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CONTRIBUTION OF SPACE LAW AND POLICY TO SPACE
GOVERNANCE AND SPACE SECURITY IN THE 21st CENTURY
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**Panel 5: Cooperation and capacity-building in space law
and policy for the benefits of developing countries**

**PROMOTION FOR DEVELOPMENT OF
NATIONAL SPACE LEGISLATION IN
DEVELOPING STATES TO ENSURE GLOBAL
SPACE GOVERNANCE**

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A disclaimer...

I am building on the works of Dr. Tanveer Ahmad.

All mistakes, errors, and omissions (and nervousness) are mine.

- This panel is about *cooperation and capacity-building*.

“...appropriate legal and diplomatic mechanisms to promote cooperation in outer space will remain inaccessible to developing countries **without specialists with thorough understanding of such mechanisms, and the building of institutional capacity at the national level**”.

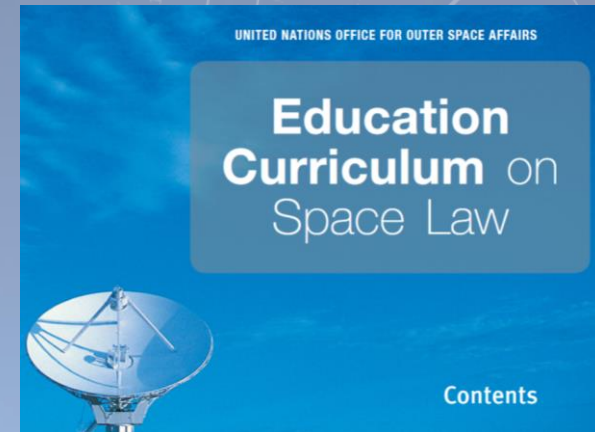
- But this presentation is about *the necessity of national space legislation*.

“...the possible ways to enhance the current frameworks of educational opportunities in space law for the **ultimate purpose of developing national space policies and domestic regulatory frameworks**”.

RATIONALE FOR ADOPTION NATIONAL SPACE LAW

Space law a very specialised field of law. Special understanding of and training in (*capacity-building*) international space law is needed to ensure:

- 1) State complies with international obligations;
- 2) national/private space activities conform to State's international obligations ;
- 3) legal certainty and predictable environment to foster national (commercial) space activities;
- 4) framework for future developments, even if States not space-faring (yet).



“Even if it was up to each State to determine how to assume its international responsibility for national space activities, certain regulations at the national level could be in the interest of the State itself”.

Report of the Working Group on National Legislation (2012)

FOSTERING GLOBAL SPACE GOVERNANCE



UNITED NATIONS
Office for Outer Space Affairs

UNCOPUOS

Multilateral level

ITU Radio Regulations

Space law treaties

- Outer Space Treaty 1967
- Liability Convention 1972
- Rescue and Return Agreement 1968
- Registration Convention 1976
- Moon Agreement 1976



Space law principles

- Declaration of Legal Principles 1963
- The "Broadcasting Principles" 1982
- The "Remote Sensing Principles" 1986
- The "Nuclear Power Sources" Principles 1992
- The "Benefits Declaration" 1996



Guidelines

- **Transparency and Confidence Building Measures**

Guidelines / Standards

- Space Debris Mitigation Guidelines
- European Code of Conduct
- ISO Standards
- IAASS

UNIDROIT Convention on Mobile Interests / Space Protocol

- Clarify contents of law
- Consolidate the law
- Source of the law
(Evidence of *opinio juris* and practice shaping custom)
- Solidify the ("soft") law

- Inform content of national law and policy
- Ensure compliance with international obligations
- Ensure rule of law at national level
- *Affirmation of foundational principles*
(interest of all States; peaceful purposes; benefit of humanity)

National level

National space law

- Acts
- Regulations
- Decrees

National space policy

- *Affirmation of foundational principles*
(interest of all States; peaceful purposes; benefit of humanity)

PRINCIPAL ACTOR IN GLOBAL SPACE GOVERNANCE

- STATES still primary actor.
- Article VI of the *Outer Space Treaty*:

Rationale for national space law

1) State complies with international obligations

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. ...

Rationale for national space law

2) national/private space activities conform to State's international obligations

Liability Convention:

liability of launching States for damage caused by their space object(s).

