

# The Registration of Lunar Activities: Recommendations from the Registration Project

*Mark J. Sundahl and Antonino Salmeri\**

## Abstract

The obligation to share information regarding space activities and to register space objects on a public registry is a fundamental aspect of the law of outer space. As we enter a new era of space exploration focused on the use of celestial bodies, existing mechanisms under international space law – i.e. Article VIII OST, Resolution 1721 B (XVI) and the Registration Convention - need updating. These mechanisms were designed for the registration of space “objects” in Earth orbit, not space activities on celestial bodies, and did not consider the possibility of prospective submissions.

The Registration Project was launched in 2021 as a joint venture between the Moon Village Association and the Global Space Law Center to discuss these very issues in an international group comprised of twenty-five experts in space law, business, engineering, and policy. The authors served as co-chairs of the Project, and wrote this paper to present its recommendations for improving existing law and practice in both the near and long-term, including a proposed template providing guidance for the submission of information regarding lunar activities.

**Keywords:** international space law; notification of space activities; registration of space objects; lunar governance.

## 1. Introduction

The obligation to share information regarding a State’s activity in outer space is a fundamental principle of international space law, and it is primarily

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\* Mark J. Sundahl, Cleveland State University, United States, m.sundahl@law.csuohio.edu.  
Antonino Salmeri, University of Luxembourg, Luxembourg, antonino.salmeri@uni.lu.

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expressed in Article XI of the Outer Space Treaty.<sup>1</sup> Submissions made pursuant to Article XI are compiled in the *Index of Submissions by States under Article XI of the Outer Space Treaty* maintained by the UN Office for Outer Space Affairs.<sup>2</sup> Unfortunately, the number of submissions for the Index are few in number.

States are further required to share information regarding any objects “launched into Earth orbit or beyond” under either Resolution 1721 B (XVI)<sup>3</sup> or the Registration Convention.<sup>4</sup> The implementation of the Registration Convention was further addressed in UNGA Resolution 59/115 of 10 December 2004 and UNGA Resolution 62/101 of 17 December 2007 which encouraged enhanced registration practices in order to increase the amount of information shared.<sup>5</sup>

The obligation to register space objects has three far-reaching implications in the effort to promote the peaceful use of outer space. First and foremost, registration ensures transparency regarding the peaceful nature of space activities. Further, registration clarifies which state has “jurisdiction and control” of space objects, while also allocating responsibility and liability by identifying the launching state. Finally, the sharing of information regarding planned and existing lunar activities is critical for compliance with the duty to act with “due regard” and to avoid potential harmful interference that would require consultation under the Outer Space Treaty.

A new era of space exploration heavily focused on the use of celestial bodies is now upon us. In the authors’ views, existing information-sharing and registration mechanisms need updating for the following three reasons. First, they were intended primarily for the registration of objects in Earth orbit, not for missions on celestial bodies. Second, and related to the first, they were designed for the registration of space “objects”, not space activities. Finally, and of particular relevance for the purposes of protecting investments made in future activity, they do not consider the possibility of prospective registration.

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1 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, entered into force Oct. 10, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 (hereinafter: OST).

2 Available on <https://www.unoosa.org/oosa/en/treatyimplementation/ost-art-xi/index.html> (accessed January 2022).

3 Available on [https://www.unoosa.org/pdf/gares/ARES\\_16\\_1721E.pdf](https://www.unoosa.org/pdf/gares/ARES_16_1721E.pdf) (accessed January 2022).

4 Convention on Registration of Objects Launched into Outer Space, entered into force Sep. 15, 1976, 28 U.S.T. 695, 1023 U.N.T.S. 15

5 Both resolutions are available online: Res 59/115 ([https://www.unoosa.org/oosa/oosadoc/data/resolutions/2004/general\\_assembly\\_59th\\_session/ares59115.html](https://www.unoosa.org/oosa/oosadoc/data/resolutions/2004/general_assembly_59th_session/ares59115.html)) and Res 62/101 ([https://www.unoosa.org/oosa/oosadoc/data/resolutions/2007/general\\_assembly\\_62nd\\_session/ares62101.html](https://www.unoosa.org/oosa/oosadoc/data/resolutions/2007/general_assembly_62nd_session/ares62101.html)) (accessed January 2022).

