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**Committee on the Peaceful  
Uses of Outer Space**  
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**Information on the activities of international  
intergovernmental and non-governmental organizations  
relating to space law**

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**Note by the Secretariat**

The present conference room paper contains the Sofia Guidelines for a Model Law on National Space Legislation of the International Law Association (ILA) in French, and in English with explanatory notes by the General Rapporteur of the ILA Space Law Committee. The Sofia Guidelines were adopted by the 75th ILA Conference on 30 August 2012 as resolution 6/2012. The report of the ILA, referring to the Sofia Guidelines, is contained in document A/AC.105/C.2/103.



## Draft model law on national space legislation and explanatory notes<sup>1</sup>

### 1. General Remarks

In view of the discussion of the Space Law Committee of the International Law Association held at the 74th Biennial Conference in The Hague, the following revised version of a model law for national space legislation is hereby proposed. The Rapporteur considers there are indispensable requirements underlying any future model law, as follows:

- Duty and details for authorization procedures and licensing, and respective requirements
- Duty of supervision
- Necessary insurance for private space actors

In the Workshop on National Space Legislation which was held in 2004 in the framework of Project 2001 Plus, as a cooperation exercise between the Cologne Institute of Air and Space Law and the German Aerospace Centre (DLR), a number of so-called “building-blocks” for national space laws were adopted. Those building blocks were considered crucial in that they should be taken into account when drafting any kind of national space law. Among those building blocks were:

1. Authorization of space activities,
2. Supervision of space activities,
3. Registration of space objects,
4. Compensation, regulation, and
5. Additional regulation.<sup>2</sup>

Thus, the major findings of Project 2001Plus and, in particular, the Workshop on National Space Legislation in that context, were the basis for the present Draft Model Law. Moreover, further doctrinal discussion is appropriately recorded in the commentary to Article VI of the Outer Space Treaty in Stephan Hobe/Bernhard Schmidt-Tedd/Kai-Uwe Schrogl (eds.), *Cologne Commentary on Space Law*, Cologne 2009, pp. 103-125 (by Michael Gerhard) and the various national space laws of an earlier as well as of a more recent nature. The following proposal of a Model Law should be seen as a guideline and source for further discussion. It attempts to bring together both doctrinal approaches and practical needs. The ILA work on the topic was developed between 2004 (Berlin Conference) and

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<sup>1</sup> Commentary by Professor Stephan Hobe, Committee Rapporteur, in consultation with the Chair and members of the ILA Space Law Committee. The commentary was drafted before the adoption of the Model Law, and therefore reference is made to a “Draft Model Law”. The Rapporteur gratefully acknowledges the contributions from Joanne Gabrynowicz, Frank Maes, Tanja Masson-Zwaan, Matxalén Sánchez and Kai-Uwe Schrogl; the frequent and valuable possibilities of exchanging opinions with Irmgard Marboe; and the great support from the Chair of the ILA Space Law Committee, Maureen Williams.

<sup>2</sup> Hobe/Schmidt-Tedd/Schrogl, (Eds.), *Towards a harmonized approach for national space legislation in Europe*, Project 2001Plus, Cologne 2004, p. 48-49.

2010 (Hague Conference). In-between these years its progress was discussed at the Toronto (2006) and Rio de Janeiro (2008) ILA Biennial Conferences.

## **2. The Proposed Model Law on National Space Legislation**

### **Article 1 — Scope of application**

The present law applies to space activities carried out by citizens of XY or legal persons incorporated in XY and space activities carried out within the territory of XY or on ships or aircraft registered in XY.

### **Comment**

From the outset this provision should clarify the scope of regulations for national space law governing human activities in outer space. It should be clear that an effective link is essential with the country enacting the specific law. This link could be either the nationality of the natural or legal person involved in space activities in a certain territory or the national register for ships and aircraft. The latter is particularly important concerning space activities in the High Seas.

Hereinafter, “XY” will be used to denote the respective State enacting national space legislation on the basis of the present Model Law.

