Prospects for the Development of National Space Legislation

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Overview

I Why national space legislation?

II GA resolution on national legislation (2013)

III Future considerations: guidelines for the Long-term sustainability in outer space activities (LTS guidelines)

IV Conclusion
I Why national space legislation?

1. What is “space activities”? 

<table>
<thead>
<tr>
<th>“space activity” is to:</th>
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<tbody>
<tr>
<td>- launch a space vehicle with a satellite onboard into Earth orbit or beyond;</td>
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<tr>
<td>- return a spacecraft intentionally from outer space to Earth;</td>
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<tr>
<td>- control a spacecraft (mostly satellites) from a ground station for command and control;</td>
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<tr>
<td>- operate a launch/return site, etc.</td>
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</table>

The scope of “space activities” is not decided under international space law.

No definition of “space activities” in the UN treaties on outer space.

The contents of “space activities” decided by the individual States which make national space laws/acts.
2. Why national space laws are enacted?

(1) summary

Main reasons:

1. obligations of the Outer Space Treaty

2. public safety  space activities = highly dangerous activity
   - conditions to conduct a space activity

3. protection of the third party victims
   - third-party liability (TPL)

4. promotion of the space industries
   - TPL  governmental indemnification
(2) First reason: obligations of the Outer Space Treaty, Art. 6

Other than space activities

- governmental agency

- internationally wrongful act → Int’l responsibility

Both governmental agency and private persons

Case of space activities

Authorization and continuing supervision required

Necessity of enacting national laws
## Five UN Space Treaties

### Signature/entry into force | Name of the treaty | Number of states parties
--- | --- | ---
1967 | Outer Space Treaty (OST) | 109
1968 | Rescue and Return Agreement | 98
1972 | Liability Convention | 96
1975 | Registration Convention | 69
1976 |  | 
1979 | Moon Agreement | 18
1984 |  | 
(3) Second reason: public safety

Launch/return space vehicles
Technological capabilities
- safe rocket
- safe launching facility
- safe launch plan
- environmental protection
- appropriate payload(s), etc.

Financial capabilities
- compensation measures in case of accidents → damages

Operation of spacecraft (satellites)
- purposes and methods of spacecraft (not in the violation of int’l law)
  - environmental protection of the outer space including the relevant space debris mitigation measures;
  - contamination prevention; collision avoidance; post-mission measures (GEO, LEO), etc.

  * usually no compensation measures are required for potential damages
(4) Third and forth reasons

(3) Protection of the third-party victims

1972 The liability Convention (compensation for foreigners)

A state which:
i) launches; ii) procures the launching;
iii) from whose territory a space object is launched; and
iv) from whose facility a space object is launched.

TPL
- on the ground: no-fault liability
- in outer space: fault-based liability

(4) Protection of the space industries

States apply the same degree of the protection to its nationals

Governmental indemnification when: TPL insurance does not cover a certain damages; and damages are greater than the amounts covered by the TPL insurance
(cont’d) One type of governmental indemnification

when damage is caused on the Earth → no-fault liability

Launch operator’s compensation

Governmental indemnifications

TPL insurance

French law does not have the ceiling of governmental indemnifications

terrorism
war
massive natural disasters

Damage amount

Types of damage
II GA resolution on national legislation (2013)

1. Elements recommended in a national space law

Eight paragraphs as elements of a national law
1. The scope of the law
2. The scope of the applicable national jurisdiction
3. Agency/agencies to give authorization
4. Conditions of the authorization
5. Contents of the continuing supervision
6. Registration of space objects
7. TPL
8. New activities such as on-orbit transfer of ownership/control of a space object
2. Frequently found examples: elements 1-2

1 The scope of the law

Typically:
  i) to launch a launch vehicle onboard a satellite into Earth orbit or beyond; and  
  ii) to control a satellite in orbit using a ground station for command and control

2 The scope of the applicable national jurisdiction

Typically:
  territorial jurisdiction + personal jurisdiction elsewhere

- only territorial jurisdiction 
- only personal jurisdiction 
- extraterritorial jurisdiction
3. Frequently found examples: elements 3-4

3 Agency/agencies to give authorization
(various agencies)
- Ministry of economy/industry/commerce
- Ministry of education, science & technology
- Ministry of transportation
- Ministry of defense
- space agencies

4. Conditions of the authorization
(depends on the scope of space activities)
- Technological conditions/requirements
- Financial conditions/requirements
- Observance of related national laws
5 Contents of the continuing supervision
- reporting
- on-site inspection
- enforcement mechanisms (administrative, penal, etc.)