With the intention of creating a neutral international platform for the multilateral discussion of these issues, *The Registration Project* was launched in 2021 as a joint venture between the Moon Village Association and the Global Space Law Center at Cleveland State University. The authors served as the co-chairs a diverse international group of twenty-seven experts drawn from business, engineering, and policy.<sup>6</sup> The members met for the first time on February 19, 2021, and again on March 26. A public workshop<sup>7</sup> was held on June 24 in order to provide all stakeholders an opportunity to share their thoughts, with nine additional space law experts invited as special guests.<sup>8</sup> A third closed meeting took place on September 6, 2021 to receive the latest inputs and comments. The following sections present these shortcomings and recommendations in final form.

## 2. Shortcomings

The following list of shortcomings regarding the law and practice of registration is divided into two tiers in order to prioritize the most critical issues for the success of impending lunar missions with an eye to providing solutions in the near term. The first tier includes those critical shortcomings that, if not addressed, pose a serious risk of interference, and potentially conflict, among lunar operators in the near future. The second tier includes additional issues that, in time, should be addressed in pursuit of the above-stated goals.

### *Tier 1: Critical Shortcomings*

1. Existing mechanisms provide for the registration of space objects, not space activities.
2. Existing mechanisms are intended primarily for the registration of objects in Earth orbit and not for missions on celestial bodies.

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6 The members of The Registration Project are: Mark J. Sundahl, Antonino Salmeri, Fabio Tronchetti, V. Gopalakrishnan, Olavo Bittencourt, Virgiliu Pop, Elina Morozova, Olga Stelmakh, Michael Chatzipanagiotis, Michelle Hanlon, Jessy Kate Schingler, Chris Johnson, Guoyu Wang, Justine Kasznica, Scott Parry, Joyeeta Chatterjee, Zac Trolley, Derek Webber, Dennis O'Brien, Giuliana Rotola, Suyan Cristina, Aimee Fanter, Hailey Hillsman, Hailee Kepchar, Jeffrey Murphy, Kristina Schiavone, Christophe Bosquillon and Anthony Ghazoul.

7 The public workshop was hosted by the conveners of the *Moon Dialogs*.

8 We invited: Setsuko Aoki, A.C. Charania, Frans von der Dunk, Mike Gold, Christopher Hearsey, Tanja Masson-Zwaan, Idris Motiwala, Michael Newman, Gabriel Swiney.

3. Current registrations provide insufficient information to enable operators to avoid interference and to operate safely with due regard to the corresponding interests of others.
4. Existing mechanisms do not encourage updates regarding changes in the location or function of an object/activity (with the exception of updates regarding deorbiting).
5. Existing mechanisms do not provide for sharing information regarding “safety zones”.
6. Registration can be significantly delayed under the Registration Convention due to the requirement to furnish information only “as soon as practicable” coupled with the use of diplomatic notes to furnish the information.
7. States are deterred from undertaking registration due to the correlation with liability.

*Tier 2: Additional Shortcomings*

1. Existing mechanisms do not provide for the verification of furnished information.
2. Existing mechanisms do not provide for prospective registration for the purpose of providing protection the planned activity from harmful interference.
3. Existing mechanisms do not foresee the protection of significant cultural/scientific sites.

### **3. Recommendations**

The astonishing acceleration in the planning and execution of lunar activities calls for the development of legal and policy solutions ensuring the peaceful, safe and sustainable uses of the Moon within a comparable timespan. After reflecting on the critical shortcomings listed in Tier 1 of the previous section, we realized that most of them could be addressed by enhancing existing practices for the notification of lunar activities and the registration of related objects. Throughout the meetings of the Registration Project, Articles IX and XI OST emerged as the most critical provisions in the effort to address these shortcomings. We believe the operationalization of these provisions within the context of lunar activities could be sufficient to ensure the peaceful, safe and sustainable uses of the Moon during the time needed to acquire more knowledge and develop fully-fledged governance systems for lunar activities. To this end, we offer the following considerations and recommendations for the usefulness of decision makers and operators. As a complement to these ideas, the end of this section provides recommendations for the revision of existing international space law when the appropriate time comes.

