DRAFT LAW

Draft law on the exploration and use of space resources

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EXPLANATORY STATEMENT

On 3 February 2016, the Government announced a series of measures to position Luxembourg as a European hub in the exploration and use of space resources.

One of the key steps of the spaceresources.lu initiative is the development of a legal and regulatory framework providing for legal certainty as to the ownership of minerals and other valuable space resources identified in particular on asteroids.

This is the first objective of this draft law.

Luxembourg is thus the first European country to set out a legal framework ensuring that private operators working in space can be confident about their rights to the resources they extract in space.

Space resources are nowadays commonly defined as abiotic resources that can be found in situ in outer space and that can be extracted.. This definition includes for example mineral resources and water, but not the satellite orbits or radio spectrum.

The relevant legal framework shall be put in place in strict compliance with the international obligations of Luxembourg and Luxembourg continues to call upon a reinforced and effective collaboration with other countries on this matter. An example of such collaboration is the way in which the European Space Agency (ESA) currently operates.

Within the framework of the spaceresources.lu project, Luxembourg has moreover begun to invest in research and development projects.

The objective of the Government is that the spaceresources.lu initiative will eventually give rise to a "new space" industry, which will provide access to mineral resources; the aim being to stimulate economic growth on Earth and, in the interests of all countries and their inhabitants, to offer new horizons in space exploration. Luxembourg wishes to promote these new space activities in order to contribute to the peaceful exploration and sustainable use of space resources for the benefit of mankind.

The launch of spaceresources.lu, aims at opening, in the interests of all, access to a wealth of numerous previously unused mineral resources on rocks travelling through space, without for all that damaging natural habitats. In doing so, Luxembourg's goal is to support the long-term economic development of new, innovative activities in the space industry.

The spaceresources.lu initiative can build on the experience Luxembourg has gained in sectors that are closely related to space resources, and in particular its strong track record in the satellite sector with one of the world leaders, the Société Européenne des Satellites (SES), having its world headquarters in Luxembourg since its creation 30 years ago.

The spaceresources.lu initiative is also a natural extension of Luxembourg's active involvement with ESA[1].

Jean-Jacques Dordain, the former Director General of the ESA and currently advisor to the Luxembourg Government on spaceresources.lu said:

> "This initiative is a clear demonstration that Europeans are innovative and able to take risks when the stakes are high. While futuristic, the project is based on solid grounds, i.e. technical prowess that already exists in Europe and around the world".

Simon P. Worden, also a Luxembourg Government advisor in this field and Chairman of the Breakthrough Prize Foundation said:

> "Humanity is on the verge of expansion into the solar system – and then beyond. Using the resources we find there is essential – not only for our expansion into space but also to ensure continued prosperity here on Earth."

* * *

This draft law also lays down the regulations for the authorisation and the supervision of space resource utilization missions, such utilization including both the exploration and use of such resources.

The rules relating to the authorisation and the supervision are largely inspired by those applicable to the financial sector and more specifically the law of 5 April 1993 on the financial sector, as amended.

In addition, the text sets forth the necessity for a book of obligations for any mission, such

[1] Please see: 2015 Activity Report, Ministry of the Economy, March 2016, point 7.5.2.

necessity making use of the precedent set by the law of 27 July 1991 on electronic media, as amended.

The rules laid down by this draft law lastly take into account specific requirements relating to the utilization of space resources.

COMMENTARY OF ARTICLES

Article 1

Article 1 of the draft law provides that space resources are capable of being appropriated. Although property law is in Luxembourg, as in France and Belgium, since 1804 governed by Article 544 of the Civil Code, nobody in 1804 envisaged this provision to apply to space resources.

