

Space Law and Regulations

Access to Space 4 All webinar
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UNITED NATIONS
Office for Outer Space Affairs



Context

Part 1 An introduction to space law

- **Fundamental principles of international space law**
- **International responsibility for national activities**
- **Liability framework**
- **Registration**
- **Space Debris mitigation**

Part 2 What can UNOOSA offer to support implementation of international space law?

- **Space Law Curriculum**
- **United Nations Conference on Space Law and Policy**
- **Space Law for New Space Actors**



International Space Law: United Nations Instruments

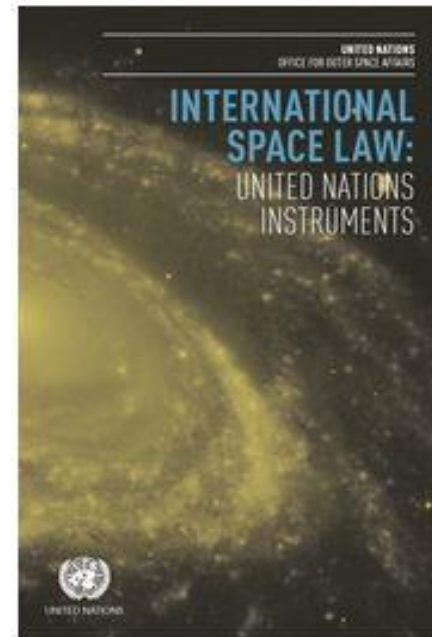
UN treaties and Principles on Outer Space

- ▶ **Outer Space Treaty**, 1967 (110 Ratification / 23 Signatures)
 - ▶ **Rescue Agreement**, 1968 (98/23)
 - ▶ **Liability Convention**, 1972 (98/19)
 - ▶ **Registration Convention**, 1975 (69/3)
 - ▶ **Moon Agreement**, 1979 (18/4)
-
- ▶ Declaration of Legal Principles (1963)
 - ▶ Broadcasting Principles (1982)
 - ▶ Remote Sensing Principles (1986)
 - ▶ Nuclear Power Sources Principles (1992)
 - ▶ Benefits Declaration (1996)



Other Instruments

- Application of the concept of the “launching State” (2004)
- Recommendations on registration of space objects (2007)
- Recommendations on national legislation (2013)
- Space Debris Mitigation Guidelines (2007)
- Safety Framework for Nuclear Power Source (2009)
- 21 Long-term Sustainability Guidelines (2019)



To download the latest treaty booklet please visit our webpage!!
Available in all UN official languages.

<https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html>



Fiftieth Anniversary of the Outer Space Treaty



Declaration on the fiftieth anniversary 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

(A/RES/72/78, 2017)

- Urge States to become party to the Outer Space Treaty
- Emphasize that the benefits arising from adherence to the Treaty and that being party to the Treaty would enhance the ability of States to become part of international cooperation efforts in the exploration and use of outer space for peaceful purposes
- Reiterate the role of the Treaty as the cornerstone of the international legal regime governing outer space activities and that the Treaty manifests the fundamental principles of international space law



Outer Space Treaty

Entry into force: 10 October 1967

- Exploration and use of outer space - province of all mankind (Article I)
- Principle of non-appropriation (Art. II)
- International law and UN Charter (Art. III)
- Prohibition of Weapons of mass destruction (Art. IV)
- **International responsibility for national activities in outer space (Art. VI)**
- **International liability for damage (Art. VII)**
- **Registration of space object (Art. VIII)**
- Cooperation and mutual assistance, due regard, harmful contamination, harmful interference (Art. IX)
- Information and notification (Art. XI)





International responsibility for national activities in outer space (Article VI)

- “State Parties to the Treaty shall bear **international responsibility** for **national activities** in outer space... whether such activities are carried on by **governmental agencies** or by **non-governmental entities**

Material Scope
Territorial and Personal Scope
Delimitation

No detailed procedures
are mentioned

- 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 in conformity with international law.



If satellites causes damage, regardless of their size, the launching State will be responsible under the Liability Convention. Important to recognize their liability and to assure measurements for compensations.