### 3.1. Towards the Operationalization of Articles IX and XI of the OST

Within the context of lunar activities, the identification of practical means to implement the various rules laid down in Article IX OST will play a critical role in preventing tensions and conflicts related to the exploration and use of the Moon. In our view, the key to unlock the full potential of Article IX OST lies in the operationalization of the principle of due regard.<sup>9</sup> Simply put, a State can pay due regard only to those interests that have been stated in concrete terms by others. Arguing otherwise would entail that every State conducting a space activity has to speculate about what could be the interests of others that may correspond to its own ones. Accordingly, we must conclude that a critical component for the operationalization of the principle of due regard under Article IX OST is the availability of proper information about the (potentially corresponding) interests of other States. This conclusion is further reinforced by the mechanism foreseen in the last part of Article IX OST dealing with potentially harmful interference. Here again, the availability of appropriate information on the activities planned or conducted by other States is essential in order to inform the development of the “reason to believe” which is the legal condition triggering the obligation to undertake appropriate international consultations.

All these arguments are even more pregnant when considered in the context of lunar activities. At present, we know very little about the characteristics of the lunar environment, let alone about its potential interactions with permanent robotic or human operations. In this context, no State is in the position to determine on its own how its lunar activities may impact the corresponding interests of other States, nor whether and to what extent they could cause potentially harmful interference to others. This determination entirely depends on the availability of proper information about the concrete plans of other States for the exploration and use of the Moon, including a certain level of technical details as necessary to prevent interference.

The above considerations shed new light on the relevance of Article XI OST, which is the only OST provision providing a legal mechanism for sharing basic information about space activities. So far, Article XI OST has been one of those provisions that has apparently lacked any practical attractiveness to States. However, in light of the critical role played by information sharing for the safety and sustainability of lunar activities, we believe this should and will soon change.

### 3.2. Recommendations for Enhanced Submissions

We recommend that all States involved in lunar activities, either as responsible States, launching States or States of Registry, notify the UNSG

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<sup>9</sup> As defined in Article IX OST, *supra* note 1.

about such activities by providing fundamental information on their nature, conduct and location to be included in the existing Index of Submissions by States under Article XI of the Outer Space Treaty maintained by the UN Office for Outer Space Affairs (UNOOSA).<sup>10</sup> As a result of this notification, other States will be better able to identify the corresponding interests of the notifying State, and as such will be able to exercise due regard to these interests when planning and conducting their own activities.

To complete the suggested operationalization of Article IX OST, we recommend to include in the notification additional, selected information relevant to the prevention, mitigation, and remediation of potentially harmful interferences. To this end, we recommend States to indicate designated point of contacts and dedicated procedures for the purpose of appropriate international consultations under Article IX OST as well as for discussing any operational matter.

Further, we recommend to include in the notification a safety impact assessment accounting for the potentially harmful consequences and vulnerabilities of the activity, the generation of any debris and waste, together with appropriate mitigation measures. On top of this, we recommend the inclusion of essential operational information on the communication components and power aspects of the concerned lunar activity. We argue that sharing this information would place a duty of care over future lunar operators, which might likely be considered at fault for any damage caused by their reckless disregard of the safety impact assessment shared by others.

From a procedural viewpoint, we recommend that States submit this notification in conjunction with the licensing of the activity, in order to enable proactive coordination. In the event of any changes to the information provided in the original submission, including the termination of the activity and/or the disposal of any related space objects, we argue that the relevant State should submit supplementary notifications addressing such changes. For what concerns lunar activities conducted by private actors, we recommend that the relevant notification should be undertaken by the responsible State under Article VI OST and that the latter acquire the necessary information from the private operator as part of the licensing process. These States may also wish to consider the possibility of authorizing private actors to make direct submissions to the Index as part of the mission authorization process.

Finally, we encourage UNOOSA to restructure the layout of Article XI OST's index of submissions in order to allow for the fully digital transmission of information by means of an internet-based interface and

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<sup>10</sup> Available online <https://www.unoosa.org/oosa/en/treatyimplementation/ost-art-xi/index.html> (accessed January 2022).

**facilitate its navigation for the users.** For each activity, we suggest the display - directly in the webpage - of information regarding the operator, the nature of the activity, the location, the duration, and the concerned States (responsible states, launching states, and state of registry), as well as to allow for the ability to search the index based upon these criteria.

