issue an opinion as regards the compliance of the envisaged space activities with the requirements laid down in Title IV, Chapters I to V, as applicable.

   Competent authorities shall take utmost account of the technical assessment carried out in relation to Title IV, Chapter II, by the qualified technical bodies for space activities, pursuant to Article 8(2), third subparagraph.

6. Within 12 months from the date of receipt of the application, the competent authority shall issue the authorisation or reject the application and shall inform the applicant thereof.

   The deadline shall be suspended until the complete information is provided by the applicant upon request by the competent authority.

7. For the purposes of registration in URSO, a competent authority shall inform the Agency of all authorised Union space operators and primary space services providers and of any third country space operator they have authorised to launch from their territory.

Article 8

Technical assessments

1. When setting-up the authorisation systems, Member States shall determine whether the technical assessments are to be carried out by:

   (a) qualified technical bodies for space activities;

   (b) international organisations with specific technical expertise in matters covered by this Regulation;

   (c) the Agency;

   (d) combining the options referred to in points (a), (b) and (c).

2. Member States that intend to make use of the system referred to in paragraph 1, point (a), shall ensure that qualified technical bodies for space activities are established on their territory.

For the purposes of carrying out technical assessments on any matters covered by Title IV, Chapters I to V, Member States shall use qualified technical bodies for space activities established in their territory.

Member States shall ensure that the competent authority established pursuant to Article 8(1), of Directive 2022/2555 shall be competent for carrying out the technical assessment on matters covered by Title IV, Chapter II, in respect to Union space operators, excluding when operating assets referred to in Article 5, first paragraph, point (20).

3. Space services providers referred to in paragraph 1, point (b), which provide technical assessment activities shall meet the requirements laid down in Title III, Chapter I, Section 3.

Member States that make use of the system referred to in paragraph 1, point (b), shall ensure judicial enforcement of the obligation referred to in the first subparagraph.

4. Member States shall notify to the Commission their choice pursuant to paragraph 1 and any changes thereof.

Article 9

Authorisation for constellations

1. Where the Union space operator intends to carry out a space mission that entails the launch of a satellite constellation, it shall submit to the competent authority an application for a single authorisation covering the launch or, as applicable, the launch and operation, in respect to all satellites that are part of the constellation, provided that all of the following conditions are met:

(a) all satellites planned to be launched under the respective space mission are identical and perform the same tasks in the same manner;

(b) the launch of all satellites is planned to be carried out through the same launch vehicle and from the same launch site.

The Union space operator shall ensure that the satellites that are part of the constellation comply with the requirements laid down in Title IV, Chapters I to V, and declare that the conditions laid down in the first subparagraph are fulfilled.

2. If, following the receipt of an application in accordance with paragraph 1, first subparagraph, the assessment of the competent authority carried out in respect to a single satellite to be launched under the respective space mission, demonstrates compliance with the requirements laid down in Title IV, Chapters I to V, the competent authority shall issue an authorisation for the entire satellite constellation (‘single authorisation’).

3. Competent authorities may, from the date of the delivery of the single authorisation carry out random inspections on any of those satellites part of the constellation which have not been subject to the ex-ante check upon which the single authorisation was based.

4. The competent authority shall withdraw the single authorisation when the results of the random inspections establish non-compliance of the satellite with the authorisation requirements.

5. Where the random inspections referred to in paragraph 3, identify aspects that conflict with the declaration referred to in paragraph 1, second subparagraph, without

however amounting to non-compliance, and the assessment of the competent authority, taking into consideration the explanations provided by the Union space operator, find no major risks for the respective space mission, the competent authority may impose a penalty.

6. Competent authorities shall review authorisations for the launch of satellite constellations when launching the first batch of the new generation of satellites.

Article 10

Light regimes

1. The conditions for authorisation referred to in Article 6(1) shall be adapted for the Union space operators referred to in paragraphs 2, 3 and 4, as provided for in these paragraphs.

2. Space operators that are research or education institutions or that carry out research space missions shall comply with the requirements of Title IV, Chapter I, Section 2, as set out in Article 62.

3. Entities applying a simplified risk management shall comply, as regards Title IV, Chapter II, with the provisions of Article 79(1), first subparagraph, only in relation to critical assets and critical functions.

4. When space operators that are small-sized enterprises or are research or education institutions carry out In-Orbit Demonstration and Validation (IOD/IOV) space missions, they shall be exempted, in relation to Title IV, Chapter III, from the obligation referred to in Article 96(2).

Chapter II
AUTHORISATION FOR UNION SPACE OPERATORS OPERATING UNION-OWNED ASSETS

Article 11

Application for authorisation

1. Where space activities are carried out in relation to the Union-owned assets, the Commission shall authorise the entity entrusted with the execution or operation of the respective component of the Union Programme.

   The authorisation referred to in the first subparagraph shall be based on a technical assessment carried out by the Agency regarding the fulfilment by the applicant of the requirements laid down in Title IV, Chapters I, II, III, IV and V.

2. Depending on the specific governance of the component of the Union Programme, the applicant entity shall provide to the Agency and the Commission all technical details and explanations that demonstrate compliance with the requirements laid down in Title IV, Chapters I, II, III, IV and V.

3. Within 30 working days of receipt of the entity's application for authorisation, the Agency shall assess whether the application is complete.

   Where an application for authorisation is not complete, or where further clarification is needed, the Agency shall set a deadline by which the applicant entity shall provide any additional information as needed or bring clarification.

After assessing the application as complete, the Agency shall notify the applicant accordingly.

Article 12

Examination by the Agency

1. Within 6 months from the date of the notification referred to in Article 11(3), third subparagraph, the Agency shall examine, pursuant to Article 43(1), point (a), the application for authorisation, by assessing whether the applicant:

   (a) possesses all the necessary reliability, capability and expertise to carry out space activities;

   (b) ensures compliance with the requirements laid down in this Regulation and as applicable with any specific requirements needed by the implementation of the space mission, in the context of the Space Programme referred to in Regulation (EU) 2021/696 or Regulation (EU) 2023/588, for which an application for authorisation is submitted;

   (c) does not pose a threat to the public order, the safety of persons and property and to public health in the Union.

   The Agency shall adopt a fully reasoned decision proposing to the Commission to issue or refuse an authorisation, based on the technical assessment to assess compliance carried out in accordance with Article 43(1), point (a).

   The Agency shall notify its decision to the Commission immediately.

2. Within 30 working days of receipt of the decision of the Agency referred to in paragraph 1, second subparagraph, the Commission shall take a decision to issue or refuse the authorisation and shall notify it to the applicant immediately. The decision shall take effect upon its notification to the applicant.

   The Commission shall issue an authorisation only where the applicant meets the requirements referred to in paragraph 1, first subparagraph.

3. The Agency shall register without delay in URSO the Union space operators authorised in accordance with this Chapter.

Article 13

Suspension or withdrawal of authorisation

1. A Union space operator of Union-owned assets shall immediately report to the Agency:

   (a) any unforeseen event that may require the modification of its authorisation;

   (b) any planned or imminent termination of its activity.

2. The Agency shall propose to the Commission to suspend or withdraw, as applicable, the authorisation where a Union space operator of Union-owned assets:

   (a) has obtained the authorisation by making false statements or through other irregular means;

   (b) no longer complies with the conditions under which the authorisation was issued and has not taken the remedial actions requested by the Commission.

3. Not later than 2 months from the receipt of the proposal of the Agency referred to in paragraph 2, first subparagraph, the Commission shall take a decision on the proposed suspension or withdrawal.

The Commission shall immediately notify its decision to the Union space operator of Union-owned concerned and to the competent authority of the Member State where that Union space operator of Union-owned assets is established.

Chapter III
SPACE SERVICES PROVIDERS FROM THIRD COUNTRIES AND INTERNATIONAL ORGANISATIONS

Article 14

Provision of spaced-based data and space services by third country space operators and international organisations

1. Third country space operators that are registered in accordance with Article 17 in the Union Register of Space Objects and are in possession of the e-certificate referred to in Article 25(1), shall be allowed to provide space services to Union space operators and in relation to Union-owned assets and to assets referred to in Article 5, first paragraph, point (21).

2. For international organisations to provide, by virtue of their treaties, space-based data or space services in the Union, as applicable, the agreements referred to in Articles 107 and 108, respectively, shall be in place.

International organisations providing space-based data or space services in the Union, pursuant to the first subparagraph, shall be registered to URSO and in the possession of the e-certificate referred to in Article 25(1).

3. Paragraph 2 shall not apply where an international organisation only carries out technical assessment activities pursuant to Article 8(1), point (b).

Article 15

Rules applicable to third country space operators

1. Third country spacecraft operators shall be subject to the requirements applicable to the Union spacecraft operators laid down in Articles 62, 66, 67, 69 to 73, 75 to 92, and 96 to 100.

In addition, third country spacecraft operators shall:

(a) subscribe to a public or commercial collision avoidance space services provider;

(b) ensure that the collision avoidance space services provider referred to in point (a), has the technical means to assess the collision avoidance and complies with the requirements laid down in point 1, of Annex IV;

(c) notify to the Agency, in the application for registration in URSO, the name and details of the collision avoidance space services provider referred to in point (a).

The Agency shall add the information referred to in point (c), in the Union contact list database referred to in Article 67(1).

2. Third country launch operators and third country launch site operators shall be subject to the requirements applicable to the Union launch operators and launch site operators laid down in Articles 61, 75 to 92, and 96 to 100.

3. Third country ISOS providers shall be subject to the requirements applicable to the Union ISOS providers laid down in Article 101.

4. Third country collision avoidance space services providers shall be subject to the requirements applicable to the Union collision avoidance space services providers laid down in Articles 102 and 103.

Article 16

Rules for third country space operators from equivalent jurisdictions

Third country space operators that are established in a third country for which the Commission has adopted an equivalence decision, in accordance with Article 105, shall be presumed to comply with the requirements laid down in Article 15.

Article 17

Registration for third country space services providers

1. Based on a decision by the Commission to allow registration, pursuant to paragraph 5, the Agency shall register in URSO third country space operators that demonstrate compliance with the requirements of Title IV, as set out in Article 16 or Article 15.

2. Where a derogation has been obtained in accordance with Article 19, third country launch operators shall be registered in URSO based on a decision of the Commission without complying with one or more of the conditions set out in Article 15.

   When a derogation has been requested by a Member State to enable a Union space operator to launch with a third country space operator, that third country space operator shall provide evidence of that request to the Agency.

3. To obtain registration in URSO, pursuant to paragraph 1, a third country space operator shall lodge an application to the Agency. The application shall contain all the evidence needed to demonstrate compliance as referred to in paragraph 1.

   The Agency shall keep all the evidence which has been supplied by the applicants during the registration procedure.

4. The Agency shall assess the application for registration and shall notify the third country space operator of the outcome of its preliminary assessment. The Agency shall allow that third country space operator to submit a reasoned statement and to provide additional explanation or evidence.

5. Not later than 5 months from the receipt of the application referred to in paragraph 3, first subparagraph, the Agency shall make a proposal to the Commission to take a decision approving or rejecting the registration in URSO of a third country space operator.

6. The Commission shall take a decision based on the proposal of the Agency referred to in paragraph 5 and shall notify that decision to the third country space operator and to the Agency.

7. Where Article 16 applies, the Agency shall register on the basis of the following:

(a) the third country space operator is authorised in a third country and is subject to ongoing supervision in a third country;

(b) the Commission has adopted an equivalence decision pursuant to Article 105.

8. Where an application for derogation has been lodged in accordance with Article 19, the Agency shall proceed to the registration of the third country space operator in URSO after the Commission has adopted its decision in accordance with Article 19(5), first subparagraph.

Article 18

Registration of international organisations

1. Where the conditions laid down in Article 107 or Article 108 are met, the Agency shall register international organisations in URSO.

2. For the purposes of paragraph 1, Article 17(3), (4), (5), (7) and (8), and Articles 19, 21 and 22 shall apply accordingly.

Article 19

Derogations

1. A Member State may request the Commission to adopt a decision allowing the Agency to register a third country launch operator which does not comply with one or more of the conditions referred to in Article 15(2), if the public interest conditions referred to in paragraph 2 are met.

A Member State shall lodge an application in accordance with paragraph 3, first subparagraph.

For Union-owned assets, the Commission shall, on its own initiative, assess whether the public interest condition referred to in paragraph 2 is met.

2. As regards launch services, a Member State shall demonstrate that the launch services provided by a third country launch operator facilitate the access to, and the use of, space, when the following cumulative conditions are met:

(a) no readily available substitute or realistic alternative exist in the Union to the launch services provided by the respective third country launch operator;

(b) the launch services provided by the respective third country launch operator promote the technological capabilities of strategic importance for the Union or Member States.

3. The application referred to in paragraph 1, second subparagraph, shall:

(a) identify the third country launch operator for which a derogation is requested;

(b) specify in a clear, unambiguous and exhaustive manner all the requirements laid down in Article 15(2), for which a derogation is requested;

(c) outline the necessary technical details regarding the space mission concerned;

(d) provide the necessary evidence to demonstrate that the other requirements are met.

The application regarding a third country launch operator shall propose, where possible, alternative mitigating measures to ensure that the objectives pursued by the

requirements referred to in Article 15(2), for which a derogation is requested, are achieved or are at least partially achieved.

4. Upon receipt of the application referred to in paragraph 3, the Commission shall transmit it to the Agency. Within 1 month, the Agency shall issue a technical assessment on the compliance with the requirements laid down in Article 15 not subject to the application for derogation.

5. Within 2 months from the receipt of the technical assessment issued by the Agency pursuant to paragraph 4, the Commission shall, on the basis of that technical assessment, either adopt a decision granting a derogation to the respective third country launch operator, where the Commission concludes that the public interest condition referred to in paragraph 2 is met, or a decision refusing to grant such a derogation where it concludes that that public interest condition is not met.

   Those decisions shall be adopted as implementing acts in accordance with the examination procedure referred to in Article 114(2).

6. When the Commission grants, pursuant to paragraph 5, first subparagraph, a derogation to a third country launch operator, it shall in parallel grant a derogation to the Union space operator using the launch services of the respective third country launch operator.

Article 20

Third country public entities

1. Upon request of a third country public entity to be allowed to provide space services or space-based data in the Union, or upon a Member State request, as referred to in paragraph 2, the Commission, assisted by the Agency, shall first assess whether that third country public entity is a governmental entity or whether it operates or owns assets of space infrastructure that are military systems, including with civilian use.

   In its technical assistance provided to the Commission, the Agency shall map all the relevant activities and services provided by that third country public entity and shall identify all relevant assets of space infrastructure that such third country public entity operates or owns.

2. A Member State may request the Commission to allow a third country public entity to provide space services or space-based data in the Union.

   In support of its application, a Member State may indicate a public interest for one or more Member States to obtain, or as applicable, to safeguard, continued and unhindered access to the respective space-based data or space services provided by that third country public entity, and may evidence the consequences for the relevant markets at the level of the Union or at Member State level, of losing such access.

3. The Commission may, on its own initiative, carry out the assessment referred to in paragraph 1.

4. Where, upon the assessment referred to in paragraph 1, the Commission concludes to the absence of security risks for the Union or the Member States, the Commission may adopt a decision allowing the respective third country public entity to provide space services or space-based data in the Union.

The decision referred to in the first subparagraph shall apply until the date when an international agreement concluded with the respective third country takes effect, governing the conditions for a third country public entity to provide space services or space-based data in the Union, or until the date where the Commission has adopted an equivalence decision as regards that third country, whichever is the earliest.

The Agency shall register without delay in URSO the third country public entity concerned on the basis of the decision taken by the Commission pursuant to first subparagraph.

The decision referred to in first subparagraph shall be adopted as implementing act in accordance with the examination procedure referred to in Article 114(2).

Article 21

Emergency clause

1. Where an emergency or crisis occurs in a Member State, or an incident or attack causes disruption affecting more Member States or the Union institutions, the Commission shall, as soon as possible, on its own initiative, or at the request of the Member State concerned, carry out an assessment.

   Based on this assessment, the Commission may allow the use of space-based data or space services by space services providers not registered in URSO, in accordance with the examination procedure referred to in Article 114(2).

2. As soon as possible, and depending on the gravity, duration and effects of the respective emergency, crisis or disruption, the decision referred to in paragraph 1 shall be confirmed, revoked or extended in accordance with the procedure referred to in Article 8 of Regulation (EU) No 182/2011.

Article 22

Suspension or withdrawal of registration

1. The Agency shall make a proposal to the Commission to suspend or withdraw the registration in URSO of a third country space operator where:

   (a) based on documented evidence, the Agency establishes that the third country space operator no longer complies with one or several requirements laid down in Article 16 or Article 15, as applicable, and is not able to apply the needed remedies to ensure the continuous compliance thereof;

   (b) the relevant third country supervisory authority has suspended or withdrawn the operating or launching authorisation granted to the space services provider concerned.

2. Before submitting a proposal to the Commission for suspension or withdrawal of registration, on the grounds referred to in paragraph 1, point (a), the Agency shall conduct a dialogue with the third country space operator concerned, on the reasons, context, scope and gravity of the non-compliance, and on the remedies and deadlines which are needed for that third country space operator to ensure compliance, with due consideration for any need for technical adaptation.

   During that dialogue, the Agency shall give the third country space operator concerned the opportunity to submit observations on the grounds which the Agency intends to adopt its proposal, to provide explanations and submit any relevant

documentation and evidence in support of its explanations, including any technical analysis, and to achieve compliance.

3. No later than 2 months from the receipt of the proposal referred to in paragraph 1, first subparagraph, the Commission shall take a decision.

4. In the case referred to in paragraph 1, point (b), and at least 30 days before issuing a decision of suspension or withdrawal, the Commission shall inform the relevant third country supervisory authority of its intention to suspend or withdraw registration in URSO.

5. The Commission shall, without delay, inform the competent authorities of any action or measure to be adopted in accordance with paragraphs 2 and 4.

The Agency shall publish a summary of the information regarding a suspension or withdrawal on its website and the URSO portal.

6. A decision of the Commission to suspend or withdraw registration in URSO shall take effect upon a date which shall be specified in the decision of the Commission. In establishing that date, the Commission, acting upon a proposal by the Agency, shall take into account the time that may be required for the adaptation of relevant contracts.

Depending on the complexity of the contractual adaptations that may be required, the date of withdrawal of registration shall be no later than 16 months from the date of adoption of the decision of withdrawal.

Article 23

Legal representative in the Union

1. Third country space operators shall designate in writing one or more legal persons in one of the Member States to act as their legal representative in the Union.

2. The legal representative in the Union shall be mandated by the third country space operator to be addressed in addition to, or instead of, the third country space operator, by the competent authorities, the Commission and the Agency, on all issues related to compliance with this Regulation. It shall have all necessary powers and resources to guarantee an efficient and timely cooperation with such authorities.

Chapter IV
PROVISION OF SPACE-BASED DATA AND SPACE SERVICES IN THE UNION AND E-TRACEABILITY

Article 24

Union Register of Space Objects (URSO)

1. The Agency shall set up a Union Register of Space Objects (URSO) for the registration of:

(a) Union space operators authorised in accordance with Article 6(1) and notified to the Agency by the competent authorities pursuant to Article 7(7);

(b) Union space operators that are entities entrusted with the execution or operation of the respective component of the Union Programme, based on an authorisation issued to the Commission, pursuant to Article 12(2);

(c) third country space operators for which a decision of registration has been adopted pursuant to Article 17(1);

(d) international organisations registered pursuant to Article 18(1).

2. The Agency shall draw up, update and publish on the URSO website the consolidated lists of all space services providers referred to in paragraph 1.

3. URSO shall have a centralised inventory and platform.

Article 25

Electronic certificate (e-certificate)

1. Upon completion of the registration in URSO, the Agency shall issue and deliver an electronic certificate ('e-certificate') to the space service providers except the collision avoidance space services providers.

2. The e-certificate referred to in paragraph 1 shall identify the space mission(s) and space object(s) having generated the space-based data or having enabled the provision of space services and shall attest the conformity of such space objects with the requirements laid down in this Regulation.

3. Contracts of space services providers referred to in Article 2(1), points (a), (c) and (d), for the provision of space-based data and space services in the Union shall be accompanied by the e-certificate referred to in paragraph 1.

4. The following information shall be transmitted by the competent authorities, as regards Union space operators, pursuant to Article 7(7), and directly by third country space operators and international organisations, to allow the Agency to issue and generate the e-certificate referred to in paragraph 1:

(a) details regarding the space services provider concerned, such as the name, physical address, internet address, the Member State or, as applicable, the third country of establishment and authorisation, the name and address of the competent authority or, as applicable, the relevant third country supervisory authority;

(b) details regarding the type of space services carried out, indicating the Member State(s) or the third countries where these are being carried out;

(c) technical details regarding the space object that is operated or launched and the respective space mission.

5. For the purposes of the request for standards referred to in Article 104, the e-certificate referred to in paragraph 1 shall comply with the following requirements:

(a) the e-certificate shall determine that a given space-based data is generated through the use of a clearly identified space mission and space object;

(b) for observation data, the e-certificate shall allow the tracking of the flow of space-based data, from its generation by a given space object, to incorporation into the first space service making use of that space-based data;

(c) the e-certificate shall be based on algorithms to ascertain the integrity of space-based data across its incorporation into subsequent services.

6. For the purposes of generating the e-certificate referred to in paragraph 1 the Agency may request, as appropriate, technical assistance from the competent authorities

and the qualified technical bodies for space activities regarding any of the elements referred to in paragraph 5.

Article 26

Provision of space services and space-based data in the Union

1. Where space services providers, except for collision avoidance space services providers, provide for the first time, space-based data or space services in the Union, they shall be in possession of the e-certificate referred to in Article 25(1).

2. They shall ensure that the e-certificate is annexed to their contracts for the provision of space based-data or space services.

Article 27

Requirements for primary providers of space-based data

1. Primary providers of space-based data shall provide space-based data in the Union only where such space-based data has been generated by space objects registered in URSO.

2. Where primary providers of space-based data receive alerts or complaints about potential irregularities, they shall alert their suppliers and contact in parallel the Agency or the competent authority of the Member State where they are established.

Title III
GOVERNANCE ASPECTS

Chapter I
GOVERNANCE IN THE MEMBER STATES

SECTION 1
COMPETENT AUTHORITIES

Article 28

Designation or establishment of competent authorities

1. Each Member State shall designate or establish a public authority to act as competent authority, responsible for the authorisation and supervision of Union space operators and for any market surveillance activity needed to safeguard the use of space-based data in compliance with this Regulation.

2. Member States shall ensure that the competent authorities have the independence, expertise, financial and human resources, operational capacity and powers necessary to carry out functions referred to in paragraph 1.

Article 29

Supervisory tasks regarding Union space operators

1. Competent authorities shall supervise the space activities carried out by Union space operators and shall in particular:

(a) control the application of the requirements laid down in this Regulation;

(b) conduct investigations;

(c) keep internal records of infringements of the requirements laid down in this Regulation;

(d) cooperate with the competent authorities of other Member States, to ensure consistency across the Union in the application of this Regulation;

(e) promote awareness and understanding of the requirements laid down in this Regulation;

(f) carry out audits;

(g) request qualified technical body for space activities to perform technical assessments in accordance with Article 8(1), point (a);

(h) review, in the context of supervisory tasks, the application by Union space operators of the proportionality principle;

(i) report to the Commission about main supervisory activities in relation to the application of this Regulation.

2. Member States shall ensure appropriate supervision of Union space operators carrying out national space programmes, by observing the separation of roles and the absence of conflict of interest.

Article 30

Supervisory powers

1. Competent authorities shall have all supervisory, investigatory, corrective and sanctioning powers that are necessary for the exercise of the functions and tasks referred to in Article 29.

2. When carrying out supervisory activities in respect to Title IV, Chapter II, the competent authorities shall ensure coordination with the competent authorities designated pursuant to Article 8(1) of Directive 2022/2555 responsible for supervisory tasks of that Directive.

Member States may empower competent authorities to delegate relevant supervisory activities and tasks as regards Title IV, Chapter II, of this Regulation, to the competent authorities established pursuant to Article 8(1) of Directive 2022/2555.

The supervisory tasks pursuant to Directive 2022/2555 referred to in the first and second subparagraphs shall be exercised in a manner that fully preserves the integrity of the supervisory powers referred to in paragraph 1.

3. Competent authorities shall have at least the following investigative powers:

(a) to require the delivery of all necessary data and documents;

(b) to obtain access to premises, land and means of transport, including to any data processing equipment and means;

(c) to request proof of implementation of the requirements laid down in this Regulation and the underlying evidence;

(d) to review the technical assessments carried out by qualified technical bodies for space activities pursuant to Article 8;

(e) to carry out on-site and off-site inspections, including carrying out audits.

4. Where competent authorities carry out inspections, the officials authorised to carry out inspections shall be empowered to:

(a) enter any premise, land and means of transport of the respective Union space operators;

(b) examine the books and other business records, irrespective of the medium on which they are stored, access any information accessible to the Union space operators subject to the inspection, and take or request copies or extracts from those books or records;

(c) ask any representative or member of staff of the Union space operator subject to the inspection for explanations of facts and for documents which are in the remit of the subject-matter of the inspection, and record the answers;

(d) seal any business premise, books or records, for the duration of, and to the extent necessary for, the inspection.

5. Competent authorities shall have at least the following corrective powers:

(a) to issue warnings of alleged infringements of the requirements laid down in this Regulation;

(b) to order Union space operators to cease a conduct which the competent authorities deem to be contrary to the requirements laid down in this Regulation;

(c) to order Union space operators to ensure compliance in the manner and in the timeframe to be determined by the competent authorities;

(d) to order Union space operators to remedy the shortcomings identified by the competent authorities in relation to the application of the requirements laid down in this Regulation, including by applying corrective measures for infringements of the requirements laid down in this Regulation;

(e) to designate, for a determined period, a monitoring officer to oversee the process of bringing the conduct of Union space operators into compliance, as regards the requirements laid down in this Regulation.

6. Competent authorities shall have at least the following sanctioning powers:

(a) to impose or request a relevant administrative or judicial body to impose an administrative fine for non-compliance, or an administrative sanction in regard to an infringement of the requirements laid down in this Regulation;

(b) to temporarily suspend or request a relevant administrative or judicial body to temporarily suspend, in part or fully, the authorisation;

(c) to withdraw the authorisation to carry out space activities, when a Union space operator no longer fulfils the conditions under which an authorisation was issued, or when a Union space operator falls within a situation where, pursuant to national law, the authorisation shall be withdrawn.

A temporary suspension imposed pursuant to point (b), shall be applied until the Union space operator concerned takes all the actions which are necessary to remedy the problems identified by the competent authority, or to fully comply with all the measures prescribed by the competent authority.

7. Competent authorities may, on their own initiative, decide to impose interim measures on Union space operators, notably in case of urgency, to comply with the requirements laid down in this Regulation.

8. Member States may provide by law that competent authorities shall have additional powers to those referred to in paragraphs 3 to 7. The exercise of those powers shall not impair the effective implementation of this Chapter.

Article 31

Administrative sanctions

1. Member States shall lay down rules on penalties for infringements of this Regulation. Those penalties shall be effective, proportionate and dissuasive. Member States shall without delay notify the Commission of those provisions and any subsequent amendment affecting them.

2. When determining the administrative sanction and the level of the administrative fine, competent authorities shall consider all relevant circumstances, including, where appropriate:

   (a) the gravity and duration of the infringement and the permanence of damages caused by the infringement;

   (b) previous infringements by the natural or legal person responsible for the infringement;

   (c) the material or non-material damage caused by, or through, the infringement, including financial or economic loss and adverse effects upon other services, and relevant criteria for the impact of an infringement, such as the number of users affected, or the magnitude of the loss incurred by a third party as a result of the infringement;

   (d) the intent or negligence on the part of the perpetrator of the infringement;

   (e) measures taken by the Union space operator to prevent or mitigate the damage;

   (f) the level of cooperation with the competent authorities and any obstruction of inspections, audits or other monitoring activities of competent authorities, following the discovery of the infringement;

   (g) the importance of the profits gained, or of the losses avoided, by the natural or legal person responsible for the infringement;

   (h) the need for the administrative fine to have a deterrent effect.

3. Competent authorities shall set out the reasoning for their enforcement measures.

4. The supervisory measures shall be effective, dissuasive and proportionate, considering all circumstances of each individual case. Before adopting a supervisory measure, the competent authorities shall inform the Union space operators of their preliminary findings and shall allow reasonable time for Union space operators to submit observations.

5. Member States shall ensure that competent authorities have the power to directly bring infringements of this Regulation before a judicial body and that they are entitled to take part, in their own right, in all types of legal proceedings regarding the enforcement of this Regulation, including by lodging appeals.

SECTION 2
MONITORING OF QUALIFIED TECHNICAL BODIES FOR SPACE ACTIVITIES

Article 32

Use of qualified technical bodies for space activities

1. Member States making use of the possibility referred to in Article 8(1), point (a), shall ensure that qualified technical bodies for space activities are designated, assessed and monitored by public authorities and that they are notified to the Commission, in accordance with Article 33.

2. Member States may entrust the tasks of assessment and monitoring to the national accreditation body within the meaning of, and in accordance with, Regulation (EC) No 765/2008. The Commission shall make that information publicly available.

3. Member States shall ensure that the public authority referred to in paragraph 1:

   (a) is organised and operates in a way that no conflict of interest arises with the technical assessment activities carried out by the qualified technical bodies for space activities;

   (b) carries out with objectivity and impartiality the tasks of designating, assessing and monitoring the qualified technical bodies for space activities;

   (c) has an adequate number of personnel for the performance of its tasks.

Article 33

Notification process

1. Member States shall notify to the Commission all designated qualified technical bodies for space activities established on their territory. For the purpose of this notification, they shall use the New Approach Notified and Designated Organisations (NANDO) information management system.

2. Only qualified technical bodies for space activities that comply with the requirements laid down in Article 35 can be notified by the Member State to the Commission.

3. The notification referred to in paragraph 1 shall include:

   (a) the full details of the technical assessment activities carried out from the matters covered by this Regulation, any relevant assessment module, indicating which processes, services or products are covered in relation to matters covered by this Regulation;

   (b) any relevant attestation of competence.

4. Where a notification is not based on the accreditation certificate referred to in Article 34(5), point (b), Member States shall provide to the Commission and the other Member States evidence attesting the competence of that qualified technical body for space activities and shall ensure that such body will be regularly monitored and continues to meet the requirements laid down in Article 35.

5. A body may perform activities as qualified technical body for space activities only if the Commission or a Member State have not raised objections within two months from the date of the notification, where it includes the accreditation certificate

referred to in Article 34(5), point (b), or within three months from the date of notification, where it includes the documentary evidence referred to in Article 34(6).