Registration Convention: responsibilities of States:

- 1) to register the space object by means of an entry in an appropriate registry ; and inform the Secretary-General of the United Nations of the establishment of such a registry (Art II)
- 2) Furnish “as soon as possible” certain information related to space object

Report Of The Working Group On National Legislation (2012)

UN Doc A/AC.105/C.2/101

Highlights:

- *“importance of the responsibility of States to ensure that Outer Space is used for peaceful purposes”!*
- **DIFFERENCES in national legislation:**
 - “unified acts or a combination of national legal instruments, ranging from administrative regulations to decrees and laws
 - “national legal requirements depended to a high degree on the range of space activities conducted and the level of involvement of the private sector”
- **COMMONALITIES in national legislation:**
 - national jurisdiction for regulating space activities of governmental and non-governmental entities;
 - procedures for authorizing and licensing national space activities;
 - liability and indemnification procedures;
 - registration of objects launched into outer space and establishment of national registries and
 - regulatory frameworks for national space agencies or other national entities mandated to carry out and supervise space activities.

COMPONENTS OF NATIONAL SPACE LEGISLATION

- Recognition by **UNCOPUOS Working Group** of elements of national space legislation (2012):
- **Scope of application** (OST, Art VI)
(phases of launch, operation in orbit, return; responsibilities of launching and registering State)
- **Authorisation and licensing** (OST, Art VI)
- **Safety** (OST, Art IX)
(to persons, property and environment)
- **Continuing supervising of non-governmental activities** (OST, Art VI)
- **Registration** (OST, Art VIII & IX)
(national registry; information and change in status of space object)
- **Liability and insurance** (OST, Art VI & VII)
(recourse from operators to ensure appropriate coverage, indemnification)
- **Transfer of ownership or control of space object** (OST, Art VI, VII & VIII)
(authorisation and obligations of changes in status of operator of space object)

International Law Association's *Draft model law on national space legislation* (2013)

- **Scope of Application** (Article 1)
- Use of Terms (Article 2)
definition of: space activity; space object; operator; commercial activity
- **Authorisation** (Article 3)
- **Conditions for authorisation** (Article 4)
- **Supervision** (Article 5)
- **Withdrawal, suspension, amendment authorisation** (Article 6)
- Protection of environment (Article 7)
environmental impact assessment
- Mitigation space debris (Article 8)
- **Transfer of space activity** (Article 9)
- **Registration** (Article 10)
- **Liability and Recourse** (Article 11)
- **Insurance** ((Article 12)
insurance against fault; right of State recourse
- Procedure ((Article 13)
administrative rules of implementation; dispute resolution
- Sanctions (Article 14)

TREND LEADING TO DEVELOPMENT OF NATIONAL SPACE LEGISLATION

Beginning space age

- Dominated by two super powers of that time
- Type of actors and activities:
 - Economically developed States
 - mostly military (government)



Increasing democratisation and commercialisation of outer space

- New actors in space activities
 - Developing countries
 - Commercial entities/ private enterprise

TRENDS, REALITIES and CHALLENGES:

- Ever-growing reliance on outer space (“dependence”)
- Ever-increasing number of actors (“democratisation”)
- Shift away from governmental to private/commercial undertakings in outer space (“commercialisation”)
- Shift of balance of power to rising powers /economies (BRICS) (“multi-polarisation”)
- Militarisation and security concerns in outer space (“militarisation”)
- Need to address needs and interests of developing countries
- Environmental degradation of outer space
- Sustainability of human activity and presence in outer space

- *Growth of national space legislation in to meeting new challenges and opportunities*
- *Calls by UNCOPUOS for States to adopt national space legislation (e.g. Res 59/115)*

ON THE PROPOSED NATIONAL SPACE LEGISLATION ON SPACE RESOURCE EXPLOITATION

“Luxembourg aims to actively become a global leader in the **exploration and sustainable utilisation of space resources**. [...]

To create an environment of **legal certainty**, the Luxembourg government decided the enactment of a new comprehensive legislation regarding space mining activities.

This regulatory framework will ensure a **stable legal environment for both companies and investors** willing to undertake their commercial activities in Luxembourg.

Space resource-dedicated regulation licences will be issued under the new law and government **supervision of the activities** of operators and **regulating their rights and obligations** will be ensured by Luxembourg as a sovereign state.

The new space legislation will adopt a legal provision, which guarantees the operators the right to property of the minerals extracted in outer space **in accordance with international law**. This guarantee will coherently enhance investor protection. There will be no conflict about the extraction or the use of minerals with present international law.

Luxembourg will offer an attractive overall framework for space mining activities, including – but not only limited to – **the legal regime”**.

Luxembourgish Prime Minister Xavier Bettel, June 2016

NATIONAL SPACE LEGISLATION TO DATE...

- 27 States have adopted national space legislation, of some form or shape:

Australia, Austria, Argentina, Belgium, Brazil, Canada, Chile, China, France, Germany, Japan, Kazakhstan, India, Indonesia, Iran, Italy, Netherlands, Nigeria, Norway, South Korea, the Russian Federation, South Africa, Spain, Sweden, Ukraine, the United Kingdom (UK), and the United States (US)

- More are on the way...