**To support States and UNOOSA in this new process, we have developed a template (set forth in Annex A) specifically designed for the notification of lunar activities.** We produced this document combining the suggestions of our members with the advice received from selected experts consulted during our public webinar, and drawing inspiration from the registration information submission form developed by UNOOSA.<sup>11</sup>

It is important to bear in mind that the above suggestions on the notification of lunar activities are meant to be *an addition to*, not a replacement of, existing mechanisms for the registration of space objects. Ultimately, we hope that all States will provide information as appropriate under all available channels.

**Beyond the operationalization of Article IX OST, we recommend the creation of an international database to supplement Article XI OST's Index, in order to include additional information provided by third parties or private entities.** Initiatives should also be undertaken to develop methods for checking the accuracy of submitted information, perhaps through blockchain or other technologies.

In parallel to these efforts, we invite all the Member States of UNCOPUOS to consider the development of a process for identifying and protecting sites of significant cultural and scientific interest on the Moon. Finally, we invite all the Member States of the International Telecommunication Union (ITU)<sup>12</sup> to urgently undertake appropriate actions for the establishment of a new radio regulatory region to enable the application of ITU instruments and mechanisms for the allocation of frequencies and the prevention of harmful interference.

In summary, we submit the following main recommendations:

1. That all States involved in the exploration and use of the Moon – either as responsible States, launching States or States of Registry – notify the UNSG, preferably prior to the commencement of activity, of the nature, conduct, and location of lunar activities, including their

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11 Available online <https://www.unoosa.org/oosa/spaceobjectregister/resources/index.html> (accessed January 2022).

12 Constitution and Convention of the International Telecommunication Union, entered into force July 1st 1994, 1825 UNTS 1.

- envisaged duration and subsequent results, in accordance with the procedure set forth in Article XI OST.
2. That as part of this notification States also include designated point of contacts and dedicated procedures for any consultation that may be necessary under Article IX OST, as well as a safety impact assessment accounting for both the envisaged harmful consequences and vulnerabilities of the activity, including proposed mitigation measures, together with essential operational information on the communication components and power aspects of the activity.
  3. That all States involved in the exploration and use of the Moon undertake appropriate steps to harmonize their practices for the notification of lunar activities and the registration of related space objects, and that in the meantime they utilize the attached template provided in Annex 1.
  4. That all States qualifying as launching States for a space object involved in the exploration and use of the Moon promptly register said object in accordance with either Resolution 1721 (XVI) B or the Registration Convention, as applicable to their case, and that they complement said registration by submitting the notification to the Article XI Index as suggested above.
  5. That UNOOSA, in compliance with its obligation to disseminate the information received under Article XI OST “immediately and effectively”, reorganizes the existing “Index of Submissions by States under Article XI of the Outer Space Treaty” in order to (i) allow for the fully digital transmission of information by means of an internet-based interface and (ii) directly display on the webpage the operator(s), nature, location(s), duration and concerned States (responsible States, launching States, and State of registry) for every notified lunar activity.

Furthermore, we also recommend, albeit with a lesser degree of urgency:

6. That a proactive institution within the global space community develops an international database to supplement Article XI OST’s Index, in order to include additional information provided by third parties or private entities.
7. That UNCOPUOS Member States begin taking steps to establish a process for identifying and protecting sites of significant cultural and scientific interest on the Moon.
8. That ITU Member States urgently undertake appropriate actions for the establishment of a new radio regulatory region to enable the application of ITU instruments and mechanisms for the allocation of frequencies and the prevention of harmful interference.



### **3.3. Hard Law Solutions**

Eventually, the time will come for revisiting the treaties and producing new binding rules of international space law. When said moment approaches, we recommend to either revisit some provisions related to the notification of lunar activities and registration of related space objects, or to develop a new regime of *lex specialis* to these ends.