That said, French-inspired law has since the beginning of the 18th century dealt with legal situations comparable to those that are the subject of this Article:

> It was thus as early as 1810 that the law[2] has come to address, through concession acts, the rights of the owners of the surface on the products of the mines that have been conceded[3] by laying down the principle that the concession agreement "gives the perpetual ownership of the mine"[4], while also stating that "at the time when a mine is conceded..., this ownership [that of the mine] will be distinguished from that of the surface"[5].
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> Colin & Capitant[6], renowned authors from the first half of the 20th century held that "the idea that dominated the law of 1810 [concerning mining] is that the ownership of a mine does indeed constitute an ownership, but (an) independent (one) from that of the surface, and not necessarily belonging to the owner of such surface".
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> There is an even closer analogy in legal terms between space and the sea.
>
> Thus, the most authoritative legal theorist, which is Laurent[7], has held as early as in the 18th century that "the sea does not form part of any territory, since it is outside of any territory"[8] and that "the sea cannot be appropriated[9]. With regards to shellfish and fish, Laurent goes on as follows: "One sometimes calls *common* things those things that have no master, although they are capable of being appropriated[10] by means of occupation: this is the case for shellfish, fish and wild animals. This is not the theory of Roman law. Legal experts refer to these things as

[2] Law of 21 April 1810 concerning mines, mining and quarries.
[3] Article 6.
[4] Article 7.
[5] Article 19.
[6] A. Colin et H. Capitant, Cours élémentaire de droit civil français, Volume I (3rd edition), 1920, page 723.
[7] François Laurent, Principes de droit civil français, Volume 6, 3rdedition, 1878, pages 6 and 10.
[8] Laurent, op. cit., page 10.
[9] *Ibidem*.
[10] Underlined by the authors of this draft law.

> *res nullius*. i.e. they have no master, but they can get one, whereas strictly speaking *common* things cannot become the object of an exclusive ownership right. On the other hand, one cannot say that *masterless things* are destined by their nature for the use of all mankind. In reality, they are of no use to anyone as long as they are masterless, and from the moment that they have a master, they exclusively serve the one who has appropriated them."[11]

Laurent accordingly held as early as 1878[12] that although the high sea cannot be appropriated, shellfish and fish are capable of being appropriated[13].

Article 1 of the draft law relies on this same vision for space by employing the same terms as Laurent, namely that space resources are "capable of being appropriated". Space resources are appropriable, in the same way as fish and shellfish are, but celestial bodies and asteroids are not, just like the high sea is not.

This approach is not only in accordance with basic principles of French-inspired property law, it is also consistent with international law. In this instance here, it is perfectly in line with Article II of the Treaty on principles governing the activities of States in the exploration and use of outer space, including the moon and other celestial bodies (hereinafter the "Treaty") which provides that:

> "Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means".

Although the legal status of the territories of celestial bodies themselves is defined by said provision - namely that they are not subject to national appropriation -, it does not further address the status of the resources nor even touches upon it. Yet, Article 1 of the draft law only addresses "resources". It does not address asteroids, comets or celestial bodies by themselves. The latter are outside of the scope of the law, and neither the wording of Article 1 nor the draft law in general have the objective, purpose or effect of paving the way or attempting to pave the way for any sort of beginning of a commencement of appropriation or possibility of appropriation of asteroids, comets or other celestial bodies. The draft law does not either propose to establish or imply in any way whatsoever the beginning of a commencement of a component of sovereignty over a territory over a celestial body or any part whatsoever of outer space and the other celestial bodies.

Only space resources and the appropriation of such resources are addressed here.

In addition, Article I paragraph 2 of the Treaty - which is to be read in conjunction with the aforementioned Article II of the same Treaty - establishes the principle of freedom of exploration and use of outer space, and although legal scholars have been debating the question whether non-appropriation also applies to resources[14], the fact remains that there

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[11] *Ibidem*, page 6.

[12] and even earlier, the 1878 edition is the 3rd edition.

[13] The same may be said for forests and game in the context of hunting.