Liability Framework 1

(OST Art. VII & Liability Convention)

A launching state shall be

liable to pay compensation
for **damage** caused by

its **space objects**

Launching State

- 1 State which launches a space object
- 2 State which procures the launching of a space object
- 3 State from whose territory a space object is launched
- 4 State from whose facility a space object is launched

Damage

Loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organization

Space objects

Component parts of a space object as well as its launch vehicle and parts thereof



Liability Framework 2

Damage caused by a space object

Damage in surface of the Earth

Absolute liability
(Liability Convention Art II)

Victim Oriented

Space activities are beneficial, however...

- incorporates ultra-hazardous activities
- might cause great damage
- requires knowledge of the space technology and notoriously difficult to prove the fault

Damage in outer space

Fault liability
(Liability Convention Art. III)

Both parties acknowledge the risk of space activities.
Due diligences is required.

If there is no fault there will be no illegality to the act,
hence would not be liable



UN Register on Objects Launched into Outer Space

- UNOOSA maintains a **central register** of objects launched into outer space as a treaty-based TCBM in Outer Space
- UNOOSA assists State parties with **the identification** of space objects
- UNOOSA **provides data** needed for the implementation and application of other treaties





Information required for registration (Treaty)

Registration Convention (Article IV para. 1):

Each State of registry shall furnish to the Secretary-General of the UN, **as soon as practicable**, the following information concerning each space object on its registry:

- name of launching State or States;
- an appropriate designator of the space object or its registration number;
- **date and territory or location of launch;**
- basic orbital parameters, including:
 - (i) nodal period (time for satellite to orbit the Earth)
 - (ii) inclination (angle from the equator of the orbit of the satellite)
 - (ii) apogee (the furthest distance the orbit is from the Earth);
 - (iii) perigee (the closest distance the orbit is from the Earth);
- general function of the space object.



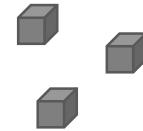
Definition of Launch

To GEO

1st Step:
Launched from earth
to outer space



2nd Step:
Deployed into
another orbit



Small satellites are not always deployed into orbit with rockets as in the case of big satellites. Therefore there may arise problems in finding a country suitable for “procuring the launch”. Which in terms of liability would be difficult to find the country liable when an incident has occurred.



Additional Information required for registration

Recommendation on Registering Space Objects (res 62/101, 2007)

para. 4 (a) :

States could furnish additional information, such as;

- (i) The date of change in supervision;
- (ii) The identification of the new owner of operator;
- (ii) Any change of orbital position;
- (iii) Any change of function of the space object;

States need to register space objects regardless of their size. However, registration to the UN is done in a “timely manner”, hence the status of the small satellites are not changed or sometimes never registered for their lives are short.

REGISTRO DE LAS NACIONES UNIDAS DE OBJETOS LANZADOS AL ESPACIO ULTRATERRESTRE

Formulario para presentar información sobre el registro de objetos espaciales (a partir del 1º de enero de 2010)

Nota: El presente formulario está disponible en Las Instrucciones para rellenarlo y las definiciones de los términos figuran en el anexo. El formulario rellenado debe enviarse en un ejemplar impreso, por conducto de la respectiva Misión Permanente, a la Oficina de Asuntos del Espacio Ultraterrestre y en forma electrónica a space@unospa.org.