SECTION 3
QUALIFIED TECHNICAL BODIES FOR SPACE ACTIVITIES

Article 34

Process for becoming a qualified technical body for space activities

1. Where an entity intends to carry out technical assessments for one or more matters covered by Title IV, Chapters I to V, it shall submit an application to the relevant authority, as referred to in Article 32, in the Member State where it is established, to obtain designation as qualified technical body for space activities.

2. Where the technical assessment activities concern matters covered by Title IV, Chapter II, Member States shall make use of national competent authorities designated in Article 8 of Directive (EU) 2022/2555.

3. In carrying out their tasks of authorisations and supervision referred to in Article 28(1), competent authorities shall take duly account of the technical assessments carried out by the bodies and the authorities referred to in paragraph 2 and shall ensure supervisory convergence with the authorities referred to in Article 8 of Directive 2022/2555.

   Member States shall ensure close coordination through mechanisms and protocols between such authorities and the competent authorities designated pursuant to Article 28(1) of this Regulation.

4. Where a public entity carrying out technical assessments in relation to the requirements laid down in Title IV, Chapter I and in Chapter V, is part of the administrative structure of the competent authority referred to in Article 28(1), the application referred to in paragraph 1 shall be submitted by the competent authority.

5. Entities referred to in paragraph 1 shall indicate for which of the matters covered by Title IV, Chapters I to V, the application to become a qualified technical body for space activities is submitted, and shall:

   (a) provide a description of all the technical assessment activities to be carried out;

   (b) indicate any accreditation certificate(s), where one exists, issued by a national accreditation body, which attests that the respective body fulfils the requirements laid down in Article 35;

   (c) indicate, as applicable, a valid document providing evidence on the designation of the applicant as a notified body under any relevant Union harmonisation legislation.

6. Where an applicant cannot provide the accreditation certificate referred to in paragraph 5, point (b), it shall provide the authority referred to in Article 32 with all documentary evidence allowing that authority to carry out verifications or conduct regular monitoring to ensure compliance with the requirements laid down in Article 35.

7. Where the applicant has been already designated as a notified body under a Union harmonisation legislation, all documents and certificates linked to such designation

may be used to support its designation as a qualified technical body for space activities pursuant to this Regulation.

8. Where the conditions laid down in paragraph 5 are fulfilled, the authority referred to in Article 32 shall adopt a positive decision on the application. The decision shall be notified to the technical body, the competent authorities of the Member State concerned and the Commission.

9. A qualified technical body for space activities shall update the documentation referred to in paragraphs 5, 6 and 7, whenever relevant changes occur, to enable the notifying authority to monitor the continuous compliance of that qualified technical body for space activities with the requirements laid down in Article 35.

Article 35

Requirements for qualified technical bodies for space activities

1. Qualified technical bodies for space activities shall meet the requirements laid down in point 1, of Annex IX.

2. Where technical assessment activities are carried out in relation to Title IV, Chapter III, a qualified technical body for space activities shall meet, in addition to the obligation referred to in paragraph 1, the requirements laid down in point 2, of Annex IX.

3. Qualified technical bodies for space activities carrying out technical assessment activities in relation to Title IV, Chapter I and V, shall be public bodies.

4. A qualified technical body for space activities which subcontracts tasks related to the technical assessment shall inform the authority referred to in Article 32 accordingly and shall ensure that its subcontractor meets the requirements referred to in paragraphs 1 and 2.

Qualified technical bodies for space activities shall keep at the disposal of the authority referred to in Article 32 all documents related to the assessment of the qualifications of the subcontractor and to the work carried out by that subcontractor.

Article 36

Identification numbers

The Commission shall assign an identification number to each qualified technical body for space activities and shall make publicly available the list of qualified technical bodies for space activities in the Union, their identification numbers and the matters covered by Title IV for which they have been notified.

Article 37

Changes to notification

1. The authority referred to in Article 32 shall restrict, suspend or withdraw, as appropriate, the notification of a qualified technical body for space activities which no longer meets the requirements laid down in Article 35 or fails to fulfil its obligations. That authority shall inform the Commission and the other Member States accordingly.

2. In the event of a restriction, suspension or withdrawal of the notification, or where a qualified technical body for space activities established on the territory of a Member State has ceased its activity, that Member State shall take appropriate steps to transfer the files of that qualified technical body for space activities to another qualified technical body for space activities or, where this is not possible, to the Agency or the international organisation referred to in Article 8(1), point (b).

Article 38

Appeal against decisions of qualified technical bodies for space activities

Member States shall ensure that decisions of qualified technical bodies for space activities can be appealed.

Article 39

Coordination of qualified technical bodies for space activities

The Commission shall enable appropriate coordination of qualified technical bodies for space activities bodies across the Union, including by setting-up sectoral groups of qualified technical bodies for space activities.

Chapter II
GOVERNANCE AT UNION LEVEL

SECTION 1
TASKS AND STRUCTURES OF THE AGENCY

Article 40

Tasks of the Agency

1. The Agency shall have the following tasks in relation to the requirements laid down in Titles II to VI of this Regulation:

   (a) carry out the technical assessments enabling the Commission to take decisions regarding the authorisation and the ongoing supervision of Union space operators of Union owned-assets and the registration and the ongoing supervision of third country operators;

   (b) upon request, carry out the technical assessments referred to in Article 8(1), point (c);

   (c) carry out, on the basis of a decision of the Commission, the registration of third country space operators and of international organisations, in accordance with Article 17 and Article 18;

   (d) set-up and manage URSO, in accordance with Article 24;

   (e) issue the e-certificate referred to in Article 25(1);

   (f) manage the registration in URSO, and respectively, the suspension or withdrawal of registration thereof, in accordance with Article 22;

   (g) set-up and manage the Union contact list database for high interest event alerts, in accordance with Article 67(1);

(h) report to the Commission on the application of simplified risk management across the Union, and submit appropriate recommendations, in accordance with Article 79(3), first subparagraph;

(i) coordinate the activities of the Union Space Resilience Network (EUSRN) established in accordance with Article 94(1), and provide the secretariat of EUSRN;

(j) contribute to the establishment and maintenance of the Union Space Label Framework, in accordance with the provisions of Title VI, Chapter II;

(k) maintain a website providing updated information on, and publicising, the Union Space Labelling Schemes and Union Space Labels, in accordance with Article 111(5);

(l) assist the Commission in the preparation of delegated and implementing acts based on this Regulation, and in the preparation of proposals for amendments to this Regulation, by issuing formal technical opinions addressed to the Commission;

(m) issue guidelines addressed to the competent authorities and the Union space operators, and issue recommendations to one or more competent authorities, to promote consistent supervisory practices across the Union and the uniform application of Union law;

(n) upon request by the Commission, contribute, for matters covered by this Regulation, to the establishment, measurement, reporting and analysis of performance indicators, notably on significant incidents and on collisions;

(o) provide all necessary technical, scientific and administrative advice and support to the Commission, to allow the latter to carry out its supervisory tasks under this Regulation;

(p) establish cooperation with supervisory authorities of third countries, international organisations or bodies thereof, and promote and facilitate awareness at international level in respect to the requirements laid down in this Regulation;

(q) cooperate, as appropriate, with other Union institutions, bodies, offices, and agencies, where the activities of such Union institutions, bodies, offices, and agencies, cover technical aspects related to the safety, resilience and environmental sustainability of space activities, or other relevant matters, such as the use of artificial intelligence when carrying out space activities.

2. Before submitting the technical opinions referred to in paragraph 1, point (l), as well as before issuing the guidelines referred to in paragraph 1, point (m), the Agency shall conduct open public consultations.

By 01.08.2028, the Agency shall submit to the Commission the technical opinions to assist the Commission in the preparation of the delegated acts referred to in Article 113 and of the implementing acts referred to in Article 59(3), first subparagraph, in Article 61(3), first subparagraph, in Article 63(2), in Article 68(2), first subparagraph, in Article 69(2), first subparagraph, in Article 70(3), first subparagraph, in Article 73(4), first subparagraph, in Article 93(8), in Article 96(7), second subparagraph, in Article 97(4), in Article 101(5), first subparagraph, in Article 104(2), and in Article 111(4), first subparagraph.

3. Before issuing a new guideline or recommendation, the Agency shall review existing guidelines and recommendations to avoid duplication.

Article 41

Agency fees

1. The Agency shall, in accordance with the delegated act referred to in paragraph 3, charge Union space operators, third country space operators and international organisations fees to fully cover the necessary expenditure incurred by the Agency in carrying out tasks pursuant to this Regulation, including the reimbursement of costs incurred as a result of the work of the joint examination teams referred to in Article 44(2), first subparagraph, or the costs of the advice provided by independent experts.

2. The amount of a fee charged to a space services provider referred to in paragraph 1 shall cover all costs derived from the execution of the tasks set out in this Regulation. The amount shall be proportionate to the turnover of the respective space services provider.

3. The Commission is empowered to adopt delegated acts in accordance with Article 113 to supplement this Regulation by determining the amount of fees and the way in which they are to be paid.

Article 42

Agency structures

For the purposes of the tasks referred to in Article 43 a Compliance Board and a Board of Appeal are hereby established within the Agency.

Article 43

Tasks of the Compliance Board

1. The Compliance Board shall be responsible for:

   (a) issuing technical proposals to the Commission for the authorisation, in accordance with Article 12(2), of operators of Union-owned assets which are entrusted by the Commission with the execution or operation of the respective component of the Union Programme, as referred to in that Article, and carrying out, throughout the duration of such authorisation, technical assessment activities to allow the Commission to exercise the ongoing supervision of such operators to ensure compliance with the requirements laid down in this Regulation;

   (b) carrying out technical assessment activities in relation to the requirements laid down in Title IV, Chapters I, II, III, IV and V, before competent authorities issue authorisations to Union space services providers, as regards the assets referred to in Article 5, first paragraph, point (21), where a Member State has decided to entrust the Agency with the task of carrying out such technical assessment, pursuant to Article 8(1), point (c);

   (c) assess, and issuing technical proposals to the Commission as regards, the ongoing compliance of third country space operators with the requirements laid

down in Title IV, in the manner specified to in Articles 15 and Article 16 respectively.

2. For the purposes of paragraph 1, the Compliance Board shall have the following powers:

(a) take, in the manner specified in paragraph 3, technical assessment decisions proposing to the Commission the authorisation, in accordance with Article 11(1), first subparagraph, of Union space operators of Union-owned assets entrusted with the execution or operation of components of the Union Programme, in accordance with Article 12(2), as well as proposing to the Commission throughout the duration of such authorisation any needed supervisory measures;

(b) take technical assessment decisions regarding the fulfilment of the requirements laid down in Title IV, Chapters I, II, III, IV and V, where a Member State entrusts the Agency to carry out the technical assessment pursuant to Article 8(1), point (c);

(c) ensure, on the basis of a decision of the Commission taken pursuant to Article 11(1), first subparagraph, Article 17(6), and Article 22(6), first subparagraph, the registration in URSO, and respectively, the suspension or withdrawal of registration in URSO, of Union space operators of Union-owned assets and third country space operators, and that of international organisations, pursuant to Articles 17, 18 and 22, and manage URSO and its associated platform;

(d) take technical assessment decisions proposing to the Commission measures for ensuring the compliance of third country space operators, once registered, with the requirements laid down in Title IV, in the manner specified in Articles 15 and Article 16;

(e) issue the e-certificates referred to in Article 25(1);

(f) approve the conclusions of the reports submitted by the Technical Boards referred to in Article 44(2), second subparagraph, when carrying out the technical assessments referred to in paragraph 1;

(g) draw up and publish the consolidated lists of space services providers registered in URSO pursuant to Article 24(2);

(h) adopt and publish its rules of procedure.

3. For the purposes of taking the decisions referred to in paragraph 2, the Compliance Board shall act as follows:

(a) compliance with the requirements laid down in Title IV, Chapters I, III, IV and V, shall be established by means of technical assessments carried out in accordance with Article 44(1);

(b) compliance with the requirements laid down in Title IV, Chapters II, shall be established as follows:

(i) for technical assessment decisions regarding the space services providers referred to in paragraph 1, point (a), compliance shall be established by the Security Accreditation Board, in accordance with Chapter II of Regulation (EU) 2021/696;

(ii) for technical assessment decisions regarding the space services providers referred to in paragraph 1, points (b) and (c), compliance shall be established by in accordance with Article 44(1).

Article 44

Technical configurations of the Compliance Board

1. The Compliance Board shall work in three technical board configurations, as follows:

   (a) the Safety Compliance Technical Board;

   (b) the Resilience Compliance Technical Board;

   (c) the Environmental Sustainability Compliance Technical Board.

2. The Technical Boards referred to in paragraph 1 shall be composed of joint examination teams comprising staff members from the Agency, competent authorities and qualified technical bodies for space activities.

   After completing their technical assessments, the Technical Boards shall submit reports to the Compliance Board.

   The Technical Boards shall be supported by a technical secretariat which shall carry out preparatory work necessary to enable the Compliance Board to fulfil its tasks pursuant this Regulation.

3. The Commission is empowered to adopt delegated acts, in accordance with Article 113, to supplement this Regulation, by specifying the criteria for the composition and the expertise of staff composing the joint examination teams to the Technical Boards, to ensure balanced participation of staff from the competent authorities and the qualified technical bodies for space activities, as well as to specify the details for their designation, tasks and working arrangements.

Article 45

Composition of the Compliance Board and voting rules

1. The Compliance Board shall be composed of one representative of each Member State and one representative of the Commission.

   The term of office of the members of the Compliance Board shall be 4 years and shall be renewable.

2. The representatives of the Union agencies or bodies and of third countries or international organisations may on an exceptional basis be invited to attend the meetings of the Compliance Board as observers, as follows:

   (a) as regarding the representatives of Union Agencies or bodies, for matters regarding tasks or aspects of interest to those Union Agencies or bodies;

   (b) as regards the representatives of third countries or international organisations, for matters directly related to them, notably regarding assets of space infrastructure which they own or are located on their territory, or for matters directly related to compliance of third country space operators and international organisations, with this Regulation;

3. The arrangements regarding the conditions of participation of the representatives of third countries or international organisations referred to in paragraph 2 shall be laid down in the relevant agreements and shall comply with the rules of procedure of the Compliance Board.

4. The decisions of the Compliance Board shall be reached by consensus of all its members with voting rights. If consensus cannot be reached, the Compliance Board shall take decisions based on qualified majority voting, in accordance with Article 16 TEU.

The representative of the Commission shall not vote.

The Chair of the Compliance Board shall sign, on behalf of the Registration Board, the decisions adopted by the latter.

Article 46

Board of Appeal

1. A Board of Appeal is established. The Board of Appeal shall be responsible for deciding on appeals against decisions of the Agency.

2. The Board of Appeal shall be composed of six members and six alternates which shall be appointed, from a list of qualified candidates established by the Commission, by the Administrative Board, on the basis on their relevant expertise in the fields of space law or space activities, notably on matters related to the safety, risk management, cybersecurity, environmental sustainability of space activities, or ISOS.

3. Two members of the Board of Appeal and two alternates shall be appointed by the Administrative Board referred to in Article 72(1) of Regulation (EU) 2021/696, from a shortlist proposed by the Commission, following a public call for expressions of interest which shall be published in the Official Journal of the European Union.

4. The members of the Board of Appeal shall be independent in making their decisions. They shall not be bound by any instruction. They shall not perform any other duties within, and in relation to, the Agency, its Administrative Board, Security Accreditation Board or Compliance Board.

5. The term of office of the members of the Board of Appeal shall be 4 years. It may be prolonged once. Members of the Board of Appeal shall not be removed during their term of office unless found guilty of serious misconduct by decision of the Administrative Board.

6. The decisions of the Board of Appeal shall be adopted based on a majority of four of its six members. The Board of Appeal shall designate its Chairperson.

The Chairperson and the members shall have equal voting rights.

7. The Agency shall ensure adequate operational and secretarial support for the Board of Appeal.

Article 47

Appeal

1. An appeal may be brought against a decision of the Agency taken pursuant to Title II, Chapters II, III and IV, to Article 43(2), to Articles 49 to 52, and to Title IV, as

well as against any other decision of the Agency addressed to a natural or legal person or which, although in the form of a decision addressed to another person, is of direct and individual concern to that person.

2. The appeal, together with the statements of the grounds thereof, shall be filed in writing to the Agency within 3 months from the date of notification of that decision to the person concerned, or in the absence thereof, of the day on which the Agency published its decision.

3. An appeal lodged pursuant to paragraph 1 shall not suspend the application of the decision referred to in that paragraph. The Board of Appeal may however suspend the application of the contested decision if it considers that circumstances so require.

4. The Board of Appeal shall decide upon the appeal within 6 months after an appeal has been lodged. The Board of Appeal may confirm the decision, or it may remit the case to the Compliance Board. The latter shall be bound by the decision of the Board of Appeal.

   The decisions taken by the Board of Appeal shall be reasoned and shall be made public by the Authority.

5. The Commission is empowered to determine the details of the procedure before the Board of Appeal in accordance with the examination procedure referred to in Article 114(2).

6. Actions for the annulment of a decision issued by the Agency pursuant to this Regulation and actions for failure to act within the applicable time limits may be brought before the Court of Justice only after the exhaustion of the appeal procedure referred to above.

SECTION 2
POWERS OF THE COMMISSION AND THE AGENCY REGARDING UNION SPACE OPERATORS OF UNION-OWNED ASSETS AND THIRD COUNTRY SPACE SERVICES PROVIDERS

Article 48

Scope and exercise of powers by the Agency and the Commission

1. The Commission, supported and assisted by the Agency, shall exercise the supervision of the following space services providers regarding compliance with the requirements laid down in this Regulation, in the manner specified in this section, as follows:

   (a) Union space operators of Union-owned assets who are entities entrusted with the execution or operation of the components of the Union Programme, based on the authorisation issued by the Commission in accordance with Article 12(2);

   (b) third country space operators;

   (c) international organisations, pursuant to Article 107(3), and Article 108, respectively.

2. For the purposes of carrying out the technical assessments referred to in Article 40(1), point (a), the Agency shall have the powers referred to in Articles 49, 50, 51 and 52.

The Agency shall inform the Commission on each of the actions referred to in Articles 49, 50, 51 and 52.

3. The Commission and the Agency shall exercise separately or jointly any of the tasks referred to in Articles 49, 50, 51 and 52.

4. Without prejudice to the respective competences of the Union institutions and of Member States, the Agency may, for the purposes of paragraph 1, point (b), after the conclusion of the international agreements referred to in Article 106(1), conclude administrative cooperation arrangements with the relevant authorities of third countries, to enable smooth conduct of inspections where the conditions laid down in Article 52(1) are met.

Those cooperation arrangements shall not create legal obligations in respect of the Union and its Member States, nor shall they prevent Member States and competent authorities from concluding bilateral or multilateral arrangements with third countries and their relevant authorities.

5. Those cooperation arrangements shall specify at least the following:

(a) the detailed procedures and coordination aspects with relevant third country authorities which enable the Agency to conduct, pursuant to Article 52, inspections at the business premises of the space services providers referred to in paragraph 1, point (b), located outside the Union;

(b) the details setting out the conditions for the participation of the representatives of relevant third country authorities in inspections conducted by the Agency pursuant to Article 52, notably where the space services providers referred to paragraph 1, point (b), are public entities;

(c) the necessary protocols and mechanisms to ensure the transmission of any relevant information between the Agency and the third country authorities, notably the mechanisms for the prompt notification by a third country authority of situations where the space services providers referred to in paragraph 1, point (b), are deemed to have infringed requirements to which they are obliged to adhere to, pursuant to the applicable law of the third country concerned, as well as the remedies and penalties that have been applied;

(d) any needed coordination of supervisory activities carried out under this Regulation and those carried out by the third country authorities, respectively;

(e) the regular transmission of updates regarding regulatory or supervisory developments in the third country concerned.

Article 49

Request for information

1. The Commission and the Agency may require by decision that space services providers referred to in Article 48(1), points (a), (b) and (c), provide any information necessary for the Commission and the Agency to carry out their tasks under this Regulation, including any relevant business documents, audit or incident reports, or information on outsourced activities.

2. In their decisions adopted pursuant to paragraph 1, the Commission and the Agency shall state the purpose of the request, specify which information is required, set a time within which that information is to be provided, specify the fines

applicable, pursuant to Article 55(1), point (c), for supplying incomplete, incorrect or misleading information or explanations, the possibility to have that decision reviewed by the Court of Justice and the legal remedies available under Article 47.

3. The space services providers referred to in Article 48(1), points (a), (b) and (c), shall supply the information requested.

Article 50

Power of investigations

1. The Commission and the Agency shall conduct investigations at the space services providers referred to in Article 48(1), points (a), (b) and (c), respectively.

2. The Commission and the Agency shall issue an authorisation to their designated officials to allow them to conduct the investigations referred to in paragraph 1. The officers of the Commission and the Agency shall exercise their investigation powers upon the production of this authorisation.

   The Commission and the Agency may entrust other persons from the joint examinations teams referred to in Article 44(1) or auditors with the task to carry out investigation together with the officials of the Agency.

3. The authorisation referred to in paragraph 2, first subparagraph, shall specify its purpose, subject matter, the actions to be carried out, as well as the fines provided for in Article 55(1), point (c), applicable where the production of the elements referred to in paragraph 4, first subparagraph, or the answers to the questions and explanations asked under paragraph 4, point (c), are incorrect or misleading.

4. The officers of the Commission and the Agency shall be empowered to:

   (a) examine any records, data, procedure, and other material relevant to the execution of their tasks, irrespective of the medium on which they are stored;

   (b) take or obtain certified copies of, or extracts from, such records, data, procedure and other material;

   (c) summon and ask any of the persons subject to the investigation, or their representatives, or staff, for oral or written explanations on facts or documents relating to the subject matter and purpose of the inspection, and to record the answers;

   (d) request records of telephone and data traffic.

5. The space services providers referred to in Article 48(1), points (a), (b) and (c), respectively are required to submit to investigations.

   In good time before the date of the investigation, the Commission and the Agency shall inform the competent authority of the Member State where the investigation is to be carried out of the planned investigation of the names of the authorised officers and other authorised persons referred to in paragraph 2, second subparagraph, as applicable.

6. The officers of the competent authority concerned shall, at the request of the Commission and the Agency, assist the authorised officers of the Commission and the Agency and other authorised persons, in carrying out their duties. Upon request, the officers of the competent authority concerned may attend the respective investigation.

Article 51

On-site inspections in the Union

1. The Commission and the Agency may carry out all necessary on-site inspections at any of the business premises, land or property of the Union space operators of Union owned-assets, as well any of the business premises, land or property of the space services providers referred to in Article 48(1), points (b) and (c), located in the Union.

2. The inspections referred to in paragraph 1 shall be carried out on the basis of the decisions of the Commission and the Agency respectively, to carry out an on-site investigation.

   That decision shall designate the authorised officers of the Commission and the Agency and other persons authorised by the Commission and the Agency to conduct an inspection.

   It shall specify the purpose, the subject matter and the date of the inspection. It shall include the reference to the fines and the periodic penalty payments provided for in Article 56(1), for cases where the persons concerned do not submit to inspection, as well as to the possibility to have that decision reviewed by the Court of Justice and the legal remedies available under Article 47.

3. The officers of the Commission and the Agency and other persons authorised to conduct an on-site inspection, in accordance with paragraph 2, second subparagraph, may enter any of the business premises, land or property of the Union space operators of Union owned-assets, and of the space services providers referred to in Article 48(1), points (b) and (c), respectively. They shall have all the powers set out in Article 50(4) and the powers to seal any business premises, books or records for the period of, and to the extent necessary for, that inspection.

4. In sufficient time before the inspection, the Commission and the Agency shall give notice to the competent authority of the Member State where that inspection is to be carried out. Inspections shall be carried out if the relevant authority has raised no objections.

   The officers referred to in paragraph 2, second subparagraph, shall exercise their powers upon production of the decision referred to in paragraph 2, first subparagraph.

5. Union space operators of Union owned assets and space services providers referred to in Article 48(1), points (b) and (c), respectively, shall submit to the on-site inspections ordered by decision of the Agency and the Commission.

6. The officers of the competent authority of the Member State where the inspection is to be carried out and the persons authorised by such competent authorities shall, at the request of the Commission or the Agency, assist the officers referred to in paragraph 2, second subparagraph. The officials of the competent authorities may also attend the on-site inspections, upon request.

7. The Commission and the Agency may require the competent authorities to carry out specific investigatory tasks and on-site inspections, as provided for in this Article and in Article 50, on their behalf. To that end, the competent authorities shall enjoy at least the same powers as those set out in this Article and in Article 50.

Article 52

On-site inspections outside the Union

1. Where the Commission and the Agency cannot fulfil their tasks set out in this Regulation by means of interaction with the legal representatives referred to in Article 23 of the space services providers referred to in Article 48(1), point (b), the Commission and the Agency may carry out on-site inspections at the business premises, land or property of space services providers referred to in Article 48(1), point (b), which are located outside the Union, if all the following conditions are met:

   (a) the concerned space services provider referred to in Article 48(1), point (b), consents to the conduct of an inspection in a third country; and

   (b) the relevant third country authority has been officially notified by the Agency and raised no objection thereto.

2. When the Commission and the Agency act based on paragraph 1 they shall have the powers referred to in:

   (a) Article 49;

   (b) Article 50(4), points (a), (b) and (c);

   (c) Article 51(3).

Article 53

Procedure for investigation by the Agency

1. Where the Agency has serious indications of infringements to the technical requirements laid down in Title IV, the Agency shall open an investigation.

2. Officers conducting the investigation shall have the power to request information, in accordance with Article 49, to carry out investigations, and respectively, on-site inspections, in accordance with Articles 50 and 51.

Article 54

Measures following an investigation by the Agency

1. When, based on the investigation referred to in Article 53(2), the Agency finds on a preliminary basis that a Union space operator of Union-owned assets or respectively a space services provider referred to in Article 48(1), points (b) and (c), has committed an infringement of the requirements laid down by this Regulation, as specified in Annex X, the Agency shall make a proposal to the Commission to establish the existence an infringement of this Regulation and to adopt one or more of the measures referred to in Article 55(1), first subparagraph, as regards the concerned Union space operator of Union-owned assets or space services provider referred to in Article 48(1), points (b) and (c).

   The Agency shall indicate all the factual elements, the rules breached and the proposed amount of the fine.

   The Commission may on its own initiative, upon request by a Member State or upon complaint investigate any infringement of this Regulation.

2. When submitting the proposal to the Commission referred to in paragraph 1, first subparagraph, the Agency shall consider the nature and the seriousness of the infringement based on its preliminary findings, having regard to the following criteria:

(a) the gravity and duration of the infringement and the permanence of the damages caused by the infringement;

(b) previous infringements perpetrated by that Union space operator of Union-owned assets;

(c) the material or non-material damage caused, or which could be caused, by or through the infringement, including financial or economic loss and adverse effects upon other services, as well as any relevant criteria as regards the impact of the infringement, such as the number of users affected or the magnitude of the losses incurred by a third-party as a result of that infringement;

(d) the intent or negligence on the part of the perpetrator of the infringement;

(e) the measures taken by the Union space operator of Union-owned assets to prevent or mitigate the material or non-material damage referred to in point (c);

(f) the level of cooperation during the investigation procedure, including any obstruction of audits or monitoring activities, following the discovery of the infringement;

(g) the importance of the profits gained, or of the losses avoided, by the natural or legal person responsible for the infringement;

(h) potential systemic consequences that such infringement may entail;

(i) the need for administrative fines to have a deterrent effect.

3. When the result of an investigation under this section does not allow the Agency to conclude on the existence of an infringement to this Regulation, the Agency shall adopt a decision closing the investigation. It shall without delay inform the Commission.

Article 55

Supervisory measures of the Commission

1. Upon receipt of the proposal of the Agency referred to in Article 54(1), first subparagraph, the Commission may take one or more of the following actions:

(a) establish the existence of an infringement and require the concerned Union space operator of Union-owned assets or space services provider referred to in Article 48(1), points (b) and (c), to bring the infringement to an end;

(b) where necessary, on the basis of a prima facie finding of infringement, order interim measures to avoid any irreparable damage;

(c) impose, pursuant to Article 56, an administrative fine or, as applicable, a periodic penalty payment;

(d) suspend or withdraw the authorisation of the concerned Union space operator of Union-owned assets, or respectively the registration in URSO of the

concerned space services provider referred to in Article 48(1), points (b) and (c);

(e) issue a public notice indicating the Union space operator of Union-owned assets or Article 48(1), points (b) and (c), responsible for the infringement and the nature of the infringement.

2. When taking the actions referred to in paragraph 1, the Commission shall consider the nature and seriousness of the infringement, having regard to the criteria referred to in Article 54(2).

Article 56

Fines and periodic penalty payments

1. Where the Agency proposes, pursuant to Article 54(1), first subparagraph, in respect to a Union space operator of Union owned-assets or a space services provider referred to in Article 48(1), points (b) and (c), that the Commission imposes a fine or a periodic penalty payment, for an infringement of this Regulation, the Commission may impose within the decision finding an infringement a fine or a periodic penalty payment, in accordance with paragraphs 2, 3, 4, 5, 6 and 7.

2. An infringement shall be considered to have been committed intentionally if objective factors demonstrate that a person acted deliberately to commit that infringement.

3. The maximum amount of the fine referred to in paragraph 1 shall be twice the amount of the profits that have been gained or twice the amount of losses that have been avoided because of the breach, where those can be determined, or, where this determination is not possible, 2 % of the total worldwide annual turnover, as defined in the relevant Union law, of a legal person in the preceding financial year.

4. When determining the level of the fine to be imposed pursuant to paragraph 1, the Commission shall take into account the criteria set out in Article 54(2).

5. The Commission may impose periodic fines and penalty payments to compel Union space operators of Union-owned assets, and respectively space services providers referred to in Article 48(1), points (b) and (c), to put an end to the infringement or to submit to an investigation, and in particular to produce the complete records, data, procedure or any other material required, and to complete and correct any other information provided in an investigation launched by a decision taken pursuant to Article 50.

6. A periodic penalty payment shall be effective and proportionate. The periodic penalty payment shall be imposed for each day of delay.

7. A periodic penalty payment shall be imposed for a maximum period of 6 months, following the notification of the decision of the Commission, unless it is determined, in the review of that measure, at the end of the period or 6 months, that the measure has not reached its purpose.

8. The amounts of the fines and periodic penalty payments shall be allocated to the general budget of the European Union.

