UNOFFICIAL TRANSLATION

Government proposal to Parliament for the approval and implementation of the Convention on Registration of Objects Launched into Outer Space and for the Act on Space Activities and the Act on the Amendment of Section 2 of the Lost and Found Objects Act

RATIONALE
1 Introduction

Finland became a space nation when the first Finnish satellite was launched into space in summer 2017. Other small-satellite projects are also underway. In addition to satellites intended for scientific research and higher education thesis projects, commercial satellites are also becoming increasingly common. Increased activity in the sector has created the need to enact national legislation regarding the conditions for these activities and operators' obligations. National legislation is based on the provisions of international treaties on authorisation for space activities, registration of space objects, compensation for damage caused by space activities and supervision of space activities that are binding on Finland.

2 Current state
2.1 Legislation and practice
2.1.1 National space administration and legislation

Finland has decentralised space administration. Space matters are by their nature horizontal and cross administrative boundaries. The perspectives of the various administrative branches are brought together by the Finnish Space Committee, which operates under the Ministry of Economic Affairs and Employment. The Ministries are, however, responsible for the development and utilisation of space activities of their respective administrative branches. The Ministry of Economic Affairs and Employment is responsible for formulating Finland's national positions on matters on the agenda of the Competitiveness Council of the European Union (EU), and the minister of economic affairs represents Finland at the ministerial meetings of the European Space Agency (ESA) and the EU relating to the space sector. Finland is represented at ESA's highest organ, the Council, by representatives of the Ministry of Economic Affairs and Employment and Tekes – the Finnish Funding Agency for Innovation. Tekes also acts as the secretariat of the Finnish Space Committee and coordinates Finland's participation in ESA's programmes.

Act on the Rescue and Return of Astronauts and the Return of Space Objects (616/1970)

There is currently no Finnish legislation applicable to the launch of satellites or to other space activities. The only act of law relating specifically to outer space is the Act on the Rescue and Return of Astronauts and the Return of Space Objects (616/1970). The Act implements nationally the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Finnish Treaty Series 45 and 46/1970).

Under the Act, everyone is obliged to notify the nearest police, border guard or military authority if they discover that the personnel of a spacecraft have suffered accident or are experiencing conditions of distress or have made an emergency or unintended landing or a space object or its component part has otherwise landed in Finland's land or marine area or adjacent high seas. In addition, the Act obliges to extend assistance in search and rescue operations for spacecraft personnel or equipment without, however, endangering oneself or others.

Any space object found shall be reported without delay to the nearest police, border guard or military authority. The object may not be removed or moved without an authority's authorisation unless there are serious reasons to do so. Upon request, the object shall be released to an authority. The Lost and Found Objects Act (778/1988) does not apply to space objects. Under the Act, expenses incurred in assistance and notification are borne by the State. Any damage caused

by the search and rescue operations or the space object or by spacecraft personnel while performing tasks relating to the space mission is also compensated out of State funds. Violations of the Act are punishable by a fine.

Decree on the Finnish Space Committee (288/1992)

The Government appoints the Finnish Space Committee for three years at a time. The three-year term of office of the current Committee expires at the end of March 2019. The Committee chair is from the Ministry of Economic Affairs and Employment and the deputy chair from the Ministry of Transport and Communications. The other members represent the Ministry for Foreign Affairs, the Ministry of the Interior, the Ministry of Defence, the Ministry of Education and Culture, the Ministry of the Environment, the Finnish Meteorological Institute, the National Land Survey of Finland, the Academy of Finland, Tekes – the Finnish Funding Agency for Innovation and AFDA, the Association of Finnish Defence and Aerospace Industries.

The Committee plays a key role in Finland's space administration. The Committee was responsible for the formulation of the National Strategy for Finland's Space Activities 2016–2020 and is monitoring its practical implementation. The Committee also draws up reports and proposals concerning the national objectives for space activities and gives opinions for the development of research and education, as well as industrial activities relating to space, for the utilisation of information obtained from space activities and for the development of cooperation between Finnish actors in the space sector. The Committee also participates in the preparation of ESA's ministerial meetings and national opinions on space-related matters in the EU.

In spring 2016, the Committee found there to be a need for national legislation on space activities. Appointed by the Ministry of Economic Affairs and Employment for the period from 1 February to 29 December 2017, the working group drafting the bill for the new national Act on Space Activities reported on the progress made in its work to the Finnish Space Committee.

Objectives in line with the National Strategy for Finland's Space Activities focus on applications that are important for society. The four key areas of Finnish space activities are scientific research into space and the Earth, Earth observation, satellite positioning and space industry. The aim is for Finland's space activities to reach the world's top level in selected areas by 2020.

The key development objectives of the strategy are as follows:

1. Developing space-based applications that respond to the growing demands of the Arctic region: through the activities of the national satellite data centre, strengthening research into the Arctic region, natural resources, climate change and environmental safety, and creating new public and commercial services.

2. Strengthening the competitiveness of services with open-source geographical information: Satellite positioning will support smart transport nationally and in export. Other location-based business activities will be based on the refining of big data from Earth observation by satellite into services for Finland and export markets in the positioning, Earth observation and geographical information sectors.

3. Raising the level of scientific research by utilising ESA's and EU's programmes: Finnish space science and Earth observation science will network more deeply internationally.

4. Advancing the specialisation of the space industry and its applications development to tackle tightening competition: The competitiveness of Finnish space technology enterprises will be developed further in the international satellite markets.

2.1.2 The space sector in Finland

Finnish space-sector enterprises have gained a strong position and good reputation in European space-industry subcontracting chains and ESA's programmes. There are currently around 80 enterprises in Finland designing or manufacturing satellite equipment, structures and software or utilising satellite data in their business.

Finnish enterprises have been contributing their high-technology competencies to several international space projects for decades. Products of Finnish industry are used in the EU's Sentinel satellites, and Finnish organisations have taken part in research projects in the fields of forest mapping, space science and space weather under the EU's framework programmes. Finland also has several small positioning and geographical information companies, and new companies operating in the sector have spun off from universities.

According to a Tekes impact assessment completed in 2016, space technology and space applications generate at least EUR 22 billion in turnover, more than 40,000 jobs and EUR 13 billion in export earnings (around 20% of Finland's exports). One in four respondents to the impact assessment survey (807 respondents) reported that their product, service or process would not function without space technology or satellite data.

In addition to traditional research organisations and equipment and application suppliers, the opportunities offered by the New Space Economy are attracting new actors to the sector in Finland, too. 'New Space' refers to space activities often carried out by operators that are new to the sector and typically commercially oriented and independent of the State. Small satellites and private launch services enable easier and less expensive access to space, and space applications are also used increasingly for purposes other than research needs, such as everyday positioning and telecommunications services. The first Finnish satellite was launched into outer space by Aalto University in summer 2017, and two Finnish enterprises are making preparations to send their satellites into orbit. With rapid advances taking place in the sector, the number of commercial actors can be anticipated to increase further in the future.

Finland's first satellites are small satellites, which usually mean satellites weighing under 500 kg. They can be classified as minisatellites (100–500 kg), microsatellites (10–100 kg), nanosatellites (1–10 kg), picosatellites (0.1–1 kg) and femtosatellites (under 0.1 kg). Another subgroup of small satellites is CubeSats, which are standardised in terms of their shape and size (10 cm x 10 cm x 10 cm), have a mass off around 1 kg and can also be stacked together to form larger units.

2.2 International development and foreign legislation

2.2.1 United Nations treaties on outer space

The United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) operates under the General Assembly of the United Nations (UN). The Committee has 84 members. Finland is not a Committee member but aims to apply for membership during 2018. The Committee considers various matters relating to the use of outer space and prepares drafts for treaties and resolutions.

At the beginning of its activities, COPUOS prepared two important resolutions adopted by the General Assembly, resolution 1721 (XVI) (resolution 1721 A and B (XVI) of 20 December 1961: International cooperation in the peaceful uses of outer space) and in 1963 resolution 1962 (XVIII) (Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space). Although not legally binding, these resolutions are regarded as containing commonly accepted principles of space law and binding customary rules.

The resolutions laid the foundation for the five UN treaties on outer space concluded in the late 1960s and in the 1970s:

1) The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (the Outer Space Treaty) was opened for signature on 27 January 1967 and entered into force internationally on 10 October 1967. Finland is a State Party to the Treaty (Finnish Treaty Series 56–57/1967).

2) The Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (the Rescue Agreement) was opened for signature on 22 April 1968 and entered into force internationally on 3 December 1968. Finland is a Contracting Party to the Agreement (Finnish Treaty Series 45 and 46/1970), and the Agreement has been implemented by the Act on the Rescue and Return of Astronauts and the Return of Space Objects (616/1970).

3) The Convention on International Liability for Damage Caused by Space Objects (the Liability Convention) was opened for signature on 29 March 1972 and entered into force internationally on 1 September 1972. Finland is a State Party to the Convention (Finnish Treaty Series 8 and 9/1977).

4) The Convention on Registration of Objects Launched into Outer Space (the Registration Convention) was opened for signature on 14 January 1975 and entered into force internationally on 15 September 1976.

5) The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the Moon Agreement) was opened for signature on 18 December 1979 and entered into force internationally on 11 July 1984.

There are more than 100 States Parties to the Outer Space Treaty. Most of the EU Member States and European Space Agency Member States and other countries engaged in space activities are parties to the four most important treaties on outer space, that is, to all except the Moon Agreement.

In addition to the above treaties, the UN General Assembly has adopted several declarations of principles and resolutions. These, however, are not legally binding, but recommendations only. The main ones include the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting (37/92 of 1982), the Principles Relating to Remote Sensing of the Earth from Outer Space (41/65 of 1986), the Principles Relevant to the Use of Nuclear Power Sources in Outer Space (47/68 of 1992) and the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States, Taking into Particular Account the Needs of Developing Countries (51/122 of 1996). The UN has also adopted resolution 59/115 of 2004: Application of the Concept of the ”Launching State”, resolution 62/101 of 2007: Recommendations on Enhancing the Practice of States and International Intergovernmental Organizations in Registering Space Objects, and resolution 68/74 of 2013: Recommendations on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space. The UN has also issued the Space Debris Mitigation Guidelines of the COPUOS.

COPUOS still remains an internationally important forum for debate about matters relating to the use of and research into outer space and to the development, applications and interpretations of international space law. The Legal Subcommittee and the Scientific and Technical Subcommittee operate under the General Assembly. Updates to the UN treaties on outer space are discussed every now and then, but it has proven to be very difficult to agree on any amendments.

Key contents of the UN treaties on outer space

The Outer Space Treaty

The Outer Space Treaty is the most central of all treaties on outer space, and the other treaties were formulated to supplement its provisions. The Treaty has been signed by 25 States and ratified by 105 States (situation on 1 January 2017).

The objective of the Outer Space Treaty is to ensure all States free and equal access to outer space. Pursuant to the Treaty, the exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind. Outer space shall be free for exploration and use by all States on a basis of equality and in accordance with international law. There shall be free access to all areas of celestial bodies. There shall be freedom of scientific investigation in outer space, and States shall facilitate and encourage international cooperation in such investigation. Outer space, including the celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means, and States shall carry on activities in the exploration and use of outer space in the interest of maintaining international peace and security and promoting international cooperation and understanding.

The Treaty emphasises the use of outer space for peaceful purposes. It explicitly prohibits placing in orbit any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, installing such weapons on celestial bodies or stationing weapons in outer space in any other manner. Furthermore, the Moon and other celestial bodies shall be used exclusively for peaceful purposes, and the establishment of military bases, the testing of weapons and the conduct of military manoeuvres shall be forbidden. However, the use of military personnel for scientific research and for any other peaceful purposes shall not be prohibited.

Articles VI–VIII contain the most central provisions of the Outer Space Treaty from the perspective of national legislation. Pursuant to article VI of the Treaty, States Parties to the Treaty shall bear international responsibility for national activities in outer space, whether such activities are carried on by governmental agencies or by non-governmental entities. The activities of non-governmental entities in outer space shall require authorisation and continuing supervision by the appropriate State Party.

Pursuant to article VII of the Treaty, each State Party that launches or procures the launching of an object into outer space, and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party or to its natural or juridical persons by such object on the Earth, in airspace or in outer space. The articles on liability have been supplemented by the provisions of the Liability Convention.

Pursuant to article VIII of the Outer Space Treaty, a State Party on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof. Ownership of objects launched into outer space and of their component parts is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State Party on whose registry they are carried shall be returned to that State Party.

Other articles in the Outer Space Treaty place the obligation of cooperation and mutual assistance on the States Parties. States Parties shall render to astronauts all possible assistance in the event of accident, distress or emergency landing and inform the other States Parties of any phenomena they discover which could constitute a danger to astronauts. States Parties shall also conduct all their activities in outer space so as to avoid the harmful contamination of outer space and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter. Furthermore, the Outer Space Treaty seeks to promote the openness of space activities, and States Parties are to inform the other States Parties of their space activities in, for example, COPUOS.

The Outer Space Treaty does not provide a definition of ‘outer space’ or specify where outer space begins. The topic is discussed annually at the Legal Subcommittee of COPUOS, but no consensus has been reached. The definition of ‘outer space’ would primarily be of significance as regards aviation law, since outer space and the atmosphere are governed by different international treaties. Outer space is fully an international area, while the airspace above the land and water areas of a State form part of the State’s sovereign area. The absence of a definition has not, however, resulted in significant problems in practice.

It is unanimously recognised internationally that outer space begins after the atmosphere. There is not, however, a specific height where the atmosphere turns into outer space. Instead, the atmosphere grows gradually thinner until it gives way to the vacuum of outer space. Outer space is often defined as beginning at the Karman line, which lies at an altitude of approximately 80–100 km above sea level, where the aerodynamic lift of air ends and ordinary aircraft are no longer able to fly. According to another definition, outer space begins at the lowest altitude at which satellites can maintain orbits, which is approximately at 95–110 km above sea level. Scientifically, also the area where space weather becomes a more significant environmental condition than ordinary weather, which is at an altitude of approximately 80 km, can also be regarded as outer space.

Under the Danish Outer Space Act, ‘outer space’ means space above the altitude of 100 km above sea level. According to the legislative history of the Danish Act, the definition of ’outer space’ is provided to delimit the scope of application of the Act and the delimitation does not affect Denmark's position on where outer space begins in terms of international law. Other national acts of law included in the comparison do not contain a definition of 'outer space'. In the absence of an international definition, no definition of ’outer space’ is proposed for inclusion in the Finnish Act, either.

The Liability Convention

The objective of the Liability Convention was to create international rules concerning liability for damage caused by space objects and to ensure the prompt payment of a full and equitable measure of compensation to victims of such damage. The Liability Convention has been signed by 20 and ratified by 94 States (1 January 2017).

The Liability Convention defines both personal injury and other impairment of health and loss of or damage to property as ‘damage’. Among the definitions of the Convention, particular attention has been attracted by the definition of the ‘launching State’. Pursuant to the Convention, the term 'launching State' means a State which launches or procures the launching of a space object as well as a State from whose territory or facility a space object is launched. The same definition is provided in article I of the Registration Convention and a corresponding one in article VII of the Outer Space Treaty.

The definition of the ‘launching State’ has been interpreted in various ways. Three of the factors – launching, territory or facility – are, as a general rule, clear, but the interpretations vary as to when a launch is to be regarded as having been procured by a State, particularly as space activities are carried on by private operators. According to the broad interpretation, a State that has authorised the space activity is regarded as the launching State.

For example, according to the legislative history of the Austrian Outer Space Act, Austria regards itself as the launching State procuring the launching of a space object if the activity has been authorised by Austria. In contrast, the view of the Netherlands is that it is never the launching State in cases where space activities are carried on by private operators even if the State has authorised such activities. The policy of the Netherlands is, however, commonly regarded in the legal literature as too strict an interpretation. According to the legislative history of the Danish Act, Denmark regards itself as the launching State in those cases where it launches the space object, that is,

where it is responsible for the space object, or where Denmark in other ways participates in the launching, for example, by authorising the space object prior to its launching from abroad.

It would be justified also in Finland to proceed from the premise that Finland is the launching State if it has authorised the space activity in accordance with this Act. It should, however, be noted that national interpretation cannot affect international law. If a matter were to be investigated as an international case involving space damage, the status of the launching State would be assessed in the light of the UN treaties on outer space, regardless of the interpretative path chosen by an individual State. There is regular international debate on the interpretation of the concept of the 'launching State' in contexts such as the Legal Subcommittee of the UN's COPUOS.

The main principles of the States' liability are defined in articles II and III of the Liability Convention. Pursuant to article II of the Convention, a launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the Earth or to aircraft in flight. Pursuant to article III of the Convention, in the event of damage being caused elsewhere than on the surface of the Earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.

Pursuant to the Convention, two or more launching States jointly launching a space object shall be jointly and severally liable for any damage caused, and the liability shall either be absolute or based on fault. A launching State which has paid compensation for damage shall have the right of recourse towards another liable launching State. Launching States may conclude agreements regarding their joint and several liability. It should be noted that the Liability Convention does not apply to damage caused by a launching State's nationals or by foreign nationals participating in the launching State's space activity.

The Convention grants a State which suffers damage the right to present to a launching State a claim for compensation for such damage. A claim for compensation for damage shall be presented through diplomatic channels within the time limits specified in the Convention. In case of the eventuality that no settlement of a claim is arrived at through diplomatic negotiations within one year, the Convention contains provisions on the establishment of a Claims Commission. The Claims Commission shall decide the merits of the claim for compensation and determine the amount of compensation payable, if any. The decision of the Commission shall be final and binding if the parties have so agreed. In 2001, Finland made a reciprocal declaration according to which it recognises the decisions of the Claims Commissionas binding, in relation to any other States accepting the same obligation, (government proposal HE 85/2001, Decree of the President of the Republic on Amending the Decree on Bringing into Force of the Convention on International Liability for Damage Caused by Space Objects 1003/2001). The Commission shall make its decision or award public and deliver it to each of the parties and to the UN.

In the Convention, references to States shall be deemed to also apply to any international intergovernmental organisation which conducts space activities if the organisation declares its acceptance of the rights and obligations provided for in the Convention and if a majority of the States members of the organisation are States parties to the Convention and to the Outer Space Treaty. Such organisation and its States members shall be jointly and severally liable in accordance with the Liability Convention, but any claim for compensation shall be first presented to the organisation and, only where the organisation has not paid, may the liability of the States members be invoked. Organisations including ESA have made such a commitment to the Liability Convention.

The Registration Convention

The Registration Convention has been signed by four and ratified by 63 states (1 January 2017).

The Registration Convention obliges the launching State to register the space objects it has launched by means of an entry in a registry it shall maintain. This obligation applies to States as well as private actors. 'Launching State' means a State which launches or procures the launching of a space object or a State from whose territory or facility a space object is launched. The term 'State of registry' means a launching State on whose registry a space object is carried. Where there are two or more launching States in respect of a space object, they shall jointly determine which one of them shall register the object. The contents and conditions of the registry shall be determined by the State of registry concerned. In addition to the national registries, the Secretary-General of the UN maintains a public Register of space objects.

Each State of registry shall furnish to the UN Register the name of the launching State or States, an appropriate designator of the space object or its registration number, the date and territory or location of launch, the basic orbital parameters, including nodal period, inclination, apogee, perigee, and the general function of the space object. The State shall also notify the UN of space objects recorded in the UN Register which have been but no longer are in Earth orbit. Each State of registry may also provide the UN with additional information concerning a space object carried on its registry, such as any change in ownership.

The Convention obliges States to assist a States Party that has been unable to identify a space object which has caused damage or is otherwise of a hazardous or deleterious nature.