[14] Fabio Tronchetti, Handbook of space law, 2015, page 790: (A) group of scholars argues that the prohibition laid down in Article II applies both to outer space and its natural resources. They affirm that the absence of any reference to natural resources in the text of Article II is not relevant, because the Outer Space Treaty never makes a distinction between outer space and its natural resources. Therefore, the term outer space must be understood in a comprehensive manner so as to include both outer space broadly considered and its natural resources. [Footnote 74: See e.g. S. Gorove, Limitations on the Principles of Freedom of Exploration and Use in

is a powerful school of thought which advocates in favour of the possibility of the appropriation of these resources[15].

Other countries - like the United States of America - have taken the same path that Luxembourg is about to engage upon[16].

Like the text of the US law, the text of Article 1 of this draft law contains an express reference to international law in that it provides that such appropriation has to take place in accordance with international law.

* * *

As indicated above, the analogy with the high sea and mining advocates in favour of the appropriation of resources, and Article 1 is furthermore perfectly in line with the principle of the non-appropriation of outer space and celestial bodies as set out in Article II of the Treaty[17].

Outer Space: Benefits and Interests, in Proceedings of the Thirteenth Colloquium on the Law of Outer Space (1971), 74; A.A. Cocca, ILA Report of the Fifty-Fourth Conference, The Hague, 1970, 454.]

Comp.: Steven Freeland and Ram Jakhu in Cologne Commentary on Space Law, volume 1, Outer Space Treaty, 2009, pages 44 to 63

[15] Fabio Tronchetti, Handbook of space law, 2015, page 789: (A) group of authors points out that the non-appropriation principle refers only to outer space as a whole and not to its natural resources [Footnote 71: So e.g. B. Cheng, Le Traité de 1967 sur l'espace, Journal du droit international (1968), 533; M. Williams, The Exploration and Use of Natural Resources in the Law of the Sea and the Law of Outer Space, in Proceedings of the Twenty-Ninth Colloquium on the Law of Outer Space (1987), 198; Jenks, above n.44,275; Gal, above n.69,47]. Therefore, by analogy with the rules underlying the freedom of the high seas, these authors state that the right to freely explore and use outer space, which is provided in Article I of the Outer Space Treaty, also includes the right to remove and use the natural resources contained thereof [Footnote72: See e.g. Art. II, Convention on the High Seas, Geneva, done 29 April 1958 entered into force 30 September 1962; 450 UNTS 82 ; TIAS 5200; 13 UST 2312; UKTS 1963 n°5; Cmnd.584; ATS 1963 n°12; which for the first time formally and explicitly conferred upon states the freedom of fishing in international waters]

Comp.: Bin Cheng, The 1967 Space Treaty, Journal du droit international, 95th year, 1968, pages 565 to 577 (particularly page 575) and ibidem, The Extraterrestrial Application of International Law, Studies in International Space Law, 1997, pages 400 to 401

Comp. also: Frans G. von der DUNK, Public Space Law and Private Enterprise - The Fitness of International Space Law Instruments for Private Space Activities, in Project 2001- Working Group on Privatization, Legal Framework for Privatising Space Activities, July 19, 1999, Vienna, pages 12 to 39 (cited by Laurence Ravillon, Droit des activités spatiales, Adaptation aux phénomènes de commercialisation et de privatisation, Les mutations de l'activité spatiale, 2004, page 139, n°141 and footnote n°524)

An author (David Johnson, Limits on the giant leap for mankind: legal ambiguities of extraterrestrial resource extraction, 26 American University International Law Review 1477 (2010-2011)) argues that international law does not adequately address the issue of the ownership of space resources (page 1481 e. a.). The author furthermore analyses a whole series of opinions and theories on the matter. The author, in addition, cites Carl. Q. Christol (The modern international law of outer space, 1982) who writes that Article I of the Treaty "confirms the freedom of use because every state has an equal right to pursue space activities" and that the major contribution of Article 1 is the concept of "freedom of use which necessarily implies the right to exploit the benefits of space" (page 1501 and footnote n°134)

[16] U.S. COMMERCIAL SPACE LAUNCH COMPETITIVENESS ACT, TITLE IV--SPACE RESOURCE EXPLORATION AND UTILIZATION - Public Law No: 114-90 (11/25/2015), **https://www.congress.gov/bill/114th-congress/house-bill/2262/text**

[17] see above, for developments regarding mines and the sea and those concerning Article II of the Treaty

Lastly, and while it is true that in relation to domestic law, the authors of the draft law could well have dispensed themselves of adding article 1 to the draft law - as the latter only constitutes an application of article 544 of the Civil Code -, the insertion of said article into Luxembourg law provides clarity and legal certainty as to, both, domestic law and to international law.