9. With regard to the imposition of fines and periodic penalty payments in accordance with this Article, the Commission shall adopt delegated acts in accordance with Article 113, to supplement this Regulation, by laying down:

(a) the detailed criteria and methodology for establishing the amounts of the fines and periodic penalty payments;

(b) the detailed rules for the enquiries, associated measures and reporting, as well as the decision-making, including provisions on the rights of defence, access to file, legal representation, confidentiality and temporary provisions; and

(c) the procedures for the collection of the fines and periodic penalty payments.

10. The Court of Justice of the European Union shall have unlimited jurisdiction to review decisions imposing fines or periodic penalty payments. It may annul, reduce or increase the amount of a fine or periodic penalty payment imposed.

Article 57

Right to be heard of the persons subject to investigations

1. The Commission, before taking a decision pursuant to Articles 55 and 56, shall give Union space operators of Union-owned assets and space services providers referred to Article 48(1), points (b) and (c), which are subject to the proceedings, the opportunity to be heard on the findings and grounds on which the Commission intends to adopt a decision.

The Commission shall base its decisions only on findings on which the persons subject to the proceedings have had an opportunity to comment.

2. Persons subject to the proceedings shall be entitled to have access to the file held by the Commission, subject to the legitimate interest of other persons in the protection of business secrets.

The right of access to the file shall not extend to confidential information or to internal preparatory documents of the Agency or of the Commission.

Title IV
TECHNICAL RULES

Chapter I
SAFETY AND SUSTAINABILITY IN SPACE

SECTION 1
LAUNCHERS

Article 58

Launch Safety Plan

The Union launch operator shall submit to the competent authority a Launch Safety Plan in accordance with point 3, of Annex I.

Article 59

Safety and coordination measures during launch and re-entry

1. Union launch operators shall take appropriate measures to mitigate the risk of collision between the launcher and aircraft, maritime vessels or spacecraft, and debris in orbit, during the launch and re-entry phases.

2. The mitigation measures referred to in paragraph 1 shall include:

   (a) the implementation of the coordination requirements laid down in point 1.1, of Annex I with the competent authorities regarding air traffic services, the collision avoidance space services provider and the air traffic service providers that could be impacted.;

   (b) the performance of a risk assessment - the Launch Collision Avoidance ('LCOLA') - in accordance with point 1.2, of Annex I, and the implementation of the launch closure window accordingly;

   (c) the calculation and limitation of the casualty risk at launch and re-entry, in accordance with point 1.3, of Annex I.

3. The Commission shall, by means of implementing acts:

   (a) develop the method to calculate the LCOLA, based on the probability of collision which shall be adapted depending on the object of interest size, and on whether the spacecraft is habitable or active;

   (b) select, among existing methods, and develop, a new method for the calculation of the collective risk for casualties due to launch and re-entry, with due consideration for the following elements:

      (i) all the phenomena leading to a risk of catastrophic damage (ascent phase, fallout from stage after separation, re-entry into the atmosphere of a deck put into orbit, recovery phase of a reusable deck);

      (ii) pre-fragmentation trajectories (atmospheric or in outer space), depending on the flight times and faults considered;

      (iii) the corresponding fragmentation and debris generation scenarios, at the re-entry or at the moment of neutralisation of the launch vehicle and the return to Earth of any element of the launcher;

      (iv) the dispersion on the ground of the debris and the evaluation of the effects thereof;

      (v) the reliability of the launch vehicle for the launch phase, including, where applicable, during the recovery phase;

      (vi) the reliability of the deorbiting manoeuvre of the launcher element put into orbit, in the case of controlled re-entry;

   (c) establish the thresholds for the casualty risks, in accordance with point 1.3, point (b), of Annex I, for the mentioned risk scenarios;

   (d) set up the minimum coordination requirements between the Union launch operator, the collision avoidance space services provider, the competent authorities and traffic services providers to assess the impact of launch operations on other air traffic services during the launch and re-entry phases and to minimise the disruption.

   Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 114(2).

Article 60

Flight safety system

1. Launch vehicles shall either incorporate tracking devices or establish means of tracking that enable real-time monitoring of the launch vehicle position and of velocity.

2. Launch vehicles shall incorporate at least a telemetry data transmitting system for monitoring the launch vehicle performance data, except where the pre-flight analysis establishes that the flight of the launch vehicle will not result in an unknown and hazardous impact area of dispersion.

3. Union launch operators shall conduct a risk assessment to identify potential risk scenarios and implement mitigatory measures, in accordance with point 2.1, of Annex I.

4. Union launch operators shall add an on-board system for the neutralisation of the launcher, in accordance with point 2.2, of Annex I.

Article 61

Space debris mitigation for launchers

1. Union launch operators shall limit debris creation through the implementation of the following measures:

   (a) limitation of planned release of debris into Earth, during nominal operations, through the implementation measures set out in point 1.1, of Annex II;

   (b) protection against accidental fragmentation, through the implementation measures set out in point 1.2, of Annex II and point 1.3, of Annex II;

   (c) end-of-life disposal, in accordance with point 2, of Annex II.

2. Union launch operators shall submit the following space debris mitigation plans:

   (a) a debris control plan, in accordance with the technical and operational requirements laid down in point 3.1, of Annex II;

   (b) an end-of-life disposal plan, in accordance with point 3.2, of Annex II.

3. The Commission shall, by means of implementing acts:

   (a) establish the time period for when a launch vehicle deployed in Low Earth Orbit (LEO) shall be disposed, in accordance with point 1.1.1, point (e), of Annex II, including specific measures for the pyrotechnic system and the solid or hybrid propellant;

   (b) establish the safe region and time for disposal of launch vehicles deployed in Medium Earth Orbit (MEO), in accordance with point 1.1.1, point (d), of Annex II, including specific measures for the pyrotechnic system and the solid or hybrid propellant;

   (c) establish the threshold of probability of the risk of accidental fragmentation in orbit due to internal causes point 1.2.1, of Annex II;

   (d) establish the duration and the threshold of the risk of fragmentation due to collision in accordance with point 1.3, of Annex II;

(e) develop the conditions for design of the launch vehicle for demise for atmospheric re-entry and uncontrolled re-entry referred to in point 2.2, point (b)(ii), of Annex II; and

(f) develop the calculation method of the probability of successful disposal and the percentage threshold referred in point 2.5, of Annex II.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 114(2).

SECTION 2
SPACECRAFT

Article 62

Special regime for research and education spacecraft

1. Union spacecraft operators of research and education missions, are exempted from the requirements laid down in:

(a) Article 66, for research spacecraft intended to be placed in an orbit above the limit prescribed in that Article and below 600 km, where:

(i) a trackability system enables a precise positioning of the spacecraft and;

(ii) the relevant space mission documents demonstrated why manoeuvrability capabilities were not retained;

(b) Article 72, for spacecraft intended to remain in orbit less than one year;

(c) point 2.3, of Annex IV;

(d) point 2.5, of Annex IV;

(e) Point 1.2.1, point (e)(iv), of Annex V;

(f) Point 4.3, point (f)(iii), of Annex V.

For the purposes of point (c), of the first subparagraph, a contact point shall be available to respond in a reasonable operational time for LEO/MEO/GEO.

For the purposes of point (d), of the first subparagraph, the Union spacecraft operator of the research spacecraft may request the Union collision avoidance space services provider referred to in Article 64(1) to assist in the delivery of its spacecraft ephemerides and covariances.

For the purposes of point (e), of the first subparagraph, an obligation of redundancy shall take into consideration the technical limitations linked to the size of the spacecraft.

2. The exceptions referred to in paragraph 1 shall be assessed on a case-by-case basis, by taking into consideration the size and the weight of the spacecraft, and the duration and orbit of the mission.

Article 63

Trackability

1. Union spacecraft operators shall ensure that a spacecraft possesses the technical means to allow trackability and precise determination of the orbital position, in accordance with point 1, of Annex III.

   Union spacecraft operators shall ensure that systems at the ground segment are able to process data in an existing recognised data format, in accordance with point 2, of Annex III.

2. The Commission shall, by means of implementing acts, specify the level of precision required for the trackability of spacecraft, as referred to in point 1.1, of Annex III. That implementing act shall be adopted accordance with the examination procedure referred to in Article 114(2).

Article 64

Collision Avoidance (CA)

1. Union spacecraft operators shall subscribe to the CA space services provided by the collision avoidance space services provider in charge of the Space Surveillance and Tracking (SST) sub-component referred to in Article 58(2) of Regulation (EU) 2021/696 ('Union CA space services provider').

2. The subscription referred to in paragraph 1 shall cover all phases of a space mission, including orbit raising, ISOS and end of life phases, with the exclusion of the re-entry phase.

3. During operation, Union spacecraft operators shall inform without delay the Union CA space services provider of any of the following:

   (a) any planned changes to the operation;

   (b) the decision to start the disposal phase and to initiate the end-of-life phase, by providing the relevant information three months in advance from the date of the start of the procedure;

   (c) any unplanned changes to the operations, including regarding problems encountered during the lifetime of the space mission and the disposal phase, that would impact compliance to this Regulation, without undue delay.

4. Union spacecraft operators shall comply with the requirements laid down in point 2, of Annex IV, and shall cooperate with the Union CA space services provider, in accordance with the requirements therein.

5. Upon receipt of a high interest event alert, Union spacecraft operators shall inform without delay the Union CA space services provider of all actions taken to avoid the collision, in accordance with point 2, of Annex IV.

Article 65

Re-entry services

1. Union spacecraft operators shall send the necessary data and information, such as positioning, state of the spacecraft, possibility to communicate, to enable a more accurate re-entry service to the Union CA space services provider referred to in Article 64(1), without prejudice to the transmission to the entity in charge of re-entry service in the Space Surveillance and Tracking (SST) sub-component referred to in Article 58(2) of Regulation (EU) 2021/696.

2. The entity in charge of re-entry service referred to in paragraph 1 shall ensure the necessary coordination with the relevant authorities and air traffic services providers to minimise the impact of the re-entry on other traffic services.

Article 66

Spacecraft manoeuvrability

1. Union spacecraft operators shall ensure that a spacecraft is designed, produced, and operated in a way that allows the spacecraft to have and enable manoeuvrability capabilities for orbits with an apogee above 400 km.

2. The manoeuvrability capability referred to in paragraph 1 shall at least:

   (a) comply with the requirements set out in point 2, of Annex IV, and allow to respond to a high interest event alert, in accordance with Article 64(5);

   (b) enable the performance end-of-life disposal in accordance with Article 70(1), point (c);

   The ground segment shall be capable of receiving orbital forecasts and process data in accordance with point 2, of Annex III.

Article 67

Contact list database for high interest event alerts

1. The Agency shall set up and manage a Union contact list database for high interest event alerts (‘contact list database’).

2. Union spacecraft operators shall report to the Agency the contact details of their relevant staff in charge of collision avoidance and re-entry activities, for inscription by the Agency into the contact list database established in accordance with paragraph 1.

3. The Agency shall share the contact list database with the Union collision avoidance space services provider referred to in Article 64(1).

Article 68

Orbital traffic rules

1. Union spacecraft operators shall comply with the orbital traffic and coordination requirements laid down in point 2, of Annex IV.

2. The Commission shall, by means of implementing acts, adopt rules specifying the collision avoidance requirements laid down in point 2, of Annex IV.

   Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 114(2).

Article 69

Positioning in orbit

1. Before launch, Union spacecraft operators shall analyse the choice of orbit and shall give reasons for that choice.

Union spacecraft operators shall select the orbit based on an analysis taking into account the existing spacecraft and the debris in orbits.

2. The Commission shall, by means of implementing acts, develop:

(a) specific methods of calculating the congestion of LEO, MEO and GEO;

(b) methods to calculate the selection of the orbit, on the basis of recognised and state of the art methods.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 114(2).

Article 70

Space debris mitigation

1. Union spacecraft operators shall take the following measures:

(a) limitation of planned generation of debris into Earth, during nominal operations, in accordance with point 1.1, of Annex V;

(b) limitation of risk of accidental fragmentation, in accordance with point 1.2, of Annex V and point 1.3, of Annex V;

(c) completion of the end-of-life disposal, in accordance with point 3, of Annex V;

(d) implementation of a failure response plan, in accordance with point 4.3, of Annex V;

(e) ensuring the reliability of the design, in accordance with point 2.1, of Annex V; and

(f) setting-up the operational procedures for the quality and reliability control, in accordance with point 2.2, of Annex V.

2. Union spacecraft operators shall draw up the following space debris mitigation plans and shall demonstrate fulfilment of the requirements laid down in paragraph 1:

(a) a debris control plan, in accordance with point 4.1, of Annex V;

(b) an end-of-life disposal plan, in accordance with point 4.2, of Annex V;

(c) a failure response plan, in accordance with point 4.3, of Annex V.

3. The Commission may, by means of implementing acts:

(a) develop the measures to limit the generation of debris, by restricting projected releases of debris by numbers and duration in orbit, including specific rules for pyrotechnic devise and solid rocket motors design as referred to in point 1.1, of Annex V;

(b) develop measures to limit risk of fragmentation to:

(i) limit the internal causes of fragmentation and the risk of collision referred to in point 1.2.1, point (a), of Annex V;

(ii) develop the design and manufacture requirements to limit the risk of fragmentation due to collision referred to in point 1.3, points (a) and (b), of Annex V;

(iii) develop the method to calculate the probability of collision and the threshold referred to in point 1.3, points (c) and (d), of Annex V;

(c) specify the end of life measures by:

(i) determining the threshold for the probability of successful disposal and the method for calculation referred to in point 3.1.2, of Annex V and point 3.1.3, of Annex V;

(ii) defining the maximum orbital lifetime in LEO before re-entry, referred to in point 3.4.2, of Annex V;

(iii) developing the requirements related to re-entry for LEO, referred to in point 3.5.4, of Annex V, point 3.5.6, of Annex V and point 3.5.8, of Annex V;

(iv) setting out the specific requirements for re-entry for MEO, referred to in point 3.6, of Annex V;

(d) specify the technical conditions for soft passivation referred to point 1.2.1, point (e)(v)(2), of Annex V, and for passivation for re-entry referred to in point 1.2.1, point (f), of Annex V;

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 114(2).

4. The Commission is empowered to adopt delegated acts in accordance with Article 113 to amend the order of preference laid down in point 3.3, of Annex V, in order to reflect and adapt such order to the technological progress as regards ISOS.

Article 71

Mission extension

1. Where a Union spacecraft operator wishes to extend a space mission, that Union spacecraft operator shall submit to the competent authority a request to extend a space mission, at the latest 3 months before the planned end of the concerned space mission.

2. Upon request submitted in accordance with paragraph 1, the competent authorities may decide to extend the duration of a space mission carried out by a Union spacecraft operator beyond the period for which the initial authorisation has been granted.

3. Competent authority shall approve the request for the extension of the space mission if the spacecraft still meets the requirements laid down in Annex V.

Article 72

Light and radio pollution

1. Union spacecraft operators shall establish a plan containing measures that are adequate to limit light and radio pollution in accordance with paragraph 2.

2. The visual magnitude for spacecraft during the entire lifetime, including the design requirements on low reflectivity coating or shielding, shall be at least 7 magnitude.

The plan referred to in paragraph 1 shall include all of the following elements:

(a) a description of the technical and operational measures implemented by the Union spacecraft operator to reduce the visible brightness of the spacecraft and to minimise the impact of satellites on astronomical observations;

(b) a description of the technical and operational measures implemented by the Union spacecraft operator to limit disruptions for radio astronomy observatories and to minimise the impact of satellites on astronomical observations.

Article 73

Constellations

1. Union spacecraft operators of a constellation, a mega-constellation or a giga-constellation shall:

   (a) ensure that each individual spacecraft has a propulsion system;

   (b) maintain at the ground segment a catalogue of the individual spacecraft trajectories and perform on a daily basis collision risk screenings;

   (c) ensure the safety in accordance with the requirements laid down in point 1, of Annex VI, as regards intra-constellation collision avoidance measures;

   (d) comply with the additional reporting obligations referred to in point 2, of Annex VI.

2. Union spacecraft operators of a mega-constellation or a giga-constellation shall:

   (a) take into consideration, for the choice of the orbit, the following elements:

      (i) the full constellation deployment's impact on the orbit congestion;

      (ii) before choosing the orbit, existing constellations in orbit;

      (iii) ensure that the orbit chosen does not collocate with other space object implying a high number of recurrent and systematic conjunction situations;

      (iv) the total number of collision avoidance manoeuvres expected during the lifetime of the satellite constellation.

   (b) limit the consequences of dead-on arrival spacecraft, by injecting spacecraft at an orbit:

      (i) that allows a short re-entry period of the spacecraft;

      (ii) where there are limited collision risks.

   (c) ensure that the requested probability of successful disposal referred to in Article 70(1), point (c), is proportionate to the number of spacecraft;

   (d) ensure that the time spent in orbit after the end-of-life is lower compared to the one laid down in Annex V.

3. Union space operators of a giga-constellation shall provide to the competent authority, during the spacecraft design and operation, a plan evidencing the availability of propellant necessary to tackle the high number of manoeuvres related to the anticipated number of required collision avoidance.

4. The Commission shall, by means of implementing acts:

   (a) specify the risk of intra-constellation collision, in accordance with point 1.2, point (c), of Annex VI;

   (b) limit light and radio pollution, in accordance with point 2.1, of Annex VI.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 114(2).

Article 74

Applicability of product requirements

In their contracts concluded with supplier manufacturers, Union space operators shall ensure the conformity of contracted space objects or, as applicable, conformity of components, with the design and the manufacturing requirements as laid down in this Chapter.

Chapter II
RESILIENCE OF SPACE INFRASTRUCTURE

SECTION 1
GENERAL PROVISIONS

Article 75

Relationship with NIS 2 and CER Directives

1. In relation to Union space operators qualifying as essential or important entities pursuant to Article 3 of Directive (EU) 2022/2555 with regard to space activities and space services covered by this Regulation, this Regulation shall be considered, as regards Article 21 of Directive (EU) 2022/2555, related to cybersecurity risk-management measures, a sector-specific Union legal act, for the purposes of Article 4 of that Directive.

2. Where Union space operators have been identified as critical entities in accordance with Directive (EU) 2022/2557, this Regulation shall apply in complementarity with Directive (EU) 2022/2557.

3. For the purposes of this Chapter, the competent authorities shall cooperate with the relevant authorities designated or established pursuant to Article 9(1) of Directive 2022/2557, as follows:

   (a) in the context of supporting the risk assessments to be carried out under this Regulation, pursuant to Article 78(2), and the risk assessments to be carried out under Directive (EU) 2022/2557, pursuant to Article 12(2), second subparagraph, and to Article 13(2);

   (b) whenever necessary for the purposes of ensuring consistency in the application of this Regulation and Directive (EU) 2022/2557, and of sharing information, including for the purposes referred to in Articles 11, 15, 18 and 21 of that Directive.

SECTION 2
RISK MANAGEMENT

Article 76

Risk management through the lifecycle of space missions

1. Union space operators shall take all the necessary measures to manage the risks posed to the security of network and information systems and the security of the physical infrastructure and environment, in accordance with the principle of proportionality, taking into account their risk profile and size, as well as the nature, scale and complexity of their space activities.

   The measures referred to in the first subparagraph shall be:

   (a) comprehensive, to cover, depending on the tasks being carried out, all segments of space infrastructure, including the ground infrastructure, encompassing the systems and subsystems thereof;

   (b) appropriate and proportionate to risks;

   (c) based on an all hazard-approach.

2. The measures referred to in paragraph 1, first subparagraph, shall allow Union space operators to:

   (a) ensure at all times the resilience of space infrastructure;

   (b) maintain effective technical control of their space missions, while allowing a level of risk that is appropriate and consistent with the objectives and the features of each space mission and compliant with supervisory instructions.

3. Union space operators shall take into account at least the following criteria when assessing the appropriate and consistent level of risk in accordance with paragraph 2, point (b):

   (a) the type and features of the space mission, such as its specific objectives, the orbit, the constellation size;

   (b) the impact upon other space activities;

   (c) the size of the respective entity, the degree of exposure to risk and the likelihood and severity of incidents, including their societal and economic impact.

4. Union space operators shall manage the risks referred to in paragraph 1, first subparagraph, to ensure the digital and physical resilience of space infrastructure, throughout the lifecycle of space missions, with due regard to:

   (a) the conception and design phases, including the preparatory activities to the manufacturing phase, such as mission analysis, system analysis, system definition, system design, until the complete determination of systems;

   (b) the manufacturing and test phases, such as manufacture, assembly, integration, verification, validation and qualification phases;

   (c) the operational phase, including:

      (i) the transport, commissioning, launch and early orbit phase (‘LEOP’);

      (ii) the operation of a space object, the routine phase, the activities related to the control, management and monitoring of a space mission and any relevant coordination thereof;

      (iii) maintenance of the ground segment and space segment;

      (iv) carrying out in-space operations and services, such as on-orbit servicing;

(d) the end of life phases, notably the end of the space mission, the passivation, the disposal, the decommissioning and de orbiting phases;

(e) any supporting activities, such as transport, storage, logistics, maintenance services, management of general ICT infrastructure.

5. Union space operators shall establish, implement and maintain an information security management system in accordance with relevant standards.

The information security management system referred to in the first subparagraph shall be part of the overall risk management of Union space operators and shall be implemented in a way that allows them to efficiently and comprehensively address all sources of risk, pursuant to Article 78(1), point (a), and the principles laid down in paragraph 2, point (b).

6. Union space operators shall establish, implement and apply a policy and procedures to assess whether the cybersecurity risk-management measures taken are effectively implemented and maintained.

Article 77

Organisational aspects

1. The management body of a Union space operator shall oversee, be responsible and held liable for, the implementation of the risk management measures taken to ensure compliance with the requirements laid down in this Chapter.

2. Union space operators shall set up, revise and monitor internal mechanisms regarding the human resources security policy, to ensure that all personnel, understand and commit to security responsibilities, in line with roles and responsibilities. Union space operators shall set up human resources polices to ensure throughout the hiring and disciplinary processes any needed vetting and checks.

Article 78

Risk assessments

1. Throughout the life cycle of space missions, Union space operators, shall:

(a) identify and assess, on a continuous basis, all sources of risks;

(b) regularly review the identified risks;

(c) identify cybersecurity and physical vulnerabilities and incidents and analyse, in view of the risk assessment referred to in paragraph 2, when such vulnerabilities cannot be fixed or mitigated immediately;

(d) establish dedicated risk treatment plans for all the cybersecurity vulnerabilities identified which create a risk above the level of risk referred to in Article 76(2), point (b).

2. Union space operators shall carry out risk assessments in accordance with point 1, of Annex VII.

3. The Commission is empowered to adopt delegated acts, in accordance with Article 113, to supplement this Regulation by:

(a) establishing, for the purposes of the risk scenarios referred to in point 1.4, point (f), of Annex VII, the criteria for the identification of:

(i) critical assets, critical functions, critical operations and critical stages, throughout the lifecycle of space missions, for which Union space operators shall develop security risk scenarios;

(ii) critical assets and critical functions referred to in Article 79(1), first subparagraph, for which the entities applying a simplified risk management shall develop security risk scenarios;

(b) developing risk scenarios that are tailored to the risks addressed by Union space operators, and respectively entities applying a simplified risk management;

(c) establishing a minimal list of security objectives, including the risk levels to be taken into account;

(d) developing the criteria and the methodology to ensure the comparability of risk assessments, to facilitate the supervisory activities ('supervisory reviews') of competent authorities;

(e) develop threat modelling methods to support the risk assessments for different segments and systems of space infrastructure;

(f) develop risk treatment measures to be applied by the Union space operators.

Article 79

Simplified risk management

1. Entities subject to the simplified risk management referred to in Article 10(3) shall apply the measures laid down in point 9, of Annex VII, only in relation to critical assets and critical functions, needed to address the risks of:

(a) loss of control of assets with propulsion;

(b) loss of control of assets with capacity to emit interferences susceptible to adversely impact the security of other space operations.

2. Competent authorities shall submit to the Agency the list of entities applying a simplified risk management.

3. The Agency shall report to the Commission annually on the application of the simplified risk management across the Union. The Agency may submit recommendations to facilitate supervisory convergence across the internal market.

The main findings of the reports referred to in the first subparagraph shall be tabled, as appropriate, on the agenda of the meetings of the EU Space Resilience Network established in accordance with Article 94(1).

4. To allow the provisions of this Regulation to be adapted to scientific and technical progress, based on the best available techniques, the Commission is empowered to adopt delegated acts in accordance with Article 113 to amend the requirements laid down in point 9, of Annex VII.

Article 80

Identification and management of information and assets of space infrastructure

1. Union space operators shall establish, maintain and update comprehensive policies for the categorization and management of information and assets of space infrastructure.

2. Union space operators shall identify and document assets in accordance with point 2, of Annex VII, considering the risk assessments referred to in Article 78(2), and proportionately with the need to monitor and detect incidents referred to in Article 83.

3. Union space operators shall categorise information according to information security needs, based on, at least:

   (a) the need to ensure the confidentiality, integrity, authenticity and availability of information;

   (b) the level of criticality required by the security level of the respective space mission.

4. For the purposes of paragraphs 1, 2 and 3, Union space operators, and respectively entities applying a simplified risk management, as regards the critical assets and critical functions referred to in Article 79(1), first subparagraph, shall set up and maintain inventories.

   The inventories referred to in first subparagraph shall be drawn-up by individual space mission, indicating the origin and the current physical location of assets, including the identification of a cloud-based service, when relevant. Inventories shall be up to date.

Article 81

Management and control of access rights

1. Union space operators shall implement the management and control of access rights through identity and access management protocols.

2. The protocols referred to in paragraph 1 shall set-out the conditions and procedures for the logical and physical access rights to systems and assets, including for remote access.

3. The identity and access management protocols referred to in paragraph 1 shall:

   (a) be capable of safeguarding accesses to the ground segment and to the centres for the control of the space segment;

   (b) allow restriction of physical and logical access to all critical assets, critical information, critical functions, critical operations and, as appropriate, critical equipment or information identified in accordance with Article 80(2);

   (c) be tailored to standard operations and to emergency situations, to enable effective and timely emergency responses upon the activation of the response and recovery plans referred to in Article 87.

4. When setting-out the conditions and procedures referred to in paragraph 2, Union space operators shall cover the issuance, the continuous management (including change, upgrade or downgrade), the revocation, termination, verification and the audit of logical and physical access rights for all authorised devices, processes, and users.

Those conditions and procedures shall be based on the principles of 'need to know' and 'the least privilege' (limitation to what is required for ensuring a legitimate and approved use or activity).

5. The identity and access rights referred to in paragraph 2 shall be revoked automatically when the authorizations of staff or devices expire or are no longer needed.

6. The identity and access management protocols referred to in paragraph 1 shall ensure adequate protection of information and assets identified in accordance with Article 80(2) from risks, including from damage, misuse or unauthorised access or usage.

Article 82

Physical resilience

1. Union space operators shall take the measures laid down in point 3, of Annex VII, and any other measures that are necessary and adequate to ensure the resilience of the physical assets and which are at least equivalent to the technical, security and organisational measures referred to in Article 13 of Directive (EU) 2022/2557 to ensure the resilience of the ground segments.

2. Where Union space operators have been identified as critical entities in accordance with Directive (EU) 2022/2557, this Regulation shall apply without prejudice to, and in complementarity with, that Directive.

3. Union space operators shall define, protect and segregate areas that contain assets and information which are deemed sensitive or identified as critical, based on the identification carried out pursuant to Article 80(2).

4. The Commission is empowered to adopt delegated acts in accordance with Article 113, to amend the requirements laid down in point 3, of Annex VII, to adapt them to the scientific and technical progress, based on the best available techniques.

Article 83

Detection and monitoring of incidents

1. Union space operators shall monitor on a continuous basis the occurrence of anomalies and incidents by using appropriate detection systems and mechanisms.

2. Union space operators, and respectively entities applying the simplified risk management, as regards the critical assets and critical functions referred to in Article 79(1), first subparagraph, shall ensure that the ground stations have access to detection systems and mechanisms that comply with at least the requirements laid down in point 4, of Annex VII.

3. The spacecraft and the ground segment shall be configured to generate and respectively receive, upon detection of an incident, a security event which shall be sent to a security monitoring subsystem. The security monitoring subsystem of the ground segment shall be, in terms of information technology, segregated from the rest of the infrastructure (logical segregation).

4. Union space operators shall ensure that the detection systems and mechanisms are regularly tested in accordance with Articles 88 and 89.

5. The Commission is empowered to adopt delegated acts in accordance with Article 113, to amend the list of requirements laid down in point 4, of Annex VII, to adapt them to the scientific and technical progress, based on the best available techniques.

Article 84

Prevention and protection

1. Union space operators shall tailor the measures concerning the cybersecurity of the spacecraft and the ground segment adopted in accordance with this Chapter to the specific needs of the space mission and shall adequately cover the risks identified in the security risk assessment referred to in Article 78(2).

2. Union space operators shall ensure that the network and information systems fulfil the following conditions:

   (a) they comply with the requirements laid down in point 5.1, of Annex VII;

   (b) they are configured to allow the ground segment to supervise the telemetry/telecommand on ground and to supervise the state of the spacecraft;

   (c) they enable Union space operators to maintain effective technical control of the space segment.

3. Union space operators, and respectively entities applying a simplified risk management, as regards the critical assets and critical functions referred to in Article 79(1), first subparagraph, shall ensure that only authorised devices communicate with the systems in charge of the control, command of a satellite, and configuration of the space mission.

   They shall comply to that effect with at least the requirements laid down in point 5.2, of Annex VII and point 5.3, of Annex VII.

4. Union space operators shall implement preventive and protective measures that are necessary and adequate to ensure the resilience of space activities, by taking at least the measures regarding the ground segment which are laid down in point 5.4, of Annex VII.

5. The Commission is empowered to adopt delegated acts in accordance with Article 113 to amend the requirements laid down in point 5, of Annex VII, to adapt them to the scientific and technical progress, based on the best available techniques.

Article 85

Cryptography and encryption

1. Based on the risk assessment referred to in Article 78(2), Union space operators, and respectively entities applying a simplified risk management, as regards the critical assets and critical functions referred to in Article 79(1), first subparagraph, shall comply with the following:

   (a) they shall define a cryptographic concept to ensure the cybersecurity of the space missions, by duly considering all the relevant criteria, such as the objective of the space mission, the features of the payload, any functional requirement and any relevant threat scenarios;

   (b) they shall select cryptographic mechanisms in accordance with the relevant standards and recommendations of competent authorities;

(c) they shall implement policies and procedures for the use of cryptography and encryption for their space missions.