## **4. Conclusion**

There are multiple potential paths forward to reform the law and practice for the notification of lunar activities and registration of related objects, all of which carry their own advantages and challenges. Throughout the discussions carried out during the meetings of the Registration Project, we have identified a number of potential solutions operating at different levels and have decided to focus on those that could be implemented under the current legal framework. With this paper we wanted to summarize the key takeaways of this initial phase, in order to develop a solid basis for the way forward. Having completed this task, we are now transitioning into a new project dedicated to the implementation of our proposed enhanced practices. The template included in Annex A serves this very purpose, and we hope to see many States adopting it when making their submissions under Article XI OST.

**Annex A - Submission Template<sup>1</sup>**

INFORMATION SUBMITTED UNDER ARTICLE XI OST ABOUT ACTIVITIES IN THE EXPLORATION AND USE OF CELESTIAL BODIES		
SECTION A: GENERAL INFORMATION		
Target body		Indicate name and type (planet, comet, asteroid).
Nature of the activity	Governmental <input type="checkbox"/> Private <input type="checkbox"/> Hybrid <input type="checkbox"/>	Nature of the activity. If “other”, please specify.
	Other: Human <input type="checkbox"/> Robotic <input type="checkbox"/> Hybrid <input type="checkbox"/>	Modalities of the activity. If “other”, please specify.
	Other:	
Purpose of the activity	Commercial <input type="checkbox"/> Scientific <input type="checkbox"/> Hybrid <input type="checkbox"/> Other:	Purpose(s) of the activity. If “other”, please specify.
Conduct		Please briefly describe how the activity will be conducted.

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<sup>1</sup> *Disclaimer: this template has been originally developed by Antonino Salmeri & Mark J. Sundahl based upon the submission model available on the website of the United Nations Office of Outer Space Affairs. All public uses of the Template with appropriate credits to its authors are welcome.*

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<b>SECTION B: STATE(S)</b>		
<b>Submitting State and/or intergovernmental organization</b>		Must qualify under one of the three categories below.
<b>Responsible State(s)/IGO(s) (as applicable)</b>		Under Article VI OST. In case of multiple entities, please indicate the relevant legal basis for responsibility and the apportionment of authorization and supervision.
<b>Launching State(s)/IGO(s) (as applicable)</b>		Under Articles VII OST or I/XXII LIAB. In case of multiple entities, please indicate the relevant space object(s) for each of them.
<b>State(s)/IGO(s) of Registry (as applicable)</b>		Under Articles VIII OST or I/VII REG. In case of multiple entities, please indicate the relevant space object(s) for each of them.
<b>SECTION C: OPERATOR(S)</b>		
<b>Name</b>		In case of multiple operators, please indicate which portion of the activity and which objects will be operated by each of them.
<b>Contact details</b>		
<b>Licensing States</b>		

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<b>SECTION D: LOCATION AND DURATION</b>		
<b>Launching location</b>		Please indicate from which location the space object(s) have been or will be launched.
<b>Area of operations</b>	Orbit <input type="checkbox"/> Surface <input type="checkbox"/> Hybrid <input type="checkbox"/> Other:	Please check relevant box. If "other", please specify.
<b>Orbital parameters</b>		Leave blank if not applicable.
<b>Aerial, Surface and Subsurface coordinates</b>	Envisaged landing coordinates: <hr/> Envisaged operations' coordinates:	Leave blank if not applicable.
<b>Launching date (actual or envisaged)</b>	dd/mm/yyyy Performed <input type="checkbox"/> Envisaged <input type="checkbox"/>	Coordinated Universal Time (UTC)
<b>Arrival date (actual or envisaged)</b>	dd/mm/yyyy Performed <input type="checkbox"/> Envisaged <input type="checkbox"/>	Coordinated Universal Time (UTC)
<b>Estimated duration of the activity</b>		In Earth calendar
<b>Estimated duration of the activity</b>		In target body calendar (leave blank if not applicable)

<b>SECTION E: SPACE OBJECTS &amp; SPACE MADE PRODUCTS</b>		
<b>Launcher</b>		Where applicable, insert name, description, operator, user, owner and relevant launching State(s). For registered objects, please indicate registration number/State.
<b>Orbiter</b>		
<b>Lander</b>		
<b>Rover</b>		
<b>Other Payload(s)</b>		
<b>Space Made Product(s)</b>		Please indicate the envisaged or realised artificial creation of any space product during the activity. Leave blank if not applicable.
<b>SECTION F: HUMANS</b>		
<b>Crew members</b>		Please indicate name, nationality and assigned tasks.
<b>Passengers</b>		