### **Article 2 — Definitions — Use of terms**

The following definitions will apply for the purposes of this law:

#### *Space activity*

The term “space activity” includes the launch, operation, guidance and re-entry of space objects into, in and from outer space and other activities essential for the launch, operation, guidance and re-entry of space objects into, in and from outer space.

#### *Space object*

The term “space object” refers to any object launched or intended to be launched into outer space including its component parts as well as its launch vehicle and parts thereof.

#### *Operator*

The term “operator” refers to a natural or legal person carrying out space activities.

#### *Authorization*

Licence delivered in written form.

#### *Supervision*

A system established for permanent observation and tracking space activities.

*Commercial space activity*

A space activity for the purpose of generating revenue or profit whether conducted by a governmental or by a non-governmental entity.

**Comment**

The definition of “space activity” is in line with current international space law and State practice. Arguably, one could add that activities at an altitude of 100 km above sea level are considered space activities.

*Space object*

The definition of “space object” reflects current State practice and includes the official definition embodied in the Registration and in the Liability Conventions. (See also Kerrest/Smith, in: Hobe/Schmidt-Tedd/Schrogl (eds.), Cologne Commentary on Space Law, Vol. 1, p. 140.) Authorization and supervision shall be based on the 1967 Outer Space Treaty and current State practice.

Note: This list is by no means exhaustive. National legislators are free to add more definitions if they so consider.

**Article 3 — Authorization**

All space activities are subject to authorization. Authorization shall be granted by the minister of (e.g. the competent minister or authority).

**Comment**

The article lays down the fundamental obligation under article VI, second sentence of the Outer Space Treaty, namely that all national space activities need to be licensed. For this reason, a respective licensing authority should be established or, alternatively, an existing authority may be considered to be the licensing authority. Authorization may take several forms ranging from general licences to individual licences or permits.

**Article 4 — Conditions for authorization**

1. Authorization shall be granted under the following conditions:
  - (a) The operator is in a financial position to undertake space activities;
  - (b) The operator has proven to be reliable and to have the required technical knowledge;
  - (c) The space activity does not cause environmental damage to the Earth and outer space in accordance with article 7;
  - (d) The space activity is undertaken in such a manner as to mitigate to the greatest possible extent any potential space debris in accordance with article 8;
  - (e) The space activity is compatible with public safety standards;
  - (f) The space activity does not run counter to national security interests;
  - (g) The space activity does not run counter to international obligations and foreign policy interests of XY;

(h) The operator has complied with ITU Regulations with regard to frequency allocations and orbital positions;

(i) The operator complies with insurance requirements as determined in article 12.

2. In order to prove fulfilment of the conditions mentioned in paragraph (1), the operator should submit appropriate documentation and evidence (as specified in an implementing decree/regulation).

3. The authorization may contain conditions and requirements.

#### **Comment**

It must be made clear that any applicant is personally reliable and in a secure financial position. Moreover, requirements of foreign policy, national security, public safety, international telecommunication regulations and insurance should be fulfilled. Written documentation gives proof of these facts.

#### **Article 5 — Supervision**

All space activities are subject to continuing supervision by the ministerial authority. Details of such shall be laid down in an implementing decree/regulation.

#### **Comment**

Supervision is the other requirement mentioned in Article VI, second sentence of the Outer Space Treaty. It shall be entrusted to the same authority responsible for the licensing. Furthermore, it should be made sure that such information is available on the governmental level.

#### **Article 6 — Withdrawal, suspension or amendment of authorization**

The respective authority may withdraw, suspend or amend the authorization, when either the conditions of article 4, paragraph 1, or the specific requirements of article 4, paragraph 3, are not observed.

#### **Comment**

Withdrawal, suspension and amendment should be the usual forms of supervision of the authorizing body, notwithstanding additional sanctions as contained in article 14.

#### **Article 7 – Protection of the environment**

1. Space activities shall not cause environmental damage to the Earth and outer space or parts thereof, either directly or indirectly.