2. Union space operators shall establish a lifecycle management policy for the cryptographic keys which shall set out rules for the protection and management of cryptographic key to ensure the secure generation, use, storage, distribution, and disposal thereof.

3. For the purposes of paragraph 1, first subparagraph, Union space operators shall implement at least the following requirements:

(a) end-to-end authentication of the links between the satellite control centres and the space segment, by using cryptographic mechanisms between the ground segment and the satellite;

(b) ensure the encryption of telecommands considering the risk assessments referred to in Article 78(2), and following recommendations from supervisory reviews;

(c) ensuring the availability of cryptographic keys and parameters that are necessary to ensure the implementation of the response and recovery plans referred to in Article 87, through redundant cryptographic equipment, or by implementing key escrowing.

4. The Commission is empowered, in accordance with Article 113, to adopt delegated acts to further supplement the use by Union space operators of cryptographic products and related key management products or services certified under the European cybersecurity certification schemes adopted pursuant to Article 49 of Regulation (EU) 2019/881, to ensure the protection of the telemetry and telecommands.

Article 86

Backup management and redundancies

1. Union space operators and respectively entities applying a simplified risk management, as regards the critical assets and critical functions referred to in Article 79(1), first subparagraph, shall ensure a sound and comprehensive backup management policy to enable the restoration of the network and information systems, and to facilitate, with minimum downtime and limited disruption or loss recovery, the recovery processes and the retrieval of data, upon the activation of the response and disaster recovery measures.

That policy shall specify the data subject to the backup management, the frequency of backups, and the restoration and recovery procedures and methods used.

2. Union space operators shall ensure that the backup systems do not jeopardise the security of the network and information systems, or the confidentiality, integrity, authenticity, and availability of data.

3. Union space operators and respectively entities applying a simplified risk management, as regards the critical assets and critical functions referred to in Article 79(1), first subparagraph, shall ensure sufficient redundancies of relevant components of the network and information systems in the ground segment.

They shall in particular:

(a) ensure redundancies of elements, other than the components of the network and information systems, as necessary to safeguard the continuity of operations, for instance redundancies of power supply in the form of generators for secondary processing sites;

(b) ensure geographical splitting into distinct locations, as deemed appropriate, of redundant elements and of back-up;

(c) ensure an adequate survivability of the space segment, without intervention, to facilitate quick recovery from incidents, such as notably from cyber-attacks, disasters, failures, as well as from an accidental interruption of services.

4. The Commission is empowered to adopt delegated acts in accordance with Article 113, to specify further the requirements on backup needed to ensure adequate survivability of the space segment and to facilitate quick recovery from incidents in order to allow the provisions of this Regulation to be adapted to scientific and technical progress, based on the best available techniques.

Article 87

Business continuity policy and response and recovery plans

1. As part of their risk management, Union space operators shall put in place and shall document incident and crisis management measures. The measures shall be structured into a business continuity policy which shall be implemented through tailored response and recovery plans.

2. The response and recovery plans referred to in paragraph 1 shall allow Union space operators to quickly and effectively respond to incidents and contain the adverse effects thereof.

3. The crisis management measures taken by Union space operators shall build on the measures established, within the space segment and the ground segment, including redundancies and backups, to mitigate in particular the following:

(a) natural disasters;

(b) operation accidents;

(c) disruptions in the supply of utilities, notably during the operation phases;

(d) loss of power generation, power failures and disturbances and changes of conditioning of the relevant equipment;

(e) loss of physical assets at the ground segment, including, for instance, loss of mission control centres, loss of satellite control centres, and loss of terrestrial interconnection between them;

(f) interferences on the ground-to-space, space-to-ground and the space-to-space radio frequency links;

(g) altered or compromised parts of the ground segment, including as regards the cryptographic keys.

When implementing the requirements set out in the first subparagraph, Union space operators shall take into consideration the need to maintain effective technical control of the space segment, and ensuring the continuity of services and minimising the areas of the unavailability of services.

4. Union space operators shall ensure that staff involved in carrying out business continuity measures and implementing response and recovery plans have acquired full and adequate trainings needed to fulfil their roles.

Article 88

Testing

1. Union space operators shall establish, maintain and review a testing programme for the network and information systems, as an integral part of their risk-management.

2. The testing programme referred to in paragraph 1 shall include testing campaigns comprising all necessary tests, notably considering the risk assessment referred to in Article 78(2).

3. Union space operators shall ensure that, prior to launch, or in the case of satellites part of a constellation, prior to the launch of the first batch of satellites, and at least every 3 years afterwards, they carry out Threat Led Penetration Testing (TLPT).

   The plan for testers carrying out a TLPT shall outline the scope and the methodology of the TLPT, the entity in charge of carrying out such test, the mitigation strategy for any risks which carrying out of a TLPT may entail.

   Testers carrying out TLPT shall comply with the following requirements:

   (a) they shall be of the highest suitability and reputability;

   (b) they shall possess all technical and organisational capabilities and shall demonstrate specific expertise in penetration testing;

   (c) they shall provide an independent assurance or an audit report;

   (d) they shall present a redress plan to address the identified risks.

   Testers that are external to the corporate structure of the Union space operators shall be certified by an accreditation body of a Member State or shall adhere to formal codes of conduct or ethical frameworks. They shall be fully covered by a relevant professional indemnity insurance against risks of misconduct and negligence.

   Union space operators shall monitor system failures and anomalies observed during the testing processes and evaluate their criticality.

Article 89

Learning and training

1. Union space operators shall provide their staff with appropriate training, in accordance with paragraphs 2, 3, 4, 5 and 6.

2. All staff of Union space operators shall be adequately and continuously trained and shall follow the trainings referred to in point 7.1, of Annex VII.

3. Union space operators shall ensure that all staff receive tailored trainings in accordance with point 7.2, of Annex VII.

4. All security personnel working for the Union space operators shall have the required security skills and shall be adequately trained.

5. Staff of Union space operators operating in sensitive environments or handling sensitive equipment or data shall be regularly trained on the best methods and practices to carrying out such tasks.

6. Union space operators shall incorporate the lessons learned from the handling of incidents by updating business continuity plans, training sessions and staff testing programmes.

Article 90

Crisis communication and disclosure policy

1. Union space operators shall put in place a crisis communication strategy which shall enable responsible disclosure of significant incidents and shall be targeted to, and tailored for, each of the following categories:

   (a) staff involved in the execution of risk management tasks, notably response and response and recovery measures;

   (b) staff, other than that staff referred to in point (a), to the extent that communication to such staff is deemed appropriate for ensuring general corporate awareness, based on the need-to-know principle;

   (c) clients, to alert them of, and raise awareness of, significant cyber threats;

   (d) in the case of satellites hosting third-party payloads, where an incident has adverse impact on the satellite platform operations, the concerned third-party entity, according to a pre-defined agreement and following instructions set out in its response and disaster recovery plan.

2. At least one person in the corporate structure of Union space operators shall be responsible of the implementation of the communication strategy referred to in paragraph 1 and shall fulfil the function of media officer.

Article 91

Handling of incidents

1. Union space operators shall establish and implement an incident management process that allows them to promptly detect, identify, handle and respond to incidents and to report significant incidents in accordance with Article 93.

   Union space operators shall set up roles and responsibilities in relation to the different types of incidents which shall be adapted to the different risk scenarios.

2. Union space operators shall ensure that at least the significant incidents are reported to the senior risk management staff immediately.

   The management body shall receive, on a regular basis, to be determined by the chief information security officer, the security manager or the senior risk management officer, sufficient information about the significant incident, an assessment of their impact, information about the response and recovery measures which have been taken and any additional controls and procedures to be established in the follow-up of that significant incident.

3. When a satellite hosts third-party payloads, and an incident has adverse impact on the satellite platform operations, Union space operators shall inform the concerned third-party entity and shall follow the instructions set out in the pre-defined

agreements referred to in the second subparagraph and those set out in the response and disaster recovery plans.

For those purposes of ensuring speed and effective handling of incidents, Union space operators shall conclude agreements with third-party entities for which a satellite host a payload.

4. Union space operators shall address the root causes of incidents to prevent the occurrence of future incidents.

Article 92

Supply chain risk management

1. Union space operators shall establish a supply chain risk management framework. Their contracts with supplier manufacturers and service providers shall contain supply-chain security-related aspects in particular on information security requirements.

2. Union space operators shall base their supply chain risk management on a strategy to reduce risks in the supply chain which shall include at least the measures referred to in point 6, of Annex VII.

3. Union space operators shall establish an inventory of at least the critical assets of non-Union origin, which, considering the risk assessment referred to in Article 78(2), are needed to maintain an effective technical control of the space mission, such as the orbital control, with a view to supporting the analysis of the level of dependence of the space missions of the respective assets.

4. To allow the provisions of this Regulation to be adapted to scientific and technical progress, based on the best available techniques, the Commission is empowered to adopt delegated acts in accordance with Article 113, to amend the list of requirements laid down in point 6, of Annex VII.

SECTION 3
REPORTING OF INCIDENTS

Article 93

Reporting of significant incidents

1. Union space operators shall report to the structure referred to in Article 34(4) of Regulation (EU) 2021/696 significant incidents affecting the Union-owned assets.

2. Without prejudice to paragraph 3, Union space operators shall report to the competent authorities referred to in Article 28(1) the significant incidents affecting the assets referred to in Article 5, first paragraph, point (21). The competent authorities referred to in Article 28(1) shall in turn transmit a summary of each reported incident to the Agency.

3. Where Union space operators qualify as essential or important entities pursuant to Annexes I or II of Directive (EU) 2022/2555, the reporting referred to in paragraph 2, shall be carried out through the CSIRTs, established pursuant to Article 10 (1) of Directive 2022/2555 or, where applicable, the competent authority, established pursuant to Article 8(1) of Directive 2022/2555, which shall, without delay, transmit all the relevant reported information to the competent authorities referred to in

Article 28(1), including any technical support and feedback that such CSIRTs or authorities provided to space operators pursuant to Articles 23 of that Directive.

Where Union space operators have been identified as critical entities pursuant to Directive (EU) 2022/2557, Member States shall determine whether the reporting referred to in the first subparagraph shall be carried out by the Union space operators directly to the competent authorities referred to in Article 28(1), or to the authorities referred to in Article 15 of that Directive or by other means.

The provisions of paragraph 7 shall in that case apply accordingly as regards the information to be transmitted.

4. For Union space operators qualifying as essential or important entities pursuant to Annexes I or II of Directive (EU) 2022/2555, or which are identified as critical entities pursuant to Directive (EU) 2022/2557, respectively, the reporting requirement referred to in paragraphs 2 and 3 shall be without prejudice to the reporting obligations provided for in Article 23 of Directive (EU) 2022/2555 or the notification obligations provided for in Article 15(1) and (2) of Directive (EU) 2022/2557, respectively.

5. Without prejudice to the technical input, advice, remedies and subsequent follow-up which may be provided, as applicable, in accordance with national law, by the CSIRTs, in accordance with Article 11 of Directive (EU) 2022/2555, competent authorities may provide feedback to Union space operators, by making available any relevant anonymised information on cyber threats and may discuss remedies or ways to minimise and mitigate potential adverse impact across borders.

6. An incident shall be considered significant if:

   (a) it has caused or can cause a severe operational disruption of space activities carried out by Union space operators, or of services provided, or considerable financial loss for the Union space operators concerned;

   (b) it has an impact on, or can impact, other natural or legal persons by causing considerable material or non-material damage.

7. Union space operators shall submit to the Agency, as regards the requirement referred to in paragraph 1, and respectively to the competent authorities, as regards the requirement referred to in paragraph 2, the following information:

   (a) without undue delay, and in any event within 12 hours of becoming aware of the significant incident, as regards the Union-owned assets, and within 24 hours for assets referred to in Article 5, first paragraph, point (21), respectively, an early warning which shall indicate whether the significant incident may have been caused by unlawful or malicious acts, or if it could have a cross-border impact;

   (b) without undue delay, and in any event within 72 hours of becoming aware of the significant incident, a report, which shall update the information referred to in point (a), and shall provide an initial assessment of the significant incident, including its severity and impact, as well as, where available, the indicators of compromise;

   (c) upon the request of the competent authority, or as applicable, of the Agency, an intermediate report with relevant status updates;

(d) a final report, not later than 1 month after the submission of the report referred to in point (b), including the following:

(i) a detailed description of the significant incident, including its severity and impact;

(ii) the type of threat or the root cause that is likely to have triggered that significant incident;

(iii) the applied and ongoing mitigation measures;

(iv) as applicable, the cross-border impact of the significant incident;

(e) if a significant incident is still ongoing at the time of the submission of the final report referred to in point (d), a progress report at that time, as well as a final report within 1 month from the date of the handling the significant incident.

The Commission is empowered to adopt delegated acts, in accordance with Article 113, to supplement this Regulation, by specifying the criteria to determine what constitutes a severe operational disruption of space activities, or of services provided by a Union space operator, as referred to in paragraph 6, point (a), including the relevant materiality thresholds.

8. The Commission is empowered to adopt implementing acts, in accordance with the examination procedure referred to in Article 114(2), to specify in further detail the content of the information to be reported pursuant to paragraph 7, and to lay down the templates and procedures for the reporting of that information.

Article 94

Union Space Resilience Network

1. The Union Space Resilience Network ('EUSRN') is established to support coordination and exchanges between the Agency and the competent authorities in fulfilling their respective mandates as regards Union-owned assets and respectively the assets referred to in Article 5, first paragraph, point (21).

2. The EUSRN shall have the following tasks:

(a) to ensure consistent approaches among the competent authorities when providing the advice and support referred to in Article 93(5), and support the Union space operators in achieving coherence in their monitoring and handling of significant incidents;

(b) to prevent, as regards significant incidents affecting the assets referred to in Article 5, first paragraph, point (21), adverse impacts in the functioning of the Union Space Programme referred to in Article 1 of Regulation (EU) 2021/696, as well as to promote, for that purpose, the necessary coordination and to support the adoption, by the Commission and the Agency, of measures needed to mitigate such adverse impacts, under the mandates conferred by Articles 28, 29 and 34 of Regulation (EU) 2021/696, with a view to fulfil the objectives laid down in Article 4(1), point (c), of that Regulation;

(c) to ensure coherence of the national measures taken pursuant to Article 34(6) and Article 42 of Regulation (EU) 2021/696 for the protection of the assets of infrastructure located on the territories of Member States, at the ground segments, which are an integral part of the Union Space Programme;

(d) to discuss any relevant developments on risks affecting the assets of space infrastructure, promote a consistent approach in the monitoring and management of cyber risk for the space sector in the Union, discuss best practices and share information regarding relevant resilience measures;

(e) organise joint meetings with the NIS Cooperation Group established pursuant to Article 14(1) or EU-CyCLONe established pursuant to Article 16 (1) of Directive (EU) 2022/2555 to exchange relevant information in relation to the space sector concerning cyber threats, incidents, vulnerabilities, awareness raising initiatives, trainings, exercises and skills, capacity building, standards and technical specifications.

3. The EUSRN shall be composed of representatives of competent authorities, the Commission, the Agency and the European External Action Service (EEAS).

Where appropriate, the Commission or the Agency may invite representatives of other Union institutions, agencies or bodies, in particular the European Union Agency for Cybersecurity (ENISA), the European Defence Agency (EDA), or the European Union Military Staff (EUMS) to attend specific sessions of the EUSRN.

4. The EUSRN shall, on a regular basis, exchange information with, and report to, the computer security incident response teams network ('CSIRTs network') referred to in Article 15 of Directive (EU) 2022/2555, to ENISA and to the European Cyber Crisis Liaison Organisation Network (EU-CyCLONe) referred to in Article 16 of that Directive, with a view to provide situational updates and assessments in relation to significant incidents impacting the assets referred to in Article 5, first paragraph, point (21), of this Regulation, and to discuss any potential consequences that significant incidents may entail upon other sectors and services falling within the scope of that Directive.

5. The Commission shall ensure coordination between the EUSRN and the Critical Entities Resilience Group established pursuant to Article 19 of Directive (EU) 2022/2557, and respectively, between the EUSRN and the Cooperation Group established pursuant to Article 14 of Directive (EU) 2022/2555.

6. The EUSRN shall meet on a regular basis and at least twice a year. The Agency shall chair the technical working groups.

In addition to the regular meetings referred to in first subparagraph, the EUSRN shall hold, every 18 months, a general session dedicated to the facilitation of strategic cooperation in the domain of space and the sharing of relevant updates and analyses. The Commission shall chair the general sessions.

SECTION 4
INFORMATION SHARING AND AWARENESS

Article 95

Information sharing on cyber threats

1. Union space operators may, on a voluntary basis, exchange among themselves relevant information in the area of cybersecurity, including relevant information on cyber-attacks, cyber threats, electronic interferences such as jamming, spoofing, information on indicators of compromise, adversarial tactics, techniques and procedures, near misses, vulnerabilities, threat-actor-specific information, and share

cybersecurity alerts and recommendations for the configuration of cybersecurity tools allowing detection of cyberattacks, to the extent that such information sharing:

(a) aims at preventing, detecting, responding to, or recovering from incidents, or mitigating the impact thereof;

(b) enhances the level of cybersecurity and the overall resilience of Union space operators, in particular by raising awareness on cyber threats, by limiting or impeding the ability of such threats to spread, by supporting the development of defensive capabilities and common knowledge regarding vulnerability remediation, threat detection, containment and prevention techniques, mitigation strategies, response and recovery stages, or by promoting collaborative cyber threat research between public and private entities;

(c) takes places within trusted communities of Union space operators;

(d) is implemented through arrangements that protect the potentially sensitive nature of the information shared and are governed by rules of conduct, in full respect of business confidentiality, of the rules on the protection of personal data, in accordance with Regulation (EU) 2016/679, and the guidelines on competition policy.

2. The arrangements referred to in paragraph 1, point (d), shall:

(a) specify the conditions to enter, and the rules to participate in, information-sharing arrangements, as well as the type of information to be shared;

(b) specify the operational aspects, such as use of dedicated ICT platforms and automation tools;

(c) set out the details governing the involvement of public authorities in the information-sharing arrangements and the capacity in which those authorities may participate in such arrangements.

3. Union space operators shall notify competent authorities of their participation in the cybersecurity information-sharing arrangements referred to in paragraph 1, upon entry into, and exit from, such arrangements.

4. The Commission, shall, with the assistance of the Agency, facilitate the establishment of cybersecurity information-sharing arrangements referred to in paragraph 1, point (d), by supporting or promoting the activities of EU Space Information Sharing and Analysis Centre.

Chapter III
ENVIRONMENTAL SUSTAINABILITY OF SPACE ACTIVITIES

Article 96

Environmental footprint of space activities

1. Sustainability shall cover sustainability in space and sustainability on Earth (environmental sustainability).

2. Union space operators, except for those referred to in Article 10(4), shall calculate the EF of the space activities they carry out.

3. Union space operators shall by contract require their suppliers to provide all data needed by Union space operators to meet the obligation referred to in paragraph 2.

4. As part of the application for authorisation referred to in Article 6, applicants shall submit an Environmental Footprint Declaration ('EFD') to competent authorities.

5. The EFD shall attest that the Union space operators have calculated, in accordance with Article 97, the EF of the space activities they intend to carry out.

6. The EFD referred to in paragraph 4 shall be accompanied by all of the following:

   (a) an EF certificate which shall be delivered in accordance with Article 98(2);

   (b) the EF study supporting the results of the EFD;

   (c) the aggregated and disaggregated datasets on the basis of the EF which has been calculated in accordance with paragraph 2;

   (d) the proof of transmission of the aggregated and disaggregated datasets to the Commission, in accordance with Article 99(1), first subparagraph.

7. The EFD shall contain the following information:

   (a) the name, the registered trade name or registered trademark of the Union space operators, their postal address and electronic means of communication;

   (b) information about the type of space activities that are planned to be carried out and the type of products, substances or materials to which the EFD applies;

   (c) the proof that the EF that has been calculated and verified in accordance with the calculation and verification rules laid down in the implemented act adopted pursuant to Article 97(4);

   (d) the EF performance class to which the spacecraft belongs to, in accordance with the rules laid down in the implemented act adopted pursuant to Article 97(4);

   The Commission is empowered to adopt implementing acts in accordance with the examination procedure referred to in Article 114(2), to lay down the templates and content for the information to be reported pursuant to the paragraph 6, first subparagraph.

8. Until 31 December 2031 the following Union space operators shall be exempt from the obligations laid down in Articles 96, 97, 98, 99 and 100:

   (a) small-sized enterprises;

   (b) research and education institutions.

Article 97

EF calculation and verification of the space activities

1. The EF of space activities shall cover the space missions carried out in any of the Earth orbits including graveyard orbits.

2. The calculation referred to in Article 96(2) shall cover all the activities carried out throughout the lifecycle of a space mission, including during initial stages, such as design and development, during the manufacturing phase, the operation phases and the end of life stages.

3. The EF of space activities carried out under the Union Space Programme and the Union Secure Connectivity Programme shall cover the components referred to in Article 3(1), points (a) to (c) and point (e), of Regulation (EU) 2021/696 and in Article 1 of Regulation (EU) 2023/588.

4. The Commission is empowered to adopt implementing acts, in accordance with the examination procedure referred to in Article 114(2), to specify the method of calculation and verification of the EF of space activities, by taking into account scientifically sound assessment methods and the relevant international standards aligned with the Commission Recommendation (EU) 2021/2279[18]. Those implementing acts shall be reviewed to take into account scientific and technological developments and adapt to technological progress.

Article 98

EF certificate

1. When applying for authorisation, pursuant to Article 7(1), an applicant shall be in possession of a certificate attesting that the EF of their foreseen space activities has been calculated in accordance with the requirements laid down in Article 96(2).

2. The certificate referred to in paragraph 1 shall be delivered by a qualified technical body for space activities carrying technical assessment, including verification and validation, for the purposes of Articles 96, 97, 98, 99 and 100.

Article 99

Transmission of datasets to the Union EF-related database

1. Before applying for authorisation, in accordance with Article 7(1), applicants shall transmit the aggregated and disaggregated datasets referred to in Article 96(6), point (c), to the Commission.

   The Commission shall integrate those datasets in the Union database storing EF-related data and issue a proof of receipt to the applicants thereof.

2. Within 2 weeks from the date of the notification to third country space operators and international organisations of the decision of their registration in URSO, the Agency shall transmit to the Commission for integration into the Union database storing EF-related data, the aggregated and disaggregated datasets referred to in Article 96(6), point (c), which those space services providers have submitted, pursuant to Article 15(1), first subparagraph, or to Article 15(2), in their application for registration in URSO.

   The Commission shall issue a proof of receipt.

3. The Commission shall ensure the confidentiality of the data that is included in the disaggregated datasets.

4. The aggregated datasets referred to in paragraph 1 shall be made publicly available by the Commission through the Union EF-related database.

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(18) Commission Recommendation (EU) 2021/2279 of 15 December 2021 on the use of the Environmental Footprint methods to measure and communicate the life cycle environmental performance of products and organisations (OJ L 471, 30.12.2021, p. 1, ELI: http://data.europa.eu/eli/reco/2021/2279/oj).

Article 100

Use of disaggregated datasets informing policy making

1. The Commission shall make use of the disaggregated datasets referred to in Article 99, exclusively for the purposes of informing policymaking activities, of providing regulatory updates, and for the creation of derived datasets.

2. Union space operators, third country space operators and international organisations shall retain full ownership of the data included in the aggregated and disaggregated datasets transmitted pursuant to Article 99.

3. The Union shall acquire exclusive worldwide ownership of intellectual property rights related to the derived datasets which have been created on the basis of the disaggregated datasets referred to in paragraph 1.

Chapter IV
IN-SPACE OPERATIONS AND SERVICES (ISOS)

Article 101

ISOS

1. Union space operators carrying out ISOS shall comply with the requirements laid down in this Article and Annex VIII from 1 January 2034.

2. For Union owned assets, spacecraft above the mini-satellite class that are operated by Union space operators shall possess a minimal technical capacity to receiving in-space services.

3. For the purposes of ensuring the minimal technical capacity referred to in paragraph 2, a client spacecraft operated by Union space operators shall be equipped with dedicated Spacecraft Service Interfaces (SSI).

4. The Commission is empowered to adopt delegated acts in accordance with Article 113 to further supplement this Regulation by specifying:

   (a) the main features of the dedicated operational mode for the service that ensures a cooperative behaviour of the client spacecraft and minimises the risk of collision and malfunctions after the service;

   (b) where space debris objects are threatening other spacecraft and increase the risk of orbit pollution, the requirements needed to enable removal of debris objects from orbits by means of ISOS (active debris removal), including those requirements applicable to the concept of operations.

5. The Commission shall, by means of implementing acts, lay down:

   (a) the design principles for the dedicated SSI referred to in paragraph 3;

   (b) the design principles for Composable and Exchangeable Functional Satellite Modules (satAPPs) that can be connected to a spacecraft to deliver new spacecraft functionality or payload, making use of SSIs.

   Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 114(2).

Chapter V
ORBITAL TRAFFIC RULES

Article 102

Supervisory reviews and updates from the collision avoidance entity

1. A competent authority may request the Union collision avoidance space services provider referred to in Article 64(1) to provide it with up-to-date information about its spacecraft, in the context of the annual reporting or of specific investigations carried out on Union spacecraft operators.

2. Upon receipt of such request, the Union collision avoidance space services provider referred to in Article 64(1) shall report to the competent authority on whether:

   (a) the measures set-up by the Union spacecraft operator meet the requirements outlined in the space debris mitigation plans referred to in Article 70(2), first subparagraph, throughout all phases of the space mission;

   (b) the orbit position is in line with the selected orbit, pursuant to Article 69;

   (c) the Union spacecraft operator complies with the requirements laid down in Article 64(1), (2), (3) and (4), and, as applicable, in Article 101(3).

Article 103

Conditions for collision avoidance manoeuvres in case of HIE

1. When the CA entity referred to in Article 64(1), publishes a High Interest Event Alert between two manoeuvrable spacecraft and decides that one of the two concerned spacecraft have to perform a Collision Avoidance Manoeuvre (CAM), their proposed CAM shall be based on the following principles:

   (a) take the utmost account of the protection of crewed vehicles;

   (b) reduce the initial collision risk by at least one order of magnitude below the manoeuvre threshold for High Interest Event Alert; and

   (c) not create unreasonable risks of secondary conjunctions.

2. Where both spacecraft are registered to the CA entity referred to in Article 64(1), Union spacecraft operators shall seek to agree on a strategy to implement the CAM referred to in paragraph 1under the coordination of that CA entity, within a reasonable period.

3. If no agreement can be found under paragraph 2 within a reasonable period, the CA entity referred to in Article 64(1) shall propose a strategy for action. That strategy shall take into consideration the right of the way rules, based on at least the following elements:

   (a) protection of crew vehicle;

   (b) involvement of a spacecraft that is part of a constellation;

   (c) the operational capacity for CA manoeuvres;

   (d) the state of the spacecraft;

   (e) the eccentricity of the spacecraft’s orbits;

(f) the age of the spacecraft;

(g) the phase and type of the respective space mission.

4. Where one of the two spacecraft is not registered to the CA entity referred to in Article 64(1), that entity shall establish contact with the respective spacecraft.

5. In case of successful contact under paragraph 4, the CA entity referred to in Article 64(1) shall, to the extent possible:

(a) exchange information on the tools and methods used for calculation of collision risks;

(b) share all the necessary data and calculation results to ensure avoidance of the collision;

(c) determine, in collaboration with both spacecraft's operators, the best collision avoidance's manoeuvres, taking into consideration the elements of the manoeuvres' action plan specified to in paragraph 3.

6. Where the contacts referred to in paragraph 4 are unsuccessful or if, after a reasonable period of time, contacts cannot be initiated, the CA entity referred to in Article 64(1) shall recommend to the Union spacecraft operator a strategy for action that ensures at least the respect of the principles outlined in paragraph 1 and shall inform the other Union spacecraft operator about the intended action.

Chapter VI
STANDARDISATION AND COMMON SPECIFICATIONS

Article 104

Standards

1. The Commission shall, in accordance with Article 10(1) of Regulation (EU) No 1025/2012, request one or more European standardisation organisations to draft standards in relation to the following essential requirements:

(a) the requirements laid down in Article 72(2), first subparagraph, for the purposes of demonstrating compliance with Article 72(1);

(b) the requirements laid down in Article 25(5), first subparagraph, for the purposes of demonstrating compliance with Article 25(2).

When preparing the standardisation requests referred to in the first subparagraph, the Commission may take into account existing European or international standards in place or under development, to simplify the development of standards, in accordance with Regulation (EU) No 1025/2012.

2. Where the conditions referred to in paragraph 3 are fulfilled, the Commission shall adopt implementing acts establishing common specifications covering the technical requirements which provide the means to comply with the essential requirements referred to in paragraph 1, first subparagraph.

3. The implementing acts referred to in paragraph 2 shall be adopted in any of the following cases where the Commission has requested, pursuant to Article 10(1) of Regulation (EU) No 1025/2012, one or more European standardisation organisations to draft a standard for the essential requirements referred to in paragraph 1, first subparagraph, and one of the following situations occurs:

(a) requirements are not covered by harmonised standards, or parts thereof, the references of which have been published in the Official Journal of the European Union;

(b) requirements are covered by harmonised standards, or parts thereof, the references of which have been published in the Official Journal of the European Union, but application of those standards or parts thereof result in non-compliance with the essential requirements, or

(c) where the Commission considers that there is a need to address an urgent concern.

Those implementing acts shall be adopted in accordance with the advisory procedure referred to in Article 114(3).

Title V
EQUIVALENCE DECISIONS, INTERNATIONAL AGREEMENTS AND REGIMES FOR INTERNATIONAL ORGANISATIONS

Article 105

Equivalence

1. The Commission may adopt, on the basis of a detailed assessment, an equivalence decision, by means of implementing acts, in accordance with Article 114(2), stating that the legal and supervisory framework of a third country ensures that the third country space operators established in that third country comply with legally binding requirements that are equivalent to the requirements laid down in this Regulation and are subject to an effective supervision and enforcement in that third country.

2. The legal and supervisory framework of a third country shall be considered equivalent to this Regulation only if it fulfils at least the following conditions:

   (a) the third country space operators established in that third country are subject to authorisation and effective supervision and enforcement on an ongoing basis;

   (b) the third country space operators, established in that third country are subject to legally binding rules that are equivalent to the requirements laid down in Article 15; and

   (c) the legal and supervisory framework of that third country provides for an effective equivalent system of recognition of space services providers authorised under third country legal regimes.

3. The Commission may attach specific conditions to the equivalence decisions, such as where the scale and scope of the space-based data or the space services provided by third country space operators are likely to be of strategic importance for the Union, or to ensure that the Commission, the Agency and the competent authorities have the necessary tools to prevent regulatory arbitrage.