The Convention also applies to any international intergovernmental organisation which conducts space activities if the organisation declares its acceptance of the rights and obligations provided for in the Convention and if a majority of the States members of the organisation are States Parties to the Registration Convention and the Outer Space Treaty. Organisations including ESA are parties to the Registration Convention and maintain their registries of space objects.

The Rescue Agreement

The Rescue Agreement has been signed by 24 and ratified by 95 States (1 January 2017).

The Rescue Agreement provides further specifications to the provisions of the Outer Space Treaty concerning astronauts. The Agreement applies to situations where astronauts need assistance. Pursuant to the Agreement, each Contracting Party shall notify the launching authority or UN if the personnel of a spacecraft have suffered accident or are experiencing conditions of distress or have made an emergency or unintended landing in territory under its jurisdiction or on the high seas. Contracting Parties shall also take steps to rescue any personnel of a spacecraft landing in their territory and promptly return them to the launching authority. Correspondingly, Contracting Parties shall notify the launching authority of any space objects or their components that have landed on the Contracting Party's territory and return them upon request.

The Rescue Agreement has been implemented in Finland by the Act on the Rescue and Return of Astronauts and the Return of Space Objects.

The Moon Agreement

The Moon Agreement has been signed by four and ratified by 17 states (1 January 2017). Finland has not acceded to the Agreement.

The Moon Agreement was drawn up in the late 1970s to further specify the provisions of the Outer Space Treaty concerning the use of the Moon and other celestial bodies. The purpose of the Agreement is to ensure that the use of the Moon and other celestial bodies is in the common interests of the humankind. Pursuant to the Agreement, the Moon shall be used exclusively for peaceful purposes. Although, pursuant to the Agreement, States may operate anywhere on the Moon and establish stations on the Moon, no State or States may subject the Moon, or any part

thereof or natural resources in place, to appropriation by any claim of sovereignty. The Agreement provides the freedom of scientific investigation and the right to collect and remove samples from the Moon and the use of samples collected, in reasonable quantities, for other purposes. The Moon Agreement also pays attention to the protection of the Moon's environment and provides the opportunity to designate areas having special scientific interest as preserves with special protective arrangements. The States Parties have undertaken to establish an international regime to govern the exploitation of the natural resources of the Moon as such exploitation is about to become feasible.

The number of States Parties to the Moon Agreement is considerably smaller than that to the other UN treaties on outer space and, for example, no major space nation is a party to it. High hopes are still placed in the natural resources of the Moon and their exploitation, but the general nature and ambiguity of the Moon Agreement is feared to prevent the exploitation of the Moon's natural resources, which is why the number of States Parties, particularly industrialised countries, to the Agreement is small.

The principles of the Moon Agreement have, however, re-emerged in international debate with the growing interest in exploiting the natural resources of outer space. The topic was on the agenda of the Legal Subcommittee of COPUOS in spring 2017, and discussion in the Committee is likely to continue in the coming years. Several COPUOS Member States emphasised the need for common international rules concerning the exploitation of the natural resources of outer space to guarantee the safety of the activities, the prevention of the generation of space debris and the sustainable use of outer space. As far as is known, only the USA and Luxembourg have national legislation concerning mining activities in outer space.

2.2.2 International Telecommunication Union

The International Telecommunication Union (ITU) is the UN specialised agency for the international coordination of information and communication technologies (ICTs). ITU has a membership of 193 Member States and almost 800 Sector Members, Associates and Academia. Its supreme organ is the Plenipotentiary Conference, which meets every four years and where Member States decide on ITU's policies, funding and structures.

ITU's main tasks are standardisation, allocation of radio frequencies spectrum and organisation of phone network communication protocols. ITU's tasks include the allocation and administration of radio spectrum and satellite orbits at the global level. The ITU Radio Regulations (RR) regulate, on law of nations scale, global radiocommunication services and the utilisation of radio frequencies. The RR are updated every three to four years by the World Radiocommunication Conference (WRC). It is vital to agree internationally on the use of radio frequencies so that the radio frequency spectrum, which is a limited and increasingly scarce resource, can be utilised as efficiently as possible and the various radio systems operating on the frequencies are able to operate without radio interference. Radio frequencies used in space activities often extend to the territory of several States and, to avoid radio interference, agreements on the allocation of radio frequencies for space activities need to be concluded at the international level.

Supplementing the Constitution and Convention of ITU, the RR contain the regulations concerning the use and allocation of radio frequencies for various types of radiocommunication. The purpose of the procedures for mandatory coordination, notification and registration under the RR is to make sure any satellite systems taken into use do not cause harmful interference to the world's other radiocommunications. The agency responsible for these procedures as regards Finnish space objects is the Finnish Communications Regulatory Authority (FICORA).

Chapter III of the RR contains the provisions administrations shall apply with other administrations in frequency assignments. According to Article 9 of the RR, administrations shall send to the Radiocommunication Bureau information about any planned satellite systems for advance

publication in the International Frequency Information Circular. It is recommended that the information be sent not later than two years before the planned date of bringing into use of the network or system.

The coordination, notification and registration procedure under the RR depends on the frequency range used. If the satellite system falls within the scope of the procedure in accordance with Article 9.1 of the RR, the procedure is lighter and primarily only intended to inform other administrations. Within four months of the date of publication, other administrations have the opportunity to communicate to the publishing administration on the anticipated interference to its existing or planned systems. The publishing administration shall explore all possible means to resolve the difficulties without considering the possibility of adjustment to networks of other administrations and, only if no such means can be found, it may request the other administrations to explore means to resolve the difficulties by adjustments to their networks. The administrations concerned shall endeavour to cooperate in joint efforts on the matter and, where necessary, either administration may seek the assistance of the Bureau to resolve any difficulties. The administration by which the details were published shall, after the period of four months, inform the Bureau of the progress made in resolving any difficulties.

As regards satellite systems covered by the procedure laid down in Article 9.2 of the RR, the administrations shall complete a coordination procedure prior to the frequency assignment or its notification to the Bureau the aim of which is to resolve the matter by agreements with the other administrations. If mutual agreement between the administrations cannot be reached, either administration may request the assistance of the Bureau to resolve the matter.

Notification and registration of frequency assignments in the Master International Frequency Register takes place in accordance with Article 11 of the RR.

In addition, under the Information Society Code (917/2014), the possession and use of radio transmitters requires a radio licence granted by FICORA, unless otherwise provided by law. Terms may be incorporated into a radio licence if these are necessary to ensure the efficient and appropriate use of frequencies, efficiency of the communications markets and for the prevention or removal of interference. The essential radiotechnical transmission parameters are defined in the technical terms of a radio licence. In the terms of a radio licence, FICORA takes into account the procedures for coordination with other administrations in accordance with the RR and, where necessary, specifies the terms specific to frequency range and service in accordance with the RR.

2.2.3 The European Space Agency’s and the European Union’s outer space policies

Europe as a whole (the EU and its Member States, the European Space Agency and the European Organisation for the Exploitation of Meteorological Satellites, EUMETSAT) is an important actor in outer space. Europe has a strong and competitive space industry as regards, for example, satellites, launching services and related services and functions. The European space industry employs more than 230,000 professionals and generates a value added estimated at EUR 46–54 billion. Europe has achieved many successes in space with breakthrough technologies and exploration missions and is manufacturing a third of the world’s satellites.

Between 2013 and 2020, the total combined investment of ESA and EU space programmes will amount to around EUR 40 billion. With EU funding, ESA is developing projects including the Galileo satellite navigation system and the Copernicus Earth observation data provision system. Between 2014 and 2020, the EU is investing EUR 12 billion in high-quality space projects. As well as Copernicus and Galileo, the key projects include the European Geostationary Navigation Overlay Service (EGNOS).

Finland has been an ESA Member State since 1995 and an Associate Member since 1987. The Accession Agreement was brought into force by a Decree (Decree on the Implementation of the Agreement on Finland's Accession to the Convention for the Establishment of a European Space Agency and its Associated Resolutions, Finnish Treaty Series 2/1995). ESA is an important European cooperation body for research and development and currently has 22 Member States. ESA also has a Cooperation Agreement with Canada. There are around 2,200 staff, including around 20 Finns, working for ESA at sites and facilities around Europe. ESA's annual budget totals around EUR 4 billion.

Finland pays some EUR 20 million in annual contributions to ESA. The Ministry of Economic Affairs and Employment is responsible for the basic funding of the activities (mandatory contributions, including membership fee) amounting to around EUR 3.3 million. Within the scope of its annual granting authorisations, Tekes is responsible for ESA programme contributions, which amount to around EUR 16.5 million each year. According to ESA's Industrial Policy, at least 91% of the contributions must always be returned as contracts awarded to the enterprises, research institutions and universities of the Member State (the "geographical return").

The Treaty of Lisbon (Finnish Treaty Series 66 and 67/2009) increased the EU's competence as regards space policy. Article 198 of the Treaty on the Functioning of the European Union (TFEU) provides the Union with shared competence with the Member States in space matters. The Union has the mandate to draw up the EU space policy. To this end, it promotes joint initiatives, supports research and technological development and coordinates the efforts needed for the exploration and exploitation of space. The European Parliament and the Council shall establish the necessary measures, which may take the form of a European space programme. In addition, the Union shall establish any appropriate relations with the European Space Agency.

Space Strategy for Europe

The Commission published its Communication on a Space Strategy for Europe (COM(2016) 705 final) on 26 October 2016. Conclusions of the Council on the Space Strategy for Europe were adopted by the Competitiveness Council meeting of 30 May 2017. The implementation of the strategy is furthered systematically in open and close cooperation between the Commission, Council, European Parliament and Member States as well as the European Space Agency and various stakeholders.

The main aim of the strategy is to enable European actors to fully benefit from the opportunities offered by space. Measures taken under the strategy create a favourable environment for the growth of start-ups, strengthen Europe's position as a leader in space and increase its share on the world space markets. The strategy is the EU's response to growing global competition and increasing participation of the private sector. The four strategic goals are:

1) Maximising the benefits of space for society and the EU economy;
2) Fostering a globally competitive and innovative European space sector;
3) Reinforcing Europe's autonomy in accessing and using space in a secure and safe environment;
4) Strengthening Europe's role as a global actor and promoting international cooperation.

2.2.4 National space legislation

The UN treaties on outer space lay down rights and obligations to States only. The form of national implementation of the obligations of the UN treaties on outer space is not specified by the treaties or international law. States must, however, ensure their compliance with the treaties. Any national regulation is subject to national discretion.

Space activities were originally only carried out by States or state-owned companies, but today more and more satellites are owned and operated by a private operator. There are also several providers of launching services in the market. Consequently, the State's opportunities to supervise space activities through ownership have been reduced. In order to extend the coverage of the obligations of the treaties on outer space to private actors, many States have ended up enacting a national outer space act. In addition to traditional space nations, in recent years such acts have been enacted by States whose universities or enterprises have launched small satellites.

Ten EU Member States have legislation on outer space currently in force. Austria, Belgium, France, the Netherlands, Sweden, the United Kingdom and Denmark have an actual act of law on outer space activities, whereas Spain and Italy only have provisions on a registry of space objects. In Germany, provisions concerning space activities are included in other legislation. Most of the various countries' outer space acts contain provisions on the authorisation procedure, supervision, registration, liability, safety and transfer of rights. There are, however, differences and varying emphases between the acts. Space legislation has been enacted during this millennium in particular, and several countries currently have plans or measures for the enactment of their own act on outer space. The latest national acts on outer space in the EU entered into force in Denmark (2016) and Austria (2011).

Norway, the USA and Russia also have outer space legislation. China and Japan have provisions concerning registration and are drafting more comprehensive outer space legislation.

Only some of the EU Member States that have enacted an act on outer space have any significant experience in the application of the act. For example, France and the United Kingdom both granted around 50 licences for space activities in the 2009–2013 period, whereas Austria, Belgium, the Netherlands and Sweden in total granted fewer than ten authorisations, mainly for small satellites of universities.

Comparison of national acts on outer space

Denmark

Denmark's Outer Space Act (Act no. 409 of 11 May 2016) entered into force on 1 July 2016. The Act is supplemented by an Executive Order (Executive Order no. 552 of 31 May 2016 on requirements in connection with approval of activities in outer space, etc.) of the same date, laying down further provisions concerning the approval and registration procedure, and risk assessment and possible further insurance cover.

The Act applies to space activities carried out within the Danish State and to space activities carried out by Danish craft or facilities or by Danish operators. The Act provides the definitions of 'space activity', 'space object', 'operator' and 'launching State'. It also defines 'outer space' as meaning space above an altitude of 100 km above sea level.

A space activity under the scope of application of the Act is subject to prior approval, applications for which must be submitted by the time limit specified in the Executive Order. Under the Act, the responsible authority is the Minister for Higher Education and Science, but the Executive Order specifies the Danish Agency for Science and Higher Education as the approving authority. Under the Act, approval requires documentation of the technical expertise and financial capacity to carry out the activity, the safety of the activity, appropriate measures with regard to space debris management and environmental safety, no conflict with Denmark's international obligations and foreign-policy interests, required insurance and other liability cover, and authorisations in accordance with ITU regulations. The Executive Order further specifies the sufficient content of applications for approval and the various requirements. Transfers of space activities to another owner or operator are also subject to an approval and corresponding assessment as when commencing activities.

An operator may be obliged to take out insurance. Under the Executive Order, the risks involved in the space activities are taken into account when assessing the need for insurance cover. Practices as regards when insurance is required are currently being formulated in Denmark. The State has the right of recourse with respect to compensation paid by the State for any damage caused by a space object. The Executive Order specifies that the operator's liability to pay damages may not exceed DKK 455 million (around EUR 60 million).

The Danish Act requires that those space objects for which Denmark is the launching State are to be entered in the registry maintained by the Minister for Higher Education and Science. The Executive Order specifies the Danish Agency for Science and Higher Education as the registration authority.

The Minister for Higher Education and Science supervises space activities. Violations of the Act are punishable by a fine or a term of imprisonment.

Austria

The Austrian Federal Law on the Authorisation of Space Activities and the Establishment of a National Registry (the Austrian Outer Space Act) entered into force in 2011. In addition, a Regulation of the Federal Minister for Transport, Innovation and Technology (the Outer Space Regulation) laying down further provisions on the authorisation procedure and applications, the insurance obligation and registration entered into force in 2015.

The Act applies to space activities carried out on Austrian territory, on board vessels or airplanes registered in Austria, or by a natural person with Austrian citizenship or legal persons seated in Austria. The Act contains the definitions of 'space activity', 'space object' and 'operator'.

Space activities falling within the scope of application of the Act require authorisation by the Minister for Transport, Innovation and Technology. Under the Act, the conditions for authorisation include the operator's reliability, capability and expertise to carry out the space activity, the safety of the activity, compliance with Austria's international obligations and foreign policy interests, insurance cover required by the Act, and authorisations in accordance with ITU regulations. In addition, the Act requires appropriate provision having been made for the mitigation of space debris, avoidance of negative impacts on the environment and outer space, and provisions for the orderly termination of the space activity. Transfers of space activities to another owner or operator are subject to authorisation of the Minister and corresponding assessment as when commencing activities.

All space objects for which Austria is the launching State are entered in the registry maintained by the Minister.

Under the liability provisions of the Act, the operator is under the obligation to take out an insurance covering a minimum amount of EUR 60 million per insurance claim. The State may, however, also accept a lower sum or release the operator from the insurance requirement if the space activities are in the public interest, that is, if they serve science, research or education. In addition, the risks connected to the space activity and the operator's financial capacity are taken into account. Under the Act, the State has the right of recourse for compensations paid by the State for damage caused by a space activity up to the sum of the insured risk.

Space activities are supervised by the Minister. An administrative fine may be imposed for carrying out a space activity without an authorisation.

The Netherlands

The Space Activities Act of the Netherlands entered into force in 2008. The Act is supplemented by a few subordinate statutes that lay down further provisions concerning the licencing and registration procedures. In addition, the Act was amended in 2015 by expanding its scope of application to also cover small, unguided satellites.

The Dutch Act applies to space activities that are performed in or from within the Netherlands or on or from a Dutch ship or aircraft. The Act provides definitions including those of 'space object' and 'space activities'.

The Dutch approach is special as the Netherlands does not regard itself as the launching State if the space object was not launched from the Netherlands or if the State of the Netherlands itself did not procure the launch of the space object from elsewhere. Therefore, according to the Dutch interpretation, space activities carried out by private actors do not make the Netherlands the launching State. The Netherlands does, however, regard itself as an appropriate State Party referred to in article VI of the UN Outer Space Treaty, whereby space activities carried out in the Netherlands are subject to a licence issued by the State and the supervision of the State. The licence application shall be submitted to the Minister and issued enterprise-specifically, which means an operator may use the same licence to carry out licensed space activities that cover several space objects launched at different times.

The Netherlands has a national registry divided into two parts, one intended for those space objects for which the Netherlands regards itself as a responsible State in accordance with article VI of the Outer Space Treaty and another for those concerning which it regards itself as the registering State under the Registration Convention. The Netherlands only regards itself as the launching State for the State's own satellites. The Netherlands notifies the UN of space objects listed in both of the registries.

Under the Dutch Act, the State has the right of redress in the event of damage, and the operator is obliged to take out insurance against damage to third parties. The maximum amount of the insurance obligation is determined case-specifically.

The activities are supervised by officials designated by the Ministry of Economic Affairs. An administrative penalty may be imposed by the Ministry if the provisions of the Act are contravened or if space activities are performed without a licence.

Belgium

The Belgian Law of 17 September 2005 on the Activities of Launching, Flight Operation or Guidance of Space Objects entered into force in 2006. The Law applies to the launch, flight operation and guidance of space objects in zones or from vessels or aircraft under the jurisdiction or control of the Belgian State.

Space activities within the scope of application of the Law require the prior authorisation of the Minister with responsibility for space research and its applications in the framework of international cooperation. Conditions for the authorisation are determined with a view to ensuring the safety of the activities, protecting the environment as well as Belgium's national interests and satisfying its obligations under international law. Transfers of space activities to a third party are also subject to the Minister's prior authorisation and corresponding assessment as when commencing activities.

The Belgian Law pays particular attention to environmental protection. In the application for authorisation, the operator must submit a comprehensive study of the environmental impacts of the activities on the Earth, in the atmosphere and in outer space.

Belgium registers in its National Register of Space Objects those space objects for which it regards itself as the launching State. The register is public and available on the website of Belgian Science Policy (BELSPO). In addition, Belgium maintains a public register of authorisations issued for space activities.

Under the Belgian Law, the State has a right of recourse for compensation paid by the State. The maximum amount of the operator's liability for damage is determined in the Royal Decree as being fixed at 10% of the average turnover generated by the operator over the three preceding years. This is considerably lower than the maximum amounts of other countries. Belgium does not require the operator to have liability insurance cover unless the activities involve an exceptionally high risk of damage.

The Minister may appoint experts to supervise space activities. The sanction for violations of the Law or for carrying out space activities without authorisation may be a fine or imprisonment.

The United Kingdom

The Outer Space Act of the United Kingdom dates from 1986. The Act applies to UK nationals and legal persons registered in the UK. The Act covers launching or procuring the launch of a space object, operating a space object and any activity in outer space.

Space activity to which the Act applies requires a licence granted by the Secretary of State. The Secretary of State may grant a licence if he thinks fit, but the Act lists the grounds for refusing a licence, including safety risks involved in the activities, inconsistency with the UK's international obligations, and impairment of the UK's national security. The licence procedure is carried out by the UK Space Agency. The licensing process covers the assessment of the technical and financial feasibility of the activity, the risks involved in the activity, plans for space debris mitigation and the termination of the activity.

The licence decision contains more detailed conditions concerning the content of the activity, the operator's obligations and the supervision carried out by the State. In addition, the licence decision sets a liability cap for the operator, which typically is EUR 60 million. Licence conditions also include the licensee insuring himself against third party liabilities arising from the licensed activity up to the liability cap.