Parte A: Información facilitada de conformidad con el Convenio sobre registro o la resolución 1721 B (XVI) de la Asamblea General		
Nuevo registro de un objeto espacial	SI <input type="checkbox"/>	Debe marcar la casilla, si corresponde.
Información adicional sobre un objeto espacial registrado anteriormente (ver fuentes de referencia figura infra)	Presentada de conformidad con el Convenio: ST/OSUER/2/_____ Presentada de conformidad con la resolución 1721B: AIAC.105NF. _____	Presentación del documento de las Naciones Unidas en que los datos de registro presentados anteriormente, se distribuyen a los Estados Miembros.
Estado o Estados u organización intergubernamental internacional de lanzamiento		
Estado de registro u organización intergubernamental internacional Otros Estados de lanzamiento (en caso de aplicarse. Véanse las notas adjuntas.)		De conformidad con el Convenio sobre registro, sólo puede haber un Estado de registro por objeto espacial. Véase el anexo.
Designación		
Nombre		
Designación internacional del COSPAR (ver fuentes de referencia figura infra)		
Designación nacional/número de registro en el Estado de registro		
Fecha y territorio o lugar de lanzamiento		
Fecha de lanzamiento (horas, minutos, segundos - opcional)	dd/mm/aaaa	hrs min seg Hora universal coordinada (UTC)
Territorio o lugar de lanzamiento (ver fuentes de referencia figura infra)		
Parámetros orbitales básicos		
Período nodal		minutos
Inclinación		grados
Apogeo		kilómetros
Perigeo		kilómetros
Función general		
Función general del objeto espacial (si se necesita más espacio, se suele incluir más texto en una página por separado, en formato MSWord)		
Cambio de situación		
Fecha de desintegración / reentrada / desorbitalación (horas, minutos, segundos - opcional)	dd/mm/aaaa	hrs min seg Hora universal coordinada (UTC)
Fuentes de información		
Documentos de registro de las Naciones Unidas	http://www.unospa.org/ospa-3/Reg-records-table.html	
Designaciones internacionales del COSPAR	http://nasa.gsfc.nasa.gov/records/	
Título del Convenio sobre registro y resolución 1721 B (XVI)	http://www.unospa.org/ospa-3/Reg-international.html	
Lugares de lanzamiento a nivel mundial	http://www.unospa.org/ospa-3/Reg-international.html	
Índice en línea de objetos lanzados al espacio ultraterrestre	http://www.unospa.org/ospa-3/ospa-index.html	



Online Index of Objects Launched into Outer Space

- ❑ Web-based tool developed by UNOOSA in 2001 allowing States to identify whether a space object has been registered and who is the State of registry.
- ❑ Fusion of official and unofficial data. Includes all registered and unregistered functional space objects from 1957 to present. Space debris and non-functional objects are not included.
- ❑ Each space object record contains (when available) information from the State of registry:
 - ❑ Initial registration document (Article IV, para. 1)
 - ❑ Documents containing additional information (Article IV, para.2)
 - ❑ Document containing date of decay/re-entry/deorbit (Article IV, para.3)
 - ❑ Links to documents by other States containing information related to the space object are also provided (i.e. mentioned in a State providing launch services)
- ❑ Search could be performed using different parameters (name, international designator, launching State, date of launch, orbital status, etc.)

<http://www.unoosa.org/oosa/osoindex/index.jspx>



UNOOSA/ITU Guidance on Space Object Registration and Frequency Management for Small and Very Small Satellites

- ❑ Jointly developed in 2015 by UNOOSA and the International Telecommunications Union
- ❑ for small satellite developers and operators.
- ❑ Includes a brief explanation of processes as well as links to various online resources.
- ❑ Available from UNOOSA's website under Space Object Register resources:

www.unoosa.org



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Guidance on Space Object Registration and
Frequency Management for
Small and Very Small Satellites



COPUOS and space debris - overview

STSC

- **Scientific and Technical Subcommittee (STSC)**

- Space debris included in agenda of STSC from 1994
- STSC work plan 1996-1998 on developing technical report on space debris
- STSC Technical Report on Space Debris adopted in 1999 (IADC)
- STSC Working Group on space debris 2004-2006
- COPUOS Space Debris Mitigation Guidelines adopted in 2007

LSC

- **Legal Subcommittee (LSC)**

- LSC agenda item “General exchange of information on national mechanisms relating to space debris mitigation measures” (2009)
- “General exchange of information and views on legal mechanisms relating to space debris mitigation measures, taking into account the work of the Scientific and Technical Subcommittee” (from 2012)
- Compendium of space debris mitigation standards (2014)
- As of 2018 “space debris remediation” included in the agenda item



COPUOS Space Debris Mitigation Guidelines (2007)

1. Limit debris released during normal operation
2. Minimize the potential for break-ups during operational phases
3. Limit the probability of accidental collision in orbit
4. Avoid intentional destruction and other harmful activities
5. Minimize potential for post-mission break-ups resulting from stored energy
6. Limit the long-term presence of space craft and launch vehicle orbital stages in LEO region after the end of their mission
7. Limit the long-term interference of space craft and launch vehicle orbital stages with GEO region after the end of their mission

Piggy-back launch is the major method to deploy a small satellite. This means that even though small satellites has short lives (average 3 years) they will be in the orbit for around 25 years.