2. An environmental impact assessment is required before the beginning of a space activity.

3. Details of the environmental impact assessment shall be laid down in an implementing decree/regulation.

### **Comment**

In order to ensure that space activities undertaken by private actors meet the highest environmental standards, an environmental impact assessment should be carried out. See also the Cosmic Study of the International Academy of Astronautics on the Protection of the Environment of Celestial Bodies of 2010 which includes similar recommendations.

### **Article 8 — Mitigation of space debris**

1. Space activities should be carried out in such a manner as to mitigate to the greatest possible extent any potential space debris in accordance with article 4 (d).
2. The obligation of paragraph 1 includes the obligation to limit debris released during normal operations, to minimize the potential for in-orbit break-ups, to prepare for post-mission disposal and to avoid in-orbit collisions in accordance with international space debris mitigation standards.

### **Comment**

In view of the recent discussion on the mitigation of space debris all efforts should be made to mitigate space debris. The obligations mentioned in paragraph 2 refer to international standards and guidelines on space debris mitigation. The competent national authorities should make sure that operators comply with these international standards and guidelines, such as the IADC Space Debris Mitigation Guidelines, the UNCOPUOS Space Debris Mitigation Guidelines and the ILA International Instrument on the Protection of the Environment from damage cause from space debris.

### **Article 9 — Transfer of space activity**

The transfer of a space activity and or a space object to another operator is subject to prior authorization by the competent authority. Authorization will be granted under the conditions laid down in article 4.

### **Comment**

Any transfer of space activity to another operator may cause additional problems. It must be secured that the new operator meets the same conditions for conducting the respective space activity as mentioned in article 4. Therefore, any such transfer of a space activity should have the authorization of the competent authority. In-orbit transfers of ownership or transfer and control of a space object are also included in this article.

### **Article 10 — Registration**

1. A national register is hereby established for the registration of space objects. The authority (namely the competent minister, preferably the same as in article 3) shall maintain the national space register.
2. Subject to paragraph 3 of this article all space objects for which XY is the launching State according to article 1 of the Convention on Registration of Objects Launched into Outer Space of 1974 shall be registered in the national register.

3. If there are two or more launching States in respect of any such space object, the agreement among them according to article II, paragraph 2, of the Convention on Registration of Objects Launched into Outer Space shall determine which is to be the State of registry for that particular space object.
4. The following information should be entered into the national register:
  - Name of the launching State or States (name of a private launching entity: natural or legal person)
  - Registration number of the space object
  - Date and territory or location of the launch
  - Basic orbital parameters including nodal period, inclination, apogee and perigee
  - General function of the space object
5. Additional information and information in accordance with the Registration Convention and/or the United Nations Registration Practice Resolution as specified in an implementing decree/regulation shall also be included in the national register.
6. The information contained in paragraph 1 shall be made available to the Secretary-General of the United Nations as soon as possible.
7. Any relevant change with regard to the information mentioned in paragraph 1 should be registered in the national register. The Secretary-General of the United Nations shall be informed accordingly.

#### **Comment**

In order to comply with the obligation to inform the United Nations about space activities and to register space objects, States need to get the respective information from the operators. Therefore, the establishment of a national register and the obligation of operators to produce this information make the State clearly responsible for the compliance with its international obligations.

#### **Article 11 — Liability and recourse**

1. When XY has paid compensation to third parties for damage caused by a space activity in fulfilment of its international obligations, the Government is entitled to recourse against the operator.
2. The recourse of the Government against the operator may be limited to a certain amount.

#### **Comment**

If the State is liable under the Liability Convention or under general international law to pay compensation to third parties, the Government may be allowed to have recourse against the operator. The amount of such recourse could be limited.

In some legislation it may be necessary to establish the operator's liability separately. Otherwise, the right of recourse would not have a legal basis. This is particularly true for liability without fault (liability in tort).

Therefore, an additional “article 11 (a)” could be inserted which would read:

- “1. The operator is absolutely liable to pay compensation for damage caused by a space object on the surface of the Earth or to aircraft in flight.
2. For damage caused elsewhere, the operator is liable only if the damage is due to its fault or the fault of persons for whom it is responsible.
3. Liability according to paragraph (1) is limited to ### (to be decided, i.e. either as a fixed amount or by means of insurance).”