The Act lays down provisions on a national registry. In practice, the registry consists of two parts: one for space objects where the UK is the launching State and another for those that are connected with the UK in some other manner, such as satellites procured in orbit.

The UK is enacting new legislation on space activities, with the Space Industry Bill currently passing through Parliament. The new act would also apply to launching activities and space travel. The act is anticipated to enter into force in early 2018.

The UK Space Agency website contains comprehensive information about applying for a licence and the conditions set for a licence as well as a sample Outer Space Act Licence. The Agency is currently developing a simpler model for the assessment of the safety of small satellites, particularly CubeSats.

Sweden

The Swedish Act on Space Activities (1982:963) and the supplementary Decree on Space Activities date back to as far as 1982. The Act applies to activities in outer space, including the launching of objects into outer space and all measures to manoeuvre or in any way affect space objects. The Act does not, however, apply to merely receiving signals or information or to the launching of sounding rockets. The Act does not provide any separate definitions of terms.

Under the Act, space activities carried on from Swedish territory or carried on by a Swedish natural or juridical person anywhere else require a licence granted by the Government. Under the Decree, applications for a licence shall be submitted to the Swedish National Space Board (SNSB). Under the Act, activities may not be transferred without the Minister's prior authorisation.

Details of space objects for which Sweden is the launching State are entered in the registry kept by the SNSB.

The State has the right of recourse for compensations for damage paid by the State. The Act does not lay down any separate requirement for insurance.

Activities are supervised by the SNSB. The sanction for violations of the Act or for carrying out space activities without authorisation may be a fine or imprisonment for a maximum of one year.

Norway

The Act on launching objects from Norwegian territory etc. into outer space dates from 1969 and is rather brief. Under the Act, permission from the Norwegian Ministry of Trade, Industry and Fisheries is required for launching of space objects from Norwegian territory, as well as from areas that are not subject to the sovereignty of any State, when the launching is undertaken by a Norwegian citizen or person with habitual residence in Norway. The Act does not provide definitions of terms or contain provisions concerning registration or liability issues.

The Norwegian Act of 2003 relating to electronic communications lays down the provisions that the State of Norway may require those launching space objects to take out insurance and that the State may claim recourse for compensation for damage paid by the State.

The Norwegian Space Centre published a report on Norwegian space legislation in January 2017, and a reform of the Act is being considered. According to the report, Norwegian legislation lacks sufficient provisions on matters related to space activities including authorisation procedure, supervision, liability and insurance matters and registration for Norway to be able to comply with the obligations set by the UN treaties on outer space.

The Sofia Guidelines for a Model Law on National Space Legislation

In 2012, the International Law Association (ILA) adopted Resolution 6/2012 of the 75th ILA Conference on 30 August 2012 on the Sofia Guidelines for a Model Law on National Space Legislation (hereinafter the Model Law). The Model Law is based on a broad cooperation project led by the Cologne Institute of Air and Space Law and the German Aerospace Centre (DLR) and subsequent discussion, which resulted in space activities being subject to authorisation, supervision, registration, and the recourse of the government and insurance being determined as the building blocks of national space legislation.

The scope of application in the Model Law is space activities carried out by citizens of XY or legal persons incorporated in XY and space activities carried out within the territory of XY. The Model Law provides definitions of terms including 'space activity', 'space object' and 'operator'.

According to the Model Law, space activities are subject to authorisation granted by a minister. Conditions for authorisation determined in the Model Law are the operator's financial position, reliability, technical knowledge, compatibility with public safety standards, the activity not running counter to national security interests or international obligations or foreign policy interests, and compliance with ITU Regulations. In addition, the operator must comply with insurance requirements and have a plan for the mitigation of space debris, and the space activity must not cause environmental damage to the Earth or outer space.

According to the Model Law, space objects for which XY is the launching state shall be registered in the national register.

As regards liability, the Model Law states that the government is entitled to recourse that may be limited to a certain amount. Further provisions on absolute liability may be laid down if so required by national legislation. The Model Law requires that the operator is insured up to the amount that is to be established by national law. The insurance obligation does not, however, apply when the government, acting as such, carries out a space activity or if the space activity is in the public interest.

According to the Model Law, space activities shall be subject to supervision by a ministerial authority and any breach of the obligations set out in the law shall be punishable with a fine.

2.3 Assessment of the current state

Finland does not currently have provisions of law in force on carrying out space activities and on launching space objects into outer space. Therefore legislation does not currently oblige private actors such as enterprises, universities and research institutions to apply for the State's authorisation for their space activities or for the launch of space objects or to register their space objects. The Ministry of Economic Affairs and Employment has, however, agreed with currently known operators that operators submit a risk analysis for assessment by the Ministry. In addition, a decision has been made to notify space objects launched into outer space before the entry into force of the Act and before accession to the Registration Convention to the UN Register.

Despite there only being a few known small-satellite projects at the moment, technological advances are likely to result in several small satellites being launched into space every year already in the near future. Operators also have plans for swarms of several, up to dozens, of satellites. Small satellites are inexpensive and quick to develop and easily replicable, so their development and use is easily accessible by small and medium-sized enterprises and universities and other higher education institutions.

Under the UN treaties on outer space, States are liable for damage caused by space objects. In the absence of legislation binding on private actors, Finland does not have a clear right of recourse against operators for compensation paid by the State for damage caused by space objects to third parties. The obligation of operators to take out insurance cover for damage caused by their activities also requires provisions at the level of an act of Parliament.

With space activities increasing and developing, it is necessary to lay down provisions at the level of an act on the rights and obligations of the State and private actors on the basis of international law. This also creates a clear and predictable operating environment and conditions for future growth for actors in the sector. It is important to find a balance in legislation between the management of the State's risks and favourable operating conditions of enterprises in the sector.

Finland's accession to the Registration Convention has previously not been regarded as necessary. Because the first Finnish satellite has already been launched into space and the launching of other satellites is being planned, accession is now timely. ESA also finds it important that its Member States are States Parties to the Registration Convention.

3 Objectives and key proposals

3.1 Objectives

With private space activities increasing and developing, there is a need for legislation laying down the framework ensuring the lawfulness and safety of as well as business opportunities for the activities. The definition of the actors' rights, obligations and liabilities in an act of law will clarify the

sector's activities and administrative procedures. The administrative burden on enterprises must, however, be minimised.

The objective of the national legislation is to create a predictable and legally clear operating environment for national space activities. This will promote the competitiveness, growth and safe and secure operating environment of space industry and help attract new actors and investments to Finland.

The authorisation procedure and registration laid down in the Act will provide the State with information about space activities carried on within its territory or by Finnish citizens or legal persons incorporated in Finland. This will also enable Finland to fulfil its obligation under the Outer Space Treaty to supervise space activities for which it is responsible.

The objectives of the proposed Act also include minimising the State's risks. Under international treaties, the State bears responsibility for national activities in outer space and is liable for damage caused by the activities. The liability for damage is unlimited and in part absolute. The Act would lay down a right of recourse for the State for compensation paid by the State to third parties for damage caused by space objects. In addition, as a general rule, operators would be required to have liability insurance cover for liability risk, unless an exemption from the insurance obligation is granted by the Ministry of Economic Affairs and Employment on the grounds laid down in the Act.

The starting point of the proposal is a positive approach towards space activities. There is no need to set restrictions on activities if the safety of the activities and the other criteria for granting the authorisation can be ensured.

The objective of the proposed Act is to provide space activities carried on in Finland with a clear framework, smooth authorisation process and uniform operator obligations. An authorisation process based on law may also facilitate Finnish operators' cooperation with other countries' operators and the procurement of launching services from the most reliable launch service providers.

3.2 Implementation alternatives and their assessment

The UN treaties on outer space leave it for national determination how their obligations are implemented within a State. The UN recommends that States lay down national legislation on space activities (resolution 68/74 of 2013: Recommendations on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space). States Parties may, however, also take care of national implementation through means other than legislation.

In some countries, space activities are governed by agreements concluded between the State and the operator under which the liabilities and obligations and the State's right of recourse and supervision are agreed case-specifically. For example, in Luxembourg, there are active enterprises carrying out space activities and, in the absence of national legislation, the State enters into agreements with the enterprises. In Spain, the State takes care of its supervision obligation by holding shares in enterprises carrying out space activities.

Some countries have chosen administrative provisions as the regulatory technique. No sanctions can, however, be attached to these. In Finland, a matter that also has to be taken into account is the Constitution, under which restrictions on the freedom to engage in commercial activity and the rights and obligations of the individual may only be laid down by an act of law.

The working group appointed by the Ministry of Economic Affairs and Employment has assessed that there is a need for national legislation concerning space activities. According to the working group's assessment, national legislation is the most effective way in which Finland can implement its international obligations concerning operators' responsibilities and liabilities through

authorisation, registration and supervision procedures. Because the obligation to apply for an authorisation restricts the freedom to engage in commercial activity laid down in section 18 of the Constitution, provisions on the authorisation shall be laid down in an act of law. In addition, under section 80, subsection 1 of the Constitution, the principles governing the rights and obligations of private individuals shall be governed by acts of law. The working group also regarded it as important that Finland be able to use legislation to manage its risks related to space activities by requiring preliminary assessments of risks involved in the activities; if necessary, by requiring further insurance cover; and reserving the right of recourse towards operators to compensation for damage paid by the State.

Because the space sector is an evolving industry in Finland, the proposed Act has been drafted to be flexible and, in part, generic in nature. The provisions of the Act would be supplemented by decrees of the Ministry of Economic Affairs and Employment.

The working group has regarded it as necessary to compile all of the provisions concerning the sector under one statute. Consequently, it is proposed that section 4, subsection 1 of the Act on the Rescue and Return of Astronauts and the Return of Space Objects concerning found space objects and section 2, subsection 2 of the Act on liability for damage be incorporated into the proposed new Act. It is proposed that the remainder of the Act on the Rescue and Return of Astronauts and the Return of Space Objects be repealed as the provisions of the Act are included in other legislation concerning search and rescue.

The majority of European States are parties to the Registration Convention, and ESA recommends that its Member States accede to the Registration Convention. Many European countries, including the Nordic countries with the exception of Iceland, have a national act on space activities. Several countries outside Europe have also enacted or are in the process of enacting national legislation on space activities. Finland has no reason not to follow this international trend.

3.3 Key proposals

It is put forward in the proposal that Parliament approve the Convention on Registration of Objects Launched into Outer Space of 1975.

Furthermore, it is proposed that a new Act on Space Activities be enacted. The Act would implement in national law the international obligations in accordance with the UN treaties on outer space. The proposed Act would follow the UN recommendations concerning national legislation and the Sofia Model Law. The Act would contain provisions on the scope of application, authorisation for space activities, registration of space objects, safe conduct of space activities, the State’s right of recourse and the operator’s liability and obligation to insure, authorisation for transfer of space activities, supervision of space activities and consequences of violations of the Act, and space debris and environmental protection.

The Act would contain provisions on the activities being subject to authorisation. Prior to the commencement of space activities, the operator would have to apply for authorisation from the Ministry of Economic Affairs and Employment. Authorisation could be granted if the conditions for authorisation laid down in the Act were fulfilled. The safety of the activities and compliance with Finland’s international obligations and foreign policy interests would be ensured in particular. Correspondingly, the transfer of the activities to another operator would require the approval of the Ministry of Economic Affairs and Employment and fulfilment of the conditions set for authorisation.

The provisions of the Registration Convention on the national registry of space objects would be implemented by the proposed Act. The Act would contain provisions on the establishment of a national registry of space objects. The registry would be maintained by the Ministry of Economic Affairs and Employment. Certain basic information of space objects launched into outer space would be entered in the registry and the information would also be notified to the UN Secretary-

General for entry in the international Register maintained by the UN. The registry would be public and provide easy access for everyone to information about space objects. Registration would also facilitate the identification and supervision of space objects.

Under international treaties, the State bears responsibility for national activities in outer space and is liable for any damage caused by such activities. The liability for damage is unlimited and in part absolute. The Act would lay down a right of recourse for the State for compensation paid by the State to third parties for damage caused by space objects. In addition, as a general rule, operators would be required to have liability insurance cover for liability risk, unless an exemption from the insurance obligation is granted by the Ministry of Economic Affairs and Employment on the grounds laid down in the Act.

Under the Outer Space Treaty, Finland is obliged to supervise space activities carried out by private operators. The means of supervision would comprise the operator's notification obligation concerning changes, the annual reporting obligation, the Ministry's right to obtain information on request, and the Ministry's right of inspection. Supervision would be enforced by the Act containing provisions on a fine for certain violations or omissions conducted intentionally or through gross negligence.

It is important to seek to prevent and reduce any adverse environmental impacts of space activities and the generation of space debris in accordance with international guidelines. Consequently, the Act would lay down provisions on the operator's obligation to assess the environmental impacts of its activities and plan the measures required to counter and reduce adverse environmental impacts and to ensure that the activities do not generate space debris.

The provision of section 4, subsection 1 on found space objects of the Act on the Rescue and Return of Astronauts and the Return of Space Objects and the provision of section 4, subsection 2 of the Act on compensation out of State funds for damage caused by found space objects would be included in the proposed Act on Space Activities. Because the other provisions of the Act on the Rescue and Return of Astronauts and the Return of Space Objects are included in rescue services legislation, it is proposed that the Act be repealed in full. A reference to the proposed Act on Space Activities is put forward for incorporation into section 2, subsection 4 of the Lost and Found Objects Act.

4 Impacts of the proposal

4.1 Financial and administrative impacts on enterprises and other operators

At the moment, one university and two enterprises in Finland have concrete plans for carrying out space activities. Therefore, at least in the initial stage, the scope of application of the Act would only cover a small number of operators. However, Finland, too, should also prepare for a potential considerable increase in the number of operators as the sector develops and the costs of launching satellites decrease further. In addition, there are plans for launching swarms of several, up to dozens, of satellites into outer space.

The Act obliges the operator to apply for authorisation for space activities in advance from the Ministry of Economic Affairs and Employment. Furthermore, the operator would be obliged to provide information about any changes relating to the activities and the authorisation and for the purpose of supervision. The fulfilment of these obligations will require administrative work from operators.

Drawing up the authorisation application in particular requires careful study as regards compliance with the conditions for authorisation under section 5, subsection 2 of the Act. Most of the work required for the preparation of an authorisation application is work that the enterprise would in any case carry out, such as describing the technical details of the activities and applying for radio frequency licences, while some of the conditions for authorisation may require more specific

preparation than would otherwise be carried out in the absence of the Act's requirements, such as risk assessment and plans concerning mitigation of space debris and environmental protection.

The explanatory memorandum of the Dutch Decree of 2008 on the licensing process for space activities estimates that it would take an average of two person-days to draw up a licence application, in addition to which two person-days per year should be set aside for discussions with the authorities. According to the Dutch estimate, there would be variation depending on the activities and the operator's experience, whereby the estimate of the administrative costs arising from a licence application would be around EUR 2,000–4,000 (in 2008). The explanatory memorandum estimates that a notification of changes to registered information will take less than half a person-day.

The amount of administrative work in Finland can be estimated to be in the same range as in the Netherlands. Particularly in the initial stages of the application of the Act, the operators would likely be new enterprises in the sector that would require more time than experienced enterprises to produce an authorisation application. According to Finnish operators' estimates, it would take around one to two weeks to carefully prepare an authorisation application at the first time. The authorisation application would primarily require work by experts or specialised experts in the sector and, to a minor extent, by assisting personnel. It has been estimated during the legislative drafting that this would mean an enterprise incurring an average of EUR 1,500–3,000 in pay costs per authorisation application. Some of the activities covered by the authorisation procedure may, however, be very extensive, in which case drawing up an authorisation application will also take more time. It is estimated that annual reporting on the activities would require a labour input of 1.5–3 days, including report formulation and contacts with the authorising authority. This would mean annual costs of EUR 500–1,000 for the enterprise. In addition, enterprises would incur incidental costs from notifying of changes relating to activities and to information entered in the registry. These figures are based on an assessment conducted by officials of the Ministry of Economic Affairs and Employment. The assessment was carried out in accordance with the One-In, One-Out model used by the Ministry.

In addition to administrative costs, operators would incur direct costs from the authorisation procedure in the form of authorisation fees. The Ministry of Economic Affairs and Employment would charge a fee for an authorisation under sections 4 and 6 of the Act on Criteria for Charges Payable to the State. The authorisation fee would be defined in the Decree of the Ministry of Economic Affairs and Employment on Chargeable Performances of the Ministry of Economic Affairs and Employment and determined on the basis of the average time spent for processing an application. In addition, possible costs of external opinions on authorisation applications would be taken into account in the authorisation fee.

The financial impacts of the Act on enterprises would include the liability for damage and the related right of recourse of the State and the possible obligation to take out insurance against damage caused to third parties. The first two of these would only materialise in case of an accident but, if they materialise, would result in a significant financial burden on the operator. The financial risk of the operator relating to the liability for damage and the right of recourse would be restricted by a provision on the maximum amount of absolute liability and related right of recourse.

Enterprises would incur direct costs from taking out third-party liability insurance under section 8 of the Act. A typical sum insured is currently around EUR 60 million, with the annual costs incurred by an enterprise from the insurance totalling EUR 60,000–120,000. Presumably in the early stages the majority of Finnish space objects would, however, be small satellites which have short lifetimes in the lowest orbits. Risks of damage relating to such satellites would be low, and the launch provider's liability insurance would usually cover the launch stage and the first year in orbit, whereby the Ministry of Economic Affairs and Employment could refrain from requiring the insurance in accordance with section 8, subsection 2.

Accession to the Registration Convention will not have direct enterprise impacts.

Efforts will be made to reduce the amount of work generated by the application of the Act by providing instructions concerning authorisation applications and registration and training and information targeted at operators in the sector. The Ministry will monitor developments in the amount of administrative work of enterprises and, if necessary, will develop the registration and supervision procedures and related instructions. The Ministry will also monitor developments in the insurance market and, if necessary, evaluate the content of the obligation to insure and conditions for derogations from it.

4.2 Impacts on central government finances

Finland has been a State Party to the Liability Convention since 1977. This means the State of Finland is already currently liable for damage caused by such space objects for which it is the launching State. The launching State's liability for damage is independent of whether the space object in question was launched by the State or a private operator. The amounts of compensation may be financially significant.

The proposed Act would restrict the State's liability by laying down provisions on the operator's liability for damage and the State's right of recourse. The operator's absolute liability would, however, be capped at a specific maximum amount, EUR 60 million. This means that the State would still be liable for any compensation exceeding the maximum amount. By virtue of the proposed Act, the operator would be obliged to take out insurance against damage caused to third parties, which would reduce the operator's as well as the State's risks. The sum insured under a typical liability insurance policy in the market at the moment is EUR 60 million. The State would still, however, remain liable for damage on the Earth or in airspace for any amount exceeding the maximum amount insured. The Ministry of Economic Affairs and Employment could refrain from requiring the insurance from an operator if the launching company's insurance or a corresponding insurance substantially covered the operator's liability for damage or if, on the basis of the risk assessment submitted to the Ministry, the risk of damage was sufficiently low.

4.3 Impacts on the authorities' activities

Accession to the Registration Convention and the proposed Act would assign the Ministry of Economic Affairs and Employment new tasks: acting as the authorising and supervision authority for space activities and maintaining the registry of space objects. Work relating to these tasks would be new for the Ministry and focus particularly on processing applications, providing advice about the authorisation and registration procedures, supervision of space activities, setting up and maintaining the national registry of space objects and notifying space objects to the UN Register. These new tasks would also require new technical and legal competencies and maintenance of competencies, including following developments in international law and technology in the sector.