Long-Term Sustainability of Outer Space Activities

Preamble and 21 Guidelines (A/74/20, annex II)

- Adopted in 2019 COPUOS after 8 years of discussion
- Voluntary implementation of the Guidelines. Not legally binding under international law
- Any action taken towards their implementation should be consistent with the applicable principles and norms of international law
- Nothing in the Guidelines should constitute a revision, qualification or reinterpretation of those principles and norms
- Nothing in the Guidelines should be interpreted as giving rise to any new legal obligation for States
- Reference to GGE-report on TCBM
- Review of implementation and updating of the Guidelines through COPUOS with the support of UNOOSA



21 LTS Guidelines - key areas

- National regulatory frameworks(reference to GA resolution 68/74 on national space legislation)
- Supervision of national space activities (responsible national entities)
- Registration practice (reference to GA resolution 62/101 on registration practice)
- Safety of space operations (information exchange on space objects and events)
- Improve accuracy of orbital data
- Sharing of space debris monitoring information
- Conjunction assessments (all orbital phases of controlled flight/pre-launch)
- Share space weather data and forecasts/develop space weather models
- Design and operation of space objects (including small satellites)
- Uncontrolled re-entry of space objects (risk assessment and consultation)
- Cooperation and capacity-building/scientific and technical research and development



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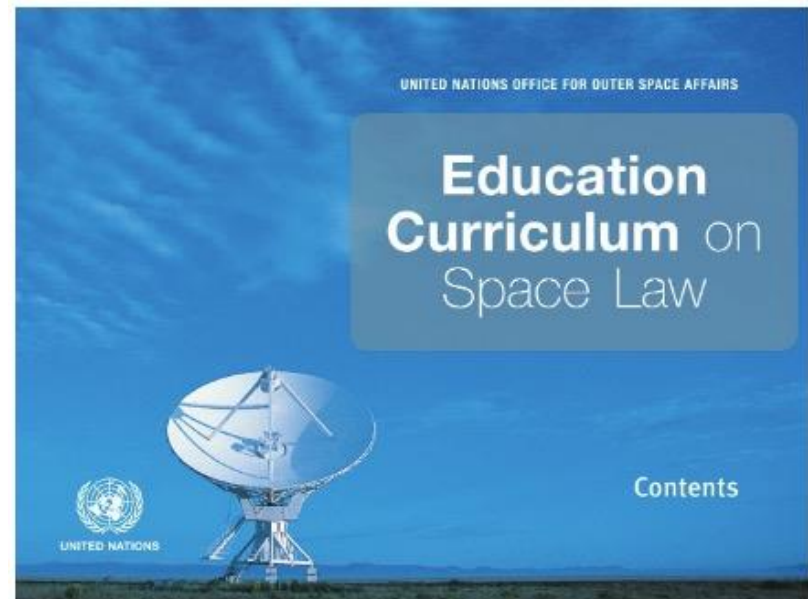
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Space Law Curriculum

- In 2007, COPUOS and LSC requested UNOOSA to develop a curriculum for a basic course on space law that could be used in the activities of the regional centres.
- It can also serve as an educational tool for other educational institutions and training initiatives.
- The curriculum is complemented by an online compilation of supplemental reference materials.



<https://www.unoosa.org/oosa/en/ourwork/spacelaw/space-law-curriculum.html>



United Nations Conference on Space Law and Policy

Series of **UN Workshops on Space Law**: Netherlands (2002); Republic of Korea(2003); Brazil (2004); Nigeria (2005); Ukraine (2006); Iran (2009); Thailand (2010); Argentina (2012); China (2014); UNOV Vienna (2016). Series of **UN Conference on Space Law and Policy**: Russian Federation (2018); Turkey/APSCO (2019).