Luxembourg, New Zealand, UAE

EXAMPLES OF NATIONAL SPACE LAWS AND POLICIES OF DEVELOPED SPACE-FARING STATES

US

- **Comprehensive sets of policies and laws**
- extensive space activities, both of government and of commercial entities
- *National Space Policy of 2010 and National Space Transportation Policy of 2013.*
- *Title 51 USC*
- *National Aeronautics and Space Act 1958 (national space agency) (Ch 201)*
- *Licensing for commercial space launch (Ch 509)*
- Remote sensing (Ch 601)
- *Commercial Space Launch Competitiveness Act 2015. — commercial recovery of an asteroid resource or a space resource*

UK

- **One comprehensive space activities act (Outer Space Act 1986)**
- Licensing, safety (health, property, persons), protection of environment, non-interference with other space activities, national security, registration of space objects jurisdiction (limited to territory)
- Fulfilment of UK's international obligations

Canada

- **Piecemeal, needs-basis policies and laws**
- *Radiocommunication Act 1985; Canadian Space Agency Act 1990, Civil International Space Station Agreement Implementation Act 1999, Remote Sensing Space Systems Act 2005; Remote Sensing Space Systems Regulations Act 2007.*

EXAMPLES OF NATIONAL SPACE LAWS AND POLICIES OF DEVELOPED NON-SPACE-FARING STATES

Netherlands

- *Space Activities Act* extends beyond national border
- licensing procedure that takes into account, among other things, safety (of persons and of property), the protection of the environment, financial security (including insurance), national security, the protection of public order and the fulfilment of the Netherlands' international obligations; the revocation of license; the procedures in the case of, and in the likely event of, an accident; the liability for damage caused by space objects; and penalty for the infringement of the Act
- **Activities conducted by a Dutch national or a juridical person on or from the territory of a State – if the person not from State Party to the OST.**

Austria

- **One comprehensive space activities act (Austrian Outer Space Act 1986)**
- authorization of space activities, the procedure for revocation and modification of the authorization, the establishment of a national space registry for the registration of space objects launched from Austria with the registration procedure, the grant of supervision authority; mitigation of space debris, the liability for damage; sanctions for the violation of the provisions of the

Italy

- **Piecemeal, needs-basis policies and laws**
- *Law 23 of 25 January 1983: Norms for the implementation for the Convention on International Liability for Damage caused by Space Objects*
- *Law No 153 of 12 July 2005: Registration of objects launched into outer space*

NATIONAL SPACE LEGISLATION: SPACE-FARING DEVELOPING STATES

- **CHINA:** Two space legislation and three white papers: Compared to China's presence in outer space, this is insufficient.
- **INDIA:** No space legislation: only a policy on remote sensing data and a guiding document for the implementation of satellite communications policy framework.
- **BRAZIL:** Three space legislation: Insufficient to discharge Brazil's international obligation since those laws do not address a good number of important issues.
- **KAZAKHSTAN:** One comprehensive space legislation addressing most issues.
- **IRAN:** One statute that established Iran's national space agency.
- **RUSSIAN FEDERATION:** Significant number of statutes on outer space activities addressing almost every issue.

NATIONAL SPACE LEGISLATION: NON SPACE-FARING DEVELOPING STATES

- **ARGENTINA:** Two decrees on outer space activities.
- **CHILE:** One decree establishing its national space agency.
- **INDONESIA:** One comprehensive space legislation addressing most issues.
- **NIGERIA:** One space law establishing its national space agency and one comprehensive national space policy.
- **UKRAINE:** Several space legislation.
- **SOUTH AFRICA:** Four space legislation and one national space policy.

VARYING APPROACHES TO DIFFERENT ISSUES IN NATIONAL SPACE LEGISLATION

- **POLICIES:**

Belgium: ensure the safety of people and property, protect the environment, advance the optimal use of air space and outer space, protect strategic, economic and financial interests of the State, and fulfil obligations under international law (Belgium);

China's White Papers, as guidance for space legislation ;

EU's space policy underlines freedom of access, exploration and use space; addresses the use of space for self-defence, and calls upon its Member States to engage in the peaceful exploration and use of space

Ukraine: achievement of socio-economic development and scientific progress, promotion of welfare, development of the national economy, and promotion of national security and defence.