Particularly in the early stages of the application of the Act, the Ministry of Economic Affairs and Employment can be expected to have to acquire external expertise for the processing and assessment of authorisation applications, particularly concerning technical details and risk assessments. Expertise could be acquired nationally from, for example, VTT Technical Research Centre of Finland or the National Land Survey of Finland, and for more extensive projects, from ESA. According to ESA, the assessment of an authorisation application would cost EUR 1,000–10,000, depending on the scope and complexity of the project. The national space legislation of several EU Member States requires the applicant to pay the costs arising from the authorisation assessment, including the costs of external experts. The Netherlands is an exception to this and pays for the assessment in advance out of on-budget State funds. The Finnish system should also be built on the premise of incorporating the costs of external assessments into applicants' authorisation fees. However, it might be justifiable in the early stage of the development of the

operating environment not to charge the operators for the costs of external assessments because this constitutes as much a process of developing the authority's competencies.

The administrative and human resources impacts of the Act apply to the Ministry of Economic Affairs and Employment, which will be assigned new administrative tasks under the Act. In other respects, the respective powers and administrative responsibilities of the Ministries will remain unchanged. Matters relating to the State's potential liability for damage fall within the remit of the Ministry of Finance.

Finland does not currently have any State-owned satellites but may have them in the future. Under the proposed Act, the launching of these, too, would be subject to authorisation by the Ministry of Economic Affairs and Employment to be applied for in advance. This would ensure, on the one hand, transparency and exchange of information in Finnish space activities and, on the other, the development of the authorising authority's competencies and uniform practice. The State's own satellites would have to be registered in accordance with section 6. Under section 3 of the Act, sections 5, 8, 11, 14 and 15 would not, however, apply to space activities carried on by the Defence Forces. The technical capacity and safety of the space activities of the Defence Forces would have to be ensured. The Defence Command would submit a report on the Defence Forces' space activities to the Ministry of Defence and the Ministry of Economic Affairs and Employment once a year.

4.4 Environmental impacts

The intention is for the proposed Act to pay particular attention to the environmental impacts of the activities and the prevention of the generation of space debris. The proposal sets the obligation for the operator to assess in advance the environmental impacts of the activities on the Earth, in the atmosphere and in outer space, and plan and implement measures necessary to counter and reduce adverse environmental impacts and to report to the Ministry of Economic Affairs and Employment on the measures taken as part of the annual report submitted to the Ministry. In addition, the operator should comply with generally accepted international guidelines and seek to ensure that the space activities do not generate space debris.

5 Drafting
5.1 Drafting stages and material

On 16 January 2017, the Ministry of Economic Affairs and Employment appointed a working group to assess the need for and scope of national space legislation on the basis of the UN treaties on outer space and international obligations and to draft a proposal for a government proposal for new national space legislation. In addition, the working group was tasked with drafting a proposal for measures relating to the registration and authorisation procedures for space objects and preparing possible other proposals concerning the matter for the Ministry of Economic Affairs and Employment. The term of office of the working group was from 1 February to 29 December 2017.

The composition of the working group was made as broad-based as possible by inviting the members of the Finnish Space Committee and its secretariat to appoint their representatives to the working group. The Ministry of Economic Affairs and Employment, the Ministry for Foreign Affairs, the Ministry of Defence, the Ministry of Education and Culture, the Ministry of Transport and Communications, the Finnish Meteorological Institute, the National Land Survey of Finland, Tekes – the Finnish Funding Agency for Innovation, AFDA, the Association of Finnish Defence and Aerospace Industries, and Aalto University were represented in the working group, which also had a permanent expert from the University of Helsinki. In conjunction with its work, the working group consulted experts from the Ministry for Foreign Affairs, the Ministry of Finance, the Ministry of the Interior, the Finnish Communications Regulatory Authority (FICORA), the Finnish Transport Safety Agency (Trafi) and the National Land Survey of Finland. Comments received were taken into account in the sections and rationale of the proposal. Whether or not the proposal falls within the

State's competence was confirmed with experts from the Government of Åland and the Ministry of Justice.

During the drafting, the secretariat of the working group visited several European countries that have a national outer space act. Discussions took place with the Norwegian Space Centre, the space division of the Danish Agency for Science, Technology and Innovation, the drafters of the Austrian Act, Belgian Science Policy (BELSPO), the Independent Posts and Telecommunications Authority of the Netherlands, the UK Space Agency, the Swedish National Space Board and the Institute of Air and Space Law of the University of Lapland. Support for the legislative drafting was provided by experts from the Legal Services Department of ESA. Practical experience of the application of other EU Member States' national outer space acts and international comparisons of outer space acts provided important support for the legislative drafting.

The Ministry of Economic Affairs and Employment commissioned a review of States' international liabilities relating to space activities and insurance policies relating to the activities. The review was completed in May 2017.

Brief blog postings on the topic were published on the working group's website at www.tem.fi/avaruuslaki.

5.2 Opinions and taking them into account

In February 2017, the Ministry of Economic Affairs and Employment requested opinions on accession to the Registration Convention from the Ministry of Transport and Communications, the Ministry of Justice, the Ministry for Foreign Affairs, Tekes – the Finnish Funding Agency for Innovation and AFDA, the Association of Finnish Defence and Aerospace Industries. All of the opinions stated that Finland should accede to the Convention. According to the views of the Ministry of Justice and the Ministry for Foreign Affairs, the matter should be referred to Parliament for decision. According to the opinion of the Ministry for Foreign Affairs, accession to the Registration Convention should be proposed in conjunction with proposing the passing of the national space activities bill as the matter requires approval by Parliament.

Opinions on this government proposal were requested from the following: the Prime Minister's Office, the Ministry of Transport and Communications, the Ministry of Agriculture and Forestry, the Ministry of Justice, the Ministry of Education and Culture, the Ministry for Foreign Affairs, the Ministry of Defence, the Ministry of the Interior, the Ministry of Finance, the Ministry of the Environment, the Finnish Communications Regulatory Authority (FICORA), the Finnish Transport Safety Agency (Trafi), the National Land Survey of Finland, the Defence Command of the Defence Forces, the Academy of Finland, the Finnish Environment Institute (SYKE), Tekes – the Finnish Funding Agency for Innovation, VTT Technical Research Centre of Finland, Finland Chamber of Commerce, the Federation of Finnish Enterprises, AFDA, the Association of Finnish Defence and Aerospace Industries, Aalto University and the Institute of Air and Space Law of the University of Lapland. In addition, a request for opinions was published by the Ministry of Economic Affairs and Employment on the Ministry's website.

The Ministry of Economic Affairs and Employment received opinions from the following organisations by the deadline set: the Ministry of Transport and Communications, the Ministry of Agriculture and Forestry, the Ministry of Justice, the Ministry of Education and Culture, the Ministry for Foreign Affairs, the Ministry of Defence, the Ministry of the Interior, the Ministry of Finance, the Ministry of the Environment, the Finnish Communications Regulatory Authority (FICORA), the Finnish Transport Safety Agency (Trafi), the National Land Survey of Finland, Tekes – the Finnish Funding Agency for Innovation, VTT Technical Research Centre of Finland, and Reaktor Space Lab Ltd and ICEYE Ltd (joint opinion). The opinions and a summary of the opinions can be found in the Government Project Register Hankeikkuna.

The Ministry of the Environment, the Ministry of Agriculture and Forestry and the Finnish Transport Agency did not provide an opinion.

No opinion was submitted by Aalto University, the University of Lapland, the Federation of Finnish Enterprises, AFDA, the Association of Finnish Defence and Aerospace Industries, Finland Chamber of Commerce, the Finnish Environment Institute (SYKE), the Academy of Finland and the Prime Minister's Office.

The opinions submitted welcomed the proposal and generally recognised the need for national legislation because of the emerging small-satellite activities.

The opinions of the Ministry of Justice and the Ministry for Foreign Affairs presented observations concerning legal technicalities and language, which were taken into account in further drafting.

The opinion of the Ministry of Justice stated that there is a need to lay down separate provisions on the right of the Ministry of Economic Affairs and Employment to use external experts and to assess the feasibility of notices of a conditional fine to enforce compliance with the Act and the suitability of the claim for a revised decision procedure as an appeal measure. In further drafting, the right to use external experts and to impose a conditional fine was included in the Act. The claims for a revised decision procedure was not regarded as appropriate as the preparation of decisions requires careful preparation and is based on information provided by the operator on the conditions for the activities.

The opinion of the Ministry of Defence proposed the exclusion of the space activities of the Defence Forces from the scope of the authorisation procedure and supervision under the Act. It was further proposed that information concerning the Defence Forces' satellites be kept secret in the registry. In further drafting, the exception to the scope of application as regards the Defence Forces was drafted in cooperation with the Ministry of Defence and the Defence Forces. Information entered in the registry may not, however, be kept secret due to the obligations laid down in the Registration Convention.

In the opinion of the Ministry of Finance, the right of recourse and the obligation to insure were regarded as necessary to limit the State's risks. According to the opinion, limiting the right of recourse is justifiable due to the low level of risks and the significant amounts of compensations. The Ministry for Foreign Affairs proposed that cases where international obligations require amendments to or withdrawal of an authorisation be added to the conditions for authorisation. The opinion of the Ministry of the Interior proposed that the rationale concerning the Act proposed to be repealed be specified further with a reference to rescue-sector legislation. Both were taken into account in further drafting.

The opinion of VTT Technical Research Centre of Finland emphasised that clear instructions on risk assessment are needed. The opinion of the Finnish Communications Regulatory Authority (FICORA) emphasised that the authorisation processes of ITU and those concerning space activities are parallel to each other and need to be implemented in cooperation. Both were taken into account in further drafting.

The joint opinion of Reaktor Space Lab Ltd and ICEYE Ltd proposed that the obligation to insure should not apply to small satellites. Because the risks involved with small satellites may be similar to those with large satellites, a categorical exception to the obligation to insure was not regarded as appropriate during further drafting. The opinion also proposed that, under the transitional provision, authorisation and insurance not be applied to space objects launched before the entry into force of the Act. It was, however, regarded as necessary that also space activities commenced before the entry into force be authorised under the Act, whereby it was not regarded as necessary to amend the proposal in this respect.

The rationale of the proposal was supplemented and clarified on the basis of the opinions, and examples were added, particularly concerning the conditions for authorisation, the obligation to insure and the changes to be notified. In addition, provisions on the safe conduct of space activities were drafted in cooperation with the Finnish Transport Safety Agency (Trafi).

DETAILED RATIONALE

1 Contents of the Registration Convention and its relationship with Finnish legislation

Article I. The article contains the key definitions used in the Registration Convention. These are the 'launching State', 'space object' and 'State of registry'.

Pursuant to subparagraph (a) of the article, the term 'launching State' means a State which launches or procures the launching of a space object or a State from whose territory or facility a space object is launched. The Registration Convention's definition of the 'launching State' is the same as that of the Liability Convention's definition of the 'launching State' and corresponds to the Outer Space Treaty's definition.

Pursuant to subparagraph (b) of the article, the term 'space object' includes component parts of a space object as well as its launch vehicle and parts thereof.

Pursuant to subparagraph (c) of the article, the term 'State of registry' means a launching State on whose registry a space object is carried.

Article II. Paragraph 1 of the article obliges the launching State to register space objects launched into Earth orbit or beyond by means of an entry in an appropriate registry maintained by it. Each launching State shall inform the Secretary-General of the United States of the establishment of such a registry.

Pursuant to paragraph 2 of the article, where there are two or more launching States in respect of a space object, they shall jointly determine which one of them shall register the object. This can be done by an agreement between the launching States. There may be several launching States but only one State of registry.

Pursuant to paragraph 3 of the article, the contents and conditions of the registry shall be determined by the State of registry concerned.

Provisions on the national registration authority and the information entered in the registry would be laid down in section 6 of the proposed Act on Space Activities.

Article III. Pursuant to the article, the Secretary-General shall maintain a Register in which the information furnished in accordance with article IV shall be recorded.

The United Nations Office for Outer Space Affairs (UNOOSA) is responsible for the Register, which is available on the UN website. In addition, a Registration Information Submission Form is available on the UN website.

Article IV. Pursuant to paragraph 1 of the article, each State of registry shall furnish to the UN Secretary-General the information specified in the article concerning each space object carried on its registry. Each State of registry shall furnish to the Register the name of the launching State or States, an appropriate designator of the space object or its registration number, the date and territory or location of launch, the base orbital parameters, including nodal period, inclination, apogee, perigee, and the general function of the space object. The information shall be furnished to the Secretary-General as soon as practicable.

Pursuant to paragraph 2 of the article, each State of registry may, from time to time, provide the Secretary-General with additional information concerning a space object carried in its registry.

Pursuant to paragraph 3 of the article, the State of registry shall notify the Secretary-General, to the greatest extent feasible and as soon as practicable, of space objects concerning which it has previously transmitted information, and which have been but no longer are in Earth orbit.

The Ministry of Economic Affairs and Employment would transmit the information to the UN Secretary-General in cooperation with the Ministry for Foreign Affairs.

Article V. Pursuant to the article, whenever a space object launched into Earth orbit or beyond is marked with the designator or registration number referred to in article IV, or both, the State of registry shall notify the Secretary-General of this fact when submitting the information regarding the space object in accordance with article IV. In such a case, the Secretary-General shall record this notification in the Register.

Article VI. The article lays down provisions on the obligation of the States Parties to assist a State Party that has not been able to identify a space object which has caused damage or which may be of a hazardous or deleterious nature. The obligation applies in particular to States possessing space monitoring and tracking facilities. A request for assistance may be made by a State Party or be transmitted by the UN Secretary-General at the State Party's request. A State Party making such a request shall, to the greatest extent feasible, submit information as to the time, nature and circumstances of the events. Arrangements under which such assistance shall be rendered shall be subject of agreement between the parties concerned.

Finland also possesses tracking facilities referred to in the article. Requests for identification should not, however, be granted in situations where identifying an object might be regarded as Finland siding with a party to a crisis.

Article VII. Pursuant to the article, references to States shall be deemed to apply to any international intergovernmental organisation which conducts space activities if the organisation declares its acceptance of the rights and obligations provided for in the Convention and if a majority of the States members of the organisation are States Parties to the Registration Convention and the Outer Space Treaty.

Organisations including the European Space Agency (ESA) have accepted the rights and obligations provided for in the Registration Convention.

Article VIII. The article contains standard provisions on the signing and ratification of, accession to and entry into force of the Convention.

Pursuant to paragraph 1 of the article, the Convention shall be open for signature by all States at the UN Headquarters in New York. States may accede to it at any time after its entry into force.

Pursuant to paragraph 2 of the article, this Convention shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Secretary-General of the United Nations.

Pursuant to paragraph 3 of the article, the Convention shall enter into force among the States which have deposited instruments of ratification on the deposit of the fifth such instrument with the UN Secretary-General. This condition for entry into force was fulfilled when the United States ratified the Convention, whereby the Convention entered into force internationally on 15 September 1976.

Pursuant to paragraph 4 of the article, for States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

Pursuant to paragraph 5 of the article, the Secretary-General shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification and accession to this Convention, the date of its entry into force and other notices.

Article IX. Pursuant to the article, any State Party to the Convention may propose amendments to the Convention. Amendments shall enter into force for each State Party to the Convention accepting the amendments upon their acceptance by a majority of the States Parties to the Convention and thereafter for each remaining State Party to the Convention on the date of acceptance by it.

Article X. The article lays down provisions on the review of the Convention by the UN General Assembly or at a conference convened separately. Such review shall take into account in particular any relevant technological developments, including those relating to the identification of space objects.

Article XI. Pursuant to the article, any State Party may give notice of its withdrawal from the Convention by written notification to the Secretary-General of the United Nations. Such withdrawal shall take effect one year from the date of receipt of this notification.

Article XII. Pursuant to the article, the Arabic, Chinese, English, French, Russian and Spanish texts of the Convention are equally authentic.

2 Rationale for the government bills

2.1 Act on the Convention on Registration of Objects Launched into Outer Space

Section 95 of the Constitution requires the provisions of treaties and other international obligations that are of a legislative nature to be brought into force by a special implementation act. The provisions of an international obligation that are of a legislative nature must be implemented by a blanket or hybrid act also in cases where the obligation gives rise to the need to review the substantive content of national legislation. The proposal contains a proposal for a blanket act.

Section 1. The section contains a provision that would implement the provisions of a legislative nature of the Registration Convention.
The provisions of a legislative nature are described below in the context of the necessity of parliamentary authorisation.

Section 2. Provisions on the implementation of the Registration Convention's provisions other than those of a legislative nature would be issued by government decree.

Section 3. Provisions on the entry into force of the Act would be issued by government decree. The aim is for the Act to enter into force at the same time as the Registration Convention enters internationally into force for Finland.

2.2 Act on Space Activities

Chapter 1 **General provisions**

Section 1. *Scope of application.* The proposed Act would apply to space activities that fall within Finland's jurisdiction and to which obligations of international law binding on Finland are related.

Pursuant to article VI of the Outer Space Treaty, States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the Outer Space Treaty. The activities of non-governmental entities shall require authorisation and continuing supervision by the appropriate State.

The Treaty does not specify in more detail to which 'national activities' the State's responsibility in accordance with the first sentence of the article applies or when a State is 'the appropriate State Party' referred to in the second sentence of the article. Therefore States Parties have sought to determine in their national legislation for which activities they deem themselves as internationally responsible and for which activities the State's authorisation is required.

The State's jurisdiction, which is usually divided into legislative, judicial and executive powers, is closely related to the concept of State sovereignty. The premise is the territorial principle, under which, as a rule, each State has extensive and exclusive jurisdiction over its territory. The territory includes internal and external territorial waters. The State's jurisdiction also covers vessels and craft on its register. A State may also have based its jurisdiction on the nationality principle and, as regards certain international crimes, also on the universality principle. Where wishing to exercise extraterritorial jurisdiction, the State usually has to demonstrate that there is a genuine link between the matter in question and the exercise of jurisdiction, also taking the rights of other States into account.

As regards the countries covered by the comparative examination, the scope of application usually determined in their legislation is space activities carried on within the territory of the State or on board a vessel or craft registered with the State as well as space activities carried on by citizens of the State or a legal person registered in the State. This is also recommended by UN General Assembly resolution 68/74 on national legislation and the Sofia Model Law. However, some States restrict nationality-based application to cases where space activities are carried outside their sovereign areas (Norway), where application is based on international treaties (Belgium) or where these provisions are laid down in subordinate statutes (the Netherlands). In international debate, however, it has been regarded as important to extend the scope of application to citizens without restrictions to ensure comprehensive State supervision of space activities. This was also the starting point for the definition of the scope of application of the Finnish Act.

Under subsection 1 of the section, the Act would apply to space activities carried on within the territory of the State of Finland. The territory of the State of Finland would cover the State's land areas, territorial waters and airspace. In its exclusive economic zone directly adjacent to its territory, Finland has jurisdiction under international law with regard to the establishment and use of artificial islands, installations and structures as well as other rights and obligations under international law. Provisions on these are included in the Act on the Exclusive Economic Zone of Finland (1058/2004). Under section 17 of the Act, Finnish law applies on artificial islands, installations and structures constructed in accordance with the Act as if the structure concerned was located in the nearest part of the Finnish territory. Accordingly, Finnish law would be applied in such special situations despite the fact that the exclusive economic zone is not part of the State's territory.

Because Finland does not currently have the infrastructure required for launching space objects, space activities carried on in Finland would primarily mean operating and other control of space objects from Finland. However, as advances are made in technology, it is possible that space objects may also be launched from Finnish territory in the future.