- UN Conference on Space Law and Policy focusing on African region
- 8-10 December 2020 (Virtual)
 - Long-term sustainability of outer space activities
 - Legal regime of outer space and global governance
 - National legal and policy frameworks related to outer space activities
 - Best practices in sharing remote sensing data to achieve SDG
 - Strengthening capacity-building in space law and policy
- [Registration page coming soon!](#)





Request from Member States targeted legal assistance

UNOOSA receives regular requests for targeted technical legal assistance to support national space policy and legislation development, as well as implementation of five UN Space Treaties, principles and guidelines.

The importance of UNOOSA delivering such services has been recognised on multiple occasions, including:

- Declaration on the fiftieth anniversary 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 (A/RES/72/78) December 2017
- United Nations/Austria Symposium on the theme “Access to space: holistic capacity-building for the twenty-first century” (A/AC.106/1162) Graz, 3-7 September 2017
- United Nations Workshop on Space Law (A/AC.105/1131) Vienna, 5-8 September 2016
- Report of Legal Subcommittee (2017, 2018)



Space Law for New Space Actors Project Objectives

The project will allow UNOOSA to establish dedicated advisory services to assist emerging space faring nations on national space legislation and national space policy.

The project aims to:

- In collaboration with requesting States, identify needs and deliver tailored advisory services.
- Raise global awareness levels of the fundamental principles of international space law.
- Support the universalization, adherence and implementation of the key components of normative framework.



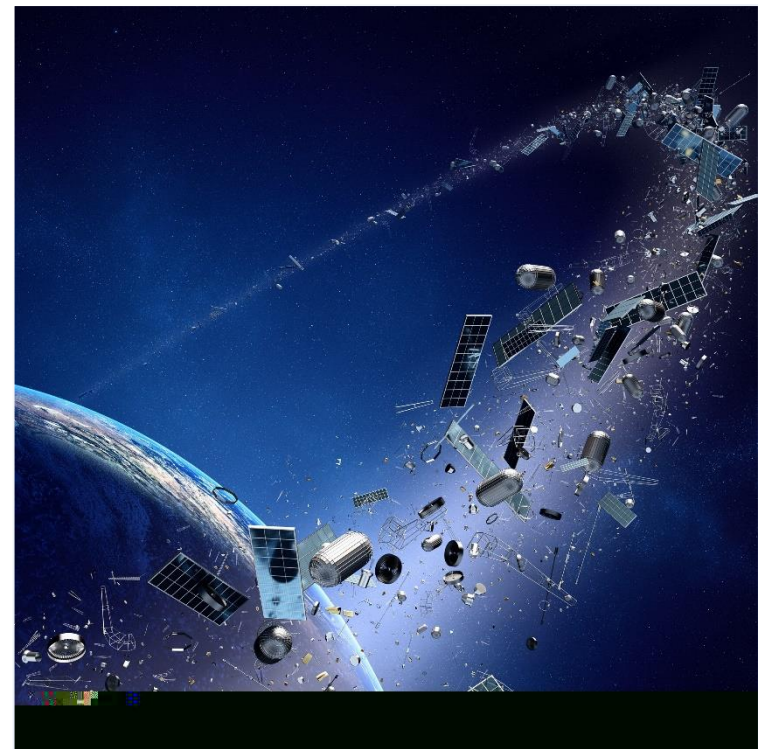


Target Beneficiaries

National Policy-makers and legislators

UNOOSA will tailor the capacity-building and advisory services to the needs and requirements of policy-makers and legislators in governmental and regulatory authorities.