The concept of appropriation includes all of the classic attributes of the right of ownership and in particular the right to possess, transport, use or sell resources in accordance with the provisions of this draft law and those of the international texts that are applicable here[18].

Article 2

The requirement of an authorisation for any outer space resource exploration and use mission is laid down in Article VI of the Treaty, which provides that "the activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty"[19].

On the basis of this provision of the Treaty, Article 2 of the draft law sets the general prohibition of space resources utilization activities in the absence of an authorisation, whereas the Articles that follow determine the conditions for obtaining such authorisation.

Whoever intends to undertake a space resources utilization mission will thus be required to obtain an authorisation to do so.

This Article is inspired by Article 2 (1) of the law of 5 April 1993 on the financial sector, as amended.

It further provides that authorisations are granted by the ministers responsible for the economy and space activities.

Article 3

Article 3 provides that the authorisation is granted with respect to a mission, that the application must be presented in written form and that it is to be examined by the ministers in charge pursuant to Article 2.

The wording of Article 3 is inspired by Article 3 (1) of the law of 5 April 1993 on the financial sector, as amended.

Article 3 introduces the concept of operator. This term is to be looked at together with that of applicant in that both terms refer to the same person, i.e. the person who has lodged an application for authorisation (the applicant) or who has effectively received authorisation

[18] The law recently adopted in the United States (see footnote on page 18 on this subject) employs the terms of possessing, transporting, using and selling in paragraph 51.303 in addition to a reference to ownership (propriété), like the Luxembourg draft law.

[19] As to the authorisation itself, please see Articles 3 et seq. and as regards the monitoring component, see Article 14.

(the operator).

Authorisation will be granted for a mission and this mission shall relate to the exploration and use of space resources.

As the title of the draft law, this Article - just like the Treaty and the wording of the American law - employs the terms *exploration and use* of space resources.

Together with the provision of Article 1 pertaining to appropriation, this concept of use and exploration of resources delineates the basic regulatory framework of this draft law.

The concept of exploration and use of resources does not aim at activities such as launch activities and objects launched themselves. These launch activities must therefore, where appropriate, be subject to a separate authorisation, whereas the registration of a launched object or an object to be launched shall likewise, where appropriate, be subject to separate rules.

The text specifies that the mission has to be led for commercial purposes. This enables the distinction between missions that are the subject matter of this law and scientific missions. The activity aimed at by the authorisation must be a business activity, as activities in space for purely private purposes are not susceptible to be granted an authorisation.

It goes without saying that any operator having received an authorisation for a mission must carry out its mission in line with the principles and rules of international space law. The operator is consequently in particular obliged to comply with Article IV of the Treaty setting out the principle of the peaceful use of outer space.

Article 4

Authorisation may, subject to the provisions of Article 6 of this draft law, only be issued to a legal person incorporated under Luxembourg law. A natural person cannot apply for an authorisation.

It was moreover deemed useful to limit the corporate form, a company exploring and using space resources can take, to two corporate forms, namely a *société anonyme* or a *société en commandite par actions*. In this respect, the wording of Article 6 is more restrictive than Article 4 of the law of 5 April 1993 on the financial sector, as amended.

Article 5

The wording of Article 5 provides *expressis verbis* that the authorisation is limited to the mission that it covers.

The authorisation is granted to an operator, but not in a generic way like it is the case for a business license. It is granted for a specific and determined mission.

The authorisation is of limited duration, although it can be renewed. It was deemed useful to limit the authorisation in time, as space missions, even if they are long missions, are not meant to go on indefinitely. The duration will mainly be subject to the mission's programme. That said, authorisations are renewable once or multiple times.