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<b>SECTION G: CONSULTATIONS</b>		
<b>Designated point of contact for consultations under Article IX OST</b>		Please indicate who to contact for requesting/conducting appropriate consultations under Article IX OST.
<b>and preferred procedure</b>		Please indicate which documents should be attached, preferred means of communications, etc.
<b>Designated point of contact for operational matters</b>		Please indicate who to contact for any operational matter (e.g. request technical parameters)
<b>and preferred procedure</b>		Please indicate which documents should be attached, preferred means of communications, etc.
<b>Emergency point of contact</b>		Please indicate who to contact in case of emergencies.
<b>and preferred procedure</b>		Please indicate which documents should be attached, preferred means of communications, etc.

<b>SECTION H: SAFETY IMPACT ASSESSMENT</b>		
<b>Safety/Coordination Zones</b>		Please declare the existence, location and duration of any safety or coordination zone involved in the activity (leave blank if not applicable).
<b>Potentially harmful consequences</b>		Please indicate any potentially harmful effect that could be caused by the activity (e.g. dust ejection, vibrations, radio interference).
<b>Potentially harmful factors</b>		Please indicate any known factor that could compromise the safety or success of the activity (e.g. sensitivity to vibrations, dust generation, radio interference).
<b>Debris and waste generation</b>		Please indicate any debris or waste that could be generated in the course of the activity.
<b>Mitigation measures</b>		Please indicate all envisaged mitigation measures to address the above indicated elements.

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SECTION I: ESSENTIAL OPERATIONAL INFORMATION		
Communication		Please indicate the means of communication of the activity.
Power		Please indicate which power systems are used for the activity.
SECTION L: ADDITIONAL INFORMATION		
Any other information		Please provide any additional information related to the activity that you wish to submit.

**Instructions for completing the form**

1. This form is filled on a voluntary basis. We recommend filling all sections that may be applicable to your activity, with particular emphasis on the critical importance of sections A, B, D, E and G.
2. Please fill the form with accurate information. Where appropriate, please reference external sources and consider attaching any additional document that may complement or validate the information provided in the form.
3. When in doubt, please check the definitions below. For any guidance, please email the authors or UNOOSA.
4. The **completed hardcopy form** should be sent through official government channels to the relevant Permanent Mission to the United Nations (Vienna) to be formally transmitted to the United Nations.
5. The **completed electronic form** should be sent by the appropriate government entity, or its authorized representatives, to the United Nations Office for Outer Space Affairs using e-mail [soregister@unoosa.org](mailto:soregister@unoosa.org).

**Definition of terms**

Section A: General Information	
Target body:	The celestial body targeted by the activity.
Nature of the activity:	The activity’s nature (governmental or private) and modalities (robotic, human).
Purpose of the activity:	The activity’s main purpose (commercial, scientific, hybrid).
Conduct:	Please indicate in few sentences what are the concrete goals of the activity, how it will be conducted, any cooperation with international partners, and similar.



<b>Section B: State(s)</b>	
<b>Submitting State:</b>	The State submitting the information. Please note that only a State qualifying as responsible State, launching State or State of Registry is entitled to submit information under this form. Multiple submissions by different States qualifying under the various categories mentioned above are encouraged and welcome.
<b>Responsible State(s):</b>	The State(s) internationally responsible for the activity under Article VI OST. This may include the State(s) issuing the license(s) for the activity, the State of nationality of the operator(s), and the State from whose territory operations are controlled.
<b>Launching State(s):</b>	The State(s) internationally liable for damages caused by the space object(s) involved in the activity under Article VII OST or Article I LIAB. This may include the State(s) launching (i) or procuring the launch (ii) of the involved space object(s), or from whose facilities (iii) or territory (iv) the launch is performed.
<b>State(s) of Registry:</b>	The State(s) exercising jurisdiction and control over the space object(s) involved in the activity under Article VIII OST or Article I REG.
<b>Section C: Operator(s)</b>	
<b>Name:</b>	The official denomination of the operator(s).
<b>Principal place of business:</b>	The legal address of incorporation of the operator(s).
<b>Contact details:</b>	Phone number and an active email address of the operator(s).
<b>Section D: Location and Duration</b>	
<b>Launching location(s):</b>	The location(s) of the launch(es) of the space object(s) involved in the activity.
<b>Area of operations:</b>	Whether the activity will take place in orbit or on the surface of a celestial body.
<b>Orbital parameters:</b>	For orbital activities. Please provide information on nodal period, inclination apogee and perigee as applicable.
<b>Aerial, Surface and Subsurface coordinates:</b>	For aerial, surface and subsurface activities. In the first box, please indicate the coordinates where the space object(s) involved in the activity are envisaged to land. In the second box, please indicate the coordinates covering the area in which the space object(s) or the crew involved in the activity are envisaged to operate.
<b>Launch date:</b>	The date of launch of the space object(s) involved in the activity expressed in UTC. For prospective notifications, please indicate the envisaged date.