Under subsection 2, paragraph 1 of the section, the Act would apply to space activities carried on on board a vessel or aircraft registered in Finland. Vessels and aircraft would mean ships, airplanes and other machines capable of flight. These would include, in particular, various space

object launching systems operated from vessels or aircraft. Although these do not currently exist in Finland, future advances in technology should be taken into account in legislation.

Under subsection 2, paragraph 2 of the section, the Act would apply in accordance with the nationality principle to Finnish citizens and legal persons incorporated in Finland. Finnish space operators currently have to procure the launch of a satellite or other space object from outside of Finland. There are operators offering launch services in countries such as the United States, India and Russia. The operation of a space object can also take place outside of Finland. Under UN treaties on outer space, Finland may, however, be deemed to be a responsible State if a Finnish operator is responsible for the space activity and procures the launch and operation of a space object from abroad. This typically involves a setup where a Finnish operator procures the launch from outside Finland and itself operates the satellite from Finland. A Finnish operator may also acquire a satellite already in orbit and assume responsibility for its operation.

Extending the obligations of the Act to Finnish citizens regardless of the location where the space activities are carried on would ensure Finland's opportunity to supervise space activities and comply with its international obligations in all situations where Finland can be deemed as the responsible State under UN treaties on outer space. However, a Finnish citizen employed by a foreign organisation would be beyond the scope of application of the Act while taking part in space activities carried on by that organisation while employed by it.

Vessels and aircraft registered in Finland, Finnish citizens and legal persons incorporated in Finland would also be included in the scope of application of the Act while outside the borders of the State of Finland within the jurisdiction of another State, in international airspace, on the high seas or in other areas that are not subject to the sovereignty of any State, such as Antarctica. In these cases, Finnish operators may be obliged to comply with the legislation of more than one State in their space activities.

Under subsection 3 of the article, a space object flying in the airspace of Finland would be subject to applicable provisions on civil aviation. This provision would prepare for space objects potentially being launched from the territory of the State of Finland in the near future, in which case the safety of aviation would need to be ensured. Because so far there is no international regulation on the harmonisation of space activities and aviation, subsection 3 mainly refers to civil aviation provisions concerning activities posing a hazard to aviation safety, particularly section 159 of the Aviation Act (864/2014).

Section 2. *Competent authority.* Under the section, the Ministry of Economic Affairs and Employment would be responsible for the overall guidance, monitoring and development of activities under the Act.

Section 3. *Application of the Act in defence administration.* The section would lay down provisions on the application of the Act in defence administration. Sections 5 (authorisation for space activities and conditions for authorisation), section 8 (obligation to insure), section 11 (transfer of space objects and space activities to others), section 14 (supervision) and section 15 (right of inspection) would not apply to activities of the Defence Forces. In the Defence Forces, the obligations applying to the operator would apply to the Defence Command of the Defence Forces.

The space activities of the Defence Forces differ considerably from space activities carried on by civilian operators, so the application of these sections to activities of the Defence Forces would not be appropriate.

Under subsection 2 of the section, the Ministry of Defence would be responsible for the overall guidance and supervision of space activities under this Act. The Defence Command of the Defence Forces would supervise compliance with this Act and the provisions laid down by virtue of it.

Once a year, the Defence Command would submit a report on the Defence Forces' space activities to the Ministry of Defence and the Ministry of Economic Affairs and Employment. The report would be the primary supervision tool of the Ministry of Defence and, on the basis of the report, the Ministry of Economic Affairs and Employment would also be informed of the status of space activities carried on by the Defence Forces. The report could, in particular, describe the functionality of the space object(s), any warnings and risks of collision and the plans concerning continuing, altering or discontinuing the tasks of the space object(s).

Under subsection 3 of the section, the technical capacity and safety of the space activities of the Defence Forces shall be ensured.

Under subsection 4 of the section, further provisions on the supervision of the Defence Forces' space activities may be laid down by a decree of the Ministry of Defence. A decree could, for example, lay down further provisions on the contents of the report submitted by the Defence Command to the Ministry of Defence and the Ministry of Economic Affairs and Employment and on other necessary supervision measures.

Section 4. *Definitions.* The section would provide definitions of the key terms as regards the application of the Act.

Under paragraph 1 of the section, 'space activities' mean launching a space object into outer space, operation and other control of a space object in outer space, and measures to return a space object and its return to the Earth.

No definition of 'space activities' is provided in the UN treaties on outer space. In practice, all measures to enter outer space and explore or use outer space from outer space are regarded as space activities. Consequently, space activities would include launching a space object into outer space and measures to return a space object or its return to the Earth. Launching would also cover operating launching infrastructure and procuring a launch from a launch provider. In addition, space activities would include operating and other control of a space object in outer space. Operating covers any measures relating to placing a space object in orbit or its flying conditions, navigation or evolution in outer space, such as the control and correction of its orbit or its trajectory, including inclination change. Other control means other influencing of the space object, such as responding to collision warnings and discontinuation of the operation the space object.

Objects launched into outer space remaining in orbit around the Earth is not a condition for space activity. International debate is taking place on matters including whether sounding rockets and sub-orbital flights constitute space activity. International consensus on these is, however, yet to be achieved.

Being successful is not a requirement set for classification as space activity, either. Therefore unsuccessful launches and non-functioning space objects would be covered by the scope of application of the Act. Because non-successes involve the highest risk of damage, it is essential that they be included in the scope of application of the Act, particularly the liability provisions.

Space activities referred to in the Act would not include manufacturing satellites or their parts or supplying applications and systems needed for the operation or other control of satellites as a subcontractor. Correspondingly, manufacturing research equipment placed in a satellite or other space object and receiving information produced by it would be beyond the scope of space activities. A condition for the application of the Act is that responsibility for the space activity, that is, launching and operating a satellite, is in Finland or with a Finnish operator.

Under paragraph 2 of the section, 'space object' means any object launched or intended to be launched into outer space, including the component parts of such an object, and any device used

or intended to be used for launching an object into outer space, including the component parts of such a device.

Pursuant to article I of the UN Liability Convention, a ‘space object’ also means component parts of a space object as well as its launch vehicle and parts thereof. The same definition is provided in article I of the Registration Convention. The UN treaties on outer space do not contain any more detailed definitions.

The definition of a ‘space object’ is broad, covering its component parts and launch vehicle because, in addition to the space object itself, damage can be caused by its launch vehicle or parts of the launch vehicle. Parts may become detached from a space object intentionally, for example, in conjunction with the launch when various parts of the launch vehicle are designed to detach. Parts may also detach unintentionally, for example, due to a collision or fault situation. The launcher of the space object is also responsible for such detached parts. As stated above, a space object does not need to be functional to be covered by the scope of application of the Act.

Application of the obligations of the Act on a manufacturer of individual parts of a space object does not, however, follow from the definition. Therefore the operator launching a space object has overall responsibility for the space object, including applying for authorisation, registration of the space object and any damage, regardless of whether parts or software for the satellite have been supplied by another actor. Correspondingly, if a Finnish organisation supplies a part for a satellite or other space object of another operator, no authorisation application is required for it, and it is not included in the scope of application of the Act.

Under subsection 3 of the section, ‘operator’ means a natural or legal person who carries on or intends to carry on space activities or is effectively responsible for such activities. The operator is a party that launches a space object or is responsible for its operation. The operator may launch the space object or operate it itself or it may procure the launch or operation as a service. The operator is the party that exercises effective power over the space activity. The operator’s activities may be based on a special agreement concluded for the purpose. In case of a space object whose flight cannot be controlled or that cannot be steered once it has been placed in orbit, the operator would be that party that ordered the placing of the space object in orbit and that is able to decide on the discontinuation of the operation of the space object. An operator may also acquire a satellite already in orbit and assume responsibility for its operation. The operator is usually a legal person as carrying on space activities requires significant resources. As advances are made in technology, the size of satellites gets smaller and launching costs are reduced, it may, however, be possible for natural persons to also launch space objects.

Chapter 2 **Operator’s obligations**

Section 5. *Authorisation for space activities and conditions for authorisation.* The section would implement nationally the provisions of article VI of the Outer Space Treaty, pursuant to which States Parties to the Treaty shall bear international responsibility for space activities, they shall supervise space activities and the space activities of non-governmental entities shall require authorisation by the State.

The operator should apply for prior authorisation by the Ministry of Economic Affairs and Employment before the launch of a space object or the acquisition of a satellite in orbit. The time limit would be determined more specifically by decree of the Ministry of Economic Affairs and Employment. Under the Decree, an operator should submit an application for an authorisation six months before the planned launch but, as advances are made in technology and in space activities within the scope of application of the Act, it may be necessary to lay down provisions for a longer or shorter time limit or different time limits for different forms of space activity.

The authorisation would cover activities deemed as a single entity. Authorisation would typically be applied for the launch of one satellite and its subsequent operation in outer space. An application and authorisation could, however, also cover several satellites of the same operator that are launched in a coordinated manner, form a single system and are possibly operated together and for which the intended orbits and other matters relevant to risks, such as any information transmission between the satellites, technical details of the satellites and any hazardous substances would be determined in the application.

Pursuant to article VI of the Outer Space Treaty, non-governmental entities may not carry on activities in outer space without authorisation by the State. The Act, however, proposes that in Finland authorisation would also be applied for space activities of State operators. This would correspond to the Danish and Austrian legislation. Extending the authorisation procedure also to State operators would, on the one hand, ensure transparency and exchange of information in Finnish space activities and, on the other, the authorising authority's competencies and development of uniform practices.

The Ministry of Economic Affairs and Employment would grant the authorisation for an indefinite or definite period.

Conditions necessary for the safe conduct and supervision of space activities may be attached to the authorisation for space activities. Conditions could pertain, for example, to the technical capacities of the space object or the handling of the space object once its mission ends. The conditions would ensure compliance with the obligations of the UN treaties on outer space throughout the activities.

Subsection 2 of the section would contain provisions on the conditions that the space activities and the operator must fulfil for the Ministry of Economic Affairs and Employment to be able to grant authorisation in accordance with subsection 1. By requiring the fulfilment of certain conditions, the Ministry of Economic Affairs and Employment ensures that space activities are carried on in accordance with the UN treaties on outer space and under the supervision of the State of Finland.

Under paragraph 1 of the subsection, the operator shall have sufficient capacities for space activities, in particular that it is reliable and has the necessary technical expertise and financial capacity. As regards the reliability, technical expertise and financial capacity of the operator, an assessment shall be made of whether the operator will be capable of taking care of all of the stages of space activity from the launch of the space object to its operation and the discontinuation of the space activities. Because space activities are, as a rule, to be regarded as dangerous activities involving the risk of significant damage, it is essential to ensure the operator's reliability, technical expertise and financial capacity. Space activities and the conditions for carrying them on would be assessed as a whole in relation to the scope and dangerousness of the planned space activities. For example, launch activities and the launch and operation of space objects with nuclear power sources differ significantly in terms of the level of hazard involved from small satellites of less than 100 kg in mass.

When assessing technical expertise, the requirements must be commensurate with the planned space activities. The assessment is an overall assessment examining the operator's and its personnel's experience, technical expertise and knowledge of the sector and their competence, taking the scope of the space activities referred to in the application into account. Consequently, space activities that are technically less complex would not need to be set as high requirements as space activities that are technically more demanding. A variety of technical standards are applied to space activities. The standards are not, however, always suitable for small satellites, and compliance with them cannot be required in all situations. Small satellites should, however, also correspond to the sector's general level of technology and the necessary quality requirements in terms of their technical properties.

When assessing financial capacity, the operator's financial circumstances and resources would be taken into account. The operator should have the financial capacity to take care of not only the launch of the space object but also its operation in orbit, including the measures required by any collision warnings. In addition, in this context an assessment would also take place on how the operator has prepared to assume any liability for damage caused by its activities, also taking into account the requirements set for liability insurance under section 8.

Under paragraph 2 of the subsection, the space activities may not cause any particular risk to persons, property or public safety. Therefore it is important to ensure the safety of the space activities during the authorisation procedure. Further provisions on the safe conduct of space activities are laid down in section 9.

In the authorisation application, the operator would have to provide the Ministry with a risk assessment concerning the risk of personal injury and material damage on the Earth, in the airspace and in outer space. Further provisions on the contents of the risk assessment would be issued by decree of the Ministry of Economic Affairs and Employment. The risk assessment is also relevant in the context of assessing the grounds for any derogation from the obligation to insure under section 8, subsection 2.

In the initial stages of the application of the Act, assessment would pertain particularly to the safety risks of satellites as the authorisation procedure would mainly relate to satellites launched by Finnish operators from abroad. In the future, however, space objects may also be launched from Finnish territory. In that context, the safety and risks involved in launches will need to be assessed even more carefully when granting authorisations, and separate safety requirements may be set for launches.

Paragraph 3 of the subsection requires the operator to seek to prevent the generation of space debris and adverse environmental impacts on the Earth, in the atmosphere and in outer space in accordance with section 10. Further provisions on environmental protection and space debris would be laid down in section 10.

Under paragraph 4 of the subsection, the operator must have made a plan for discontinuing the space activities. This condition is closely related to the provisions concerning space debris. In its authorisation application, the operator must specify what will happen with the space activities after the mission, such as whether they will be transferred to another operator, whether the space object will remain in orbit, be moved to a less congested orbit or burn up in the atmosphere.

Under paragraph 5 of the subsection, the space activities shall be compatible with the national security interests, Finland's international obligations and Finland's foreign policy interests. Space activities must be carried on in accordance with the UN treaties on outer space. In addition, the international obligations binding on Finland must be taken into account in the activities. The compatibility of space activities with Finland's national security interests, international obligations and foreign policy interests is assessed case-specifically on the basis of the current situation at the time. Opinions to support the assessment would, where necessary, be requested from competent authorities, particularly the Ministry for Foreign Affairs, the Ministry of Defence and the Ministry of the Interior. In the initial stage of the application of the Act, at least the opinion of the Ministry of Defence would be requested on all authorisation applications.

Paragraph 6 of the subsection requires that the operator complies with the insurance requirements under section 8.

Under paragraph 7 of the subsection, the operator must comply with the rules of the International Telecommunications Union (ITU) in force. If the international ITU coordination procedure is not passed, the space object may not be launched or taken into use.

The FICORA radio licence procedure is a procedure separate from the authorisation procedure laid down in the Act. It is, however, important to cooperate in these parallel authorisation and licencing procedures to avoid any conflicts or unnecessary overlapping between the radio licence and the authorisation referred to in this Act. In particular, the authorisation referred to in this government bill should not include such technical conditions that will not be confirmed until the ITU coordination procedure or that may change following the resolution of any incidents. Cooperation has been agreed between the Ministry of Economic Affairs and Employment and FICORA. Further discussions on the practical procedures will, where necessary, still take place to ensure the efficient flow of information between the authorities and to avoid any overlapping processes.

Under paragraph 8 of the subsection, the operator would have to provide evidence of compliance with the export control provisions in force. In the evidence, the operator could assure that the applicant's space activities are not activities governed by Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items, the Act on the Control of Exports of Dual-Use Goods (562/1996) or the Act on the Export of Defence Materiel (282/2012). If the space activities involve any transfer of items and/or technology subject to the control of exports mentioned above, the operator of the space activities would have to submit applications for authorisation to the authorising authorities concerning the items and technology subject to authorisation and provide the Ministry of Economic Affairs and Employment with evidence of the decisions received.

The authorising authority supervising the exports of dual-use items is the Ministry for Foreign Affairs and the authorising authority supervising the exports of defence materiel is the Ministry of Defence. Imports to Finland are governed by the export legislation of the exporting country in question.

International export control arrangements to which Finland has made a political commitment include the Missile Technology Control Regime (MTCR) and the Hague Code of Conduct against Ballistic Missile Proliferation (HCoC). The MTCR seeks to limit the proliferation of missiles, missile technology, unmanned air vehicle systems and related technology. The HCoC limits the proliferation of ballistic missiles. It aims to supplement disarmament and non-proliferation mechanisms through confidence-building measures. The HCoC seeks to restrain the development, testing, deployment and spread of ballistic missiles. It does not prohibit the ownership of missiles or their use for peaceful purposes in outer space.

Under subsection 3 of the section, in its application for authorisation, the operator shall present such reliable evidence of fulfilling the conditions laid down in subsection 3 as is necessary for considering the application. The Ministry of Economic Affairs and Employment may request information necessary for the processing of the matter until the information submitted in the application can be regarded as sufficient for a decision to be made.

The obligation to apply for authorisation of space activities does not lie with the owner of the space object, but with the operator, that is, the party with the effective control of the launch and operation of the space object. The operator and owner of the space object may be different parties. The ownership of the space object must be described in the authorisation and is taken into account in the assessment of the conditions for granting the authorisation. Ownership may be of relevance in particular when assessing financial capacity for the activities and any conflicts with Finland's foreign policy interests.

It is appropriate to issue further provisions at decree level on applications for authorisation and the information and documents to be submitted in an application. For example, it would be appropriate to issue provisions by a decree on the contents of the risk assessment of subsection 2, paragraph 2 and on the time limits relating to applications for authorisation.

Section 6. *Registration of space objects.* Under this section, a national registry of space objects would be established by implementing the obligation of article II of the UN Registration Convention to maintain a national registry of space objects.

Under subsection 1 of the section, the Ministry of Economic Affairs and Employment would maintain the registry of space objects. The registry would be public and available on the Ministry's website.

The registration of space objects is one of the commonly accepted principles of international space law. The registration obligation corresponds to the obligations under maritime and aviation law to register vessels and aircraft.

Under subsection 2 of the section, the operator would have to provide the Ministry of Economic Affairs and Employment with the information laid down in the section concerning space objects launched into Earth orbit or beyond into outer space.

The registry would contain information about all space objects for which Finland is the launching State in accordance with article I of the Registration Convention.

In article I of the Registration Convention, the 'launching State' is defined as a State which launches or procures the launching of a space object or a State from whose territory or facility a space object is launched. Finland would be the launching State if it authorised the space activities under this Act.

Pursuant to article VIII of the Outer Space Treaty, a State Party on whose registry a space object is carried shall retain jurisdiction and control over such subject. Jurisdiction and control shall be retained by the State also while the object is in outer space.

There may only be one State of registry in accordance with the Registration Convention entered in the UN Register. If both Finland and one or more States Parties to the Registration Convention are deemed as launching States, the Ministry of Economic Affairs and Employment will register the space object if it has been determined under an agreement concluded between the States in question that Finland is the launching State. Most launch service providers require the customer's satellite to be registered in the national registry of the customer's State and not that of the launch service provider's State.

Even if agreed that another State is the State of registry in accordance with the Registration Convention, information about those space objects for which Finland is the co-launching State would be recorded in the national registry. As the launching State, Finland is liable for any damage caused by the space object, which means it is justifiable to also record this information in the registry. In addition, information about space objects within the scope of application of the Act acquired by the operator while in orbit would be recorded in the registry. For these space objects, Finland is not the launching State but it is a responsible State referred to in article VI of the Outer Space Treaty, in addition to which responsibilities borne by Finland agreed upon separately by States may relate to a space object.

The registration obligation in accordance with the Registration Convention applies to objects launched into Earth orbit, such as satellites, and space objects launched further into outer space, such as to the Moon or other celestial bodies. Therefore the registration obligation does not apply to objects such as launch vehicles or other objects that return to the atmosphere without remaining in orbit, or to unsuccessful launches.

The Registration Convention does not distinguish whether or not an object registered should be functional. Some States only register functional space objects, whereas others also register non-

functional objects. The registration of non-functional space objects is justifiable as they may also cause damage and therefore awareness of non-functional objects in outer space is also required.