The authorisation is strictly personal. It is granted on an *intuitu personae* basis and any transmission, cession or lease or any other transfer or transmission of the authorisation is formally prohibited.

Article 6

Article 6, which sets out the requirement for the provision of a mission program and the communication of all relevant information for its assessment, is inspired by Article 3 (4) of the law of 5 April 1993 on the financial sector, as amended.

That said, the wording of Article 6 of this draft law is broader than that of the aforementioned Article 3 (4) in that it requires to communicate all "relevant" information and not only that being "necessary", as set forth in the aforementioned Article 3 (4).

Article 7

Article 7 sets out the requirement of the existence of the central administration and of the registered office of the applicant, and afterwards of the operator, in Luxembourg. It specifies the (robust) internal governance arrangements that the latter must have in place.

The wording is inspired by Article 5 (1) and (1bis) of the law of 5 April 1993 on the financial sector, as amended. Under point (3) of Article 7 of this draft law, one can in particular find the principle of proportionality.

Article 8

Article 8 subjects the important shareholders of the operator to authorisation.

The wording is inspired by Article 6 (1) and (9) of the law of 5 April 1993 on the financial sector, as amended[20].

The text does not incorporate the provisions specific to the financial sector, such as for instance, that relating to the supervision of groups. This does not mean, however, that the group structure would be irrelevant for the assessment of the application; the opposite is the case given that the reputation is not only assessed in respect to the applicant, but also in respect to the group, pursuant to Article 8 (2), first indent of this draft law.

The shareholder structure shall in all cases be transparent.

Article 9

Article 9 of this draft law requires that the members of the management body of a company utilizing space resources are of sufficiently good repute and have sufficient professional experience. It details the manner in which these criteria are assessed.

[20] For the definition of what may be determined as a qualifying holding, the wording makes a pure and simple reference to the law of 5 April 1993 on the financial sector, as amended.

The wording is modelled on Article 7 of the law of 5 April 1993 on the financial sector, as amended, while setting out the requirement to have previously carried out similar activities specifically in connection with outer space, or in relation to a related sector such as the satellite, the telecommunications, the mining or the information technology sector.

Like for important shareholders, this is a *nihil obstat* procedure on the part of the ministers responsible for issuing authorisations.

It should also be noted that the wording does not provide for the specific appeal procedure foreseen against decisions in the financial sector on this issue under the terms of Article 7 (3), 3rd sentence of the law of 5 April 1993 on the financial sector, as amended.

Article 10

In light of the risks inherent to any activity in space, but also as regards the responsibility rules under international outer space law and in particular Article VI of the Treaty[21], the financial stability of the applicant - who shall subsequently become the operator, once the authorisation has been granted - is a critical issue.

Consequently, the wording of Article 10 of the draft law - while drawing inspiration from Article 8 of the law of 5 April 1993 on the financial sector, as amended - does not set forth any numerical requirement, but links the evidence of an adequate financial base to its suitability with respect to the risks related to the mission, thus leaving a large margin of discretion to the ministers in charge of the issuing of authorisations.

As regards the form of the financial base, it was deemed useful to clearly specify in the text of the law that such financial base must first of all take the form of share capital, but then also - in a mandatory and cumulative manner together with the requirement of the share capital - the form of an insurance policy or any other financial guarantee that can be compared to an insurance policy emanating from an insurance company or a credit institution. The third party providing such guarantee must not belong to the same group as the applicant seeking an authorisation for a mission.

A Grand-Ducal regulation may specify the terms and conditions relating to the financial base.

Article 11

Article 11 deals with external audit. It is inspired from Article 10 of the law of 5 April 1993 on the financial sector, as amended.

[21] Article VI of the 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 by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space, including the Moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization."

Article 12

Article 12 stipulates the requirement for a book of obligations attached to each authorisation.

By providing for a book of obligations, this law follows the example of the law of 27 July 1991 on electronic media, as amended.