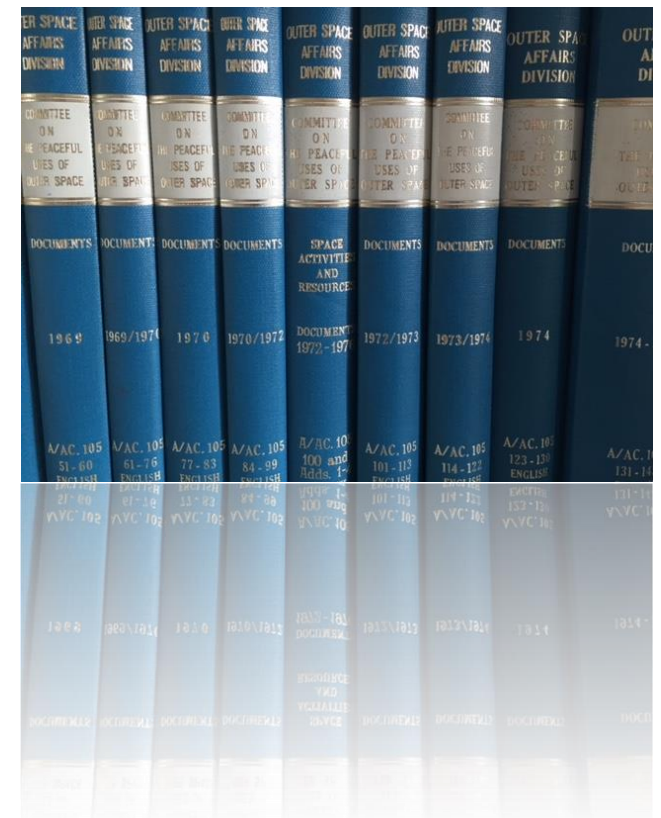
It is expected that countries who are either entering the space sector for the first time or who are embarking upon new phases of space activities will benefit most from the project.





Services on offer

- UNOOSA to support partners enhance understanding of the fundamentals of international space law, increasing their capacity to draft national space law and policy.
- UNOOSA supports partners implement existing normative frameworks, such as the Outer Space Treaty, the Liability Convention, the Registration Convention and the UN Space Debris Mitigation Guidelines.





A Four Stage Method (12month)

Stage 1) Information gathering and baseline analysis

Stage 2) Training session programme and material development, tailored to national needs

Stage 3) Mandatory E-learning course completed by participants
Deliver on-site legal advisory training sessions

Stage 4) Follow up and impact evaluation





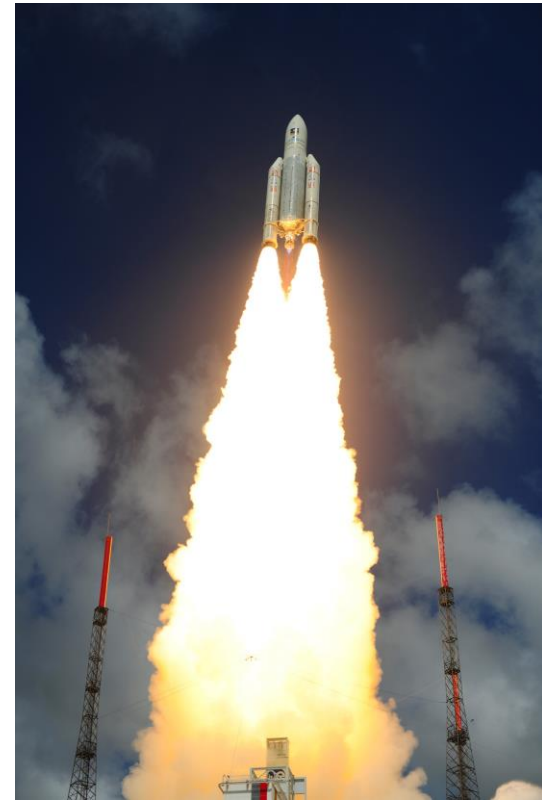
2020 -2021 activity

Type of activity	Target Beneficiaries		Location	Language	Date
Legal Advisory Mission (Stage 3)	National	National authorities	Santiago, Chile (Online)	Spanish	13-16 October, 2020
Raising Awareness (Stage 1)	Regional	African countries	Online (registration open)	English	7 December of 2020
Information Gathering (Stage 1)	Regional	Focus on ASEAN countries	Bangkok, Thailand	English	2021 (TBC)



Importance of fostering responsible national space activities

Awareness of, and adherence to, international space law is becoming more important than ever to maintain sustainable environment in space.





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Call for Donors

The project aims to realize UNOOSA to collaborate with member States and to respond to such requests for legal advisory services in a structured and sustainable manner.

To establish this new approach, UNOOSA is calling on interest parties to consider supporting such efforts through voluntary contributions.



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For further information

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THANK YOU



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