The advantage of such provision is that the operator’s liability is already established and can also be brought before national courts. Therefore the injured parties do not need to go through diplomatic channels as envisaged in the Liability Convention but may enforce their claims through private litigation — which of course is preferable for the State and victims as well. Failing this the parties should consider recourse to the New Rules for Arbitration of Disputes relating to Outer Space Activities adopted in 2011 by the Permanent Court of Arbitration.

In case of liability based on fault, the operator will anyway be liable for damage on the basis of ordinary tort law. Usually, no ceiling is set for this assumption under national law.

However, absolute liability should have a ceiling in national legislation. Thus, the national legislator should start thinking of such a ceiling which could either reflect the amount which can reasonably be insured or a fixed sum. State practice has examples of various models. The ceiling usually corresponds to the ceiling envisaged for the right of recourse laid down in article 7, paragraph 2.

The ceiling of the operator’s liability, of course, does not affect the liability of the State which remains absolute and unlimited for damage caused to third parties on the surface of the Earth or to aircraft in flight.

#### **Article 12 — Insurance**

1. The operator carrying out a space activity should be insured to cover damage caused to third parties up to the amount of ... (to be established by national law).
2. The obligation of paragraph 1 does not apply when the Government, as such, carries out a space activity.
3. The authority may waive the obligation to insure when
  - (a) The operator has sufficient equity capital to cover the amount of his/her liability;
  - (b) The space activity is not a commercial space activity and is in the public interest.
4. The details of the content and conditions of the insurance shall be laid down in implementing a decree/regulation to that effect.

#### **Comment**

The insurance obligation is based on two reasons: first, the operator must insure him/herself for fault and, in accordance with the proposed article 11 (a), also absolute liability. This requirement is advisable as space activities are dangerous by



nature and may entail catastrophic consequences. Secondly, the right of a State to use its right of recourse based on article 11 becomes more realistic.

The amount of insurance may be established according to different criteria. (Cf. Section 3 (4) of the Dutch Space Activities Act which subjects it to “what can reasonably be covered by insurance”, and Art.6 (I) of the French Space Operations Act which lays down the obligation to insure up to the liability cap.) Some harmonization concerning the figure should be aimed at to avoid licence shopping. The Model Law or the comments thereupon could, therefore, contain some guidance on possible limits.

### **Article 13 — Procedure**

1. The rules of procedure shall follow the general rules of (administrative) procedural law. This includes time limits for the decision of the authority and the right to impose conditions and sanctions.
2. Appropriate costs and tariffs for the procedure should be laid down by the authority in the implementing decree/regulation.
3. Any dispute arising from the interpretation and/or application of the present law shall be solved within national jurisdiction. Failing this, recourse to the New Rules of the Permanent Court of Arbitration (PCA) for Arbitration of Disputes relating to Outer Space Activities is recommendable.

### **Comment**

Disputes arising from the interpretation or application of this Model Law should, as a rule, be decided within national courts. However, once exhausted the local remedies, there should be a possibility of recourse to the 2011 PCA Rules mentioned above.

### **Article 14 — Sanctions**

Any breach of the obligations set out in the present law is punishable with a fine of ##,####. The carrying out of space activities and the transfer of space activities without authorization from the authority, to articles 3 and 9, is punishable with an amount not lower than #,###.

### **Comment**

The law could, at this stage, establish a figure for the applicable fine. It may likewise establish a criterion or make reference to an implementing decree/other national legislation. Reference may also be taken in light of the example of the French Operations Act.

The second sentence imposes a minimum sanction in case of space activities and transfer thereof without a licence. This appears reasonable given the seriousness of the offence. The higher limit should be set at a deterring amount similar to breaches of administrative law not reaching, however, the level of a criminal sanction.