The wording of Article 12 first of all takes into account that this draft law already contains a series of provisions with requirements to be met by the future operator. These provisions are those of Articles 5 to 11 and accordingly the present Article provides that the book of obligations shall describe the manner in which the future operator shall meet the requirements of said Articles 5 to 11.

The text then specifies in a non-exhaustive list that the book of obligations may contain provisions on fees to be paid, on activities to be carried in or out of Luxembourg, on the limits of the mission or on the conditions aiming at ensuring that the operator complies with its obligations.

The latter include, in particular, but not only obligations deriving from international law.

Specifically, the book of obligations may for example contain provisions on the long-term sustainability of outer-space activities or on the prevention of contamination of celestial bodies or adverse changes to the earth's environment by reference to Article IX of the Treaty or on the notion of potentially harmful interference of Article IX of the same Treaty or provisions for which the evolution of technology commands their insertion into a binding text for the operator.

The book of obligations further allows the ministers to specify the supervision requirements. It also allows them to provide for further rights of inspection for the Government.

In general, the wording of Article 12 has been adapted to the space industry. It provides the ministers with an instrument, which allows them to establish a clear framework specific to each mission.

Article 13

Article 13 of the draft law deals with the question of withdrawal of authorisations. It is inspired from Article 11 of the law of 5 April 1993 on the financial sector, as amended.

Where the wording stipulates that the authorisation is withdrawn "if the conditions of the grant thereof cease to be fulfilled", this seeks to ensure compliance by the operator with, both, international space law and this law, and any other Luxembourg law as well as the terms of the authorisation itself and the book of obligations provided for in Article 12.

Appeals lodged against decisions of withdrawal of authorisation are common law appeals, which are moreover – and this being said by the way – meant to apply to all provisions of this draft law.

Article 14

Paragraph (1) of Article 14 specifies that the ministers responsible for issuing authorisations pursuant to Article 2 of this draft law are also responsible for the continuing supervision of missions. Although going without saying in modern regulatory law, it was deemed useful to give this precision with respect to the provision of Article VI of the Treaty.

The second sentence of paragraph (1) further specifies that for their supervision mission, the ministers may be assisted by one or several government commissioners.

The second paragraph of Article 14 further enables the ministers to impose, in the same context, additional conditions to a mission that is already in progress. This will be the case, in particular, when the constraints inherent to the mission or the manner in which it is conducted make the imposition of additional conditions necessary or even simply useful, or moreover when new scientific- or other information becomes available following the date of the initial authorisation.

Needless to say that ministers may in exceptional cases also ease the conditions provided for by an authorisation or a book of obligations. That said, and on the basis of the principle according to which "who can do more can do less", it was not considered necessary to state this possibility in the text of Article 14 itself.

Article 15

Article 15 addresses the liability of the operator during the mission.

This liability is a full liability for all cases where a damage has been caused at the occasion of a mission.

Are also covered by this provision, the damages caused at the occasion of the mission's preparatory work and duties.

The liability incumbent on the operator pursuant to this Article is not intended to exclude or limit the international liability of Luxembourg for national activities in outer space, including the Moon and other celestial bodies as laid down in the international treaties and agreements in force such as the Treaty[22] or the Convention on International Liability for Damage Caused by Space Objects.

Article 16

Article 16 of this draft law specifies that the granting of an authorisation does not dispense

[22] Article VI of the Treaty provides that: " 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 by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space, including the Moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization".

with the need to obtain other approvals or authorisations, which, where appropriate, would be required for a mission or for the operator of such mission.

This inter alia includes the business license.

Article 17

This Article contains the criminal provisions of the draft law.

The operative text distinguishes between two types of offences. Firstly, a term of imprisonment or fine may be incurred by any person who contravenes or attempts to contravene the provisions of Article 2 of the present law (this provision prohibits making use of space resources in a professional capacity without holding a written mission authorisation). The second type of offence then aims to sanction those who conduct or participate in a space resource utilization mission in violation of one of the provisions of Articles 4, 5, 7, 8, 9, 10 or 11 of the law or the terms of the authorisation itself and more particularly those of the book of obligations referred to in Article 12.