- **Role of national agency:**

Some opt for national space agency for research and jurisdiction over space activities (Argentina; Canada – also power to guarantee loans for commercial space); others are advisory and coordination role in space activities (Columbia; Chile); others hold regulatory, rulemaking and licensing powers (Russia); maintaining registry of space objects (Italy); variety of agencies to oversee safety, licensing, launch, research, fulfilment of international obligations (US)

- **REGISTRATION:**

- to comply with their international obligations under the Registration Convention, several States require that all space objects launched by its corporate or individual citizens be registered

Argentina has a novel provision, requiring that the operator provide information on environmental precautions taken, including mechanisms for placement of the space object in a transfer orbit at the end of its useful life, the anticipated date of its recovery, disintegration or loss of contact.

VARYING APPROACHES TO DIFFERENT ISSUES IN NATIONAL SPACE LEGISLATION

- **Licensing**
- **Australia** has very detailed licensing :
launch facility, launch vehicle, and flight path must be effective and safe. Applicants must submit design and engineering plans of the launch vehicle. Prior to launching, they must receive approval from local ambulance, fire, and police authorities. Environmental approvals also are required. Applicants must identify their organisational structure and financial fitness, their program management plan, their technology security plan, and their emergency plan

France: looks applicant's technical, moral, financial and professional capabilities before issuing a license; restrictions may be imposed to protect the safety of people and property, as well as the protection of public health and the environment

- **Netherlands:** requires licensing for launching, flight operations or guidance of space objects performed in or from Dutch soil or a Dutch ship

VARYING APPROACHES TO DIFFERENT ISSUES IN NATIONAL SPACE LEGISLATION

- **Sanctions:**

Australia: licensee have its license suspended or revoked if it contravenes a license condition, endangers national security, or violates foreign policy or international obligations

- **China: may revoke license or request rectification if violates national laws and/or agreement on** maintaining confidentiality during execution of the project; actions endangering national security, damaging national interests or violating national diplomatic policies; carries out the launch activities beyond the limit approved

- **Japan:** imposition of fine Y200,000 for Failure to obtain the appropriate authorisation or approval ; Conducting activities other than those set forth in relevant space act; launching without insurance

- **Russia:** failure to comply with instructions or orders, the discovery of the filing of false data, the dissolution of the legal entity of the licensee, or the violation of license conditions may result in license suspension or revocation

- **Sweden:** license may be withdrawn if license conditions are disregarded. Violations may result in imprisonment of up to one year

VARYING APPROACHES TO DIFFERENT ISSUES IN NATIONAL SPACE LEGISLATION

- **LIABILITY:** States protect themselves in their domestic legislation through indemnification and insurance requirements in the licensing of launch sites, launch vehicles, and launches and re-entry
- **Australia:** liability on the responsible party
- **Belgium:** right of State to counterclaim against operator; King may establish the limit of compensation, so operator does not have unlimited liability
- **Netherlands:** is obliged to pay compensation under Article VII of the Outer Space Treaty or the Liability Convention, the State is entitled to recover this sum, in full or in part, from the party whose space activity has caused the damage
- **Republic of Korea:** person who launches a space object must insure against liability in an amount determined by the Ministry of Science and Technology, and will be liable for any damages it causes
- **UK:** one must indemnify the UK government against any claims for damage or loss; no liability cap or other mechanism shields the private operator from unlimited liability

VARYING APPROACHES TO DIFFERENT ISSUES IN NATIONAL SPACE LEGISLATION

INSURANCE:

Insurance is of two types: (1) coverage of space objects and launch facilities; and (2) coverage of third party and products liability

China: licensee must comply with the relevant national regulations to insure himself against the liabilities with respect to damage or loss caused to third parties by the space objects launched through the licensed project

Republic of Korea: licensee must insure against liability in an amount capable of compensating for damages. The minimum amount is set by Ministry of Science and Technology.

Russia: insurance as determined by legislation, covering: damage to the life and health of the cosmonauts and the personnel at the ground and other objects of space infrastructure, as well as against property damage to third persons

US: for launch and re-entry licensee/permittee, must obtain maximum probable loss insurance to to third parties for death, bodily injury or property damage, and to the US government for property damage

ISSUES FACING DEVELOPING COUNTRIES TO CONSIDER

- National space legislation can **foster or hinder** development of national space activities
- **Capping of liability** and establishing licensing and operational standards can enhance private initiative, which relies on secure finances and insurance
- Regulatory regime must be efficient and responsive will “chill” development of space; bureaucratic system or being prone to corruption will hinder investment
- Conflict of jurisdiction >> forum shopping?

“Moreover, a fragmented and unharmonious patchwork of national laws governing such issues as safety, security, environmental harm, and liability will impede the ability of space commerce to reach its full potential” .

States would be well advised to establish regulatory institutions to regulate space activities in a way that protects their environment, ensures safety, protects their citizens and persons and their territory and property from damage or injury, and covers the costs of catastrophic loss when it occurs. National space laws are an important means of achieving those public policies.

Paul S Dempsey, *Emergence of National Space Laws*