6 Registration of space objects

OST; Registration Convention
https://www.unoosa.org/

4 categories of the launching States

Only one State registers to the UN registry

Jurisdiction and control on that space object
### 5. Frequently found examples: elements 7-8

<table>
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<th>7 TPL</th>
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<td>obligatory TPL insurance and (usually) governmental indemnification</td>
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</table>

This mechanism applies mostly only for the launch of a launch vehicle with a satellite (cf. UK requires TPL for on-orbit operation of a satellite.)

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<th>8 New activities such as on-orbit transfer of ownership/control of a space object</th>
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Other candidates are:
- suborbital flight
- Active debris removal/on-orbit servicing
- Recovery of space resources
US Space resource exploration and utilization act of 2015 (§ 402, now incorporated in 51 USC § 50303) recognizes the right of a US citizen to possess, own, transport, use, and sell space resources obtained in accordance with applicable law, including int’l law.

No authorization and supervision provisions enacted as of November 2019.

Following the 2015 Act, report of the Office for Science and Technology Policy (OSTP) to the Congress (2016) recommended to make another act providing light-touch mission authorization and supervision schemes provisions.
III Future considerations: guidelines for the Long-term sustainability in outer space activities (LTS guidelines) (1) background

21 guidelines adopted at the COPUOS in June 2019 LTS guidelines technically based guidelines

A Policy and regulatory framework for space activities (5 guidelines)

B Safety of space operations (10)

C International cooperation, capacity building and awareness (4)

D Scientific and technical research and development (2)

Since 2020, 5-year WG considerations will elaborate implementation measures of the LTS guidelines National implementation enabled by national laws (and administrative measures)
<table>
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<tr>
<th>Number</th>
<th>Guideline (=rule)</th>
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<tbody>
<tr>
<td>A.1</td>
<td>Adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities</td>
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<tr>
<td>A.2</td>
<td>Consider a number of elements when developing, revising or amending, as necessary, national regulatory frameworks for outer space activities</td>
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<tr>
<td>A.3</td>
<td>Supervise national space activities</td>
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<td>A.4</td>
<td>Ensure the equitable, rational and efficient use of the radio frequency spectrum and the various orbital regions used by satellites</td>
</tr>
<tr>
<td>A.5</td>
<td>Enhance the practice of registering space objects</td>
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<tr>
<td>C.1</td>
<td>Promote and facilitate international cooperation in support of the long-term sustainability in outer space activities</td>
</tr>
<tr>
<td>C.2</td>
<td>Share experience related to the long-term sustainability of outer space activities and develop new procedures, as appropriate, for information exchange</td>
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<tr>
<td>C.3</td>
<td>Promote and support capacity-building</td>
</tr>
<tr>
<td>C.4</td>
<td>Raise awareness of space activities</td>
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<tr>
<td>D.1</td>
<td>Promote and support research into and the development of ways to support sustainable exploration and use of outer space</td>
</tr>
<tr>
<td>D.2</td>
<td>Investigate and consider new measures to manage the space debris population in the long term</td>
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</table>
(3) Guidelines B. Safety of space operations

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<tr>
<td>B.1</td>
<td>Provide updated contact information and share information on space objects and orbital events</td>
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<tr>
<td>B.2</td>
<td>Improve accuracy of orbital data on space objects and enhance the practice and utility of sharing orbital information on space objects</td>
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<tr>
<td>B.3</td>
<td>Promote the collection, sharing and dissemination of space debris monitoring information</td>
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<tr>
<td>B.4</td>
<td>Perform conjunction assessment during all orbital phases of controlled flight</td>
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<tr>
<td>B.5</td>
<td>Develop practical approaches for pre-launch conjunction assessment</td>
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<tr>
<td>B.6</td>
<td>Share operational space weather data and forecasts</td>
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<td>B.7</td>
<td>Develop space weather models and tools and collect established practices on the mitigation of space weather effects</td>
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<tr>
<td>B.8</td>
<td>Design and operation of space objects regardless of their physical and operational characteristics</td>
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<tr>
<td>B.9</td>
<td>Take measures to address risks associated with the uncontrolled re-entry of space objects</td>
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<tr>
<td>B.10</td>
<td>Observe measures of precaution when using sources of laser beams passing</td>
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IV Conclusion

1. Not one good/ideal/desirable space legislation. A State can choose a type of law what is appropriate for its national necessity.

2. National legislation protects national interests by promoting its private space activities and country specific issues (ex. environmental and other protection obligations of certain areas)

3. National legislation protects international space safety and security (treaty obligations and non-legally binding rules such as LTS Guidelines)