These criminal penalties are necessary to enable the authorities to ensure compliance with the law and the conditions laid down by the authorisation and the book of obligations.

Article 17 further specifies that the criminal penalties apply without prejudice to the penalties laid down by the Penal Code or by other laws. The wording in question is inspired by Article 64 (6) of the law of 5 April 1993 on the financial sector, as amended.

Paragraph (4) of the Article lastly provides that the court to which a matter is being referred to, may declare the discontinuance of an operation which is contrary to the provisions of the law, under a penalty the maximum of which is to be set by said court. This provision is inspired by the amended law of 2 August 2002 relating to the protection of individuals with regard to the processing of personal data, which contains the same provision in particular in its Articles 10, 12 and 14.

TEXT OF THE DRAFT LAW

Draft law on the exploration and use of space resources

Article 1. –

Space resources are capable of being appropriated in accordance with international law.

Article 2.-

No person can explore or use space resources without holding a written mission authorisation from the minister or ministers in charge of the economy and space activities (hereinafter "the ministers").

Article 3.-

Authorisation shall be granted to an operator for a mission of exploration and use of space resources for commercial purposes upon written application, following an investigation by the ministers to establish whether the conditions laid down by the present Law are fulfilled.

Article 4.-

Authorisation for a mission may only be granted if the applicant is a legal person incorporated under Luxembourg law, which is established in the form of a société anonyme or a société en commandite par actions.

Article 5.-

The object of the authorisation is limited to the mission that it covers. It shall be granted for a limited period of time but can be renewed. The authorisation is personal and non-assignable.

Article 6.-

The application for authorisation must be accompanied by all such information as may be useful for its assessment thereof as well as by a mission program.

Article 7.-

(1) Authorisation shall be subject to the production of evidence showing the existence in Luxembourg of the central administration and of the registered office of the applicant.

(2) The applicant shall have robust internal governance arrangements, which include a clear organisational structure with well-defined, transparent and consistent lines of responsibility, effective processes to identify, manage, monitor and report the risks it is or might be exposed to, and adequate internal control mechanisms, including sound administrative and accounting procedures, as well as control and security arrangements for technical processing systems.

(3) The internal governance arrangements, processes, procedures and mechanisms referred to in this article shall be comprehensive and proportionate to the nature, scale and complexity of the risks inherent in the applicant's business model as well as to the mission for which authorisation is sought.

Article 8.-

(1) Authorisation shall be subject to communication to the ministers of the identities of the shareholders or members, whether direct or indirect, natural or legal persons, that have qualifying holdings within the meaning of the law of 5 April 1993 relating to the financial sector, as amended, and of the amounts of those holdings or, where there are no qualifying holdings, of the twenty largest shareholders or members.

Authorisation shall be refused if, taking into account the need to ensure sound and prudent operation, the suitability of those shareholders or members is not satisfactory.

(2) The concept of sound and prudent operation is assessed in accordance with the following criteria:

- the reputation of the applicant and the group to which it belongs;
- the reputation, knowledge, skills and experience of any member of the management body of the shareholders or members referred to in paragraph 1;
- the financial soundness of the applicant and the shareholders and members referred to in paragraph 1;
- whether there are reasonable grounds to suspect that money laundering or terrorist financing is being or has been committed or attempted or that the risk could be increased with the mission referred to.

The good repute of the members of the management body of the shareholders or members referred to in paragraph 1 shall be assessed in accordance with the terms of the second sentence of paragraph (1) of article 9.

Article 9.-

(1) Authorisation shall be subject to the condition that the members of the management body of the operator shall at all times be of sufficiently good repute and possess sufficient knowledge, skills and experience to perform their duties. Such good repute shall be assessed on the basis of police records and of any evidence tending to show that the persons concerned are of good repute and offering every guarantee of irreproachable conduct on the part of those persons.