   A decision shall specify whether it is granted for a definite period.

4. The Commission shall inform the European Parliament and the Council annually of the equivalence decisions which have been taken or withdrawn by the Commission in the reporting year.

5. The Agency shall establish cooperation arrangements with the relevant competent authorities of third countries whose legal and supervisory frameworks have been recognised as equivalent in accordance with paragraph 1.

Such arrangements shall specify at least:

(a) the mechanisms for the exchange of information between the Agency, and the relevant supervisory authorities of the third countries concerned, including access to all information regarding the third country space operators authorised in the third countries, which are requested by the Agency;

(b) the mechanisms for a prompt notification to the Agency, where a third country competent authority deems that the third country space operators, which the Agency has registered in URSO, pursuant to Article 24, infringe the conditions of authorisation in that third country, or other law which those third country space operators are obliged to adhere to;

(c) the procedures concerning the coordination of activities, including investigation and on-site inspections that the Agency may carry out, in cooperation with the competent authorities of Member States, having duly informed the competent authority of the third country thereof.

6. The Commission shall, in cooperation with the Agency, monitor whether the legal and supervisory framework of a third country continues to be equivalent with the requirements laid down in this Regulation.

Where the legal and supervisory framework of a third country ceases to be equivalent, the Commission shall repeal the equivalence decision concerned.

Article 106

International agreements with third countries

1. The Union may conclude agreements for cooperation with third countries on matters covered by this Regulation, in particular for:

(a) facilitating the mutual recognition of rules on matters covered by this Regulation;

(b) facilitating the mutual recognition of technical assessments carried out by qualified technical bodies for space activities and by relevant authorities and technical bodies of third countries;

(c) setting out the details and procedures for the derogation for launch services referred to in Article 19;

(d) setting out the conditions for the use in the Union of space services or space-based data provided by a third country space operator which is a governmental entity, or which operates or owns military assets of space infrastructure, including with a civilian use.

2. The Agency may cooperate with the relevant supervisory authorities of third countries, other than those referred to in paragraph 1, point (b), and, subject to the approval of the Commission, may conclude Memorandums of Understanding and working arrangements with such authorities or with bodies of international organisations.

Article 107

Regimes applicable to international organisations

1. The Commission may, by means of contribution agreements, entrust an international organisation with the implementation of tasks for the operation of Union owned-assets.

   Those contribution agreements shall set out the conditions and the practical and operational arrangements for the control of the application by that international organisation of the requirements laid down in Title IV.

2. Where an international organisation operates the assets referred to in Article 5, first paragraph, point (21), Member States shall ensure the compliance of that international organisation with the requirements laid down in Title IV, in the context of the authorisations referred to in Article 6(1).

3. Where an international organisation operates its own assets of space infrastructure, the Union shall endeavour to conclude agreements with that international organisation.

   The agreement referred to in the first subparagraph shall set out the conditions and the practical and operational arrangements to ensure the control of the application by that international organisation of the requirements laid down in Title IV, with due regard to its institutional framework.

Article 108

Relations with the European Space Agency

1. The Union shall endeavour to conclude an agreement with the European Space Agency (ESA) to advance the objectives pursued by this Regulation and to strengthen the cooperation between the Union and ESA.

2. The agreement referred to in paragraph 1 shall set forth the conditions for the implementation by ESA of the requirements laid down in Title IV, and the practical and operational arrangements for ensuring the control of the application of such requirements, and in particular:

   (a) where ESA is not the operator of the Union-owned assets, the arrangements needed for ESA to carry out the technical assessment allowing the Commission to assess the compliance of the Union space operator of Union-owned space assets, with the requirements laid down in the Regulation, with a view to issuing the authorisation and carrying out the ongoing supervision referred to in Article 11(1), first subparagraph;

   (b) where Union-owned assets are either operated or owned by ESA, the needed arrangements and conditions for allowing the technical assessment activities and the tasks of authorisation and supervision;

   (c) any support which may be provided by ESA regarding the technical specifications needed for standardisation, under the supervision of the Commission, while taking into account the existing international technical standards for space activities.

3. ESA may provide support to Member States by carrying out technical assessments, pursuant to Article 8(1), point (b).

The agreement referred to in paragraph 1 shall set out the conditions for ESA to be recognised as a qualified technical body for space activities.

4. Upon request by the Commission, ESA may attend as observer or member, any relevant advisory group of technical nature that may be established under this Regulation.

Title VI
SUPPORTING MEASURES

Chapter I
CAPACITY-BUILDING MEASURES

Article 109

Capacity building

1. The Commission shall support space operators, competent authorities and qualified technical bodies for space activities in the implementation of this Regulation, by:

   (a) developing, in close cooperation with the Agency and ENISA, as appropriate, guidance materials, methodologies and best practices on the following:

      (i) the use, in the context of public procurement procedures carried out at national level, of Union Space Safety Labels issued in accordance to Article 112(4);

      (ii) requirements applying to novel areas or to areas under development, such as on-orbit servicing or orbital traffic rules;

      (iii) as appropriate, other matters covered by this Regulation;

   (b) promoting, with the assistance of the Agency, collaboration and information sharing on matters covered by Title IV, Chapter II, by facilitating the establishment of information sharing arrangements referred to in Article 29 of Directive (EU) 2022/2555.

2. The Commission shall support capacity-building, as well as research and innovation activities, by co-funding joint research and development projects to enable industry uptake of technological solutions facilitating compliance with the requirements laid down in this Regulation in the following areas:

   (a) the development of encryption technologies and protocols;

   (b) the development of on-board safety systems;

   (c) the development of ISOS technologies and concepts;

   (d) any other matters covered by this Regulation.

   The Commission shall adopt delegated acts, in accordance with Article 113, to supplement this Regulation, by specifying the matters referred to in point (c), of the first subparagraph.

3. The Commission shall fund:

   (a) the development of standards for launcher neutralizers;

(b) the provision of vouchers to support the participation of space operators to coaching programmes aimed at offsetting part of costs incurred with the implementation of the requirements laid down in Article 96(2).

4. The Commission shall facilitate access to the threat-led penetration testing referred to in Article 88(3), first subparagraph, by mapping the availability of such testing services in the Union and by developing framework contracts to ensure fast and affordable access, notably for SMEs and small mid-caps.

Article 110

Information portal

1. The Commission, with the support of the Agency, shall set-up and manage an Information Portal in support of this Regulation ('Information Portal').

2. The Information Portal shall carry out the following tasks:

(a) assist space operators in the implementation of this Regulation;

(b) provide compliance checklists to facilitate voluntary adherence to the Union Space Labelling Schemes established pursuant to Article 111(4), first subparagraph;

(c) support any relevant single point of contact setup by the Member States.

3. Member States shall inform the Commission of any national helpdesk portals established to manage queries on rules, procedures and authorisation processes.

The Commission shall ensure the interoperability of such helpdesk portals with the Information Portal.

Chapter II
UNION SPACE LABEL FRAMEWORK

Article 111

Union Space Labelling Schemes

1. The Commission shall develop a Union Space Label Framework to promote enhanced voluntary adherence to high standards of protection of space activities.

The Union Space Label Framework shall be composed of Union Labelling schemes as referred to in paragraphs 2 and 3.

2. A Union Space Labelling Scheme shall establish the detailed requirements to:

(a) limit the risks associated to space debris;

(b) improve the safety and sustainability of space objects in orbit, the safety of aircraft in flight, or the safety of persons and property on ground when carrying out space activities;

(c) reduce the light pollution of spacecraft;

(d) reduce the radio pollution of spacecraft;

(e) safeguard the resilience of space infrastructure, in particular as regards critical assets and the resilience of the supply chain;

(f) enable in space operations and services;

(g) contribute to reducing the environmental impacts of carrying out space activities.

3. Following a request by the Commission, the Agency shall prepare a candidate scheme, or propose an update of an existing Union Space Labelling Scheme.

A Union Space Labelling Scheme may specify one or more of the following protection levels for the specific space missions, services or products that it covers: 'basic', 'substantial' or 'high'.

In such a case, it shall ensure that the specified protection level is commensurate with the level of protection associated with the requirements laid down in the respective Union Space Labelling Scheme.

4. The Commission shall adopt by means of implementing acts:

(a) a template for the elements of the Union Space Label Scheme, including their duration;

(b) Union Space Labelling Schemes based on the candidate scheme or updates of an existing Union space Labelling Scheme.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 114(2).

5. The Agency shall maintain a dedicated website providing updated information on, and publicising, the Union Space Labelling Schemes and the Union Space Labels.

Article 112

Award and use of a Union Space Label

1. Where a space operator intends to obtain a Union Space Label, that space operator shall submit to the Agency an application for Union Space Label accompanied by a detailed technical file demonstrating the fulfilment of the requirements established in the Union Labelling Scheme(s) for which the Union Space Label is sought.

The Agency shall immediately inform the Commission of the application.

2. The Agency shall provide to the Commission a detailed opinion as regards the compliance of the application with the requirements of the relevant Union Space Labelling Scheme(s).

3. Based on the Agency's assessment, the Commission shall decide, by means of implementing acts, on the applications.

4. The Agency shall issue Union Space Labels to space operators whose applications have been approved by the Commission, in accordance with paragraph 3, for a duration of a Space Label which shall be specified in the corresponding Union Space Labelling Scheme.

5. The Agency shall verify regularly on its own initiative, or upon complaint, the compliance of a holder of a Union Space Label with the requirements of the respective Union Space Label. Where the Agency establishes that the holder of a Union Space Label does not meet the requirements, it shall revoke the Union Space Label. Before revoking the Union Space Label, the Agency has to allow the holder of the Union Space Label to submit a reasoned statement.

6. The holder of a Union Space Label shall inform the Agency of any subsequently detected irregularities concerning the labelled space mission, service or product, that may have an impact on its compliance with the requirements of the respective Union Space Label.

7. Any false or misleading advertising or use of a Union Space Label or of a logo which leads to confusion with a Union Space Label shall be prohibited.

Title VII
TRANSITIONAL AND FINAL PROVISIONS

Article 113

Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.

2. The power to adopt the delegated acts referred to in Article 41(3), Article 44(3), Article 56(9), first subparagraph, Article 70(4), Article 78(3), Article 79(4), Article 82(4), Article 83(5), Article 84(5), Article 85(4), Article 86(4), Article 92(4), Article 93(7), second subparagraph, Article 101(4), first subparagraph, and Article 109(2), second subparagraph, shall be conferred on the Commission for an indeterminate period of time from 1 January 2027.

3. For each delegated act referred to in paragraph 2, the Agency, after carrying out public consultations, shall submit to the Commission formal technical opinions by 1.7.2028. For matters covered by Title IV, Chapter II, the Agency shall consult ENISA.

4. The delegation of power referred to Article 41(3), Article 44(3), Article 56(9), first subparagraph, Article 70(4), Article 78(3), Article 79(4), Article 82(4), Article 83(5), Article 84(5), Article 85(4), Article 86(4), Article 92(4), Article 93(7), second subparagraph, Article 101(4), first subparagraph and Article 109(2), second subparagraph, may be revoked at any time by the European Parliament or by the Council.

   A decision to revoke shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the Official Journal of the European Union or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.

5. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making.

6. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.

7. A delegated act adopted pursuant to Article 41(3), Article 44(3),Article 56(9), first subparagraph, Article 70(4), Article 78(3), Article 79(4), Article 82(4), Article 83(5), Article 84(5), Article 85(4), Article 86(4), Article 92(4), Article 93(7), second subparagraph, Article 101(4), first subparagraph and Article 109(2), second subparagraph, shall enter into force only if no objection has been expressed either by the European Parliament or by the Council within a period of 2 months of notification of that act to the European Parliament and to the Council or if, before the

expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by 2 months at the initiative of the European Parliament or of the Council.

Article 114

Committee procedure

1. The Commission shall be assisted by a committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.

2. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.

3. Where reference is made to this paragraph, Article 4 of Regulation (EU) No 182/2011 shall apply.

4. The Committee shall meet in specific different configurations as follows:

   (a) Safety configuration;

   (b) Resilience configuration;

   (c) Environmental sustainability configuration;

   (d) ISOS configuration;

   (e) Space-based data configuration.

5. In accordance with the international agreements concluded by the Union, the representatives of third countries or international organisations may be invited as observers in the meetings of the Committee under the conditions laid down in its rules of procedure, taking into account the security of the Union.

Article 115

Professional secrecy

1. Any confidential information received, exchanged or transmitted pursuant to this Regulation, by any person, body, or authority referred to in paragraph 2, shall be subject to the condition of professional secrecy, as laid down in paragraphs 2 and 3.

2. Without prejudice to the exchange and use of information in accordance with this Regulation, an obligation of professional secrecy shall apply to all persons who work or who have worked for the Commission, the Agency, the competent authorities, or a qualified technical body for space activities, an authority, a natural or legal person to whom the competent authorities or the qualified technical bodies for space activities have delegated powers and tasks, including auditors and experts contracted by them.

3. Information covered by the professional secrecy, including in the context of exchange of information among competent authorities under this Regulation, and competent authorities designated or established in accordance with Directive (EU) 2022/2555 and Directive (EU) 2022/2557, shall not be disclosed to any other person or authority, except by virtue of provisions laid down by Union or national law.

4. All information exchanged pursuant to this Regulation between competent authorities which concerns business or operational conditions, and economic or personal affairs, shall be confidential and subject to the requirement of professional secrecy, except where a competent authority states, at the time of initiating the

communication, that such information may be disclosed, or where such disclosure is necessary for the purpose of legal proceedings.

Article 116

Evaluation and review

1. By 1 December 2035, and every five years thereafter, the Commission shall submit to the European Parliament and the Council a report on the evaluation of this Regulation, including an assessment of the environmental, economic and social impacts of space activities on other sectors, and shall submit, as appropriate, a report on its review, accompanied, where necessary, by a legislative proposal. The reports shall be made public.

2. For the purposes of the evaluation and review referred to in paragraph 1, the Commission may request the Agency and the Member States to provide data and information. The Agency and the Member States shall promptly provide the requested data and information to the Commission.

3. In carrying out the evaluation and review referred to in paragraph 1, the Commission shall take into account the opinions, positions and findings of the Agency, the European Parliament, the Council, the Member States and the competent authorities, as well as other relevant bodies and organisations or relevant sources.

Article 117

Reports to the Commission

By 1 December 2031 and every year after that date, Member States shall report to the Commission on the status of the implementation of this Regulation. The report shall include information on enforcement actions and updates on the space sector at national level, such as competitiveness aspects with impact on the functioning of the internal market and elements on public and private spending needs.

In their first report Member States shall indicate to the Commission their preparatory actions and measures taken at national level including adaptations to ensure the smooth application of this Regulation.

Article 118

Transitional period

1. For authorisations regarding assets planned to be launched after 1 January 2030 for which the critical design review phase ended on [JO: calculate 12 months from the date of entry into force of this Regulation] this Regulation shall only apply from 1 January 2032.

2. Competent authorities, as regards Union space operators, and the Agency, as regards third country space operators, shall ascertain the end of the critical design review stage referred to in paragraph 1 at the moment when the space operators submit the proof obtained from the relevant entity entrusted by contract with the technical approval of the design of the spacecraft.

Article 119

Entry into force and application

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 1 January 2030.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the European Parliament	*For the Council*
The President	*The President*
[...]	*[...]*

LEGISLATIVE FINANCIAL AND DIGITAL STATEMENT

1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

1.1. Title of the proposal/initiative

Proposal for a Regulation of the European Parliament and of the Council on the safety, resilience and sustainability of space activities in the Union.

1.2. Policy area(s) concerned

A new plan for Europe's sustainable prosperity and competitiveness

Prosperity and Competitiveness

1.3. Objective(s)

1.3.1. General objective(s)

The proposed Regulation aims at supporting the development and functioning of the internal market for the space sector.

1.3.2. Specific objective(s)

Specific objective No

The proposal sets out four specific objectives:

(i) establish a Union framework regulating the conduct of space operators in the Union in a way that provides a stable, predictable and competitive business environment that fosters innovation;

(ii) ensure trackability of space objects and reduce generation of space debris from space activities;

(iii) create a coherent resilience baseline for the space sector through risk assessment framework and cybersecurity rules tailored for the space infrastructure;

(iv) a common method to assess and measure the environmental impacts of space activities in the Union.

1.3.3. Expected result(s) and impact

Specify the effects which the proposal/initiative should have on the beneficiaries/groups targeted.

The proposed Regulation would improve the conditions for the functioning of the internal market for space-based data and space services, with a considerable positive impact on the EU space industry and its competitiveness.

Developing the internal market for space would mean increased integration among Member States, creating conditions for enhanced market access for companies, driving innovation across the industry, attracting more private investment, and reducing administrative burden for companies.

Putting in place measures to ensure the trackability of space objects and reducing the amount of space debris would contribute to a safer and more sustainable space environment. This would significantly decrease the risk of collisions and the generation of space debris, safeguarding both operational satellites and long-term orbital sustainability.

The development of a coherent baseline for all assets of space infrastructure and the implementation of risk assessment frameworks tailored to the cybersecurity needs of

the space sector would bolster the resilience of space activities in the Union against cyber threats. This would build confidence in the capabilities of stakeholders, including private enterprises and governmental agencies, further driving the uptake of space services, attracting investments, and fostering the growth of a robust and secure space industry in the EU.

The development of a common method to measure the environmental impact of space activities would facilitate informed decision-making based on standardised metrics, allowing companies to invest in greener technologies and policymakers to balance the benefits and risks of space activities.

Finally, the successful implementation of the Regulation would enhance the ability of the Union to influence global standards in the space domain and increase the competitiveness of the Union industry in the global markets.

The Impact Assessment accompanying this Regulation established the total annual benefit for companies (satellite operators) at EUR 677.5 million, offsetting completely the costs driven by the requirements stemming from the new Regulation. For public authorities of Member States, compliance and enforcement costs are estimated at 1 to 4 FTEs.

1.3.4. Indicators of performance

Specify the indicators for monitoring progress and achievements.

The following set of indicators will be used to monitor the successful implementation of this Regulation and assess the impact on, and reaction of the market, in particular SMEs.

Specific Objectives	**Indicator**	**Method**	**Baseline**	**Target**[1]	**Annual Progress Estimate**	**Review Frequency**
Support the development and functioning of a single market for the space sector	Space activities within the single market that comply with the proposed legislation	Member States reporting	0	100%	100% after entry into force of the Act	Annual
Ensure trackab	Number of high-	Through EU	622 (LEO)	10% reductio	~5% reductio	Annual

(1) Target values are estimated for a 10 year period after entry into force of the Act, taking into account the average lifespan of commercial satellites across all orbits.

ility of space objects and reduce generation of space debris	interest events	SSST Partnership	33 (MEO) 101 (GEO)	n	n per year	
Ensure trackability of space objects and reduce generation of space debris	Number of successful disposals at end of life	Through EU SSST Partnership	GEO: 60% LEO: 65%	90% for all orbits	~3% increase per year	Annual
Create a risk assessment framework tailored to cybersecurity for space infrastructure	Number of reported significant cyber incidents mitigated	EUSPA through the reporting mechanism (for EU-owned assets); Computer security incident response teams (CSIRTs) /single points of contact (SPOC) (as per NIS) and the national space monitorin	Not provided	50% reduction	50% after entry into force of the law	Annual

		g centres for the other assets				
Create a common method to measure the environmental impacts of space activities	% EU market share representation in PEFCR development	Member States' reporting	0%	≥51%	≥51%	Annual
Create a common method to measure the environmental impacts of space activities	% of space operators conducting environmental reporting	Member States' reporting	40%(2)	80%(3)	80% after establishment of PEFCR framework	Annual
Create a common method to measure the	Number of space missions integrating the standardized	Member States' reporting	n/a (lack of standardized LCA framework for space	80%(4)	After establishment of LCA framework	Annual after framework development

(2) Considering that several EU national space laws, such as France, Belgium, Denmark, Finland and Greece already require operators to produce environmental impact assessments for the granting of licenses.

(3) Considering that microenterprises and universities might be subject to exemptions and they represent around 10-20% of space missions in Europe.

(4) Ibid.

environmental impacts of space activities	LCA framework		activities)			
Create a common method to measure the environmental impacts of space activities	Environmental footprint of space activities (e.g., CO_2 emissions)	Member States' reporting	n/a (lack of common method for measurement)	To be monitored	After establishment of PEFCR framework, then annual reduction targets	Annual after framework development

1.4. The proposal/initiative relates to:

☑ **a new action**

☐ **a new action following a pilot project/preparatory action** [5]

☐ **the extension of an existing action**

☐ **a merger or redirection of one or more actions towards another/a new action**

1.5. Grounds for the proposal/initiative

1.5.1. Requirement(s) to be met in the short or long term including a detailed timeline for roll-out of the implementation of the initiative

13 Member States have space laws, and more are in the process of drafting space legislation to address the increase of space activities and the emergence of new commercial entrants. The lack of coordination and the regulatory differences have led to a fragmented legal framework which may create obstacles to the provision of space services and space-based data in the single market.

Without coordination, the means and approaches to regulating space activities in the Union will continue to diversify. The proposed Regulation thus introduces targeted harmonisation of key requirements in the authorisation for provision of space activities and services. The key requirements cover mainly the safety, resilience and the environmental sustainability of space activities. Limited provisions apply to ISOS and orbital traffic.

[5] As referred to in Article 58(2), point (a) or (b) of the Financial Regulation.

A coherent and uniform level of protection for all assets of space infrastructure facilitates the provision of space services, the free movement of space-based data generated by the use of such space infrastructure, as well as the capacity of space operators to carry out space activities across multiple jurisdictions, without hindrances. The Regulation would thus bring about legal certainty for space operators and users in the Union.

The Regulation shall apply to all assets launched after 01 January 2030. However, for assets which are still in a phase of critical design, the Regulation envisages a transitional period of 24 additional months to achieve compliance.

Certain aspects, such as, regarding governance should be ready for implementation by 2030. Member States should ensure that by that date they appoint existing authorities or establish new authorities to carry out the tasks set out in the Regulation and to build technical expertise and capacity to allow a smooth implementation of this Regulation through qualified technical bodies for space activities performing technical assessment tasks.

At Union level, the EU Agency for the Space Programme (The Agency) should set up all necessary structures, internal processes and procedures to undertake the new responsibilities entrusted to it by the Regulation.

The new responsibilities concern in particular the technical assessment with a view to assisting and supporting the Commission new tasks of authorisation and supervision for Union space operators of Union-owned assets, registration and supervision of third country operators, and the carrying out of technical assessments for Member States lacking qualified technical bodies on their territories. In addition, the Agency shall ensure coordination of activities of the Union Space Resilience Network (EUSRN), monitor incidents related to Union-owned assets, manage the establishment and implementation of the new Union Space Labelling Schemes and contribute to the development and implementation of the different supportive measures envisaged by this Regulation.

The Agency should prepare for the exercise of its new technical assessment powers to assist the Commission when exercising supervisory tasks and for the setting up of dedicated internal structures for that purpose, such as, the Compliance Board and the Board of Appeal.

By the time of applicability of the Regulation, a number of databases and related-tools should already be in place, notably the Union Register of Space Objects (URSO), the Union contact list database for high interest event alerts.

The European Commission shall, through delegated and/or implemented acts, further elaborate the technical requirements needed for the implementation of the rules laid down in this Regulation, and issue standardisation mandates for the development of harmonised standards.

Finally, a set of supportive measures, through capacity building measures, technical assistance and funding, shall be put in place to support and prepare Member States and the space industry in the implementation of the Regulation, and contribute to offsetting part of possible implementation costs, such as for start-ups, scaleups SMEs and small mid-caps.

1.5.2. Added value of EU involvement (it may result from different factors, e.g. coordination gains, legal certainty, greater effectiveness or complementarities). For the purposes of this section 'added value of EU involvement' is the value resulting

from EU action, that is additional to the value that would have been otherwise created by Member States alone.

Space activities have a strong cross-border dimension as space infrastructure manufactured in one Member State is often used by companies active across the internal market, while space operators often need to acquire multiple authorisations in several Member States. The emerging patchy framework of potentially diverging national rules risks hampering a competitive single market for space products and space services and space-based data.

Joint action at Union level is necessary to increase the common level of safety, resilience and environmental sustainability of space activities across the Union. This presents a clear added value compared to the individual actions of Member States, by (1) establishing a level-playing field across the Union through the approximation of key requirements in the authorisation conditions related to safety, resilience and environmental impact of space activities; (2) ensuring better coordination of Member States thus avoiding overlaps, duplications and conflicts, by putting in place coherent mechanisms across the internal market; (3) enhancing in a homogeneous way the level of protection of space infrastructure reinforcing their capacity to deliver space-based data which in turn enable provision of services across the internal market; and (4) ensuring consistency when calculating the environmental impact of space activities in the Union.

A common approach to safe, resilient and sustainable space activities at Union level would provide multiple benefits for the Union space sector by ensuring legal certainty, removing obstacles in the provision of space services and space-based data, reducing administrative burden and costs related to the multiple and divergent national requirements, boosting competition and offering access to bigger markets.

Coordinated action would allow the Union to steer and strengthen future global standards on the safety, resilience and sustainability of space activities, establishing the Union as a global standard-setter in a field calling for urgent solutions to address emerging risks to the use of orbits and outer space.

The Union would in parallel seek the negotiation of mutual recognition agreements with third countries enhancing market access for the EU space industry.

1.5.3. Lessons learned from similar experiences in the past

This Regulation is the first one of its kind in the domain of space, introducing targeted harmonisation on key aspects in the authorisations for carrying out space activities. At the same time, it builds on certain elements from the New Legislative Framework and on lessons learnt in the implementation of Union harmonisation legislation for products and services.

To preserve and enhance the competitiveness and innovation of the space sector in the Union, especially with regard to start-ups, SMEs and research institutions, the Regulation will also draw lessons from the most recent legislative acts, such as, the AI Act or the Cyber Resilience Act.

In this vein, it will (a) include a set of supporting measures to help companies, notably start-ups, scaleups, SMEs and small mid-caps, to comply with the measures laid down in this Regulation, including but not limited to coaching and mentoring, technical assistance, and support to the development of new technological solutions; (b) embed proportionality in the rules, envisaging lighter regimes based on different

criteria, such as, the size of the space operator, criticality of the space mission, space asset or orbit used.

1.5.4. Compatibility with the multiannual financial framework and possible synergies with other appropriate instruments

The Regulation sets-out key common and minimum requirements for the safety, resilience and environmental aspects of space activities for Union space operators, as well as for operators established in third countries providing space-based data in the Union.

At the same time, this Regulation builds on certain foundational elements of the New Legislative Framework, such as notified bodies, conformity assessments and development of harmonised standards, which are nonetheless tailored and adjusted for the needs of the space domain, taking into account a gradual approach to regulation in this area.

The proposal would build upon, and ensure coordination with, the structures and mechanisms developed in the context of other legislations on resilience and cybersecurity, such as, Directive 2022/2555 (NIS2 Directive) and Directive 2022/2557 (CER Directive).

As regards the environmental sustainability, an incorporation of Life Cycle Assessment (LCA) principles to space activities reflects the overarching goal pursued by the Union towards achieving greater sustainability and environmental responsibility in the space sector.

Ensuring compliance with the Ecodesign for Sustainable Products Regulation ((EU) 2024/1781), which will require a Digital Product Passport for products regulated under this Regulation, thus potentially applicable even to space activities, becomes paramount. The specific objectives and constraints of space activities will be taken into account when regulating products affecting these activities.

The integration of LCA into space-related projects, through the use of a common method (based on Commission Recommendation on PEF and PEF methods C(2021) 9332 final), facilitates adherence to regulatory frameworks and enhances sustainability assessments and disclosures, thereby fostering alignment with the MFF objectives and promoting synergies with other instruments aimed at advancing the Union space activities in a sustainable and responsible manner.

1.5.5. Assessment of the different available financing options, including scope for redeployment

The management of the action areas assigned to the Agency fits its existing mandate and general tasks. However, these action areas will require specific profiles or new assignments that cannot be fully absorbed by the existing Agency resources or resolved through reallocation.

For certain horizontal tasks (e.g. administrative support, legal advice, contract management) the Agency could tap into existing resources which would create efficiencies. Synergies will also be established with existing internal technical structures (e.g. secured information environment for exchange of classified information with Member States security monitoring centres).

1.6. Duration of the proposal/initiative and of its financial impact

☐ **limited duration**

☐ in effect from [DD/MM]YYYY to [DD/MM]YYYY

☐ financial impact from YYYY to YYYY for commitment appropriations and from YYYY to YYYY for payment appropriations.

☑ **unlimited duration**

Implementation with a start-up period from 2030 to 2031,

followed by full-scale operation.

1.7. Method(s) of budget implementation planned[6]

☑ **Direct management** by the Commission

☑ by its departments, including by its staff in the Union delegations;

☐ by the executive agencies

☐ **Shared management** with the Member States

☐ **Indirect management** by entrusting budget implementation tasks to:

☐ third countries or the bodies they have designated;

☐ international organisations and their agencies (to be specified);

☐ the European Investment Bank and the European Investment Fund;

☐ bodies referred to in Articles 70 and 71 of the Financial Regulation;

☐ public law bodies;

☐ bodies governed by private law with a public service mission to the extent that they are provided with adequate financial guarantees;

☐ bodies governed by the private law of a Member State that are entrusted with the implementation of a public-private partnership and that are provided with adequate financial guarantees;

☐ bodies or persons entrusted with the implementation of specific actions in the common foreign and security policy pursuant to Title V of the Treaty on European Union, and identified in the relevant basic act

☐ bodies established in a Member State, governed by the private law of a Member State or Union law and eligible to be entrusted, in accordance with sector-specific rules, with the implementation of Union funds or budgetary guarantees, to the extent that such bodies are controlled by public law bodies or by bodies governed by private law with a public service mission, and are provided with adequate financial guarantees in the form of joint and several liability by the controlling bodies or equivalent financial guarantees and which may be, for each action, limited to the maximum amount of the Union support.

Comments

(6) Details of budget implementation methods and references to the Financial Regulation may be found on the BUDGpedia site: https://myintracomm.ec.europa.eu/corp/budget/financial-rules/budget-implementation/Pages/implementation-methods.aspx.

2. MANAGEMENT MEASURES

2.1. Monitoring and reporting rules

The Regulation will be evaluated for review periodically, within 5 years from the entry into force, and then every 5 years thereafter. In addition, several monitoring actions shall be carried out by the European Commission and the Agency in evaluating continuously the effectiveness and efficiency of the measures, in the context of monitoring the control of the application of the measures, including supervision and analysis of emerging aspects related to the application of the requirements.