## **Lignes de conduite de Sofia pour un modèle de loi spatiale nationale<sup>3</sup>**

### **Article 1 — Champ d'application**

La présente loi s'applique aux activités spatiales conduites par des citoyens de (... XY) ou des personnes morales incorporées/ayant leur siège social dans (... XY) et aux activités spatiales conduites depuis le territoire de (... XY) ou depuis un navire ou un aéronef enregistré dans (... XY).

### **Article 2 — Définitions — Utilisation des termes**

Les définitions suivantes s'appliquent pour les besoins de cette loi:

#### *Activité spatiale*

Le terme "activité spatiale" inclut le lancement, l'opération, le contrôle et la réentrée d'objets spatiaux vers, dans et depuis l'espace extra-atmosphérique et les autres activités essentielles pour le lancement, l'opération, le contrôle et la réentrée vers, dans et depuis l'espace extraatmosphérique.

#### *Objet spatial*

Le terme "objet spatial" s'applique à tout objet lancé ou devant être lancé dans l'espace extra-atmosphérique y compris ses parties constitutives ainsi que le véhicule de lancement et ses éléments.

#### *Opérateur*

Le terme "opérateur" désigne les personnes physiques ou morales qui conduisent des activités spatiales.

#### *Autorisation*

Une licence attribuée par écrit.

#### *Supervision*

Un système établi pour l'observation et le suivi des activités spatiales.

#### *Activités spatiales commerciales*

Une activité spatiale conduite afin de générer des revenus ou des profits, qu'elle soit conduite par une entité gouvernementale ou non gouvernementale.

### **Article 3 — Autorisation**

Toute activité spatiale est soumise à autorisation. Le ministre de ... (le ministre ou l'autorité compétente) est compétent pour attribuer cette autorisation.

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<sup>3</sup> Traduction française par le professeur Armel Kerrest, membre du comité de droit spatial de l'association de droit international (branche française). Les commentaires de la présidente du Comité peuvent être consultés dans le rapport du Comité.

#### **Article 4 — Conditions de l'autorisation**

1. Une autorisation sera accordée aux conditions suivantes :
  - (a) L'opérateur possède la capacité financière de conduire des activités spatiales,
  - (b) L'opérateur a montré sa capacité et ses compétences techniques,
  - (c) L'activité spatiale ne cause pas de dommage environnemental sur Terre ou dans l'espace conformément à l'article 7,
  - (d) L'activité spatiale est entreprise de manière à limiter dans toute la mesure du possible tout débris spatial potentiel en application de l'article 8.
  - (e) L'activité spatiale est compatible avec les standards publics de sécurité,
  - (f) L'activité spatiale ne porte pas atteinte à la sécurité nationale,
  - (g) L'activité spatiale ne porte pas atteinte aux obligations internationales et de politique étrangère de (XY),
  - (h) L'opérateur remplit les règles de l'UIT en matière d'allocation des fréquences électromagnétiques et de positions orbitales,
  - (i) L'opérateur remplit les exigences requises par l'article 12 en matière d'assurance.
2. Afin de prouver le respect des conditions mentionnées au paragraphe (1) l'opérateur fournit des preuves et une documentation appropriées (telles que spécifiées dans les règlements d'application)
3. L'autorisation peut contenir des conditions et des obligations.

#### **Article 5 — Supervision des activités spatiales**

Toutes les activités spatiales sont soumises à une supervision continue par l'autorité ministérielle à (selon ?) des conditions à mettre en place par des règlements d'application.

#### **Article 6 — Retrait, suspension ou amendement de l'autorisation**

L'autorité concernée peut retirer, suspendre ou amender l'autorisation si les conditions fixées à l'article 4 paragraphe 1 ou les exigences particulières de l'article 4 paragraphe 3 ne sont pas respectées.

#### **Article 7 — Protection de l'environnement**

Les activités spatiales ne doivent pas causer de dommage environnemental à la Terre ou à l'espace extra-atmosphérique ou à leurs parties. Une étude d'impact environnemental est exigée avant le début de l'activité spatiale. Les détails de l'étude d'impact environnemental sont précisés par les règlements d'application.