(2) At least two persons must be responsible for the management of the operator. Those persons must be empowered to effectively determine the direction taken by the business and must possess adequate professional experience by virtue of their having previously carried out similar activities at a high level of responsibility and autonomy in the space industry or in a related sector.

(3) Any change in the persons as referred to in paragraph (1) shall be communicated in advance to the ministers. The ministers may request all such information as may be necessary regarding the persons who may be required to fulfil the legal requirements with respect to reputation and professional experience. The ministers shall refuse the proposed change if these persons are of insufficient professional repute and, where applicable, of insufficient experience or where there are objective and demonstrable grounds for believing that the proposed change would pose a threat to the sound and prudent management of the operation.

(4) Granting the authorisation implies that the members of the management body shall, on their own volition, notify in writing and in a complete, coherent and comprehensible form, to the ministers any changes regarding the substantial information on which the ministers based their investigation of the application for authorisation.

Article 10.-

(1) Authorisation shall be conditional on the production of evidence showing the existence of an adequate financial base intended to cover the risks relating to the mission for which authorisation is being sought.

(2) This financial base takes the form of share capital and an insurance policy or another comparable guarantee from an insurance company or a credit institution, which does not belong to the same group as the applicant.

(3) A Grand-Ducal regulation may specify the terms and conditions relating to this financial base.

Article 11.-

(1) Authorisation shall be conditional on the applicant having its annual accounts audited by one or more *réviseurs d'entreprises agréés*, who can show that they possess adequate professional experience.

(2) Any change in the *réviseurs d'entreprises agréés* must be authorised in advance by the ministers.

Article 12.-

(1) Authorisation is accompanied by a book of obligations.

(2) This book of obligations describes the manner in which the applicant has met the

conditions of Articles 5 to 11. It may furthermore contain, depending on the circumstances, provisions on:

- the fee to be paid, where appropriate, to the Public Treasury;
- the activities to be carried out on the territory of the Grand Duchy or from such territory;
- the limits that could be associated with the mission;
- the supervision requirements to the mission;
- the conditions for ensuring that the applicant complies with its obligations;
- the right for the government to inspect the activity and the articles of association of the applicant.

Article 13.-

(1) The authorisation shall be withdrawn if the conditions for the granting thereof are no longer met.

(2) The authorisation shall be withdrawn if the applicant does not make use of the authorisation within thirty six months of it being granted, renounces to it or has ceased to engage in business for the preceding six months.

(3) The authorisation shall be withdrawn if it has been obtained through false statements or through any other irregular means.

Article 14.-

(1) The ministers are in charge of the continuing supervision of missions for which an authorisation has been granted. They may be assisted by one or several government commissioners.

(2) Within the framework of this supervision, the ministers can impose additional conditions consistent with the provisions of this law on a mission for which they have previously granted an authorisation.

Article 15.-

The operator that is granted an authorisation for a mission is fully responsible for any damage caused at the occasion of the mission, including at the occasion of all preparatory works and duties.

Article 16.-

The granting of an authorisation for a mission does not dispense from the need to obtain

other approvals or authorisations.

Article 17.-

(1) Any person who contravenes or attempts to contravene the provisions of Article 2 shall be punishable by a term of imprisonment of between eight days and five years and a fine of between 5.000 and 1.250.000 euros or either one of those penalties.

(2) Any person who has conducted or participated in a space resource utilization mission that contravenes or attempts to contravene the provisions of Articles 4, 5, 7, 8, 9, 10, 11 or that contravenes the terms and conditions of the authorisation shall be punishable by a term of imprisonment of between eight days and one year and a fine of between 1.250 and 500.000 euros or either one of those penalties.

(3) This Article shall apply without prejudice to the penalties laid down by the Penal Code or other laws.

(4) Without prejudice to paragraphs (1) to (3), the court to which the matter is being referred, may declare the discontinuance of an operation which is contrary to the provisions of the present law, under a penalty the maximum of which is to be set by said court.