Pursuant to article II, paragraph 3 of the Registration Convention, the contents of each registry shall be determined by the State of registry concerned. Under subsection 2 of the section of the proposed Act, the information that according to article IV of the Registration Convention is to be furnished to the UN Register would be recorded in the registry. This information comprises the name of the launching State or States, the designator or registration number of the space object, the general function of the space object, the date and territory or location of launch, and the orbital parameters of the space object (such as nodal period, inclination, apogee and perigee). In addition, it is proposed that the name of the operator and the launch vehicle be recorded in the registry.

The Ministry of Economic Affairs and Employment, which would maintain the registry, would provide each space object with a national registry designator or registration number. In addition, a space object may have a designator issued by another organisation such as the Committee on Space Research (COSPAR) of the International Council for Science (ICSU), which may also be recorded in the registry.

Standard classifications, such as remote sensing, telecommunications or navigation, could be used to determine the function of the space object.

In the current situation, a space object typically has at least one launching State in addition to Finland because, due to the absence of national launching systems, Finnish operators' space objects are launched from another country. In international cooperation projects, there may be several launching States if, for example, a space object is operated from outside of Finland. All of the launching States would be recorded in the national registry and notified to the UN. The details of the time and place of launch would help determine the other launching State.

The information would be recorded in the registry ex officio on the basis of the authorisation application. Section 12 on the obligation to provide information would oblige the operator to inform of any changes to information recorded in the registry, including specific information on the launch date and place. The Ministry of Economic Affairs and Employment would transmit the information to the UN Secretary-General through diplomatic channels in accordance with article IV of the Registration Convention in cooperation with the Ministry for Foreign Affairs.

By decree of the Ministry of Economic Affairs and Employment, further provisions could be laid down on the registry and on essential information concerning the space activities or the space object to be provided. Other significant information concerning the space object would be, for example, information about the expected period in orbit and functional life of the space object, payload, frequency and telemetry details, ownership, transfers from one operator to another, and discontinuation of the activities. More detailed recommendations on registration practices were given in resolution 62/101 adopted by the UN General Assembly in 2007. The recommendations concern uniformity in the information provided about time, place and technical parameters, additional information concerning space objects to be recorded in the Register and information to be recorded concerning changes. Technological advances, changes to international obligations or EU legislation or new UN recommendations or practices could require the recording of new information in the registry.

Section 7. *Liability for damage and the State's right of recourse.* Subsection 1 of the section would correspond to the provision of section 4, subsection 2 of the Act on the Rescue and Return of Astronauts and the Return of Space Objects (616/1970) proposed to be repealed, under which damage caused by a space object is compensated out of State funds. The legislatory history (government proposal HE 30/1970) of the Act proposed to be repealed states that it is to be deemed reasonable that the home State is primarily obliged to compensate for personal injury or

material damage caused to a citizen. For the sake of clarity, the provision would be specified further by excluding damage caused to the operator itself from the provision.

Under subsection 2 of the section, the State would have the right to recover the compensation paid to the injured party from the operator to the extent that the operator would have been liable for the damage to the injured party under the Tort Liability Act (412/1974).

Under subsection 3 of the section, by derogation from subsection 2, if the damage has been caused on the Earth or to aircraft in flight or its passenger or crew member, the State would have the right to recover the paid compensation from the operator even if the operator had not caused the damage deliberately or negligently as referred to in chapter 2, section 1, subsection 1 of the Tort Liability Act.

The State may have to pay compensation for damage caused by a space object either under the proposed subsection 1 or its international obligations. Provisions on compensation for damage caused by space objects are laid down in the Liability Convention and article VII of the Outer Space Treaty. In addition, the State may be liable for damage in accordance with general principles of the State's liability under international law pursuant to article VI of the Outer Space Treaty if it violates its obligations pursuant to article VI and this violation results in damage.

Pursuant to article II of the Liability Convention, a launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the Earth or to aircraft in flight. Pursuant to article III of the Convention, in the event of damage being caused elsewhere than on the surface of the Earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.

Pursuant to article VII of the Outer Space Treaty, each State Party to the Treaty that launches an object into outer space is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the Earth, in airspace or in outer space.

Pursuant to article I of the Liability Convention, the term 'damage' means loss of life, personal injury and other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organisations. Because this concept of 'damage' is deemed to be in compliance with the Finnish Tort Liability Act, no separate definition of 'damage' is included in the bill.

There may be several launching States, whereby Finland may also have the right of recourse to other States. Pursuant to article V, paragraph 1 of the Liability Convention, whenever two or more States jointly launch a space object, they shall be jointly and severally liable for any damage caused. A State sustaining damage may seek the entire compensation due from any or all of the launching States. According to article V, paragraph 2 of the Liability Convention, the participants in a joint launching may conclude agreements regarding the apportioning among themselves of the liability. Pursuant to article V, paragraph 3 of the Liability Convention, a State from whose territory or facility a space object is launched shall be regarded as a participant in a joint launching.

Assessments of whether damage caused by a space object in outer space was due to the operator's negligence would take into account the measures taken by the operator to prevent damage and reduce the risk of damage. For example, compliance with internationally accepted guidelines on space debris could constitute evidence of the operator's carefulness. The manner in which the operator has taken into account in its activities the risks determined in the risk assessment provided in the authorisation application and implemented the measures taken to reduce risks could also be taken into account.

Under subsection 4 of the section, the maximum amount of the State's right of recourse is EUR 60 million. It is justifiable to set a maximum amount so that the operator is able to plan its space activities taking into account the worst conceivable consequence. If there was no restriction in legislation at all to the operator's liability, it is to be assumed that, in the event of compensation being due, the operator's capacity would not be sufficient, whereby the State's unrestricted right of recourse could not be fully realised.

The provision on the maximum amount would not, however, apply if the operator had failed to comply with this Act or the conditions attached to the authorisation granted under section 5. Since liability for damage taking place in outer space requires the operator's negligence, there would be no maximum amount for liability for compensation concerning such damage.

The maximum amount of the right of recourse has been set at the same level as in the countries included in the comparison. The maximum amount of the State's right of recourse is set at EUR 60 million in Danish, Austrian and French legislation and in the UK licencing practice. This was also regarded as appropriate for Finland as the amount corresponds to the typical maximum amount of insurance available.

Section 8. *Obligation to insure*. Under subsection 1 of the section, the operator shall take out insurance against damage caused by the space activities to third parties (hereinafter liability insurance).

There are two types of insurance relating to space activities available in the market: space property damage insurance covering damage, such as breakage and destruction, to the space object itself and third party liability insurance covering personal injury and material damage caused to third parties by a space object while a space object is launched, in orbit or returning to the Earth.

The insurance company is directly responsible for the payment of compensation if the owner of the space object in question is found to be liable to indemnify. This means that the injured party and, correspondingly, the State may submit its claim directly to the insurance company regardless of whether the owner of the space object is willing or capable of making the payment.

When assessing the State's risks, it is to be noted that private-sector insurance cannot cover all damage potentially included in the State's liability to indemnify because the State's liability against third parties is, as a rule, unlimited.

Under subsection 2 of the section, the Ministry of Economic Affairs and Employment may refrain from requiring insurance if the conditions laid down in the subsection are fulfilled. As regards small satellites and, in particular, science satellites used for education and research, the price of liability insurance may be too high and even prevent the space activities of such operators if the State's requirements concerning insurance compensations are too high in proportion to the other costs of the activities or the operator's financial capacity. It would therefore be justifiable to lay down a provision concerning refraining from requiring insurance in certain situations on which provisions laid down in the Act. There are, however, similar risks of damage relating to small satellites as there are to large satellites, particularly if materials used in them will not burn up in the atmosphere or if placed in the most congested orbits. Therefore, when assessing the grounds for refraining from requiring insurance, the most important thing is to take into account the risks of damage involved in the activities.

Under subsection 2, paragraph 1 of the section, the Ministry of Economic Affairs and Employment may refrain from requiring insurance if the insurance of the launching company or a corresponding insurance substantially covers the operator's and the State's liability for damage caused by the space object. In this context, in particular liability for damage during the launch stage would be regarded as substantial. As a general rule, the launching company has insurance cover for the

launch stage under which the satellite owner or operator who is the customer is also insured. Launch insurance often provides coverage for a specific period after the launch in orbit running from a few months up to twelve months. For the period after this, liability insurance coverage while in orbit is available. According to an expert review commissioned by the Ministry of Economic Affairs and Employment, there are around 40 companies currently providing third party liability insurance on the international market. The insurance market for small satellites is only just emerging, which is why insurance cover for small satellites is offered on the same terms as for large satellites.

Under paragraph 2 of the subsection, the Ministry could refrain from requiring insurance if, on the basis of the risk assessment conducted on the space activities as referred to in section 5, subsection 2, paragraph 2, the Ministry can accept the risk of damage caused by the space activities on the Earth, in the airspace and in outer space. The activities could be deemed to involve a lower risk of damage if the space object did not contain hazardous substances or parts or materials that will not burn up in the atmosphere, if it was not placed in the most congested orbits or if its life in orbit was brief. The risk would also be reduced by technical properties that ensure no parts will be detached from the space object in outer space. The life of certain types of test and research satellites in orbit may even be shorter than the validity of the launching company's liability insurance. Refraining from requiring insurance would be based on an overall assessment of the level of risk at all stages of the space activities. Where necessary, other authorities or independent experts could be used for assistance in the assessment.

For example, the operation of CubeSats, the expected orbital lifetime of which is less than five years and which are launched into orbit from an International Space Station (ISS), is quite a standardised and low-risk activity, in which case there may be a need to consider whether it is necessary to refrain from the obligation to insure. An exception to the obligation to insure could also be considered as regards such small satellites that are launched by an experienced and trusted launch provider and that, in accordance with international guidelines, deorbit within 25 years after the completion of their mission.

Under subsection 3 of the section, further provisions on the content of insurance and the preconditions referred to in subsection 2 on the fulfilment of which the Ministry of Economic Affairs and Employment could refrain from requiring insurance could be laid down by decree of the Ministry of Economic Affairs and Employment. It would be appropriate to issue further provisions by a decree in particular on the definition of risk that is deemed as acceptable.

Section 9. *Safe conduct of space activities.* Subsection 1 of the section would lay down provisions on the general obligation to carry on space activities in a safe manner. The activities must not cause any particular risk to persons or property or jeopardise public order or security. A provision obliging safety to be taken into account would provide the authorities with the opportunity to address the matter if space activities were found to pose a risk to outsiders.

The subsection would lay down provisions on the minimum requirements set for persons participating in the launch, operation and return of a space object. Any person participating in space activities should have sufficient experience and know-how. They should be knowledgeable of their task and capable of having control of the operations under their responsibility. The provision would be targeted specifically at persons whose operations are of practical significance as regards launching, operation or return. The provision would provide these persons with legal grounds to require appropriate induction into their tasks. It would also provide the right to refuse a task in which they do not have a sufficient level of proficiency.

Subsection 2 of the paragraph contains a reference provision to section 159 of the Aviation Act laying down provisions on activities that endanger flight safety. Harmonisation of outer space and aviation activities should take place in compliance with statutes and regulations concerning the control of airspace.

Under subsection 3 of the section, further provisions on the safe conduct of space activities and on the minimum requirements for devices and operations affecting safety and for the know-how and experience of personnel could be laid down by decree of the Ministry of Economic Affairs and Employment. It is important in Finland to keep abreast of international safety developments, and it may be necessary to lay down separate provisions on the necessary safety requirements. The pace of development of operating principles and technical standards will accelerate in the international forum as space activities increase.

Section 10. *Environmental protection and space debris.* Under subsection 1 of the section, space activities shall be carried out in a manner that is environmentally sustainable. A special objective is to prevent environmental damage caused by the activities on the Earth, in the atmosphere and in outer space.

Pursuant to article IX of the Outer Space Treaty, States Parties to the Treaty shall avoid the harmful contamination of outer space and celestial bodies and adverse changes in the environment of the Earth. International debate on the contents and binding force of the provision is still ongoing.

In its application for authorisation, the operator would have to assess the environmental impacts of its space activities on the Earth, in the atmosphere and in outer space. The operator would have to, on the one hand, provide information about the technologies, components and products used in the activities and, on the other, the impacts that the activities may have on the Earth, the atmosphere and outer space. In addition, the operator would have to present a plan for measures to counter and reduce adverse environmental impacts. Any nuclear fuels or other nuclear materials in particular should be mentioned in the authorisation application. By virtue of the UN Principles Relevant to the Use of Nuclear Power Sources in Outer Space (47/68) of 1992, the use of nuclear power sources in outer space shall be restricted to those space missions which cannot be operated by non-nuclear energy sources in a reasonable way.

Subsection 2 of the section would lay down provisions on the avoidance of space debris in accordance with generally accepted international standards. The subsection would oblige the operator to take certain measures to reduce and prevent the generation of space debris.

There is no generally accepted legal definition of ‘space debris’. ‘Space debris’ usually means non-functional space objects, including parts of space objects, that are in orbit or returning to the atmosphere. Space debris therefore includes non-functional satellites, spent rocket stages, parts and pieces detached from them, other material generated in space activities and particles as small as drops of fuel, paint flakes and microparticles. Space debris is generated in an unplanned manner when space objects break or collide and in a planned manner in conjunction with space activities, for example when spent stages of launch vehicles remain in outer space. There are currently more than 20,000 items of space debris in outer space routinely tracked with current equipment. The real challenge for sustainable space activities is posed by items smaller than 1 cm that are estimated to number more than 750,000 and which may cause considerable damage to a functioning satellite in the event of a collision.

Space debris causes the risk of collision with other space objects in outer space. In addition, space debris may cause personal injury to astronauts in outer space and personal injury and material damage on the Earth and in the airspace in cases where items of space debris do not burn up in the atmosphere. Space debris may prevent the use of a specific orbit or have an adverse effect on important functions of society if, for example, a telecommunication connection is lost.

Several internationally prepared and commonly accepted guidelines on the reduction of space debris have been issued. The Space Debris Mitigation Guidelines of the Inter-Agency Debris Coordination Committee (IADC) of the UN Committee on the Peaceful Uses of Outer Space (UN

COPUOS) and the most significant space organisations are regarded as the most important of these. In addition, the International Standardization Organization (ISO) has published ISO standards for space debris mitigation. European space agencies have drawn up the European Code of Conduct for Space Debris Mitigation.

The purpose of all of the above-mentioned guidelines is to get States and other operators to reduce the amount of space debris. The guidelines should be followed while planning activities and at all stages of space activities, including the launch, orbit and deorbit stages. The requirements laid down in the guidelines include mitigating the generation of space debris in ordinary use, reducing the risk of space object breakage while in outer space, avoiding the intentional destruction of space objects and other harmful measures, seeking to avoid orbital collisions, and minimising the risk of damage caused by space object fuel (explosions, nuclear fuel). In addition, the safe return of space objects into the atmosphere within 25 years after the end of their functional lifetime should be ensured.

None of the above-mentioned guidelines constitute binding international law. Compliance with them can, however, constitute proof of the operator's carefulness. This may be of significance in contexts such as when assessing whether the operator's negligence was to blame for the damage caused by a space object to another space object.

Further provisions on the environmental impact assessment and measures necessary to avoid the generation of space debris may be laid down by decree of the Ministry of Economic Affairs and Employment.

Section 11. *Transfer of space objects and space activities to others.* Under subsection 1 of the section, space activities may be transferred to another operator only if the Ministry of Economic Affairs and Employment has approved the transfer in advance. The same would apply to a transfer of ownership of a space object where the effective control of a space object or of space activities is transferred.

The UN treaties on outer space do not take a stand on the transfer of space objects from one State to another. Increasing commercial activities in outer space are likely to also mean increasing transfers of space objects from operators of various States to others through asset deals and other transfers of assets. The matter has also been considered by COPUOS, whose work has resulted in resolution 68/74 adopted by the UN General Assembly on recommendations on national legislation pursuant to which the transfer of ownership and control of a space object in orbit should be subject to authorisation. Transfers to another operator are also subject to authorisation in several other countries. The Danish Act also requires authorisation in case of change of ownership. In the Belgian Act, authorisation is required if effective control over the space activities or over the space object is transferred. It has also been deemed appropriate in Finland to require authorisation if the transfer of ownership constitutes the transfer of effective control.

The conditions for the space activities after a transfer would be assessed in accordance with section 5 of the Act. Accordingly, the new operator would have to fulfil the same conditions of authorisation as if it had been the original applicant for authorisation. The Ministry of Economic Affairs and Employment could attach conditions necessary for the safe conduct and supervision of the space activities to the approval decision.

The section would not restrict the right laid down in section 112 of the Emergency Powers Act (1552/2011) and section 25 of the State of Defence Act (1083/1991) of the Defence Forces to oblige, during emergency conditions, those including owners, possessors or users of aircraft to release an aircraft that they own, possess or use to the control of the Defence Forces or an enterprise serving the Defence Forces.

Under subsection 2 of the section, the Ministry of Economic Affairs and Employment could require transfers of space objects or space activities to another owner or operator to be subject to an agreement between the State of Finland and the home State of the owner or operator in question under which the State of Finland is rendered harmless from any claims relating to liability for damage. In the absence of such an agreement, the Ministry of Economic Affairs and Employment could refuse the authorisation.

In accordance with the Outer Space Treaty and the Liability Convention, as a launching State, Finland is liable for damage caused by its space objects and is obliged to supervise the activities regardless of whether a space activity or space object has been transferred to another operator. Should the new operator or owner be established in a State that is not a launching State, that State cannot under the UN treaties on outer space be internationally liable for damage caused by the space object. Such a State cannot register the space object in the UN Register, either. The home State of the original operator or owner and the home State of the new operator may, however, agree on the transfer of liability for damage and the supervision obligation to the new operator's State. Any agreement on liability for damage is only binding on its parties, but not on any injured party, which could still claim for compensation from the original launching State.

Under subsection 3 of the section, further provisions on applying for the approval referred to in subsection 1 could be laid down by decree of the Ministry of Economic Affairs and Employment.

Chapter 3 **Changes and supervision**

Section 12. *Obligation to provide information.* Changes on which information is to be provided under the section would be any changes that might affect the conditions for authorisation, including changes to the date or place of launching the space object or the launch vehicle, incidents relating to the operation of the space object, such as loss of contact, and changes in the operator's technical or financial capacity. Changes of ownership of the space object or operator may also affect the conditions for granting authorisation. A change of ownership may affect matters such as financial and technical capacities for the activities and the State's foreign policy or security interests. In addition, the operator would have to notify that the launch had taken place. The operator would also, without delay, have to inform the Ministry of Economic Affairs and Employment of any changes to information recorded in the registry. Typical changes would be the specific time of launch and the specific orbit details provided after the launch. Changes to orbit details relating to the normal operation of the space object need not be notified.

The operator shall inform on discontinuing the space activities in advance or without delay after the discontinuation. This means both planned discontinuation of the activities as well as unplanned discontinuation due to reasons such as financial difficulties or technical reasons. On the basis of a discontinuation notification, the Ministry may issue more specific orders concerning measures necessary for the future safety in accordance with section 13.

Section 13. *Amending and withdrawing an authorisation.* To ensure compliance with the Act, provisions should be laid down on amending and withdrawing an authorisation granted for space activities in cases where the conditions for authorisation are not fulfilled and have not been complied with or if amending or withdrawing the authorisation is necessary because of Finland's international commitments or obligations.

The grounds for amending or withdrawing an authorisation are assessed specifically for each case. The primary approach should be to seek to amend the authorisation to reflect the new situation. For example, a change in the place of launch or launch vehicle may require amendments to the authorisation, and the same applies to changes to the mission or orbit details of the space object. If the fundamental conditions for authorisation are not fulfilled, the authorisation may be amended, for example, by requiring the operator to fulfil further conditions, such as technical conditions, or by

requiring further information, such as that of measures taken for environmental protection. An authorisation may also be amended where significant changes relevant to the conditions for authorisation take place in the activities, for example, if the satellite does not return to the atmosphere as planned or if the satellite's mission is delayed.