The specific objectives and corresponding indicators will be monitored on an annual basis.

The European Commission shall specifically perform a short-term evaluation to assess the performance of the Agency in relation to its tasks under this Regulation. The European Commission shall report on the findings of the evaluation to the European Parliament and the Council.

2.2. Management and control system(s)

2.2.1. Justification of the budget implementation method(s), the funding implementation mechanism(s), the payment modalities and the control strategy proposed

The Regulation establishes new substantive requirements with regard to space activities across the Union while ensuring fair competition among market actors in the internal market. These new rules require a consistency mechanism for the cross-border application of the obligations under this Regulation, as well as direct supervision and enforcement powers for the European Commission and technical assessment tasks for the Agency.

To address these new tasks, it is necessary to appropriately resource the European Commission's services and the Agency[7]. The enforcement and successful implementation of the new Regulation is estimated to require 3 FTEs within the European Commission (for supervisory tasks and decisions).

The preparatory activities envisaged during the ramp-up phase until the end of 2027 are estimated to require 2 FTEs that will be requested in addition to the resources available in the current Multiannual Financial Framework (2021-2027).

2.2.2. Information concerning the risks identified and the internal control system(s) set up to mitigate them

The Regulation lays down the foundation of the single market for space. Several and different national regulatory approaches may fragment the internal market making it difficult for space companies to navigate and apply disparate legal frameworks.

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[7] It is estimated that the Agency will need 17 FTEs from 2028 onwards for the management of the new tasks and ENISA 1 FTE also from 2028. The new tasks of the Agency include the development of a Union space labelling scheme for space activities and the management of the activities related to the technical assessments to support the Commission in the authorisation and supervision of Union space operators of Union owned-assets, third countries operators and international organisations as well as exercising in this context of such assistance investigatory powers (inspections, investigations). The operational costs related to the new tasks of the Agency will be financed through a system of registration fees, penalties and fines imposed on space operators (EU and non-EU alike). Such system will not cover the Agency's staff-related costs and the operational costs on labels.

The Regulation harmonises several key requirements in the authorisation and registration of space activities (technical rules in the areas of the safety, resilience and sustainability of space activities) and lays down a governance structure to that effect.

This approach intends to create legal certainty, remove cross-border obstacles and reduce the administrative burden and costs arising from multiple disparate national requirements. It would simplify the way space operators operate in the Union notably for new commercial entrants. To prevent the risk of forum-shopping and ensure a consistent application of the new regulatory framework, the European Commission will be assigned new supervisory and enforcement powers while the Agency would acquire powers to assist the Commission by carrying out technical assessments activities. To reduce the risk of administrative burden on the industry, a light regime is envisaged for start-ups, SMEs and small mid-caps. Moreover, to support the space industry with the implementation of the Regulation, dedicated supportive measures are foreseen to offset part of the possible costs of its implementation on the industry, notably on start-ups and SMEs.

2.2.3. Estimation and justification of the cost-effectiveness of the controls (ratio between the control costs and the value of the related funds managed), and assessment of the expected levels of risk of error (at payment & at closure)

n/a

2.3. Measures to prevent fraud and irregularities

The existing fraud prevention measures applicable to the European Commission and to Union agencies will cover the additional appropriations necessary for this Regulation.

3. ESTIMATED FINANCIAL IMPACT OF THE PROPOSAL/INITIATIVE

3.1. Heading(s) of the multiannual financial framework and expenditure budget line(s) affected

Existing budget lines

In order of multiannual financial framework headings and budget lines.

Heading of multiannual financial framework	Budget line	Type of expenditure	Contribution			
	Number	Diff./Non-diff. (8)	from EFTA countries (9)	from candidate countries and potential candidates (10)	from other third countries	other assigned revenue
	[XX.YY.YY.YY]	Diff./Non-diff.	YES/NO	YES/NO	YES/NO	YES/NO
	[XX.YY.YY.YY]	Diff./Non-diff.	YES/NO	YES/NO	YES/NO	YES/NO
	[XX.YY.YY.YY]	Diff./Non-diff.	YES/NO	YES/NO	YES/NO	YES/NO

New budget lines requested

(8) Diff. = Differentiated appropriations / Non-diff. = Non-differentiated appropriations.

(9) EFTA: European Free Trade Association.

(10) Candidate countries and, where applicable, potential candidates from the Western Balkans.

In order of multiannual financial framework headings and budget lines.

Heading of multiannual financial framework	Budget line	Type of expenditure	Contribution			
	Number	Diff./non-diff.	from EFTA countries	from candidate countries and potential candidates	from other third countries	other assigned revenue
	[XX.YY.YY.YY]	Diff./Non-diff.	YES/NO	YES/NO	YES/NO	YES/NO
	[XX.YY.YY.YY]	Diff./Non-diff.	YES/NO	YES/NO	YES/NO	YES/NO
	[XX.YY.YY.YY]	Diff./Non-diff.	YES/NO	YES/NO	YES/NO	YES/NO

3.2. Estimated financial impact of the proposal on appropriations

3.2.1. Summary of estimated impact on operational appropriations

☑ The proposal/initiative does not require the use of operational appropriations

☐ The proposal/initiative requires the use of operational appropriations, as explained below:

3.2.1.1. Appropriations from voted budget

EUR million (to three decimal places)

Heading of multiannual financial framework	Number	

DG: <.....>			Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
Operational appropriations							
Budget line	Commitments	(1a)					**0.000**
	Payments	(2a)					**0.000**
Budget line	Commitments	(1b)					**0.000**
	Payments	(2b)					**0.000**
Appropriations of an administrative nature financed from the envelope of specific programmes [11]							
Budget line		(3)					**0.000**
TOTAL appropriations for DG <.....>	Commitments	=1a+1b+3	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Payments	=2a+2b+3	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
			Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
TOTAL operational appropriations	Commitments	(4)	0.000	0.000	0.000	0.000	**0.000**
	Payments	(5)	0.000	0.000	0.000	0.000	**0.000**
TOTAL appropriations of an administrative nature financed from the envelope for specific		(6)	0.000	0.000	0.000	0.000	**0.000**

(11) Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

programmes							
TOTAL appropriations under HEADING <....> of the multiannual financial framework	Commitments	=4+6	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Payments	=5+6	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
DG: <.....>			Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
Operational appropriations							
Budget line	Commitments	(1a)					**0.000**
	Payments	(2a)					**0.000**
Budget line	Commitments	(1b)					**0.000**
	Payments	(2b)					**0.000**
Appropriations of an administrative nature financed from the envelope of specific programmes [12]							
Budget line		(3)					**0.000**
TOTAL appropriations for DG <.....>	Commitments	=1a+1b +3	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Payments	=2a+2b+3	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
DG: <.....>			Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**

(12) Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

Operational appropriations							
Budget line	Commitments	(1a)					**0.000**
	Payments	(2a)					**0.000**
Budget line	Commitments	(1b)					**0.000**
	Payments	(2b)					**0.000**
Appropriations of an administrative nature financed from the envelope of specific programmes [13]							
Budget line		(3)					**0.000**
TOTAL appropriations for DG <.....>	Commitments	=1a+1b +3	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Payments	=2a+2b+3	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
			Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
TOTAL operational appropriations	Commitments	(4)	0.000	0.000	0.000	0.000	**0.000**
	Payments	(5)	0.000	0.000	0.000	0.000	**0.000**
TOTAL appropriations of an administrative nature financed from the envelope for specific programmes		(6)	0.000	0.000	0.000	0.000	**0.000**

(13) Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

TOTAL appropriations under HEADING <....> of the multiannual financial framework	Commitments	=4+6	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Payments	=5+6	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
			Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
TOTAL operational appropriations (all operational headings)	Commitments	(4)	0.000	0.000	0.000	0.000	**0.000**
	Payments	(5)	0.000	0.000	0.000	0.000	**0.000**
TOTAL appropriations of an administrative nature financed from the envelope for specific programmes (all operational headings)		(6)	0.000	0.000	0.000	0.000	**0.000**
TOTAL appropriations Under Heading 1 to 6 of the multiannual financial framework (Reference amount)	Commitments	=4+6	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Payments	=5+6	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Heading of multiannual financial framework		**7**		‘Administrative expenditure’ (14)			
DG: DEFIS			Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
Human resources			0.000	0.000	0.000	0.376	**0.376**
Other administrative expenditure			0.000	0.000	0.000	0.050	**0.050**

(14) The necessary appropriations should be determined using the annual average cost figures available on the appropriate BUDGpedia webpage.

TOTAL DG DEFIS	Appropriations		**0.000**	**0.000**	**0.000**	**0.426**	**0.426**
DG: <.....>			Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
Human resources			0.000	0.000	0.000	0.000	**0.000**
Other administrative expenditure			0.000	0.000	0.000	0.000	**0.000**
TOTAL DG <.....>	Appropriations		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
TOTAL appropriations under HEADING 7 of the multiannual financial framework		(Total commitments = Total payments)	**0.000**	**0.000**	**0.000**	**0.000**	**0.426**

EUR million (to three decimal places)

		Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
TOTAL appropriations under HEADINGS 1 to 7[15]	Commitments	**0.000**	**0.000**	**0.000**	**0.426**	**0.426**
of the multiannual financial framework	Payments	**0.000**	**0.000**	**0.000**	**0.426**	**0.426**

3.2.2. Estimated output funded from operational appropriations (not to be completed for decentralised agencies)

Commitment appropriations in EUR million (to three decimal places)

(15) Beyond 2027, the estimated cost of the proposal is proposed to be financed through the subsequent MFF without pre-empting the agreement on the MFF and programmes.

Indicate objectives and outputs ⇓			Year **2024**		Year **2025**		Year **2026**		Year **2027**		Enter as many years as necessary to show the duration of the impact (see Section 1.6)						**TOTAL**	
	OUTPUTS																	
	Type [16]	Average cost	No	Cost	No	Cost	No	Cost	No	Cost	No	Cost	No	Cost	No	Cost	Total No	Total Cost
SPECIFIC OBJECTIVE No 1 [17]: [...]																		
- Output																		
- Output																		
- Output																		
Subtotal for specific objective No 1																		

(16) Outputs are products and services to be supplied (e.g.: number of student exchanges financed, number of km of roads built, etc.).

(17) As described in point 1.4.2. 'Specific objective(s)...'

SPECIFIC OBJECTIVE No 2 ...																	
- Output																	
Subtotal for specific objective No 2																	
TOTALS																	

3.2.3. Summary of estimated impact on administrative appropriations

☐ The proposal/initiative does not require the use of appropriations of an administrative nature

☑ The proposal/initiative requires the use of appropriations of an administrative nature, as explained below:

3.2.3.1. Appropriations from voted budget

VOTED APPROPRIATIONS	Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
HEADING 7					
Human resources	0.000	0.000	0.000	0.376	**0.376**
Other administrative expenditure	0.000	0.000	0.000	0.050	**0.050**
Subtotal HEADING 7	**0.000**	**0.000**	**0.000**	**0.000**	**0.426**
Outside HEADING 7					

Human resources	0.000	0.000	0.000	0.000	**0.000**
Other expenditure of an administrative nature	0.000	0.000	0.000	0.000	**0.000**
Subtotal outside HEADING 7	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
TOTAL	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

3.2.3. Total appropriations

TOTAL VOTED APPROPRIATIONS + EXTERNAL ASSIGNED REVENUES	Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
HEADING 7					
Human resources	0.000	0.000	0.000	0.376	**0.376**
Other administrative expenditure	0.000	0.000	0.000	0.050	**0.050**
Subtotal HEADING 7	**0.000**	**0.000**	**0.000**	**0.426**	**0.426**
Outside HEADING 7					
Human resources	0.000	0.000	0.000	0.000	**0.000**
Other expenditure of an administrative nature	0.000	0.000	0.000	0.000	**0.000**
Subtotal outside HEADING 7	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

TOTAL	**0.000**	**0.000**	**0.000**	**0.426**	**0.426**

The appropriations required for human resources and other expenditure of an administrative nature will be met by appropriations from the DG that are already assigned to management of the action and/or have been redeployed within the DG, together, if necessary, with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

3.2.4. Estimated requirements of human resources

☐ The proposal/initiative does not require the use of human resources

☑ The proposal/initiative requires the use of human resources, as explained below

3.2.4.1. Financed from voted budget

Estimate to be expressed in full-time equivalent units (FTEs) [18]

VOTED APPROPRIATIONS	Year **2024**	Year **2025**	Year **2026**	Year **2027**
Establishment plan posts (officials and temporary staff)				
20 01 02 01 (Headquarters and Commission's Representation Offices)	0	0	0	2
20 01 02 03 (EU Delegations)	0	0	0	0
01 01 01 01 (Indirect research)	0	0	0	0
01 01 01 11 (Direct research)	0	0	0	0

[18] Please specify below the table how many FTEs within the number indicated are already assigned to the management of the action and/or can be redeployed within your DG and what are your net needs.

Other budget lines (specify)		0	0	0	0
External staff (inFTEs)					
20 02 01 (AC, END from the 'global envelope')		0	0	0	0
20 02 03 (AC, AL, END and JPD in the EU Delegations)		0	0	0	0
Admin. support line [XX.01.YY.YY]	- at Headquarters	0	0	0	0
	- in EU Delegations	0	0	0	0
01 01 01 02 (AC, END - Indirect research)		0	0	0	0
01 01 01 12 (AC, END - Direct research)		0	0	0	0
Other budget lines (specify) - Heading 7		0	0	0	0
Other budget lines (specify) - Outside Heading 7		0	0	0	0
TOTAL		**0**	**0**	**0**	**2**

3.2.4.3. Total requirements of human resources

TOTAL VOTED APPROPRIATIONS + EXTERNAL ASSIGNED REVENUES	Year **2024**	Year **2025**	Year **2026**	Year **2027**
Establishment plan posts (officials and temporary staff)				
20 01 02 01 (Headquarters and Commissions Representation Offices)	0	0	0	2

20 01 02 03 (EU Delegations)		0	0	0	0
01 01 01 01 (Indirect research)		0	0	0	0
01 01 01 11 (Direct research)		0	0	0	0
Other budget lines (specify)		0	0	0	0
External staff (in full time equivalent units)					
20 02 01 (AC, END from the global envelope)		0	0	0	0
20 02 03 (AC, AL, END and JPD in the EU Delegations)		0	0	0	0
Admin. support line [XX.01.YY.YY]	- at Headquarters	0	0	0	0
	- in EU Delegations	0	0	0	0
01 01 01 02 (AC, END - Indirect research)		0	0	0	0
01 01 01 12 (AC, END - Direct research)		0	0	0	0
Other budget lines (specify) - Heading 7		0	0	0	0
Other budget lines (specify) - Outside Heading 7		0	0	0	0
TOTAL		**0**	**0**	**0**	**2**

The staff required to implement the proposal (in FTEs):

	To be covered by current staff available in the	**Exceptional additional staff***

	Commission services			
		To be financed under Heading 7 or Research	To be financed from BA line	To be financed from fees
Establishment plan posts	2		N/A	
External staff (CA, SNEs, INT)				

Description of tasks to be carried out by:

Officials and temporary staff	To launch the initial coordination activities required to ensure the preparation of a number of meetings, draft reports and policy work for the set-up and implementation of all the internal structures, processes and procedures necessary to undertake the new responsibilities entrusted to the Agency by the Space Act. The initial activities may also include the preparatory work necessary to launch the development and implementation of some of the digital solutions and related-tools envisaged by the Space Act.
External staff	

3.2.5. Overview of estimated impact on digital technology-related investments

Compulsory: the best estimate of the digital technology-related investments entailed by the proposal/initiative should be included in the table below.

Exceptionally, when required for the implementation of the proposal/initiative, the appropriations under Heading 7 should be presented in the designated line.

The appropriations under Headings 1-6 should be reflected as "Policy IT expenditure on operational programmes". This expenditure refers to the operational budget to be used to re-use/ buy/ develop IT platforms/ tools directly linked to the implementation of the initiative and their associated investments (e.g. licences, studies, data storage etc). The information provided in this table should be consistent with details presented under Section 4 "Digital dimensions".

TOTAL Digital and IT appropriations	Year **2024**	Year **2025**	Year **2026**	Year **2027**	**TOTAL MFF 2021-2027**
HEADING 7					
IT expenditure (corporate)	0.000	0.000	0.000	0.000	**0.000**
Subtotal HEADING 7	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Outside HEADING 7					
Policy IT expenditure on operational programmes	0.000	0.000	0.000	0.000	**0.000**
Subtotal outside HEADING 7	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
TOTAL	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

3.2.6. Compatibility with the current multiannual financial framework

The proposal/initiative:

☑ can be fully financed through redeployment within the relevant heading of the multiannual financial framework (MFF).

☐ requires use of the unallocated margin under the relevant heading of the MFF and/or use of the special instruments as defined in the MFF Regulation.

☐ requires a revision of the MFF.

3.2.7. Third-party contributions

The proposal/initiative:

☑ does not provide for co-financing by third parties

☐ provides for the co-financing by third parties estimated below:

Appropriations in EUR million (to three decimal places)

	Year **2024**	Year **2025**	Year **2026**	Year **2027**	Total
Specify the co-financing body					
TOTAL appropriations co-financed					

3.3. Estimated impact on revenue

☑ The proposal/initiative has no financial impact on revenue.

☐ The proposal/initiative has the following financial impact:

☐ on own resources

☐ on other revenue

☐ please indicate, if the revenue is assigned to expenditure lines

EUR million (to three decimal places)

Budget revenue line:	Appropriations available for the current financial year	Impact of the proposal/initiative [19]			
		Year	Year	Year	Year

[19] As regards traditional own resources (customs duties, sugar levies), the amounts indicated must be net amounts, i.e. gross amounts after deduction of 20% for collection costs.

		2024	2025	2026	2027
Article					

For assigned revenue, specify the budget expenditure line(s) affected.

[...]

Other remarks (e.g. method/formula used for calculating the impact on revenue or any other information).

[...]

4. DIGITAL DIMENSIONS

4.1. Requirements of digital relevance

The legislative proposal foresees the development and implementation of a number of digital solutions and related-tools with the aim to support Member States and assist the space industry with the timely implementation of the Act. The use of digital solutions intends to facilitate several activities, such as, the processing of data (collecting, managing, storing), monitoring and tracking activities, reporting and performing analysis, and to ease the interactions among the relevant stakeholders:

Description of requirement	Stakeholder categories affected	Process(es) affected
The Register of Space Objects (URSO) is a digital registry that will be used for the collection, processing and exchange of data related to the registered space operators authorised to operate and provide space-based services in the Union.	EU Agency for Space Programme, non-EU space service providers	Establishment and management of a digital registry
The Union contact list database for high interest event alerts is a digital solution that will be used for the collection, processing and exchange of data related to the contact details of the relevant personnel in charge of collision avoidance and re-entry activities reported by the spacecraft operators operating in the Union.	EU Agency for Space Programme, EU and non-EU Space service providers	Establishment and management of a digital database
The One-Stop Information Portal is a digital platform that will be used for the collection, processing and exchange of data to provide a certain number of services for managing the licensing process to carry out space activities at national level.	European Commission, EU Agency for Space Programme, Member States, EU Space service providers	Establishment and management of a digital platform
The E-certificate of traceability will be released to space service providers to attest the conformity of space objects with the requirements	EU Agency for Space Programme, space service providers	Establishment and management of the digital solution

of the Regulation for the purpose of their use in the Union.		
The Environmental Footprint Database is a digital public database that will be used for collection and processing activities. It will also make available to the public the data necessary to do the environmental footprint calculation.	European Commission, EU Agency for Space Programme, Member States, EU space service providers	Establishment and management of the digital database

4.2. **Data**

(1) Register of Space Objects (URSO): URSO will collect and process information on space service providers authorised or registered to operate and provide space-based services in the EU. Data management will align with the European Data Strategy, emphasizing secure sharing, reuse, and minimal duplication through the once-only principle. The Agency will set up and manage URSO ensuring transparency and consistent enforcement across Member States.

(2) Union Contact List Database for High-Interest Event Alerts: this database will hold the contact details of personnel responsible for collision avoidance and re-entry activities. It will be designed to comply with standard data formats and ensure data protection. In line with the once-only principle, it will aim to re-use existing verified contact information to minimise redundant entries. When operational responsibilities change space service providers will provide to the Agency updated records enabling timely alerts and response coordination.

(3) One-Stop Information Portal: this portal will streamline the authorisation process for space activities. It will be built around common data standards for seamless integration with existing systems. The once-only principle reduces duplicative requests for information, while periodic data exchanges, initiated by licence applications or updates, will ensure that authorities, the Agency, and operators can effectively track licensing progress.

(4) E-Certificate: the e-certificate will attest the space service provider's compliance with the Regulation, containing technical specifications. In accordance with the European Data Strategy, the Agency will aim to use existing registry and licensing data to prevent duplication. The certificate will be issued when an operator fulfils the Regulation's requirements.

(5) Environmental Footprint Database: the Environmental Footprint Database will provide high-quality life cycle inventory data aligned with EU standards, supporting Product and Organization Environmental Footprint for Space related studies. It follows the European Data Strategy by promoting data reuse, interoperability, and transparency, ensuring compliance with sustainability goals. The database adheres to the once-only principle, minimising redundancy by integrating existing datasets. Data is supplied by industry stakeholders, research institutions, and authorities, with public access, including access granted to businesses and policymakers for regulatory reporting and sustainability assessments. Exchanges are triggered by compliance

obligations and voluntary environmental impact assessments, occurring periodically or as required.

4.3. Digital solutions

The digital solutions envisaged in the context of the Regulation are the following:

- the Register of Space Objects (URSO), a digital platform set-up and managed by the Agency including the list of the registered space service providers authorised to operate and provide space-based services in the Union;

- the Union contact list database for high interest event alerts, a digital registry set-up and managed by the Agency, including the contact details of the relevant personnel in charge of collision avoidance and re-entry activities reported by spacecraft operators;

- the One-Stop Information Portal, a digital platform set-up and managed by the European Commission with the support of the Agency providing a certain number of services for managing the licensing process to carry out space activities at national level (one-stop shop approach), ensuring administrative simplification and streamlined compliance procedures, in particular for start-ups, scaleups, SMEs and small mid-caps, and the interoperability between the national and EU level;

- the e-certificate of traceability, a digital certificate released by the Agency to space service providers to attest the conformity of space objects with the requirements laid down in the Regulation for the purpose of their use in the Union;

- PEFCR4Space Calculator, a tool used to calculate the environmental footprint of space-related activities by following the guidelines and standards of the Environmental Footprint Category Rules for the space sector;

- PEFCR4Space Helpdesk, a service providing support and guidance to users on implementing the Product Environmental Footprint Category Rules specifically designed for the space industry, helping them navigate any challenges or questions they might encounter;

- The public Environmental Footprint Database compiles life cycle inventory data needed to assess environmental footprints in the space sector.

4.4. Interoperability assessment

- Register of Space Objects (URSO): URSO will support cross-border interoperability by applying shared regulatory frameworks and technical standards, allowing the Agency to register licensing and monitoring data. It might employ Interoperable Europe solutions, such as, standardised data identifiers;

- Union Contact List Database for High-Interest Event Alerts: The database will ensure immediate cross-border communication for collision or re-entry events, using harmonised data formats for contact details and alert protocols. This arrangement will streamline emergency coordination among EU and non-EU stakeholders, with Interoperable Europe’s metadata and authentication solutions helping to standardise records;

- One-Stop Information Portal: The Portal intends to be designed for seamless interaction among multiple EU and national systems, driving interoperability through standardised data exchange formats, protocols and a unified digital interface to reduce administrative burden;

- E-Certificate: Will rely on interoperable digital signatures and standardised compliance data fields.

- Environmental Footprint (EF) Database: The Union Environmental Footprint Database (EF Database) supports cross-border digital public services by enabling standardised environmental impact data exchange across EU entities and public bodies. It enhances cross-border interoperability through legal, semantic, and technical alignment, leveraging Interoperable Europe solutions like metadata standards and API-based data exchange. Key barriers include regulatory differences, data format inconsistencies, and technical integration challenges. This assessment aligns with Regulation (EU) 2024/903 (Interoperable Europe Act) and supports the EU Green Deal and Circular Economy goals.

4.5. Measures to support digital implementation

The legislative proposal envisages the development and implementation of several digital solutions and related-tools with the aim to support Member States and assist the space industry with the timely implementation of the proposal.

The digital solutions will be used for the collection, processing and exchange of data related to the different areas covered by the proposal (safety, resilience and environmental sustainability) as well as regarding the authorisation process to carry out space activities at national level and the registration of third country operators at Union level. The European Commission and the Agency will play a direct and active role in the development and management of these digital solutions.

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ANNEXES 1 to 10

ANNEXES

to the

Proposal for a Regulation of the European Parliament and of the Council on the safety, resilience and sustainability of Space activities in the Union

{SEC(2025) 335 final} - {SWD(2025) 335 final} - {SWD(2025) 336 final}

Annex I

SAFETY AT LAUNCH REFERRED TO IN ARTICLES 58, 59 and 60

1. Safety at launch and re-entry

1.1. Coordination requirements

Union launch operators shall implement the following coordination requirements:

(a) Before launch or re-entry, a Union launch operator shall enter into an agreement with:

(i) the European Network Manager and affected Air Navigation Service Providers (ANSPs), in order to agree on the appropriate measures to minimise the impact of the closing of the air routes on air services and set-out the procedures for the issuance of the Notice to Airmen (NOTAM), and the procedures for closing the air routes during the respective launch or re-entry windows and;

(ii) the maritime authorities, to set-out the procedures for the issuance of the Notice to Mariners.

(b) The requirement laid down in point (a) shall not apply where the Union launch site operator has already coordinated with the ANSPs and the maritime authorities the aspects referred to in point (a)(i) and (ii).

(c) The Union launch operators shall provide timely information to the Network Manager and the Air Navigation Service Providers in order assess the size of the airspace to be closed and the routes affected such as to safely and efficiently integrate the space launches into the European Air Traffic System.

1.2. Launch collision avoidance (LCOLA)

1.2.1. The LCOLA shall be carried out before launch.

1.2.2. The LCOLA shall be carried out with the support of the relevant entity referred to in Article 64(1).

The Union launch operator shall ensure that the entity referred to in Article 64(1) obtains the predicated ephemerides for the launcher.

1.2.3. The method for calculating the LCOLA shall be developed by the Commission in accordance with Article 59(3), point (a), considering the probability of the launcher to collide with an object of interest, which shall depend on the following:

(a) whether the spacecraft is habitable;

(a) the size of the object;

(b) whether the spacecraft is active.

1.2.4. The Union launch operator shall assess and mitigate the risks related to collision in line with point 1.3, of Annex II.

1.2.5. The Union launch operator shall define the launch closure window according to the LCOLA assessment.

1.3. Casualty risk

The casualty risk at launch and at re-entry shall be limited by the application of the following measures:

(a) The calculation of the collective risk for casualties due to launch and re-entry shall be performed by using an approved method to be selected among existing methods by the Commission, in accordance with Article 59(3), point (b), or a new method to be developed by the Commission in accordance with Article 59(3), point (b), with due consideration for the following elements:

  (i) all the phenomena leading to a risk of catastrophic damage (ascent phase, fallout from stage after separation, re-entry into the atmosphere of a deck put into orbit, recovery phase of a reusable deck);
  (ii) pre-fragmentation trajectories (atmospheric or in outer space), depending on the flight times and faults considered;
  (iii) the corresponding fragmentation and debris generation scenarios, at the re-entry or at the moment of neutralisation of the launch vehicle and the return to Earth of any element of the launcher;
  (iv) the dispersion on the ground of the debris and the evaluation of the effects thereof;
  (v) the reliability of the launch vehicle for the launch phase, including, where applicable, during the recovery phase;
  (vi) the reliability of the deorbiting manoeuvre of the launcher element put into orbit, in the case of controlled re-entry.

(b) The casualty risk shall be limited to a threshold which shall be specified in the implementing act referred to in Article 59(3), point (b) by duly taking into account the differences in the types of risks entailed by the following risk scenarios:

  (i) risk at launch;
  (ii) risk at re-entry (controlled and un-controlled);
  (iii) risk for the recovery phase of reusable launcher elements.

The implementing act referred to in Article 59(3), point (c), shall set out specific quantitative allocations for a particular risk of catastrophic damage, in particular for the specific cases of sea and air routes.

2. Flight safety system

2.1. Risk assessment

2.1.1. In their risk assessments, Union space operators shall identify potential failure scenarios that could make the launch vehicle hazardous.

2.1.2. The failure scenarios referred to in point 1 shall include scenarios for deviation from the flight corridor, dangerous fall-back phases, non-nominal flight control behaviour, and failure to achieve orbit.

2.1.3. In the risk assessments, Union launch operators shall set out specific rules for controlled or un-controlled re-entry. In the case of controlled re-entry, Union launch operators shall identify failure scenarios related to the propulsion object placed in orbit becoming a hazard, in particular in the case of failure to control the level or direction of thrust.

2.2. Neutralisation

2.2.1. The on-board neutralisation system shall meet at least the following requirements:

(a) The system can be activated remotely or automatically through an on-board algorithm.

(b) For automatic systems, Union launch operators shall submit the detailed data and validation test results to the competent authority.

2.2.2. Specific rules for controlled re-entry shall be in place.

On-board automatic systems shall be in place, and criteria to ensure controlled re-entry shall be defined, in line with point 2.1.3

3. Launcher safety plan

The launcher safety plan shall include at least the following elements:

(a) the confirmation of coordination and agreement between the Union launch operator and the ANSP and maritime authorities in line with point 1.1, point (a), unless an agreement has already been entered between the Union launch site operator and the relevant authorities, in line with point 1.1, point (b), demonstrated by a written confirmation;

(b) the result of the LCOLA, in line with point 1.2;

(c) the result of the calculation of the collective casualty risk at launch and re-entry, in line with point 1.3;

(d) the risk assessment of the failure scenario of the flight safety system, in line with point 2.2.

Annex II

SPACE DEBRIS MITIGATION FOR LAUNCHERS REFERRED TO IN ARTICLE 61

1. Limitation of debris

1.1. Limit the projected generation of debris

1.1.1. Launch vehicles shall be designed to limit the generation of debris during nominal operations in accordance with the following requirements:

(a) For single-spacecraft launches, the total number of launch vehicle orbital stages and resulting debris objects shall not exceed one.

(b) For multi-spacecraft launches, the total number shall not exceed two.

(c) Launch vehicles deployed in GEO protected orbit shall remain outside the GEO protected regions for at least 100 years.

(d) Launch vehicles deployed in MEO shall at the end of its mission, in accordance with the measures and the indicated safe region specified in the implementing act referred to in Article 61(3), point (b).