#### **Article 8 — Limitation des débris spatiaux**

Les activités spatiales sont conduites de manière à limiter dans toute la mesure du possible tout débris spatial conformément à l'article 4(d) L'obligation prévue au paragraphe 1 inclut l'obligation de limiter les débris créés lors des opérations

normales, de minimiser les risques de destruction en orbite, de préparer l'élimination en fin de mission et d'éviter les collisions en orbite conformément aux standards internationaux sur la limitation des débris spatiaux.

#### **Article 9 — Transfert d'activité spatiale**

Le transfert d'une activité spatiale et/ou d'un objet spatial à un autre opérateur est soumis à l'autorisation préalable de l'autorité compétente. Cette autorisation est accordée aux conditions prévues par l'article 4.

#### **Article 10 — Enregistrement**

Un registre national des objets spatiaux est établi. L'autorité (le ministre compétent, autant que possible le même qu'à l'article 3) maintient un registre spatial national. En application du paragraphe 3 du présent article, tous les objets spatiaux pour lesquels (XY) est Etat de lancement conformément à l'article 1 de la Convention sur l'immatriculation des objets lancés dans l'espace extra-atmosphérique de 1974 (sic) seront immatriculés sur le registre national. S'il existe plus d'un Etat de lancement pour un objet spatial, l'accord entre ces Etats en application de l'article II paragraphe 2 de la convention de 1974 détermine lequel de ces Etats sera l'Etat d'immatriculation de cet objet spatial. Les informations suivantes doivent être portées sur le registre national :

- Le nom du ou des Etats de lancement (nom de l'entité privée de lancement: personne physique ou morale),
- Numéro d'enregistrement de l'objet spatial
- Date et territoire ou situation du lancement,
- Paramètres orbitaux de base incluant la période nodale, l'inclinaison, l'apogée et le périégée,
- La fonction générale de l'objet spatial.

Sera également portée au registre national, en application des règlements d'application de la présente loi, les informations additionnelles et les informations à fournir conformément à la convention de 1974 et/ou à la résolution des Nations Unies sur la pratique en matière d'immatriculation.

Les informations visées au paragraphe 1 seront transmises au Secrétariat Général de l'Organisation des Nations Unies aussi tôt que possible.

Tout changement significatif des informations mentionnées au paragraphe premier seront portées sur le registre national. Le Secrétaire General de l'Organisation des Nations Unies en sera informé.

#### **Article 11 — Responsabilité et recours**

Quand (XY) a payé une indemnisation à un tiers pour un dommage causé par une activité spatiale en application de ses obligations internationales, le gouvernement dispose d'un recours contre l'opérateur. Le recours du gouvernement contre l'opérateur peut être limité à un certain montant.

**Article 12 — Assurance**

L'opérateur qui conduit des activités spatiales doit disposer d'une assurance pour les dommages aux tiers pour ... (montant à établir par la loi nationale) L'obligation prévue au paragraphe premier ne s'applique pas aux activités spatiales gouvernementales quand elles sont conduites en tant que telles. L'autorité peut lever cette obligation d'assurance quand :

(b) L'opérateur dispose d'un capital suffisant pour couvrir le montant de sa responsabilité ;

(c) L'activité spatiale n'est pas commerciale et est conduite dans l'intérêt public.

**Article 13 — Procédure**

Les règles de procédure de l'autorité prévoient des délais à sa prise de décision et le droit d'imposer des sanctions

Des conditions appropriées, des droits et des tarifs sont établis dans les règlements d'application.

Tout litige portant sur l'interprétation et/ou l'application de la présente loi sera résolu par les juridictions nationales ou en application des règles établies par la Cour Permanente d'Arbitrage pour les différends relatifs aux activités liées à l'espace extra-atmosphérique (2011)

**Article 14 — Sanctions**

Tout manquement aux obligations prévues par la présente loi sera puni d'une amende ne pouvant excéder (... M). La conduite d'activités spatiales et le transfert de telles activités sans l'autorisation de l'autorité compétente, prévue aux articles 3 et 9, seront en tout état de cause punis d'une amende d'un montant au moins égal à (... N).