An authorisation might need to be amended or withdrawn also if the radio licence issued by FICORA is amended or withdrawn. FICORA may amend the radio licence terms under section 47 of the Information Society Code (917/2014) if the space object causes harmful interference in other radio communications in the world. By virtue of section 49 of the Information Society Code, FICORA may cancel a radio licence if, for example, international treaties binding on Finland require such cancellation or if the licence holder violates the licence terms in a way that is significant in terms of maintaining interference-free radio communications. The use of a radio transmitter may also be prohibited by virtue of section 329 of the Information Society Code if it causes or is, on reasonable grounds, suspected to cause harmful interference.

An authorisation could be withdrawn in the event of non-compliance with its essential conditions or the operator providing in its application for authorisation erroneous or imperfect information which essentially influenced the consideration of the application. An authorisation could also be withdrawn in the event of the conditions for authorisation no longer being fulfilled and where the activities would not have originally been authorised in the absence of fulfilment of these conditions.

Amending and withdrawing an authorisation would only be possible if the violation or neglect was not corrected within the time limit set by the Ministry.

If an authorisation is amended or withdrawn after the launch of the space object into outer space, it must still be possible to ensure the safety of the activities. Therefore, under subsection 3, in its decision to amend an authorisation, the Ministry may impose necessary conditions concerning the safe continuation of the space activities, for example, by requiring closer supervision of the space object. When withdrawing an authorisation, the Ministry may order the operator to take measures to deorbit the space object either to the atmosphere or beyond active orbits if this is technically possible in the situation. Exceptionally, the Ministry could also order the operator to transfer the space activities to another operator to ensure continuation of the operation of the space object. In such cases the control of the space object would be fully transferred from the original operator. In such exceptional circumstances, the primary approach is, however, to seek to find a functioning solution between the operator and the Ministry to ensure the safety of the activities. The transfer obligation could be enforced by a notice of a conditional fine in accordance with section 19.

Section 14. *Supervision.* Pursuant to article VI of the Outer Space Treaty, following authorisation by States Parties to the Treaty, space activities carried on by non-governmental entities shall require continuing supervision by the appropriate State Party. Therefore subsection 1 of the section would lay down a provision on the Ministry of Economic Affairs and Employment supervising compliance with the Act.

Above all, supervision should ensure that space activities continue to fulfil the conditions for authorisation laid down in section 5, subsection 2 and that the activities comply with this Act and the conditions for authorisation.

Subsection 2 of the section would lay down a provision on the operator's obligation to submit an annual report on its space activities to the Ministry of Economic Affairs and Employment. The report would describe the activities in general and any changes and incidents relating to the activities. The report could, in particular, describe the functionality of the space object(s), any warnings and risks of collision, any environmental impacts and the plans concerning continuing, altering or discontinuing the tasks of the space object(s). The Ministry of Economic Affairs and Employment could draw up a standard form for the reporting. In addition, on request, the space activities operator would have to provide the Ministry with any other information relevant for the

supervision. The obligation to inform is an important condition for the Ministry to be able to supervise the activities effectively. The information requested must be substantially related to the performance of supervision.

Further provisions on the content of the report referred to in subsection 2 and on the information necessary for the supervision may be laid down by decree of the Ministry of Economic Affairs and Employment.

Section 15. *Right of inspection.* Supervision may also require inspections of an operator's physical premises, equipment or activities where these are relevant to the space activities. Subsection 1 of the section would lay down a provision granting the Ministry of Economic Affairs and Employment the right to conduct such inspections of the operator's space activities and space object as are necessary for supervision. The provision can be applied to both proactive supervision tasks and to reactive supervision, which usually takes place on the basis of external events (such as accidents) or when suspecting such an event (for example, on the basis of a notification). These could be situations where the operator has not provided the required information about its space activities or where there is a risk of personal injury or material damage. The Ministry could authorise an independent expert to conduct inspections.

Under subsection 2 of the section, the right of inspection would cover premises and areas used for space activities in the possession of or used by the operator. A public official or an independent expert conducting an inspection has, subject to the extent necessary for the inspection, the right of access to premises in the possession of or used by the operator which are used or to be used for the space activities, and to any other areas relevant to the supervision of the space activities, and the right to obtain the documents and information necessary for the supervisory task for examination. The space object itself may also be inspected. The premises of the operator are proposed for inclusion in the scope of application of the provision to enable physical access to those premises where space activities are conducted. The purpose of access must be obtaining information necessary for supervision. Premises intended for residence of a permanent nature would be beyond the scope of the right of inspection.

Chapter 4 **Miscellaneous provisions**

Section 16. *Found space objects.* The section would contain the provision of the Act on the Rescue and Return of Astronauts and the Return of Space Objects (616/1970) concerning found space objects that is proposed to be repealed. The obligation to notify an authority about a space object and the prohibition of removal or moving of a space object is based on article 5 of the Rescue Agreement. Under the section, any space object or its part found would have to be notified to the nearest police, border guard or military authority without delay. The object would not be allowed to be removed or moved without the authorisation of the above-mentioned authority unless there are very serious reasons to the contrary. According to the legislative history of the repealed Act, such reasons could include the object being found in water. On request, the object would have to be delivered to the above-mentioned authority. The Lost and Found Objects Act does not apply to space objects.

Under subsection 2 of the section, any expenses incurred from actions in accordance with the section shall be paid out of State funds. Pursuant to article 5 of the Rescue Agreement, expenses incurred shall ultimately be borne by the launching authority.

Section 17. *Opinions*. The section would lay down provisions on the right of the Ministry of Economic Affairs and Employment to request opinions from other authorities and independent experts having special expertise for consideration of authorisations, risk assessment and supervision and when assessing the fulfilment of the preconditions for amending or withdrawing an authorisation. The expert would be required to have the relevant expertise for the performance of

the task, such as technical expertise and competencies concerning the risks involved in space activities.

Possible authorities would include, in particular, the Ministry of Defence and the Ministry for Foreign Affairs, which could be requested for opinions on matters such as whether the activities are in compliance with Finland's international obligations, national security interests and foreign policy interests and whether export control provisions have been complied with. FICORA could be requested for opinions on ITU authorisations. The Finnish Meteorological Institute and the National Land Survey of Finland could assess the technical conditions of the activities, particularly matters relating to space debris. Opinions could also be requested from the Finnish Space Committee. Independent experts could include VTT Technical Research Centre of Finland and the European Space Agency (ESA), from which opinions could be requested in particular when assessing the technical conditions of space activities, risks involved in space activities and measures to mitigate adverse environmental impacts or space debris. Opinions could be utilised in the consideration of authorisations and in supervision, but the decision-making power would remain with the Ministry of Economic Affairs and Employment.

Section 18. *Right of an authority to obtain information.* The section would lay down provisions on the right of the Ministry of Economic Affairs and Employment to obtain from other authorities such information on details concerning the operator as is relevant to ensure compliance with this Act. In particular, it would be appropriate to obtain information from FICORA relating to the operator's radio licence and any interference.

Section 19. *Conditional fine*. The section would lay down a provision on the right of the Ministry of Economic Affairs and Employment to impose a conditional fine to enforce compliance with the obligations laid down in the Act. A notice of a conditional fine could enforce an obligation laid down by virtue of section 13, subsection 3 to transfer the space activities to another operator.

Section 20. *Appeal*. Under the section, a decision made by the Ministry of Economic Affairs and Employment under this Act could be appealed against to an administrative court. A decision of an administrative court could be appealed against only if the Supreme Administrative Court were to grant leave to appeal.

Section 21. *Penal provisions.* The proposed section would enable the imposition of punishment for violations of certain provisions of the Act. The condition for the imposition of punishment would be that the act was intentional or grossly negligent. The penal provision is based on space activities being generally regarded as potentially hazardous, whereby all operators should be encouraged to comply as closely as possible with the provisions of the Act to ensure the safety of their activities.

Under subsection 1, paragraph 1 of the section, an operator could be sentenced for a violation of section 5 if carrying on space activities without an authorisation. Space activities must be authorised before they are commenced. The requirement for the activities to be authorised in advance is one of the core areas of the Act and regarded as being critical when the aim is to ensure the safe conduct of space activities. To emphasise the importance of compliance with this specific requirement and to motivate the operator as effectively as possible to obtain authorisation in advance, it is regarded as necessary to lay down a provision on the power to punish the operator for a violation of the provision. Correspondingly, an operator could be punished for a violation of section 11 if it, without prior approval granted by the Ministry of Economic Affairs and Employment, transferred a space object or space activities to another owner or operator. The purpose of the provision is to ensure that space objects and space activities are only transferred in compliance with the provisions of the Act, including those on quality and safety laid down in section 5.

Under paragraph 2 of the subsection, an operator could be punished for a violation of section 8 of the Act if the operator neglected the obligation to take out insurance. If the operator is by virtue of

section 8 obliged to take out insurance, it is to be assumed that the space activities in question involve specific risks.

Under paragraph 2 of the subsection, an operator could also be punished for failing to provide the Ministry of Economic Affairs and Employment, without delay, information about changes referred to in section 12 or information requested by the Ministry by virtue of section 14, subsection 2. Many of the pieces of information to be provided may be relevant to the authorisation and the safety of other space objects, other operators and space activities.

The sanction for a violation concerning space activities would be a fine, unless the act was of minor significance or a more severe penalty was provided for it elsewhere in law.

Subsection 2 of the section would contain a reference to the provisions of the Criminal Code of Finland (39/1889) concerning providing false information to a public authority. The Criminal Code of Finland already lays down provisions penalising a registration offence under chapter 16, section 7; providing false documents to a public authority under chapter 16, section 8; and fraud under chapter 36, sections 1–3. Punishable acts include, that a person, in order to cause a legally relevant error in a public register kept by a public authority, provides false information to that authority, as well as providing a legally relevant false written document to a public authority. Acts punishable as fraud include deceiving another in order to obtain financial benefit for himself or herself,. Fraud may also be committed against a public authority.

Section 22. *Entry into force.* Subsection 1 of the section contains the standard provision on entry into force. The Act would enter into force on 1 January 2018.

Subsection 2 of the section would contain a provision on the repealing of the Act on the Rescue and Return of Astronauts and Return of Space Objects (616/1970).

Section 2 of the Act on the Rescue and Return of Astronauts and Return of Space Objects lays down a provision whereby everyone is obliged to notify the nearest police, border guard or military authority if they discover that the personnel of a spacecraft have suffered accident or are experiencing conditions of distress or have made an emergency or unintended landing or a space object or its component parts has otherwise landed in Finland’s land or marine area or adjacent high seas and to extend assistance in search and rescue operations for spacecraft personnel or equipment without, however, endangering oneself or others.

Section 3 of the Rescue Act (379/2011) lays down a provision on the general duty to act, according to which anyone who observes or receives information about a fire or other accident that is either occurring or about to occur and cannot immediately extinguish the fire or combat the danger is obliged to notify those endangered, make an emergency call and take rescue action without delay to the best of their abilities. The Maritime Search and Rescue Act (1145/2001) lays down provisions on search and rescue at sea. The provisions of these Acts substantially cover the provisions of section 2 of the Act to be repealed on making an emergency call and taking rescue action.

The provision of section 4, subsection 1 of the Act to be repealed on found space objects and that of subsection 2 on compensation out of State funds for damage caused by space objects would be included in the proposed Act on Space Activities.

Because the provisions of the Act would therefore be included in rescue services legislation and the proposed Act on Space Activities, it is proposed that the Act be repealed in full.

Subsection 3 of the section would contain a transitional provision under which space activities within the scope of application of the Act launched before the entry into force of the Act could be continued without a separate authorisation or approval for twelve months from the entry into force

of the Act. Assessments made on the risks of space activities commenced before the entry into force of the Act have been considered by the Finnish Space Committee, but it has not been possible to grant any authorisations in the absence of an act of law. Extending the authorisation procedure also to space activities commenced before the entry into force of the Act would be justifiable from the perspectives of Finland's international obligations and demonstration of the lawfulness of activities.

2.3 Act on the Amendment of Section 2 of the Lost and Found Objects Act

A technical amendment is proposed to section 2, subsection 4 of the Lost and Found Objects Act to render correct the reference to a provision given in the section. In addition, other parts of the section are amended to correspond to current drafting conventions.

3 Further provisions

Further provisions could be issued by decree of the Ministry of Economic Affairs and Employment. The authorisation to issue decrees would apply to further specifications of a technical nature to the provisions of the Act.

Under section 5, subsection 4 of the proposed Act, further provisions on applying for authorisation and on the information and documents to be provided in the application could be laid down by decree of the Ministry of Economic Affairs and Employment. Section 5, subsection 2 would lay down provisions on the conditions for authorisation for the fulfilment of which the operator under subsection 3 would have to present reliable and necessary information. A decree of the Ministry of Economic Affairs and Employment could specify further as to what kind of information and which documents would be regarded as such necessary and reliable information. Particularly as regards information about the operator's technical and financial capacities and assessments of the risks involved in the space activities, it would be appropriate to issue more detailed provisions by decree.

Under section 6, subsection 3 of the proposed Act, further provisions on the registry of space objects and the information to be recorded in the registry could be laid down by decree of the Ministry of Economic Affairs and Employment. In addition to the basic information recorded in the registry, there might be reason to supplement the information with other information determined in the UN recommendation on registration practices or other information required at a later date by technological developments or Finland's international obligations.

Under section 8, subsection 3 of the proposed Act, further provisions on the insurance referred to in section 8, subsection 1 and the preconditions referred to in section 8, subsection 2 could be laid down by decree of the Ministry of Economic Affairs and Employment. Acceptable risk in particular could be defined further by decree.

Under section 9, subsection 3 of the proposed Act, further provisions on the safe conduct of space activities and on the minimum requirements for devices and operations affecting safety and for the know-how and experience of personnel could be laid down by decree of the Ministry of Economic Affairs and Employment.

Under section 10, subsection 3 of the proposed Act, further provisions on the environmental impact assessment and measures necessary to avoid the generation of space debris could be laid down by decree of the Ministry of Economic Affairs and Employment. Further provisions could be laid down by decree concerning which matters and studies the impact assessment referred to in section 10, subsection 1 should cover. Further specifications could be provided by decree concerning which international guidelines on space debris referred to in section 10, subsection 2 in particular should be applied to specific types of activity.

Under section 11, subsection 3 of the proposed Act, further provisions on applying for approval for the transfer of space activities could be laid down by decree of the Ministry of Economic Affairs and Employment.

Under section 12, subsection 1 of the proposed Act, the operator is obliged to inform about changes relating to the activities. Under section 12, subsection 2, further provisions on the information to be provided could be laid down by decree of the Ministry of Economic Affairs and Employment.

Under section 14, subsection 2 of the proposed Act, the operator shall annually submit a report on its space activities to the Ministry of Economic Affairs and Employment and provide the Ministry with any other information necessary for the supervision of the activities. Under section 14, subsection 3, further provisions on the content of the report and on other information necessary for the supervision could be laid down by decree of the Ministry of Economic Affairs and Employment.

In addition, under section 3, subsection 3 of the Act, further provisions on the supervision of the Defence Forces' space activities may be laid down by decree of the Ministry of Defence.

4 Entry into force

The Registration Convention entered into force internationally on 15 September 1976. To date, the Convention has been ratified and acceded to by 63 States and signed by another 4 States (1 January 2017). For those States that accede to the Convention subsequent to the fulfilment of the conditions of its entry into force, the Convention enters into force on the date of deposit of the State's instruments of accession. Consequently, for Finland, the Convention will enter into force once Finland has deposited its instruments of accession with the UN Secretary-General.

The Act on the Implementation of the Convention on Registration of Objects Launched into Outer Space is intended to enter into force at a date laid down by government decree simultaneously with the entry into force of the Convention. The intention is that the depositing of the instrument of accession would take place after the adoption of the Convention and the approval of the government bill in a manner whereby the date of entry into force of the Convention, which is the date of deposit of the instrument of accession, would be coordinated timewise with the entry into force of the Act on Space Activities.

The Act on Space Activities and the Act on the Amendment of Section 2 of the Lost and Found Objects Act are intended to enter into force on 1 January 2018.

The Registration Convention does not contain provisions falling within the legislative powers of Åland under section 18 of the Act on the Autonomy of Åland (1144/1991). Therefore there is no need to obtain the consent of the Åland Parliament in accordance with section 59, subsection 1 of the Act on the Autonomy of Åland for the entry into force of the implementation act included in the proposal.

During the drafting of the proposal, it was assessed on the basis of discussions conducted by the Ministry of Justice and experts from the Åland Parliament that, from the perspective of the division of powers between the State and Åland laid down in the Act on the Autonomy of Åland, space activities fall within the legislative power of the State in accordance with section 27, subsection 42 of the Act on the Autonomy of Åland.

5 Relationship with the Constitution and enactment procedure
5.1 Necessity of parliamentary authorisation

Under section 94, subsection 1 of the Constitution, parliamentary acceptance is required for such treaties and other international obligations that contain provisions of a legislative nature. According

to the interpretive practice of the Constitutional Law Committee of Parliament, the approval powers of Parliament specified in the Constitution cover all provisions of an international obligation that are substantively of a legislative nature. The provisions of a treaty are to be deemed as being of a legislative nature:

1) if a provision pertains to the exercise or restriction of a constitutionally safeguarded basic right;
2) if a provision otherwise pertains to the fundaments of an individual's rights and obligations;
3) if, under the Constitution, provisions on the matter specified in a provision are to be laid down by an act of law; or
4) if there are already provisions of law in force concerning the matter specified in the provision or
5) if, under the view prevailing in Finland, provisions of law are to be laid down on it.

According to the Constitutional Law Committee, on the basis of these grounds, the provisions of an international obligation are of a legislative nature regardless of whether a provision is in conflict or in harmony with a provision of law adopted in Finland (see, for example, Constitutional Law Committee statements PeVL 11/2000 and PeVL 12/2000).

Based on the grounds mentioned above, the Registration Convention contains provisions that require the approval of Parliament.

Article I of the Registration Convention contains the definitions used in the Convention. Provisions that indirectly affect the interpretation and application of substantial provisions of a legislative nature themselves are also of a legislative nature (Constitutional Law Committee statements PeVL 6/2001 and PeVL 24/2001). Because the definitions used in article I of the Registration Convention affect the interpretation of provisions of the Convention that are of a legislative nature, they require the approval of Parliament.

Articles 2 and 4–6 of the Registration Convention contain provisions on the obligation of a State Party to establish a national registry of space objects, furnish information about space objects carried on its registry to the UN and assist other States Parties in the identification of space objects. Such provisions are of a legislative nature. Provisions on the national implementation of these provisions would be laid down in the proposed Act on Space Activities.

5.2 Relationship with the Constitution

The proposal for the Act on Space Activities contains certain provisions that merit attention from the perspective of constitutional law and which relate to section 18, subsection 1 (the freedom to engage in commercial activity); section 15 (protection of property); section 80, subsection 1 (the principles governing the rights and obligations of private individuals and authorisation to issue a decree); section 10 (the right to privacy); section 20, subsection 1 (environmental protection); section 124 (public administrative tasks); section 21 (protection under the law) and section 8 (the principle of legality in criminal cases) of the Constitution.

The Constitutional Law Committee (Constitutional Law Committee statement PeVL 25/1994) has specified the following conditions for the restriction of basic rights: Any restrictions must be based on a provision at the level of an act of Parliament, the restrictions must be set out precisely and defined specifically enough, and the grounds for the restrictions must be acceptable from the perspective of the system of basic rights and required owing to a weighty societal need. No restriction pertaining to the core of a basic right may be laid down by an act of law. In addition, any restriction must be necessary for the achievement of an objective and, as regards its scope, commensurate with the object of legal protection protected by the basic rights and the weight of the societal interest underlying the restriction. Where restricting a basic right, sufficient arrangements for protection under the law must be ensured and the restrictions may not be in conflict with Finland's human rights obligations under international law.