(e) The orbital lifetime of a launch vehicle deployed in LEO, shall be the one specified in the implementing act referred to in Article 61(3), point (a).

(f) The limitation of the risk of components becoming detached from the launcher and being placed in orbit which shall be carried out through the measures laid down in the implementing act in accordance with Article 61(3), point (a).

1.1.2. The requirements referred to in point 1.1.1., (a) and (b), shall not apply to the pyrotechnic system and to the solid or hybrid propellants.

1.2. Avoiding fragmentation in orbit due to internal causes

1.2.1. The probability of accidental fragmentation due to internal causes shall be limited in the manner specified in the implementing act referred to in Article 61(3), point (c).

1.2.2. The launch vehicle shall be designed and operated in a way so that at the end of the space mission, passivation of all components is carried out in the following manner:

(a) All energy reserves on board shall be permanently depleted or shall be in such a state that their depletion is unavoidable, within a reasonable period of time, or that they do not present a risk of generating debris.

(b) All means of generating energy on board shall be permanently deactivated, or all equipment directly supplied by energy production means shall be placed in a state such that such equipment entails no risk of generating debris.

(c) Following the end of life, the launcher shall be in a stable condition with minimal internal energy.

1.3. Avoiding fragmentation due to collision

In accordance with the requirements in terms of duration and threshold established in the implementing act referred to in Article 61(3), point (d), mitigating measures shall be implemented to limit the likelihood of collision between:

(a) launcher elements and launched objects;

(b) launcher elements and existing space objects in orbit (crewed, un-crewed and debris).

2. End of life disposal

2.1. Design coordination between the Union launch operator and spacecraft mission designer

The Union launch operator shall collaborate with the mission designer of the spacecraft to be launched in the context of the respective space mission with a view to design the launch phase of the space mission in a way that facilitates the disposal of the launch vehicle upper stage and considers the specification of the final injection orbit.

2.2. Disposal of launch vehicle in LEO

The disposal of launchers in LEO shall be performed by one of the following means, chosen in the following order of preference based on technical feasibility:

(a) A launcher in LEO shall be de-orbited by controlled atmospheric re-entry.

The design shall allow for the demise (‘design for demise’) or deliberate destruction of the launch vehicle orbital stage in accordance with the conditions established in implementing act referred to inArticle 61(3), point (e).

(b) If a controlled re-entry is not possible, and the casualty risk for an uncontrolled re-entry is low, the launch vehicle may instead be placed in a decay orbit, for a limited period, in line with point 1.1.1, point (e). In that case:

(i) the casualty risk shall be computed, by using a standardised method with a limited risk on ground, in accordance with the provisions of point 1.3, point (a), of Annex I;

(ii) the design shall allow for the demise (‘design for demise’) or the deliberate destruction of the launch vehicle orbital stage in line with conditions to be specified in the implementing act referred to in Article 61(3), point (e).

2.3. Disposal of launchers in MEO

The disposal of launch vehicles in MEO shall be performed in an orbit that does not interfere with protected regions and valuable orbits for a limited amount of time, in line with point 1.1.1, point (d).

2.4. Disposal of launch vehicles in GEO

The disposal of launch vehicle in GEO shall be performed by placing the launcher in a graveyard orbit, ensuring that it remains outside GEO protected region for a period of at least 100 years, under the effect of natural disturbances.

2.5. Probability of successful disposal

2.5.1. The launch stage of a space mission, and the launch vehicle orbital stage, respectively, shall be designed in such a way to have a high probability of successful completion of the disposal actions.

2.5.2. The probability of successful completion of the disposal actions shall be calculated considering at least the following elements: all relevant systems, subsystems and equipment, including their potential redundancy levels, reliability, and performance

degradation over time, as well as the availability of the necessary energy and resources.

2.5.3. The calculation of the probability of successful disposal actions, and the percentage threshold, shall be done in accordance with the method set out in the implementing act referred to in Article 61(3), point (f).

2.5.4. Union launch operators shall carry out an identification of the systems and capabilities required for successful disposal actions, including:

(a) estimations and uncertainties related to the successful disposal;

(b) the amount of propellant required to support disposal or re-orbit manoeuvre;

(c) the power requirements for disposal or re-orbit manoeuvre;

(d) the control requirements for disposal or re-orbit manoeuvre;

(e) the communication requirements for disposal or re-orbit manoeuvre.

2.6. Failure response plan

2.6.1. In the event of a failure preventing the launch vehicle orbital stage from executing the disposal actions, alternative disposal orbits shall be chosen to minimise the orbital lifetime or risk of interference with protected regions before loss of critical systems.

2.6.2. This shall be specified in a failure response planning before launch.

3. Space debris mitigation plans

3.1. Debris control plan

The debris control plan shall include at least the following elements:

(a) Evidence of compliance to the restrictions on planned debris generation, in line with point 1.1.1, point (a) or point 1.1.1, point (b), as applicable, and point 1.1.1, point (c), as well as with point 1.1.2, including relevant results from testing and analysis.

(b) Evidence of compliance with the orbital lifetime, in line with point 1.1.1, points (d), (e) and (f).

(c) Evidence of compliance with the requirement on probability of accidental fragmentation, in line with point 1.2.1, and measures to mitigate the risk such as choice of materials.

(d) Evidence of compliance with the passivation measures, in line with point 1.2.2, including relevant results from testing and analysis, and to the probability of successful passivation.

3.2. End-of-life mission disposal plan

The end-of-mission disposal plan shall include at least the following:

(a) The description of the planned disposal method, in line with point 2.2, point 2.3 or point 2.4, as applicable, for both nominal and non-nominal scenarios.

(b) The confirmation regarding the collaboration between the Union launch operator and the spacecraft mission designer, in line with point 2.1, including the specification of the final injection orbit.

(c) Evidence of compliance with the description on the adherence to the threshold of probability of successful disposal, including the relevant verification and analysis, in line with point 2.5.1, point 2.5.2 and point 2.5.3.

(d) The identification of systems and capabilities, in line with point 2.5.4.

(e) A failure response plan, in line with point 2.6.

Annex III

TRACKING AND SOFTWARE REFERRED TO IN ARTICLE 63

1. Tracking

A spacecraft shall be trackable, according to the following principles:

1.1. Union spacecraft operators shall either have themselves the technical means, or shall rely on external sources, to transmit the position of the spacecraft to the entity providing the Collision Avoidance service referred to in Article 64(1).

1.2. The capability to transmit the position referred to in point 1.1. shall meet the requirements laid down in points 1.3. and 1.4.

1.3. The tracking of the location in orbit shall be as precise as possible. The level of precision may take into account the existence of variations according to the region concerned and the size of the object.

1.4. The tracking system shall be based on either passive or active tracking.

1.5. As soon as possible after injection, Union spacecraft operators shall share with the relevant entity providing the Collision Avoidance service referred to in Article 64(1) the necessary up-to-date information to monitor the risks of collision with the catalogued space objects that the respective space spacecraft object may encounter.

1.6. The information referred to in point 1.5. shall include, at least, the following elements:

(a) ephemeris, from the Union spacecraft operator's own orbit restitution means, or from the space monitoring systems;

(b) a strategy for action, in line with Article 103;

(c) covariances.

2. Ground-based segment software requirements

2.1. The ground segment shall be capable of providing a daily orbital forecast, including manoeuvres, for the spacecraft, for up to:

(a) 7 days at minute level intervals, and in accordance with the Consultative Committee for Space Data Systems (CCSDS) format in LEO;

(b) 14 days at minute level intervals and in accordance with CCSDS format in MEO;

(c) 14 days at minute level intervals and in accordance with CCSDS format in GEO.

2.2. The ground segment shall provide rank 7 covariance formation (position, velocity, drag) for 7 day trajectory forecasts.

2.3. The ground-based segment shall be able to process CCSDS data format, and in particular Orbital ephemerides Messages (OEM) and Conjunction Data Messages (CDM), for the collision avoidance operations.

Annex IV

COLLISION AVOIDANCE REFERRED TO IN ARTICLES 15 AND 64

1. Requirements for the choice of the collision avoidance (CA) space service provider referred to in Article 15(1), first subparagraph, point (a)(i).

Third country space operators shall ensure that the CA space service provider they subscribe to, pursuant to Article 15(1), first subparagraph, point (a)(i), complies with the following requirements:

1.1. General requirements

(a) The technical means to assess collision – a CA system – and compliance with the requirements of Section 1 of this Annex.

The CA system shall be either external or in-house, provided that in the case of an in-house system, adequate mechanisms are in place to ensure the independence of the respective CA space service provider.

(b) The CA space services provider shall provide to its users a decision with sufficient time to enable manoeuvres on quality conjunction assessment results on an operational timeframe.

(c) The CA space services provider shall ensure CA space service provision for all phases of the mission (from launch to disposal).

1.2. Requirements for the input ingestion

(a) The CA space services provider shall be able to ingest orbits in standard format and associated covariance, including planned manoeuvres.

(b) The CA space services provider shall be able to ingest data from various sources, such as ephemerides provided directly by spacecraft operators, orbits from catalogue of space objects and Conjunction Data Messages (CDMs) provided by external data source.

(c) The CA space services provider shall be able to compute covariance information in exceptional cases when not included in the data source.

1.3. Requirements regarding data Quality Check

(a) The CA space services provider shall perform data quality checks to assess the data from space operators.

(b) The CA space services provider shall perform calibration of sensors' data.

1.4. Requirements for the CA process

(a) The CA space services provider may use existing catalogues and CDMs in the operational CA service.

(b) The CA space services provider shall support the screening of ephemerides, the time histories of both operational and predicted positional and velocities that incorporate all planned manoeuvres.

(c) The CA space services provider shall perform the following tasks for spacecraft operation, by making use of available sources of internal and external information:

(i) identifying conjunctions within the screening volume adapted to the orbit regime of the protected spacecraft;
(ii) assessing the risk of the conjunctions, based on the probability of collision and, when appropriate, on geometry (miss distance and radial distance) criteria;
(iii) generating CDMs;
(iv) providing users with a diverse, user-selectable set of conjunction and CA "Go/No-Go" manoeuvre metrics, to assess the collision risk and to develop an appropriate course of action;
(v) checking that mitigation actions decrease the risk level of the conjunctions to be mitigated, and do not unduly increase the risk level of other conjunctions.

(d) The CA space services provider shall use collision probability estimation techniques whose soundness is generally accepted, such as those used by the Union CA space services provider referred to in Article 64(1), and appropriate for a given encounter.

(e) The CA space services provider shall be able to coordinate with other CA service providers, especially in case of High Interest Event.

1.5. Timeliness requirements

(a) The CA space services provider shall periodically assess the risk of conjunction.

The recommended time interval shall be once per day, per GEO spacecraft, and once per hour, per LEO/MEO spacecraft (provided that new information is available).

(b) The CA space services provider shall have one person available to provide support within 1 hour, on a 24h/7 days basis.

2. Requirements for Union spacecraft operators

2.1. In the case of manoeuvrable spacecraft, Union spacecraft operators shall be able to perform CA manoeuvres.

2.2. In the case of non-manoeuvrable spacecraft, Union spacecraft operators shall cooperate with the Union CA space services provider referred to in Article 64(1) under best efforts.

2.3. Union spacecraft operators shall provide to the Union CA space services provider referred to in Article 64(1) information about its operational orbit(s), in the form of predicted positional and velocities time histories that incorporate all planned manoeuvres, including realistic covariances:

(a) 1 day before performing planned manoeuvres for non-automatic CA system;

(b) as soon as possible for automatic CA systems.

2.4. The Union spacecraft operator shall notify the Union CA space services provider referred to in Article 64(1) about:

(a) any change as regards the active and manoeuvrability status of its spacecraft;

(b) any change regarding the end of the space mission;

(c) any exceptional operations;

(d) any change as regards the re-entry method (controlled / semi-controlled /uncontrolled);

(e) any action planned after a High Interest Event alert.

2.5. The Union spacecraft operator in charge of a manoeuvrable spacecraft shall provide a contact point available to respond:

(a) within 8 hours on a 24h/7 days basis for LEO;

(b) within 24 hours, on a 24h/7 days basis for MEO and GEO.

2.6. The Union spacecraft operator shall provide the Union CA space services provider referred to in Article 64(1) with the radius of the sphere englobing its spacecraft, or an upper-bound estimation.

2.7. Union spacecraft operators and the Union CA space services provider referred to in Article 64(1) shall define at the time of spacecraft service registration:

(a) as regards the elements related to the safety distance requirement, the limit above which the risk of collision is considered high enough to trigger a High Interest Event alert;

(b) specific requirements according to the different phases of the mission (launch, transit, passivation, EOL-operations).

Annex V

SPACECRAFT SPACE DEBRIS MITIGATION REFERRED TO IN ARTICLE 70

1. Limit spacecraft fragmentation

1.1. Limitation of projected generation of debris

To limit the planned generation of debris during nominal operations, the following requirements shall be implemented:

(a) A spacecraft shall be designed to limit the generation of debris, in accordance with the requirements set out in the implementing act referred to in Article 70(3), point (a).

(b) Each planned debris estimated to be in orbit for the period of time specified in the implementing act referred to in Article 70(3), point (a), shall be justified in the Debris Control Plan.

(c) Union spacecraft operators shall put in place measures for the design of pyrotechnic devices and solid rocket motors in line with the requirements laid down in the implementing act referred to in Article 70(3), point (a).

1.2. Avoiding fragmentation due to internal spacecraft causes

1.2.1. To limit the risk of accidental fragmentation caused by on-board source of energy, the following requirements shall be implemented:

(a) The probability of accidental fragmentation of a spacecraft in Earth orbit shall be limited, in accordance with the requirements laid down in the implementing act referred to in Article 70(3), point (b)(i), until its end of life.

The calculation of the risk of accidental fragmentation of a spacecraft shall follow a standardised method, taking into account all known failure modes.

(b) The spacecraft on-board sources of energy shall be designed to be robust and take into account the following factors:

(i) the expected nominal environmental extremes;

(ii) the nominal mechanical and chemical breakdown;

(iii) the potential impact of system spacecraft failure modes; and

(iv) the impact of on-board sources of energy on the spacecraft's ability to passivate.

(c) The spacecraft shall be designed taking into consideration the specificities of its subsystems, such as the electrical and propulsion systems, or the pressurized systems' risk of fragmentation during their orbit lifetime.

(d) The in-orbit operation of spacecraft shall include procedures for the monitoring of the relevant parameters of each subsystem identified as a potential source of space debris generation, in order to detect malfunctions.

(e) Spacecraft shall be passivated in accordance with the following principles:

(i) Measures taken to implement the requirement regarding passivation shall take into account specificities related to the type of propulsion.

(ii) When electric passivation is used, the design of spacecraft shall ensure that schematics of electrical passivation are established and specified.

(iii) Union spacecraft operators shall, before the end of life of the spacecraft, update the passivation procedures to check if the passivation capabilities of the spacecraft are still nominal.

(iv) Except for Cubesats, the design of spacecraft shall ensure it contains a redundancy function for passivation.

(v) Union spacecraft operators shall deplete energy reserve in either of the following ways:

(1) through hard passivation, whereby a Union spacecraft operator shall put in place controls with parameters set to a level which cannot cause an explosion or deflagration large enough to release orbital debris or fragmentation of the spacecraft;

(2) through soft passivation in accordance with the conditions set out in the implementing act referred to in Article 70(3), point (b).

(vi) Union spacecraft operators shall deactivate the parts of the spacecraft that produce energy.

(vii) Following the passivation there shall be no more radioelectric emissions of the platform and the payload.

(viii) Passivation shall not generate space debris larger to 1 mm, with the exception of the ventilation of propellant.

(f) In the case of electrical passivation, energy sources shall be isolated and the battery drained.

Specific rules regarding passivation for re-entry shall be specified in the implementing act referred to in Article 70(3), point (d).

1.3. Avoiding fragmentation due to collision

To limit the fragmentation caused by collision, the following requirements shall be implemented:

(a) Spacecraft shall be designed and manufactured, and space missions shall be respectively designed, in a way that limits the risk of collision, in accordance with the requirements laid down in the implementing act referred to in Article 70(3), point (b).

(b) Spacecraft shall be designed and manufactured to limit the risk that a space debris or meteoroids causes the spacecraft or its component(s) to fragment, and, where tethers are used, additional measures shall be implemented to mitigate the risk of collision with space objects and meteoroids, in accordance with the requirements laid down in the implementing act referred to in Article 70(3), point (b).

(c) The probability of collision with a space object and meteoroids shall be calculated before launch for the entire lifetime of the spacecraft, and the risks shall be limited, in accordance with the threshold laid down in the implementing referred to in Article 70(3), point (b).

(d) The calculation of the probability of collision shall follow the standardised method laid down in the implementing act referred to in Article 70(3), point (b).

2. Reliability design and control

2.1. Provisions concerning the reliability of the design

2.1.1. The design and manufacture of spacecraft and of its components and sub-systems shall be:

(a) verified, through testing, analysis, demonstration or inspection;

(b) validated, through acceptance testing, demonstration or inspection; and

(c) tested, analysed and demonstrated, where such testing, analysis and demonstration may vary based on the type of equipment and the criticality of the functions.

2.1.2. Control of the design, manufacture, integration and implementation of spacecraft systems shall be put in place, in order to manage hazards, especially those arising from critical activities.

2.2. Operational procedures for quality and reliability control

Union spacecraft operators shall implement a quality management system.

2.2.1. Union spacecraft operators shall implement a quality management system.

The implementation of a quality management system shall cover at least quality assurance, RAMS (reliability, availability, maintainability, safety), including health monitoring, failure prognostics and configuration management.

2.2.2. The monitoring and controlling of any deviation in the manufacturing and implementation of the space mission shall include the following:

(a) implementation of a system to monitor and control deviations in manufacturing and implementation, including amongst other things the following:

(i) deviations in relation to configuration (definition, launch system, production and implementation process);

(ii) deviation resulting from the utilisation of in-flight data;

(iii) the operational sequences involving the spacecraft control shall be tested before launch, for the critical phases of a space mission (including but not limited to launch and early operation phase, decommissioning, critical operations in orbit);

(iv) pressure and temperature in the engines, tanks, pressure vessels;

(v) parameters (temperature and voltage) of batteries to detect failures;

(vi) parameters to detect failure modes of the orbit and attitude control system.

(b) ensuring the traceability of technical and organisation events affecting the engineering and manufacturing processes.

2.2.3. Definition of procedures to assess critical functions, using in-flight data.

(a) The procedures shall foresee a re-evaluation to be carried out at least the following times:

(i) upon request of the component authority, during nominal lifetime and during time of mission extension;

(ii) upon detection of an anomaly which could affect the successful deorbiting;

(iii) when evaluating a space mission lifetime extension;

(iv) upon occurrence of a major change on the space environment (for example a catastrophic fragmentation) with a significant impact on the operational orbit or disposal approach;

(b) At least the following parameters shall be re-assessed in the procedures referred to in point (a):

(i) the monitored and updated probability of successful disposal with flight data, to ensure that the probability of successful disposal is high;

(ii) the foreseen probability of successful disposal as referenced in Section III, Part A, for the remaining time in orbit;

(iii) the foreseen number of collision avoidance manoeuvres up to the end of life, with updated environmental models (and respective Delta V);

(iv) the disposal orbit and the respective risk of collisions from the foreseen deorbit time up to re-entry (and guarantee that the respective Delta V is available).

3. End of life

3.1. Probability of successful disposal

3.1.1. Union spacecraft operators shall calculate and adhere to assigned limits on the probability of successful disposal.

3.1.2. The probability of successful disposal shall be high and shall be calculated according to the requirements set out in the implementing act referred to in Article 70(3), point (c).

3.1.3. At the design phase, the calculation by Union spacecraft operators of the probability of successful disposal shall be based on recognised method, based on state of the art, set out in the implementing act referred to in Article 70(3), point (c), and shall include:

(a) an assessment of the probability that a space debris or meteoroid impact prevents the successful disposal of the spacecraft;

(b) an assessment of uncertainties in the availability of resources, such as propellant, required for the disposal;

(c) the inherent reliability of equipment necessary to conduct the disposal, and a monitoring of the equipment, including the subsystems, units and functions used solely for disposal;

(d) probability of collisions on appendages, unless demonstrated that they do not affect the disposal functions;

(e) passivation operations, even after loss of command or loss of contact.

3.1.4. The probability of successful disposal shall be reassessed after launch, taking into consideration any changes in the operational status of the spacecraft.

3.1.5. If propellant is used:

(a) The probability, calculated prior to launch, of having the propellant needed for the end-of-life manoeuvres, at each moment during the space mission, and up to the initiation of successful decommissioning manoeuvres, shall be maximal.

(b) Before disposal, the Union spacecraft operator shall check that it has to the necessary propellant to perform the disposal.

3.2. Design of the spacecraft in view of end of life disposal

3.2.1. Spacecraft shall be designed to support end of life disposal through the means referred to in point 3.3, point 3.6 or point 3.7, as applicable.

3.2.2. Disposal capabilities shall be planned and checked at the design stage. For LEO space missions, this shall include designing for the type of planned re-entry.

3.2.3. Disposal capabilities shall be available at any time of the space mission.

3.2.4. Protection of disposal systems from space debris and meteoroids shall be demonstrated.

3.2.5. Union spacecraft operators shall be able to maintain communication links and active tracking during disposal phase.

3.3. Removal of spacecraft in LEO

The removal of spacecraft in LEO shall be performed by one or more of the following means, chosen in the following order of preference based on technical feasibility:

(a) Performing a controlled re-entry with a well-defined impact footprint on the surface of the Earth, to limit the casualty risk;

(b) Performing a semi-controlled re-entry after the end of mission, in case the design complies with the casualty risk;

(c) Performing an immediate uncontrolled re-entry after the end of mission, in case the design complies with the casualty risk;

(d) Allowing its orbit to decay naturally, in accordance with the limit of cumulative accidental collision probability, maximum orbital lifetime, and the limit for casualty risk;

(e) In exceptional justified cases, for Very High LEO, disposal can take place in an orbit not interfering with protected regions and valuable orbits;

(f) Removal by ISOS.

3.4. Maximum orbital lifetime before re-entry for LEO

3.4.1. The Union spacecraft operator of spacecraft in LEO shall disclose the expected time in orbit following:

(a) the end of the space mission;

(b) the completion of the passivation procedure.

3.4.2. For LEO, the orbital lifetime, after the end of the mission, and before re-entry into the atmosphere, shall be limited in accordance with the requirements set out in the implementing act referred to in Article 70(3), point (c).

3.5. Rules for re-entry for LEO

3.5.1. For spacecraft being disposed in accordance with the rules laid down in Part 3.4, Union spacecraft operators shall consider design for demise as one of the steps to minimise the casualty risk.

3.5.2. Union spacecraft operators shall demonstrate that there is no risk of on-orbit collision with crewed stations following three days after the de-orbiting and return to Earth manoeuvres.

3.5.3. Union spacecraft operators shall carry out an assessment as to whether parts of the spacecraft will survive atmospheric re-entry and impact the surface of the Earth and shall set out the measures to be taken to reduce the casualty risk, in line with point 3.5.4.

3.5.4. The probability of casualties per re-entry shall be further specified in the implementing act referred to in Article 70(3), point (c)(iii), considering the following requirements:

(a) be as low as possible;

(b) be expressed as a maximum probability of having at least one victim (collective risk);

(c) include casualties on ground, as well as regards air traffic and maritime traffic;

(d) in the case of premature or accidental re-entry, Union spacecraft operators shall, as a matter of priority, implement all measures to reduce the risk to the ground.

3.5.5. The re-entry shall analyse the risk for the environment due to the substances which might survive the re-entry.

3.5.6. In case the spacecraft contains radio-active materials, the conditions set out in the implementing act referred to in Article 70(3), point (c)(iii), shall be followed.

3.5.7. Spacecraft that cannot perform a controlled re-entry as planned, shall be passivated, provided that passivation can be carried out in a safe, timely and controlled manner.

3.5.8. For a spacecraft that survives a planned re-entry and is of a size determined in accordance with the implementing act referred to in Article 70(3), point (c)(iii), Union spacecraft operators shall register to a re-entry service, able to:

(a) follow the re-entry;

(b) make predictions on potential landing site.

3.5.9. The re-entry service referred to in point 3.5.8 shall inform the relevant air traffic and maritime authorities of any expected re-entry.

3.6. Removal of spacecraft in MEO

Removal from Earth orbits outside of the protected orbital regions to an orbit not interfering with protected regions and valuable orbits within a number of years specified in the implementing act referred to in Article 70(3), point (c).

3.7. Removal of spacecraft in GEO

Removal from Earth orbits outside of the protected orbital regions in an orbit not interfering with protected regions and valuable orbits within 100 years after its end of life.

3.8. Failure response

3.8.1. The Union spacecraft operator shall draw up a failure response plan in line with point 4.3.

3.8.2. The Union spacecraft operator shall implement the failure response if a critical system for the disposal process fails.

4. Space debris mitigation plans

4.1. Debris control plan

4.1.1. A fragmentation prevention plan shall be developed by considering each item containing stored energy. When developing such plans, Union spacecraft operators shall have due regard to systems that are most likely to cause accidental fragmentation of a spacecraft, such as notably:

(a) the electrical systems, especially batteries;

(b) the propulsion systems and associated components;

(c) the pressurized systems;

(d) the rotating mechanisms.

4.1.2. When drawing-up the fragmentation prevention plan, a system level risk assessment approach shall be used.

4.1.3. The debris control plan shall list at least the following:

(a) a description of adherence to the restrictions on the planned debris generation, in line with point 1.1.

(b) a description of adherence to the requirement on probability of accidental fragmentation, in line with point 1.2.

(c) a description of adherence to limiting the risk of fragmentation due to collision, in line with point 1.3.

(d) a description of the adherence to space reliability of design, in line with point 2.1.

(e) a description of the operational procedures for quality and reliability control, in line with point 2.2.1 and point 2.2.2.

4.2. End of life disposal plan

The end of life disposal plan shall contain at least the following:

(a) a description of adherence to the threshold of successful disposal laid down in point 3.1.2.

(b) for Union spacecraft operators in LEO, a description of the selected disposal method, in line with the options laid down in point 3.3, point 3.4 and point 3.5.

(c) for Union spacecraft operators in MEO, a description of the adherence to the requirements laid down in point 3.6.

(d) for Union spacecraft operators in GEO, a description of the adherence to the requirements laid down in point 3.7.

4.3. Failure response plan

The Union spacecraft operator shall develop a failure response plan that shall include at least the following elements:

(a) the criteria for selecting, from the alternative disposal methods, the one showing the lowest level of risk for a spacecraft being left in an operational orbit;

(b) the criteria for initiating the passivation contingency actions;

(c) for Union spacecraft operators in MEO and GEO, steps to remove spacecraft to an alternative orbit, and passivate it before any further critical systems are lost;

(d) steps to ensure the safe re-entry of the spacecraft from LEO, and to passivate it before any further critical systems are lost;

(e) the component of existing or future spacecraft that share components that could lead to a similar failure of the critical system (lessons learned);

(f) a removal plan that assesses the possibility of removal to be carried out by an ISOS service provider, including:

  (i) a dedicated operational mode for the service operation (removal), and making use of the integrated removal interface (if applicable) to de-risk a provided in-space service by the servicer spacecraft;

  (ii) the technical means and the specific mission mode;

  (iii) if the removal plan is not successful, or if it excludes the use of ISOS providers in mitigating risks and leaves the spacecraft in a protected orbit without manoeuvrability, spacecraft operators shall include the dedicated spacecraft service interfaces (SSI) referred to in Article 101(3), in future spacecraft as part of the authorisation requirements.

Annex VI

CONSTELLATIONS REFERRED TO IN ARTICLE 73

1. Intra-constellation requirements

1.1. For constellations, mega-constellations and giga-constellations, the debris control plans referred to in Article 70(2), point (a), shall, with a view to address the collision risk during orbital lifetime, include a report on intra constellation collision risks, listing the measures taken for mitigating that risk.

1.2. For mega-constellations and giga-constellations the following shall apply:

(a) the spacecraft design and operations shall enable the implementation of automated processes as part of the collision avoidance strategy;

(b) Union spacecraft operators shall consider orbits that minimise the intra-constellation collision risk, including in cases of in-orbit failure, Launch and Early Operations (LEOP) and disposal;

(c) during the disposal phase and after the end-of-life, Union spacecraft operators shall analyse the risk of intra-constellation collisions and keep it at the lowest level possible, to be specified in the implementing act referred to in Article 73(4), point (a).

2. Additional reporting requirements

2.1. For constellations, mega-constellations and giga-constellations, Union spacecraft operators shall take specific measures to ensure limitation of light and radio pollution to be specified in the implementing act referred to in Article 73(4), point (b), first subparagraph;

2.2. For mega-constellations and giga-constellations that following shall apply:

(a) the debris control plan referred to in Article 70(2), point (a), shall include an analysis that demonstrate that specific care has been taken to avoid collision with the international space stations for any phase of the space mission;

(b) a report shall analyse, after one year of operation, the probability of intra and inter-collision risks, and compare it with the one calculated at the time of the granting of the authorisation;

(c) Union spacecraft operators shall, after one year of operation, demonstrate the effectiveness of measures taken to address the light and radio pollution which have been explained in their application for authorisation. If such measures are not effective, Union spacecraft operators shall initiate the development of technical solutions through research to diminish the measured pollution for their next generation spacecraft in the respective constellation;

(d) Union spacecraft operators shall in case of transit from the injection orbit to the final orbit:

(i) prepare a plan for transit and demonstrate that the probability of collision is limited;

(ii) report on the functioning of vital systems is due before reaching operational orbit.

Annex VII

RESILIENCE ANNEX VII

1. **RISK ASSESSMENT**

1.1. In their risk assessments, Union space operators shall cover the key lifecycle stages referred to in Article 76(4), first subparagraph.

1.2. Union space operators applying a simplified risk management shall cover the key lifecycle stages referred to in Article 76(4), first subparagraph only in relation to critical assets and critical functions referred to in Article 79(1), first subparagraph.

1.3. A risk assessment shall evidence and document that for the respective segments, systems or subsystems, as applicable, Union space operators have set sufficient and adequate treatments to cover the identified risked.

1.4. A risk assessment shall be carried out at least prior to the launch. The risk assessment shall include at least the following elements:

(a) the risk source, whether malicious acts such as attacks, or accidents and natural disasters;

(b) the description of the risk context to which the respective segment, system or subsystem, as applicable, may be vulnerable, including for instance in the context of reconfigurable satellites;

(c) an outline of the risk assessment process;

(d) the description of the electronic communication networks;

(e) the security objectives, including criteria scales and the risk appetite which shall be tailored to the respective space mission;

(f) the risk scenarios covering at least the attack vectors that are well-known at that point in time;

(g) the applicable treatment for each identified risk and scenario, including comprehensive corporate information security policies and system specific security requirements.

Union space operators shall have in place risk assessment registers after the application of the treatments referred to in point (g).

1.5. The risk assessments shall be reviewed annually and whenever necessary subsequently considering the developments of the threat landscape.

Union space operators shall review the risk assessments:

(a) after each test campaign performed in accordance with Article 88;

(b) after each major change in the network and information systems;

(c) after each significant incident;

(d) following supervisory instructions.

2. **ASSET MAPPING**

2.1. Identification, listing and categorization of assets, including systems and subsystems, as well as functions, operations, and technologies with the following characteristics:

(a) assets deemed critical for carrying out space activities, by considering all relevant criteria, such as the key role played in the performance of the respective space mission, in maintaining effective control of the space segment, or in ensuring the functionality and integrity of the payload;

(b) assets identified as a single point or common mode of failure, within the risk assessment;

(c) assets that generate, use or store sensitive data;

(d) assets that require use of highly specialised skills or know-how.

2.2. Setting-out procedures for the handling of assets of space infrastructure identified in point 2.1, including during transitional stages, such as transport, or throughout testing and validation phases.

3. **PHYSICAL RESILIENCE**

3.1. In taking all necessary measures to ensure the resilience of the ground stations, Union space operators shall at least:

(a) adequately secure the launch sites and premises;

(b) maintain all physical assets, notably the equipment, in adequate condition, so as to ensure its integrity and availability, and in particular, as regards the spacecraft, in adequate conditions during manufacturing, testing, transport, commissioning and launch phases, as well as during the command, control and telemetry and the generation and transmission systems for all phases;

(c) place assets used by the command, control and telemetry, and the generation and transmission systems, in a way that limits access and reduces the risk of interferences, intentional or not;

(d) ensure, at nominal level, hardening and shielding against natural radiation and determine radiation threat levels on the space segment following supervisory instructions;

(e) secure assets during all transitional stages, such as notably, transport, testing, as well as at the launching sites, in particular to avoid unauthorised access, tampering and damage;

(f) place critical back-up assets into distinct geographic zones and maintaining inventories of relevant equipment, to allow the latter to be readily available in case of incidents;

4. **DETECTION MECHANISMS**

4.1. The detection mechanisms put in place by Union space operators shall:

(a) enable prompt detection of anomalous activities and identification of incidents, such as cyberattacks and electronic interferences;

(b) set-out alert thresholds and criteria to trigger incident response processes;

(c) monitor the state of the spacecraft;

(d) based on the risk assessments, and as deemed appropriate by the competent authorities, monitor the radiofrequency environment as regards the nominal data flows for services part, for sites that are critical to the command, control and

telemetry, the generation and transmission systems, and to the support for the detection of incidents and the localisation of the sources of interference.

5. **PROTECTION AND PREVENTIVE MEASURES**

5.1. The network and information systems shall:

(a) be adequate to ensure the confidentiality, integrity and availability of data;

(b) be technologically resilient, which includes, for the space segment, ensuring resilience against, for instance, tampering, jamming, blinding attacks and spoofing of sensors;

(c) use cryptography in accordance with the principles laid down in Article 85;

(d) have an ICT architecture fit to ensure the proper allocation of spacecraft resources and the integrity of services;

(e) have a security maintenance to allow to regularly install the latest patches, including a procedure for the urgent patching of vulnerabilities considered critical in light of the risk assessments.

5.2. The claimed identity of any device attempting to communicate with the satellite in view of modifying its internal state shall be authenticated.

5.3. The configuration of the flight systems and associated systems at the ground segment shall be done pursuant to pre-defined policies and shall be subject to verification in a way that prevents the installation or upgrade to software or firmware from being executed without an explicitly identified privilege to install such software.

5.4. Minimal protection and preventive measures:

(a) Use of multi-factor authentication or continuous authentication solutions, secured voice, video and text communications and secured emergency communication systems, as appropriate;

(b) Ensuring that all systems that directly send critical commands to the space segment are physically or logically isolated from other networks, as appropriate.

6. **SUPPLY CHAIN RISK MANAGEMENT FRAMEWORK**

6.1. Taking all appropriate measures to address the security related to the acquisition, development and maintenance of the network and information systems, including as regards vulnerability handling and disclosure.

6.2. Setting-out criteria for the choice of software and hardware products in the supply chain with due regard to the risk of obsolescence.

6.3. Deploying software integrity controls on the ground segment and the space segment including by deploying software integrity controls and authenticity controls proving the origin.

6.4. Controlling the network and information systems which are temporarily interconnected, such as in the context of the provision of maintenance or support.

7. **TRAININGS**

7.1. General Trainings

(a) ICT security awareness programmes.

(b) Compulsory modules with exercises on basic cyber hygiene practices.

(c) Specific cybersecurity trainings with complexity levels that are commensurate to the remit of staff functions and tasks.

(d) General trainings on security related to staff functions.

7.2. Tailored trainings

Union space operators shall ensure that tailored trainings are provided at least to staff:

(a) that operates, monitors and maintains the equipment interfacing with the space segment;

(b) that is in charge of implementing the business continuity policy and the response and recovery plan established in accordance with Article 87;

(c) that deals with cases requiring further interaction with third parties.

8. **INCIDENT HANDLING**

8.1. Logging of incidents.

8.2. Classification of incidents by severity of their impact.

8.3. Deployment of response measures that are necessary and adequate to mitigate the impacts of incidents, by ensuring in a timely manner that services become operational and are secure.

8.4. Non-alteration and preservation of assets.

8.5. Follow-up of taken actions.

9. **REQUIREMENTS FOR CRITICAL ASSETS AND RISKS IN THE CONTEXT OF THE SIMPLIFIED RISK MANAGEMENT**

9.1. The requirements laid down in Article 76.

9.2. Risk assessment referred to in Article 78(2).

9.3. Elements of the risk assessments referred to in point 1.4.

9.4. Development of the risk scenarios referred to in point 1.4, point (f).

9.5. Setting-up and maintaining inventories referred to in Article 80(4), first subparagraph.

9.6. Prevention and protection measures in accordance with Article 84(3).

9.7. Principles for cryptography and encryption pursuant to Article 85(1), first subparagraph.

9.8. Measures for the backup management pursuant to Article 86(1) and (3).

9.9. Handling of incidents pursuant to Article 91.

Annex VIII

IN-SPACE OPERATIONS AND SERVICES (ISOS) REFERRED TO IN ARTICLE 101

1. General provisions

1.1. General principles in carrying out ISOS

(a) For the purposes of this Annex, a client object shall be understood as a client space object, including a spacecraft, as well as space debris.

(b) The Union ISOS provider and the Union space operator of the client object shall conclude a dedicated ISOS-related contract.

(c) Any ISOS shall be carried out only after the Union ISOS provider and the Union space operator of a client object have explicitly and unequivocally consented to start carrying out the agreed operation or set of operations, as applicable.

(d) The ISOS contract referred to in point (b) shall include a dedicated service plan describing in detail the mission concept for the respective ISOS and the infrastructure of both the client object and the servicer spacecraft.

(e) The servicer spacecraft and the client object shall be designed and manufactured, and the corresponding service mission shall respectively be designed, in a way that limits the risk of collision.

(f) During the ISOS operation, the physical separation between the servicer spacecraft and the client object shall be performed in a manner that ensures a sustainable orbit for both spacecraft.

1.2. Coordination of control centers

(a) The respective control centers of the servicer spacecraft and the client object shall ensure appropriate coordination, by sharing all data, including the telemetry, that is necessary to ensure the safety of the respective operations.

(b) Except where the client object is space debris, the Union ISOS provider and the Union space operator of a client object shall identify, for each phase in the carrying out of ISOS, the control centre with decision-making authority for joint operations in the area of proximity, including during the attach phase, as well as the control centre which controls the composite object in the attached phase.

2. Service provision

2.1. Servicer and service compatibility to client space object configuration

The design of the servicer spacecraft and the operational service concept shall be compatible with the design and operation of the client object, respectively or, where the client object is space debris, with the condition of the debris object.

2.2. Due diligence obligations regarding the potential impacts on third parties

2.2.1. Union ISOS providers shall take all appropriate measures to prevent:

(a) interference with an object, other than the client object, that generates harm;

(b) disruption, including interruption, of any operation carried out by a third party spacecraft;

and, where such prevention is not possible or is not immediately possible, shall adequately mitigate potential adverse impacts when carrying out ISOS.

2.2.2. The Union ISOS provider shall define in the operational concept a safe zone where presence of a third party will lead to non-engagement or withdrawal of the ongoing ISOS operation.

2.2.3. Where anomalies occur, or where unforeseen events, including those caused by the carrying out of ISOS, lead to potential adverse impact on third party space objects, the Union ISOS provider shall immediately notify the space operator of the third-party space object impacted.

2.2.4. The Union ISOS provider shall closely cooperate with CA service provider referred to in Article 63, including in the service operation phase.

2.3. Safety of operations

(a) For the purposes of the approach phase, and with a view to initiate the separation, the Union ISOS provider shall set out, in the operational concept, standby or transit points.

(b) During the service operation the Union ISOS providers shall conduct a GO/NO-GO testing at every appropriate timing/sequence and shall only continue the service operation when the GO condition is met. When the GO conditions are not met, a cancel command shall be triggered either autonomously or by a command sent from the ground segment.

(c) During the approach phase, and after the separation, the on-board systems of the servicer spacecraft shall be able to assess the risk of collision between the servicer spacecraft and the client object, in real time, and shall be capable of autonomously triggering an avoidance manoeuvre to place the servicer spacecraft on a path non-colliding with the client object.

2.4. Qualification of the system and servicing concept - Prior testing

Except for non-reversible ISOS operations, Union ISOS providers shall, for the purposes of ascertaining the proper system functioning for the planned ISOS, carry out tests in orbit at least before engaging in the first service operation or in the first step and only if no danger is posed to any other space object.

Annex IX

QUALIFIED TECHNICAL BODIES FOR SPACE ACTIVITIES REFRRED TO IN ARTICLE 35

1. General requirements for qualified technical bodies for space activities

1.1. A qualified technical body for space activities shall be established under national law and shall have legal personality unless it is part of a competent authority.

1.2. A qualified technical body for space activities shall be independent from:

(a) a space services provider referred to in Article 2(1), where that qualified technical body for space activities carries out a technical assessment in relation to a product, process, service, including risk-management, regarding matters covered by this Regulation;

(b) a competitor of a space services provider referred to in Article 2(1), as regards the carrying out of the technical assessment of a product, process, service, including risk-management, regarding matters covered by this Regulation;

(c) an undertaking, other than space services providers referred to in point (a), or competitors referred to in point (b), of this paragraph, that has an economic interest in a product, process, service, including risk-management, regarding matters covered by this Regulation.

1.3. A body belonging to a business association or professional federation that represents undertakings which are involved in the design, development, production, provision, assembly, use, maintenance, testing, or operation of a product which a technical body assesses, or respectively undertakings which are involved in the use or operation of a service, activity or process that such technical body certifies, may only be considered as a qualified technical body for space activities, under this Regulation, if such body meets the requirements of independence and absence of conflict of interest.

1.4. A qualified technical body for space activities shall be organised and managed in a way that safeguards the independence, objectivity and the impartiality in carrying out its activities.

For that purpose, a qualified technical body for space activities shall ensure that:

(a) procedures to safeguard and document its impartiality are set up and guaranteed throughout its activities, and that such procedure apply both to the top-level management and to the personnel carrying out technical assessment activities;

(b) the qualified technical body for space activities and its personnel carries out the technical assessment with the highest degree of professional integrity and with all requisite technical competence in the specific area(s) of activity, free from any pressure and inducements, particularly of a financial nature, which might influence the judgement or the results of the technical assessment activities;

(c) it has policies and procedures to distinguish between the tasks it carries out in that capacity and any other tasks;

(d) the qualified technical body for space activities, its top-level management, and its personnel responsible for carrying out technical assessment activities does not engage in any activity that may conflict with the independence of judgement or the requirement of integrity, as regards the technical assessment, notably consultancy services;

(e) the remuneration of the top-level management and of the personnel of the qualified technical body for space activities carrying out technical assessment tasks shall not depend on the number of technical assessments being carried out, or on the results of those technical assessments;

(f) transparency is ensured regarding the procedure for carrying out technical assessments, for instance by means of publication on the relevant website of a description of such procedures.

A qualified technical body for space activities shall meet the organisational, quality management, resource-related and process-related requirements necessary to fulfil its tasks.

The organisational structure and operation of a qualified technical body for space activities, as well as the allocation of responsibilities and reporting shall be such as to ensure confidence in the performance of tasks and in the results of its technical assessment activities.

1.5. At all times, and for each procedure in the technical assessment, a qualified technical body for space activities shall:

(a) have at its disposal personnel possessing the necessary technical knowledge and appropriate and sufficient experience to perform technical assessment tasks;

(b) use procedures which take into account any relevant criteria applying to:

(i) the space services providers referred to in Article 2(1), such as the criteria of size of such space services provider or the specific sector of space activities;

(ii) the objective elements, such as structure, degree of complexity of processes or technology, mass or serial nature of the production processes;

(c) possess the necessary means to perform all the technical and administrative tasks for technical assessment activities, including having access to all necessary data, equipment or facilities.

1.6. The personnel of a qualified technical body for space activities which is in charge of carrying out technical assessment activities shall have:

(a) appropriate understanding and knowledge of the matters covered by this Regulation, of relevant standards regarding matters covered by this Regulation, or relevant provisions of Union law;

(b) sound knowledge of the specific requirements for which a technical assessment activity is carried out;

(c) sound technical and vocational training covering all technical assessment activities in relation to which a qualified technical body for space activities has been notified;

(d) the ability to draw up certificates, records and reports demonstrating that technical assessments have been carried out.

1.7. A qualified technical body for space activities shall be capable of carrying out tasks in relation to matters covered by this Regulation with the highest degree of professional integrity and requisite competence in specific fields, whether such tasks are carried out by the qualified technical body for space activities itself or are being carried out on its behalf and under its responsibility.

When a qualified technical body for space activities delegates part of its tasks, it shall have sufficient internal competence to effectively evaluate the way in which the external party executes such tasks on its behalf.

1.8. A qualified technical body for space activities shall ensure the permanent availability of administrative, technical, legal and scientific personnel with knowledge and experience of the relevant technologies of space activities and the technical requirements laid down in Regulation, Title IV.

1.9. A qualified technical body for space activities shall have in place documented procedures to ensure that its personnel and any relevant committees, subsidiaries, subcontractors or associated body or, as applicable, personnel of external bodies, handle the confidential information to which it comes into possession during the performance of technical assessment, in compliance the professional secrecy requirement laid down in Article 116, except when disclosure is required by law.

The staff of a qualified technical body for space activities shall observe professional secrecy regarding all information obtained in carrying out the tasks in relation to matters covered by this Regulation.

1.10. A qualified technical body for space activities shall hold or be in a position to obtain in due time, a valid personnel security clearance certificate.

1.11. A qualified technical body for space activities shall hold an appropriate liability insurance for carrying out its technical assessment activities.

1.12. A qualified technical body for space activities shall participate in the coordination activities as referred to in Article 39.

1.13. A qualified technical body for space activities shall take part, directly or through representation, in the activities of the European standardisation organisations, or shall at least ensure that it is aware and up to date with relevant standards in the areas falling into the matters covered by this Regulation.

1.14. A qualified technical body for space activities shall operate in accordance with fair and reasonable terms and conditions, in particular taking into account the interests of SMEs in relation to fees.

2. Specific requirements for qualified technical bodies for space activities carrying out tasks of verification and validation of the environmental footprint study

2.1. Qualified technical bodies for space activities that carry out technical assessment of matters covered by Chapter III of Title IV, shall meet, in addition to the requirements laid down in section I of this Annex, the requirements laid down in Section 8 of the Commission recommendation C(2021)9332.

Annex X

INFRINGEMENTS TO THE REGULATION REFERRED TO IN ARTICLE 54

1. Infringements applicable to Union space operators

1.1. A Union space operator infringes Article 6(1) in conjunction with Article 7(1) by providing space services before having obtained authorisation to carry out space activities.

1.2. A Union space operator intending to have recourse to the space services provided by a third country space operator or an international organisation infringes Article 6(5), by not demonstrating to its competent authority, in its application for authorisation, the registration in URSO of that third country space operator or international organisation or, where the procedure of registration in URSO has not been completed yet, the Union space operator does not coordinate closely with the third country space operator or international organisation, the relevant competent authority and the Agency, including by requiring updates on the status of the registration process.

1.3. A Union space operator infringes Article 6(6), by not informing without delay the competent authority of the need for the provision of space services by a third country space operator or international organisation which arises after an authorisation has been issued, such as in the case of ISOS, and by not providing to the competent authority the proof of registration in URSO of that third country space operator or international organisation.

1.4. A Union space operator infringes Article 7(2), by not submitting in the application for authorisation a technical file with all necessary documentation and supporting evidence to demonstrate compliance with the requirements laid down in Title IV, Chapters I to V, as applicable to its specific space mission.

1.5. A Union space operator infringes Article 7(3), by not indicating in its application for authorisation, to the competent authority which qualified technical bodies for space activities the applicant intends to use for the technical assessment of the requirements laid down in Title IV, Chapters I to V, as applicable.

1.6. A Union space operator infringes Article 9(1), by not ensuring that they comply with the conditions laid down in Article 9(1), points (a) and (b), when submitting the declaration referred to in Article 9(1), second subparagraph, or by failing to submit that declaration.

1.7. A Union space operator infringes Article 9(5), by not provided the explanations required by the competent authorities, where random inspections identify aspects that conflict with the declaration made by the Union space operator and the explanations are needed to allow the competent authority to conclude on the extent of, or absence of risks entailed by such conflict.

1.8. A Union space operator that is subject to the light regimes referred to in Article 10(2), (3) and (4), fails to comply with the conditions referred to in those paragraphs.

1.9. An applicant to become a Union space operator of Union-owned assets infringes Article 11(2), by failing to provide to the Agency and the Commission all the technical details and explanations that demonstrate compliance with the requirements laid down in Title IV, Chapters I, II, III, IV and V and in Article 12(1), first subparagraph, or infringes Article 11(3), second subparagraph, by not providing all additional information or by bringing clarifications.

1.10. A Union space operator of Union-owned assets infringes Article 11(2) and Article 12(1), first subparagraph, by failing to fulfil the requirements laid down in Article 12(1), first subparagraph and in Title IV.

1.11. A Union space operator of Union-owned assets infringes Article 13(1), by not reporting any unforeseen event that may require the modification of its authorisation or any planned or imminent termination of its activity.

1.12. A Union space operator of Union-owned assets is found in any of the situations referred to in Article 13(2), first subparagraph.

1.13. A Union space operator infringes Article 26(1) and (2), by failing to accompany the contracts for the provision of space-based data and space services in the Union by the e-certificate.

1.14. A Union space operator of Union-owned assets infringes Article 49, by failing to submit to a decision of request for information laid down in Article 49(3) or to provide the information referred to in Article 49(1).

1.15. A Union space operator of Union-owned assets infringes Article 50(5), first subparagraph by not submitting to an investigation and by hindering the exercise of the powers referred to in Article 50(4).

1.16. A Union space operator infringes Article 51(5), by failing to submit to the on-site inspections ordered by decision of the Agency and the Commission.

1.17. A Union space operator infringes Article 53(2), in conjunction with Articles 49, 50 and 51, by failing to submit to that investigation.

1.18. A Union launch operator infringes Article 58, Article 59, Article 60, or Article 61 as regards the safety of launchers.

1.19. A Union spacecraft operator infringes any of the rules laid down in Article 62 to Article 73 as regards the safety of spacecraft and space activities.

1.20. A Union space operator infringes Article 74, by not taking all the measures to ensure the conformity of contracted space objects or, as applicable, the conformity of components, with the design and the manufacturing requirements as laid down in Chapter I of Title IV.

1.21. A Union space operator infringes resilience requirements, by failing to comply with the risk management rules laid down in Article 76, Article 77, Article 78, Article 79, Article 80, Article 81, Article 82, Article 83, Article 84, Article 85, Article 86, Article 87, Article 88, Article 89, Article 90, Article 91, Article 92 and Article 95(1), (2) and (3).

1.22. A Union space operator of Union-owned assets infringes Article 93 regarding the reporting of significant incidents of Union-owned assets, by failing to report to the structure referred to in Article 93(1) or by not reporting in the manner specified in Article 93(7), first subparagraph.

1.23. A Union space operator operating the assets referred to in Article 5, first paragraph, point (21), infringes Article 93, by failing to report to the competent authorities, as laid down in Article 93(2), or by failing to report in the manner specified in Article 93(7), first subparagraph.

1.24. A Union space operator qualifying as an essential or important entity pursuant to Annexes I or II of Directive (EU) 2022/2555, infringes Article 93(3), first

subparagraph, by not reporting as referred to in that Article or infringes Article 93(7), first subparagraph, by not reporting in the manner specified therein.

1.25. A Union space operator identified as a critical entity pursuant to the Annex to Directive (EU) 2022/2557 infringes Article 93(3), second subparagraph, by not reporting in the manner determined by the Member State, pursuant to that article, or infringes Article 93(7), first subparagraph, by not reporting in the manner specified therein.

1.26. An applicant for authorisation as a Union space operator infringes Article 96(4) and (6), by failing to submit an Environmental Footprint Declaration ('EFD') to its competent authority or by failing to submit all the elements referred to in Article 96(6).

1.27. A Union space operator infringes Article 97, by failing to include in the calculation the space missions referred to in Article 97(1), or the activities referred to in Article 97(2).

1.28. A Union space operator of Union owned-assets infringes Article 97(3), by failing to include the components referred to in Article 3(1), points (a) to (c) and point (e), of Regulation (EU) 2021/696 and in Article 1 of Regulation (EU) 2023/588, as applicable.

1.29. An applicant for authorisation as Union space operator infringes Article 98(1), by failing to possess the EF certificate when applying for authorisation.

1.30. An applicant for authorisation as Union space operator infringes Article 99, by failing to transmit the datasets referred to in Article 99(1), first subparagraph.

1.31. A Union space operator infringes Article 101.

1.32. A Union space operator infringes Article 112(1), first subparagraph, by failing to accompany the application for a Union Space Label by a detailed technical file demonstrating the fulfilment of the requirements established in the Union Labelling Scheme(s) for which the Union Space Label is sought.

1.33. A Union space operator that is holder of a Union Space Label infringes Article 112(3), by failing to continue to comply with the requirements established in the Union Labelling Scheme(s) for which that Union Space Label was awarded, or infringes Article 112(6), by failing to inform the Agency of any subsequently detected irregularities concerning the labelled space mission, service or product, that may have an impact on its compliance with the requirements of the respective Union Space Label.

2. Infringements applicable to third country space services providers

2.1. A third country space operator infringe Article 14(1), by providing space services to Union space operators and in relation to Union-owned assets and to assets referred to in Article 5, first paragraph, point (21), without being registered in the Union Register of Space Objects and without being in the possession of the e-certificate.

2.2. A third country space operator infringes Article 15(1), by failing to fulfil any of the requirements listed in Article 15, in conjunction to Chapters I to V of Title IV, as specified in Article 15.

2.3. A third country space operator infringes Article 17(3), by failing to provide in the application to the Agency all the evidence needed to demonstrate compliance.

2.4. A third country space operator infringes Article 22, by failing to provide during the dialogue with the Agency the required explanations, documentation and evidence in support of its explanations, including any technical analysis, and to achieve compliance.

2.5. A third country space operator infringes Article 23, by failing to designate in writing one or more legal persons in one of the Member States to act as their legal representative in the Union, or by failing to mandating that legal representative to have the powers to be addressed in addition to, or instead of, the third country space operator, by the competent authorities, the Commission and the Agency, on all issues related to compliance with this Regulation, and to have all necessary powers and resources to guarantee an efficient and timely cooperation with such authorities.

2.6. A third country space operator infringes Article 25(3), by failing to accompany the contracts for the provision of space-based data and space services in the Union by the e-certificate.

2.7. A third country space operator infringes Article 25(4), by failing to send the Agency the details referred to in Article 25(4), first subparagraph, to allow the Agency to generate the e-certificate.

2.8. A third country space operator infringes Article 26(1) and (2), by failing to accompany the contracts for the provision of space-based data and space services in the Union by the e-certificate.

2.9. A third country space operator infringes Article 49, by failing to submit to a decision of request for information laid down in Article 49(3) or to provide the information referred to in Article 49(1).

2.10. A third country space operator infringes Article 50(5), first subparagraph, by not submitting to an investigation or by hindering the exercise of the powers referred to in Article 50(4).

2.11. A third country space operator infringes Article 51(5), by failing to submit to the on-site inspections ordered by decision of the Agency and the Commission.

2.12. A third country space operator that met the requirement referred to in Article 52(1), point (b), infringes Article 52, by not submitting to the inspection or by hindering the exercise of the powers laid down in Article 52(2).

2.13. A third country space operator infringes Article 53(2), in conjunction with Articles 49, 50 and 51.

3. Infringements applicable to international organisations

3.1. International organisations with specific technical expertise in matters covered by this Regulation, chosen by Member States to carry our technical assessments pursuant to Article 8(1), point (b), infringe Article 8(3), first subparagraph, by not complying with the requirements laid down in Regulation, Title III, Chapter I, Section 3, pursuant to Article 8(3), first subparagraph.

3.2. An international organisation infringes Article 25(3), by failing to accompany the contracts for the provision of space-based data and space services in the Union by the e-certificate.

3.3. An international organisations infringe Article 14(2).

3.4. An international organisation infringes Article 25(4), by failing to send the Agency the details referred to in Article 25(4), first subparagraph, to allow the Agency to generate the e-certificate.

3.5. An international organisation infringes Article 26(1) and (2), by failing to accompany the contracts for the provision of space-based data and space services in the Union by the e-certificate.

3.6. An international organisation infringes Article 49, by failing to submit to a decision of request for information laid down in Article 49(3) or to provide the information referred to in Article 49(1).

3.7. An international organisation infringes Article 50(5), first subparagraph, by not submitting to an investigation or by hindering the exercise of the powers referred to in Article 50(4).

3.8. An international organisation infringes Article 51(5).

3.9. An international organisation infringes Article 53(2), in conjunction with Articles 49, 50 and 51.

3.10. An international organisation infringes Article 58, Article 59, Article 60, or Article 61 as regards the safety of launchers.

3.11. An international organisation infringes Article 62, Article 63, Article 64, Article 65, Article 66, Article 67, Article 68, Article 69, Article 70, Article 71, Article 72 or Article 73, as regards the safety of spacecraft and space activities.

3.12. An international organisation infringes Article 74, by not taking all the measures to ensure the conformity of contracted space objects or, as applicable, the conformity of components, with the design and the manufacturing requirements as laid down in Chapter I of Title IV.

3.13. An international organisation infringes the risk management requirements, by failing to comply with the rules laid down in Article 76, Article 77, Article 78, Article 79, Article 80, Article 81, Article 82, Article 83, Article 84, Article 85, Article 86, Article 87, Article 88, Article 89, Article 90, Article 91, Article 92, and the conditions laid down in Article 95(1), (2) and (3).

3.14. An international organisation operating Union-owned assets infringes Article 93 regarding the reporting of significant incidents of Union-owned assets, by failing to report to the structure referred to in Article 93(1) or by not reporting in the manner specified in Article 93(7), first subparagraph.

3.15. An international organisation operating the assets referred to in Article 5, first paragraph, point (21), or its own assets, infringes Article 93, by failing to report to the competent authorities, as laid down in Article 93(2), or by failing to report in the manner specified in Article 93(7), first subparagraph.

3.16. An international organisation infringes Article 97, by failing to include in the calculation the space missions referred to in Article 97(1), or the activities referred to in Article 97(2).

3.17. An international organisation operating the Union owned-assets infringes Article 97(3), by failing to include the components referred to in Article 3(1), points (a) to (c) and point (e), of Regulation (EU) 2021/696 and in Article 1 of Regulation (EU) 2023/588, as applicable.

3.18. An international organisation infringes Article 98(1), by failing to possess the EF certificate in order to provide space services as regards the assets referred to in Article 5, first paragraph, points (20) and (21).

3.19. An international organisation infringes Article 99, by failing to transmit to the Commission the datasets referred to in Article 99(1), first subparagraph.

3.20. An international organisation infringes Article 101.

4. Infringements applicable to primary providers of space-based data

4.1. A primary provider of space-based data infringes Article 27(2), by failing to alert their suppliers and to contact the Agency or the competent authority of the Member State where they are established of any received alerts or complaints about potential irregularities.

5. Infringements applicable to collision avoidance space services providers

5.1. A collision avoidance space service provider infringes Article 102(1), by failing to provide to the competent authority of the Union space operator up-to-date information about the spacecraft, or infringes Article 102(2), first subparagraph, by failing to report on the aspects laid down therein.

5.2. A collision avoidance space service provider infringes Article 103(1), first subparagraph, by failing to ensure the conditions referred to in Article 103(1), first subparagraph for the CAM, or infringes Article 103(2), by failing to ensure the coordination according to that paragraph, or infringes Article 103(3), first subparagraph, by failing to base the strategy of action on the principles laid down in that first subparagraph, or infringes Article 103(4), by failing to establish contact with the respective spacecraft, or in case of successful contact infringes Article 103(5), first subparagraph, by failing to observe the requirements laid down in that first subparagraph, or infringes Article 103(6), by failing to recommend a strategy in accordance with the requirements laid down in that paragraph.

6. Infringements applicable to qualified bodies for space activities

6.1. Without prejudice to the regime of other entities that can provide technical assessments pursuant to Article 8(1), first subparagraph, an entity infringes Article 34(1), by carrying out such technical assessments without being designated and notified as a qualified technical body for space activities under this Regulation.

6.2. An entity which intends to carry out technical assessments for one or more matters covered by Title IV, Chapters I to V, infringes Article 34, by failing to provide or update the required documentation or to meet the conditions set in paragraphs 4 to 8 of that Article.

6.3. An entity that intends to carry out technical assessment for one or more matters covered by Title IV, Chapters I to V, infringes Article 35, by failing to meet any of the conditions laid down in Article 35(1), (2), (3) and (4), as applicable, in conjunction with the provisions of Annex IX.

6.4. A qualified body for space activities infringes Article 35, by no longer meeting any of the requirements laid down therein, in conjunction with the provisions of point 1, of Annex IX or point 2, of Annex IX.