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<b>Arrival date:</b>	The date when the space object(s) involved in the activity are scheduled to arrive on the target body. Please use Coordinated Universal Time (UTC).
<b>Estimated duration:</b>	The envisaged nominal duration of the activity expressed in Earth's calendar, and if applicable also under the calendar adopted for the given celestial body.
<b>Section E: Space Object(s) &amp; Space Made Product(s)</b>	
<b>Launcher(s)</b>	All rocket(s) or vehicle(s) used to launch the space object(s) of the activity.
<b>Orbiter(s)</b>	All space object(s) utilized to conduct orbital activities on the celestial body.
<b>Lander(s)</b>	All space object(s) utilized to land on the celestial body of the activity.
<b>Rover(s)</b>	All space object(s) utilized to conduct surface activities on the celestial body.
<b>Other payload(s)</b>	Any other space object utilized as part of the activity on the celestial body.
<b>Space Made Product(s)</b>	Any product made in outer space wholly or partially from space resources.
<b>Section F: Humans</b>	
<b>Crew</b>	All individuals executing tasks in outer space or celestial bodies as part of the activity. This may include governmental or commercial astronauts as well as any individual tasked to operate any of the space objects involved in the activity.
<b>Passengers</b>	All non-crew individuals carried onboard the space object(s) of the activity.
<b>Section G: Consultations</b>	
<b>Designated point of contact for diplomatic consultations under Article IX OST</b>	The competent office or department to be contacted by other States for undertaking or requesting international consultations under Article IX OST. Please include a physical address, a phone number and an active email address.
<b>And preferred procedure</b>	Any particular instruction to be followed when approaching the designated point of contact for consultations (e.g. documents to be attached, preferred means of comms.)
<b>Designated point of contact for any operational matter</b>	The competent office or department to be contacted for any operational matter (e.g. get the technical parameters of the activity, warn about the risk of collisions). Please include a physical address, a phone number and an active email address.

<b>And preferred procedure</b>	Any particular instruction to be followed when approaching the point of contact (e.g. documents to be attached, preferred means of communication).
<b>Section H: Safety Impact Assessment</b>	
<b>Safety/Coordination Zones</b>	Interested States can use this section to declare the establishment of any safety/coordination zones, together with their relevant parameters.
<b>Potentially harmful consequences</b>	Any measurable effect of the activity that could potentially cause harmful interference with other space activities conducted in a given timeframe and area (e.g. dust ejection, vibrations, radio interference).
<b>Potentially harmful factors</b>	Any measurable factor that could cause potentially harmful interference with the activity in a given timeframe and area (e.g. dust, vibrations, radio interference).
<b>Debris and waste generation</b>	Any debris, byproduct or waste that is envisaged to be produced during the activity.
<b>Mitigation measures</b>	All measures implemented to: <ul style="list-style-type: none"> <li>- prevent, mitigate and remedy the causation of potentially harmful interference;</li> <li>- protect the activity from its known vulnerabilities, including interference;</li> <li>- prevent, mitigate and remedy the generation of debris and/or waste.</li> </ul>
<b>Section I: Essential Operational Information</b>	
<b>Communication</b>	Any information related to the means of communication employed by the activity.
<b>Power</b>	Any source and/or instrument used to power the activities conducted.
<b>Section L: Additional information</b>	
<b>Any other information</b>	Anything else related to the activity that the State may wish to submit.