Because the sector is undergoing development in Finland and technological advances are taking place rapidly, the proposed provisions have been drafted to be flexible and, in part, generic in nature. In its practice (Constitutional Law Committee statements PeVL 38/1998, PeVL 32/2010), the Constitutional Law Committee has stated that, on the basis of the diversity of the characteristics of the sector, provisions on authorisation may remain slightly more generic in nature than what is usually required from the level of specificity of provisions concerning basic rights. It is important that the provisions provide sufficiently clear guidance with regard to the kinds of principles the various decisions relating to situations where application activities are considered are based. Therefore it is important in the application stage of the Act, particularly when deciding on the granting of authorisations and approvals and the contents of authorisation and approval conditions referred to in the Act, that all essential basic rights perspectives and requirements relating to restrictions to basic rights are taken into account. The contents of the flexible norms used in regulation will ultimately be established in case law.

Freedom to engage in commercial activity

Under section 18, subsection 1 of the Constitution, everyone has the right, as provided by an act of law, to earn his or her livelihood by the employment, occupation or commercial activity of his or her choice. In its statement practice, the Constitutional Law Committee has stated that the freedom to engage in commercial activity may not be restricted without a highly legitimate reason. Examples of reasons that can be regarded as highly legitimate include the safety and security risks of the activities or other important and strong societal interests (e.g. Constitutional Law Committee statements PeVL 66/2002, PeVL 31/2006, PeVL 32/2010). Provisions on an activity being subject to authorisation must be laid down by an act of law that fulfils the general requirements set for an act restricting a basic right. Any restrictions to the freedom to engage in commercial activity laid down by an act must be specific and set out precisely, in addition to which the scope of and conditions for the restriction must be specified in the act. As regards the contents of provisions, the Committee has found it important that provisions concerning the conditions for and permanence of authorisation provide the authorities' activities with sufficient predictability. In this respect, matters of significance include the extent to which the authorities exercise circumscribed powers or whether they have wide discretionary powers. (Constitutional Law Committee statements PeVL 28/2000, PeVL 31/2006, PeVL 32/2010). In addition, the powers of the authority to attach conditions to an authorisation must be based on sufficiently specific provisions of law (Constitutional Law Committee statements PeVL 62/2002, PeVL 31/2006, PeVL 32/2010).

Section 5 of the proposed Act would lay down provisions on space activities being subject to authorisation. Under section 5, subsection 1, space activities defined in section 4 and within the scope of activities of the Act under section 1 would be subject to authorisation. Under section 5, subsection 1, conditions necessary for the safe conduct and supervision of space activities could be attached to an authorisation decision. Section 5, subsection 2 would define the conditions for authorisation for the purpose of ensuring the safety of space activities and compliance with Finland's international obligations and foreign policy interests. Provisions on amending and withdrawing an authorisation would be laid down in section 13 of the Act. In addition, under section 11, subsection 1, the transfer of space activities would require prior approval of the Ministry of Economic Affairs and Employment and the fulfilment of the conditions referred to in section 5, subsection 2.

Space activities involve risks of personal injury and material damage on the Earth, in airspace and in outer space. Therefore the primary objective of space activities being subject to authorisation is to ensure the general safety and security of the activities and enable effective supervision by the authorities. Such grounds for authorisation that are related to safety and security are acceptable from the perspective of the basic rights system (Constitutional Law Committee statements PeVL 40/2002, PeVL 66/2002). The authorisation system and, in particular, the conditions laid down in the Act for granting authorisation, guarantee the necessary proactive supervision and the safety

and security of the activities as well as the operator’s capacities to carry on space activities in an appropriate manner. The consideration of authorisations is bound by the provisions of section 5, subsection 2. In addition, space activities being subject to authorisation is Finland's binding obligation under international law, with provisions laid down on this in the UN Outer Space Treaty. The Ministry may attach conditions necessary for the safe conduct and supervision of the space activities to the authorisation decision. There are acceptable grounds from the perspective of the basic rights system for the proposed regulation.

It has been an established practice of the Constitutional Law Committee in the context of regulation of commercial activity to regard withdrawals of authorisations as actions by the authorities that have stronger impacts than refusing an authorisation applied for does. Therefore the Committee has deemed it necessary for the proportionality of regulation to bind the opportunity of withdrawing an authorisation to serious or material violations or omissions and to any cautions or warnings issued to the authorisation holder having not resulted in the elimination of the deficiencies in the activities (Constitutional Law Committee statements PeVL 66/2002, PeVL 44/2004, PeVL 31/2006, PeVL 32/2010).

The policies adopted by of the Constitutional Law Committee have been taken into account in section 13, which pertains to amending and withdrawing an authorisation, in which the conditions for amending and withdrawing are linked to the applicant having provided erroneous or incomplete information which has essentially influenced the consideration of the application or the operator having violated the provisions of the Act or no longer fulfilling the conditions for authorisation. Amending and withdrawing would also be possible if necessary because of Finland’s binding international contractual obligations. A further condition is that the operator has not rectified its activities within the time limit set by the Ministry of Economic Affairs and Employment.

The provisions concerning granting and withdrawing an authorisation are based on the need to effectively supervise space activities subject to authorisation to ensure the safe conduct of the activities. There are therefore acceptable and weighty grounds for restricting the freedom to engage in commercial activity, and the conditions for withdrawal fulfil the requirements generally set for it. Consequently, as regards the authorisation procedure, the bill is not problematic with regard to section 18, subsection 1 and section 80, subsection 1 of the Constitution.

Because the authorisation holder would, under section 20 of the proposed Act, have the right to have a decision made by the Ministry of Economic Affairs and Employment under the Act considered by an independent judicial body, the proposals are also to be regarded as sufficient as regards protection under the law.

Rights and obligations of private individuals and protection of property

Under section 80, subsection 1 of the Constitution, the principles governing the rights and obligations of private individuals shall be governed by acts of law.

Section 7 of the proposed Act would lay down provisions on the State’s right of recourse to compensation for any damage paid by the State for which the operator would be liable under the section. The maximum amount of the right of recourse would be limited by virtue of the section. Section 8 of the Act would lay down provisions on the operator’s obligation to take out insurance against damage caused to third parties. The Ministry of Economic Affairs and Employment could release the operator from the obligation to insure on the grounds laid down in section 8, subsection 2.

Section 12 of the proposed Act would lay down provisions on the operator’s obligation to inform the Ministry of Economic Affairs and Employment of any changes that may affect the conditions for authorisation and conditions attached to the authorisation or to the information recorded in the registry referred to in section 6. Under section 14, the operator would be obliged to annually submit

a report on its space activities to the Ministry and to provide the Ministry with any other information the Ministry may require.

Section 15 of the Constitution contains a general clause concerning the protection of property. Freedom of contract is not expressly safeguarded under the Constitution, but it is provided with certain protection through the general clause safeguarding the protection of property. The general conditions for restrictions of basic rights apply to restrictions of the protection of property.

Under section 11, subsection 1 of the proposed Act, the transfer of space activities to another operator or owner in a manner whereby the effective control of a space object or of space activities is transferred requires the prior approval of the Ministry of Economic Affairs and Employment. Section 5, subsection 2 would apply to the conditions for approval. The objective of the provision is to ensure the safety and security of the activities also in transfer situations, whereby there is a need to restrict the operator's or owner's freedom of contract by the Act.

Right to privacy

As a general rule, the right to privacy referred to in section 10 of the Constitution covers all kinds of premises used for residence of a permanent nature. The Committee's starting point from the perspective of the proportionality of regulation has been that the protection of privacy is not to be interfered with in order to investigate violations that are punishable at the most by a fine and which are minor in terms of their blameworthiness (Constitutional Law Committee statements PeVL 40/2002, PeVL 49/2005, PeVL 32/2010). The protection of privacy does not extend to business premises or corresponding premises of enterprises. Provisions on inspection powers concerning such premises must, however, be specific enough and provide sufficient guarantees against irregularities. Legislation must contain sufficient guarantees for a fair procedure and other protection under the law, and inspections may not disproportionately interfere with the scope of the private activities of private individuals.

Section 15 of the proposed Act would lay down provisions on the right of the Ministry of Economic Affairs and Employment to conduct or have conducted inspections in the premises of the operator used for space activities. Premises used for residence of a permanent nature are excluded from the right of inspection in the provision. The provisions of section 39 of the Administrative Procedure Act (434/2003) would apply to inspections.

Environmental protection

Under section 20, subsection 1 of the Constitution, nature and its biodiversity, the environment and the national heritage are the responsibility of everyone. The responsibility covers actively doing something and passively refraining from causing damage to the environment. Under subsection 2, the public authorities shall endeavour to guarantee for everyone the right to a healthy environment.

Under section 10 of the proposed Act, space activities shall be carried on in a manner that is environmentally sustainable and promotes the sustainable use of outer space. Under the section, the operator shall assess in advance the environmental impacts of its activities and present a plan for measures to counter and reduce adverse environmental impacts on the Earth, in the atmosphere and in outer space. In addition, the operator shall seek to ensure that the space activities do not generate space debris. Under these provisions, responsibility for the environment is expanded to also cover the impacts of activities in outer space, particularly by mitigating the generation of space debris, although there is no express mention of the outer space in section 20 of the Constitution. This is justifiable considering the nature of the activities and the spirit of the Constitution.

Public administrative tasks

Under section 124 of the Constitution, a public administrative task may be delegated to others than public authorities only by an act of law or by virtue of an act of law and only if this is necessary for the appropriate performance of the task and if basic rights and liberties, legal remedies and other requirements of good governance are not endangered. However, a task involving significant exercise of public powers can only be delegated to public authorities. A 'public administrative task' in the Constitution refers to a rather extensive entity of administrative tasks including, for example, tasks relating to the implementation of legislation and decision-making concerning the rights, obligations and interests of individuals as well as entities (government proposal HE 1/1998).

In its established statement practice, the Constitutional Law Committee has emphasised that appropriateness is a legal condition the fulfilment of which remains to be assessed on a case-by-case basis (Constitutional Law Committee statements PeVL 44/2016, PeVL 16/2016, PeVL 12/2014). In its assessments of the fulfilment of the appropriateness criterion, the Constitutional Law Committee has addressed matters such as the special competencies or resources required for the tasks (Constitutional Law Committee statements PeVL 29/2013, PeVL 37/2010).

Under section 15, subsection 1 of the Act, the Ministry of Economic Affairs and Employment could have inspections of space activities conducted by an independent expert. Inspections of space activities would require special expertise, whereby it would be justifiable to use an independent expert. Decisions on any consequences of inspection observations would be made by the Ministry of Economic Affairs and Employment.

Under section 124 of the Constitution, a further condition for the delegation of a public administrative task to others than public authorities is that the delegation of the administrative task must not endanger basic rights and liberties, legal remedies or other requirements of good governance. According to its rationale, the provision emphasises the importance of the education, training and expertise of persons attending to public administrative tasks and the fact that the public supervision of these persons must be appropriate (government proposal HE 1/1998). The interpretive practice of the Constitutional Law Committee has been to find that ensuring the fulfilment of the conditions of legal remedies and good governance requires, among others, that general legislation on administration is complied with in the consideration of the matter and that those considering matters act under liability for acts in office (Constitutional Law Committee statements PeVL 33/2004, PeVL 46/2002). Provisions on liability for acts in office and liability for damages are laid down in section 15, subsection 1 of the Act.

Protection under the law

Section 21 of the Constitution pertains to protection under the law. Subsection 1 of the section safeguards, on the one hand, the right of the individual to have his or her case dealt with appropriately and without undue delay by a legally competence court of law or other authority. The competent authority must be specified in an act of law. On the other hand, the subsection safeguards the right of the individual to have a decision pertaining to his or her rights or obligations reviewed by a court of law or other independent organ for the administration of justice. Under subsection 2 of the same section, provisions concerning the right to be heard, the right to receive a reasoned decision and the right to appeal, as well as the other guarantees of a fair trial and good governance shall be laid down by an act of law.

Under section 20 of the proposed Act, a decision made by the Ministry of Economic Affairs and Employment under this Act could be appealed against to an administrative court. A decision of an administrative court could be appealed against only if the Supreme Administrative Court were to grant leave to appeal. Particularly as regards the assessment of the acceptability of the grounds for restricting the freedom to engage in commercial activity and the protection of property, the provisions on protection under the law are to be regarded as significant.

During the drafting, the suitability of the claim for a revised decision was assessed as an appeal measure concerning decisions made by virtue of the Act. According to the practice of the Constitutional Law Committee, the claim for a revised decision procedure should not be retained or introduced where the claim for a revised decision stage would unnecessarily prolong the overall duration of the consideration of the matter. This could be the case in contexts including where revision would have to be claimed from the authority that made the decision and, according to experience or expected practice, decisions are hardly ever revised. Such categories of matters where the matter is examined particularly thoroughly already in the first stage of the administrative procedure or that usually involve demanding legal consideration would also be beyond the scope of claims for a revised decision (Constitutional Law Committee statement PeVL 55/2014).

The Ministry of Economic Affairs and Employment would make decisions by virtue of the Act on granting and rejecting authorisations and amending and withdrawing authorisations. During the drafting it was found that the opportunity to claim for a revised decision relating to decisions made by the Ministry of Economic Affairs and Employment would unnecessarily prolong the appeal process and would not generate any added value as regards the appellant's protection under the law. In practice, the Ministry's decisions will be based on information and documents provided by the applicant that are required by the Act or by virtue of decree of the Ministry of Economic Affairs and Employment. The assessment of these requires special expertise of the technical details of space activities, financial capacity for the activities and safety and security risks involved in the activities. Appropriate justifications would be provided for decisions. Any errors would be corrected in compliance with section 8 of the Administrative Procedure Act.

Also assessed during the drafting was whether the leave to appeal system of the Supreme Administrative Court is suitable for appeals concerning decisions made by administrative courts. In its previous practice, the Constitutional Law Committee has pointed out that the leave to appeal system is an exceptional arrangement in the application of administrative law (Constitutional Law Committee statements PeVL 57/2010, PeVL 37/2005, PeVL 4/2005, PeVL 4/2004). In its more recent practice, however, the Committee has found that, following developments taking place in the consideration of administrative matters and the appeal system, there no longer are grounds for maintaining a cautious basic premise regarding the leave to appeal system and its expansion (Constitutional Law Committee statements PeVL 34/2012, PeVL 33/2012, PeVL 32/201). The Constitutional Law Committee has regarded it as important to ensure that the appeal system as a whole safeguards both access to and the sufficiency of legal protection as well as the consideration of matters as quickly as possible in the light of the legal protection requirement. Application of the leave to appeal system should be based on uniform and consistent assessment of a justified need for legal remedy. In particular, it must be examined whether the appeal arrangements for the category of matters in question preceding the Supreme Administrative Court safeguard the legal protection guarantees required by the nature and significance of the matter. It is also of significance whether the obligation or opportunity of the Supreme Administrative Court to grant leave to appeal where the criteria laid down in an act of law are fulfilled is sufficient to guarantee access to legal remedy in the category of matters in question. If so, the Committee is of the opinion that application of the leave to appeal system is usually justifiable in the light of section 21 of the Constitution. (Constitutional Law Committee statements PeVL 55/2014, PeVL 32/2012, PeVL 15/2011). In contrast, leave to appeal is not always suitable for categories of matters that in the appeal stage in most cases involve demanding legal problems or that usually are particularly significant or broad as regards a party concerned or society. Such matters may include matters relating to the withdrawal of authorisation for a commercial activity or implementation of an administrative enforcement measure (Constitutional Law Committee statement PeVL 55/2014). In its more recent practice, however, the Constitutional Law Committee has regarded it as possible to use leave to appeal in all kinds of administrative decisions (Constitutional Law Committee statements PeVL 35/2016, PeVL 49/2016). Among other things, the Committee has found that provisions concerning leave to appeal cannot be ruled out even in the context of matters pertaining to administrative consequences (Constitutional Law Committee statement PeVL 14/2013, page 5). Consequently, even in the absence of the claim for a revised decision procedure, an overall

assessment may result in the leave to appeal procedure taking into account the criteria due to which the Supreme Administrative Court must grant leave to appeal under section 13, subsection 2 of the Administrative Judicial Procedure Act (Constitutional Law Committee statements PeVL 55/2014, PeVL 29/2017). It was also proposed in the draft government proposal for an Act on Judicial Proceedings in Administrative Matters, which underwent circulation for comments in spring 2017, that when appealing against decisions of administrative courts to the Supreme Administrative Court, appeal would, as a rule, require leave to appeal.

It was assessed during drafting that the grounds for granting leave to appeal are sufficient to guarantee access to legal remedy. The need to consider matters as quickly as possible, the extensive examination of matters already when preparing the administrative decisions and the need for special expertise in the consideration of matters advocate the use of the leave to appeal system. The criteria on the basis of which the Supreme Administrative Court must grant leave to appeal will safeguard the status of the parties concerned in the appeal process.

The proposed provisions are to be regarded as sufficient from the perspective of section 21, subsection 1 of the Constitution.

The principle of legality in criminal cases

According to the principle of legality in criminal cases confirmed in section 8 of the Constitution, the constituent elements of an offence must be expressed specifically enough in an act of law so that it is possible to anticipate whether or not an activity or omission is punishable. The penalty for and other consequences of a criminal offence must be defined in an act of law (Constitutional Law Committee statements PeVL 26/2002, 26/2004, 7/2005 and 17/2006).

By virtue of section 21 of the proposed Act, an intentional or grossly negligent violation of an obligation specified in a provision would be punishable by a fine, unless the act is of minor significance or a more severe penalty has been provided for it elsewhere in law. The proposed section 21 is not to be regarded as problematic with regard to section 8 of the Constitution.

Authorisation to issue a decree

Under section 80, subsection 1 of the Constitution, the President of the Republic, the Government and a Ministry may issue decrees on the basis of authorisation given to them in the Constitution or in another act of law.

Further provisions of a technical nature could be issued under section 5, subsection 4; section 6, subsection 3; section 8, subsection 3; section 9, subsection 3; section 10, subsection 3; section 11, subsection 3; section 12, subsection 2 and section 14, subsection 3 of the proposed Act by decree of the Ministry of Economic Affairs and Employment and, under section 3, subsection 3 of the Act by decree of the Ministry of Defence as stated above under ”Further provisions”.

The authorisation to issue a decree proposed for the Act can be regarded as being based on provisions concerning the bases of the rights and obligations of the individual that are sufficiently specific and set out precisely enough. The authorisation to issue a decree can be regarded as compliant with the requirements of section 80, subsection 1 of the Constitution.

5.3 Enactment procedure

The Registration Convention does not contain any provisions pertaining to the Constitution as referred to in section 95, subsection 2 of the Constitution. Therefore the implementation of the provisions does not require the use of the so-called simplified procedure for constitutional enactment. Because the provisions do not in other ways conflict with the Constitution, either, it is the Government’s view that the enactment procedure observed for ordinary acts can be observed

with the bill concerning the implementation of the provisions of the Registration Convention that are of a legislative nature.

On the basis of the above-mentioned grounds, the enactment procedure for ordinary acts can also be observed with the bill concerning the Act on Space Activities and the Act on the Amendment of Section 2 of the Lost and Found Objects Act.

On the basis of the above and in accordance with section 94 of the Constitution, it is proposed that that the Convention on Registration of Objects Launched into Outer Space adopted in New York on 4 January 1975 be approved by Parliament.

On the basis of the above and because the Convention contains provisions that are of a legislative nature, the following bills are submitted at the same time to Parliament: