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**Committee on the Peaceful
Uses of Outer Space
Legal Subcommittee**

**Report of the Working Group on the Review of
International Mechanisms for Cooperation in the Peaceful
Exploration and Use of Outer Space on the work conducted
under its multi-year workplan**

**I. Summary of the work conducted by the Working Group
under its multi-year workplan**

1. The Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space agreed to include “Review of international mechanisms for cooperation in the peaceful exploration and use of outer space”, proposed by China, Ecuador, Japan, Peru, Saudi Arabia and the United States of America, in its fifty-first session, as an item under a five-year workplan ([A/AC.105/1003](#), para. 179). In accordance with the workplan, an exchange of information on the range of existing international space cooperation mechanisms was conducted in the sessions of the Legal Subcommittee under the workplan for this agenda item. Member States and permanent observers of the Committee provided information prior to and during the respective sessions on their international mechanisms for cooperation in space activities. Special presentations on this agenda item were also made throughout the workplan.

2. The Subcommittee established the Working Group on the Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of Outer Space in 2014, under the chairmanship of Setsuko Aoki (Japan), and endorsed the report of the Chair of the Working Group, which included a set of questions that could be referred to as appropriate and on a voluntary basis in contributions to the work of the Working Group ([A/AC.105/1067](#), annex III, para. 10).

3. The Working Group conducted its work in accordance with the following multi-year workplan:

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| 2013 | Exchange of information on the range of existing international space cooperation mechanisms. Member States and permanent observers would be invited to provide information prior to the session of the Legal Subcommittee and to make special presentations on the range of bilateral and multilateral mechanisms they utilize for space cooperation. |
| 2014 | Continue the exchange of information. Establish a working group. Request the Secretariat to prepare a report categorizing the range of mechanisms for international cooperation, including existing bilateral and multilateral agreements, non-binding arrangements, principles, |



technical guidelines and other cooperative mechanisms, based upon submissions by Member States, as well as additional research, to be distributed to Member States in advance of the session of the Legal Subcommittee.

- 2015 Exchange of additional or supplemental information on existing international space cooperation mechanisms, taking into account the report of the Secretariat. Examination in the working group of the submissions provided in order to develop an understanding of the range of collaborative mechanisms employed by States and international organizations and the circumstances in which certain classes of mechanisms are favoured by States over other mechanisms. Request the Secretariat to prepare a report identifying the legal issues commonly addressed in the existing agreements relevant to international space cooperation, based upon submissions by Member States, additional research and consultation with Member States. The report should be distributed to Member States in advance of the session of the Subcommittee.
- 2016 Working group reviews the report of the Secretariat, continues to examine responses received from Member States and begins drafting its own report.
- 2017 Working group finalizes its report to the Subcommittee, including conclusions.

4. The Working Group recalled that the conclusion of its work under the five-year workplan, in 2017, would coincide with 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, and that the result of that work could serve as an important contribution to that commemoration, as international mechanisms for cooperation had evolved considerably over the past 50 years. In that regard, the Working Group noted that its work could provide a significant contribution to the 2018 “UNISPACE+50” thematic cycle of the Committee on the Peaceful Uses of Outer Space and its Scientific and Technical Subcommittee and Legal Subcommittee.

5. The Working Group considered in detail the draft set of questions presented by the Chair in 2014 ([A/AC.105/1067](#), annex III, para. 10) and noted that it constituted a tool to enable the Working Group to meet its objectives under its multi-year workplan. That set of questions focused on the need to identify a way to categorize mechanisms for international cooperation, so as to allow the Working Group to develop an understanding of the range of collaborative mechanisms employed by States and international organizations and the circumstances in which States favoured certain types of mechanisms over others.

6. The Working Group recalled that categorizing mechanisms for international cooperation would lead to a better understanding of the different approaches to cooperation in space activities taken by States and relevant international organizations and that the findings would assist the Working Group in identifying what types of mechanisms were being used and their legal content. An analysis of the findings would allow the Working Group to consider how its work could contribute to the further strengthening of international cooperation, in particular between developed and developing countries, in the peaceful exploration and use of outer space.

7. The Working Group, under its multi-year workplan, had before it the following documents:

(a) Note by the Secretariat on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Australia, Kazakhstan and Portugal ([A/AC.105/C.2/102](#));

(b) Note by the Secretariat on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Algeria, Germany and Kenya ([A/AC.105/C.2/105](#)), Argentina ([A/AC.105/C.2/105/Add.1](#)) and the International Law Association ([A/AC.105/C.2/105/Add.2](#));

(c) Note by the Secretariat on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Japan and Spain ([A/AC.105/C.2/107](#));

(d) Note by the Secretariat on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Belgium, Poland, Thailand and Turkey, and from the World Meteorological Organization ([A/AC.105/C.2/109](#));

(e) Note by the Secretariat on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Slovakia, Thailand and Turkey, and from the World Meteorological Organization ([A/AC.105/C.2/111](#));

(f) Note by the Secretariat on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Austria and Germany ([A/AC.105/C.2/111/Add.1](#)).

8. The Working Group, under its multi-year workplan, had before it the following conference room papers containing information received from Member States:

(a) Conference room paper on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Austria, China and Germany ([A/AC.105/C.2/2013/CRP.14](#));¹

(b) Conference room paper on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from the United States ([A/AC.105/C.2/2013/CRP.17](#));

(c) Conference room paper on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing the curriculum vitae of Setsuko Aoki, Chair of the Working Group on the Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of Outer Space ([A/AC.105/C.2/2013/CRP.23](#));

(d) Conference room paper containing the intergovernmental agreement on the International Space Station ([A/AC.105/C.2/2013/CRP.24](#));

(e) Conference room paper on space cooperation mechanisms in the Russian Federation, containing information received from the Russian Federation ([A/AC.105/C.2/2014/CRP.23](#));

(f) Conference room paper on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Japan ([A/AC.105/C.2/2014/CRP.24](#));

(g) Conference room paper containing a summary of international cooperative mechanisms utilized by Canada in the peaceful exploration and use of outer space ([A/AC.105/C.2/2014/CRP.25](#));

(h) Conference room paper on the contribution of Turkey to the fifty-third session of the Legal Subcommittee ([A/AC.105/C.2/2014/CRP.26](#));

(i) Conference room paper on the European Space Agency (ESA) as a mechanism and actor in international cooperation, submitted by ESA ([A/AC.105/C.2/2014/CRP.28](#));

¹ Issued subsequently as document [A/AC.105/C.2/102/Add.1](#).

(j) Conference room paper on the review of international mechanisms for cooperation in the peaceful exploration and use of outer space, containing information received from Austria ([A/AC.105/C.2/2015/CRP.14](#));

(k) Conference room paper on the categorization of international mechanisms for cooperation in the peaceful exploration and use of outer space ([A/AC.105/C.2/2015/CRP.15](#));

(l) Conference room paper on responses by Member States to the set of questions provided by the Chair of the Working Group on the Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of Outer Space, containing information received from France and Japan ([A/AC.105/C.2/2016/CRP.18](#));

(m) Conference room paper, entitled “International cooperation in the peaceful exploration and use of outer space: filling the gap between developing and developed countries”, submitted by Cuba, Iran (Islamic Republic of) and Venezuela (Bolivarian Republic of) ([A/AC.105/C.2/2017/CRP.22](#));

(n) Conference room paper on responses by Member States to the set of questions provided by the Chair of the Working Group on the Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of Outer Space, containing information received from Pakistan ([A/AC.105/C.2/2017/CRP.25](#));

(o) Conference room paper on the contribution of Indonesia to the fifty-sixth session of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space ([A/AC.105/C.2/2017/CRP.31](#)).

9. The present summary report provides an overview of the findings of the Working Group under its multi-year workplan, categorizes the range of mechanisms for international cooperation and explains legal provisions in various types of international mechanisms, in particular bilateral cooperation agreements that serve as examples for consideration, as appropriate. The International Space Station (ISS) Intergovernmental Agreement is described and serves as a comparison on legal provisions. The document has been prepared on the basis of contributions to the work of the Working Group and additional research undertaken by the Chair of the Working Group and the Secretariat.

10. Information provided since 2013 by States members and permanent observers of the Committee seems to suggest certain tendencies with respect to the basic framework for international cooperation, areas of cooperation, actors engaged in cooperation activities, modes of frequently used cooperation mechanisms and the basic principles of cooperative mechanisms. Note should be taken that the specific references in the document are illustrative and do not constitute an exhaustive list. The present report of the Working Group has been prepared to assist Member States in their voluntary consideration of cooperation mechanisms, as appropriate, and is not intended as a reinterpretation or modification of international norms applicable to outer space activities or the rights and obligations of States under international law.

II. Basic framework for international cooperation

11. It is widely recognized that tremendous success in the exploration and use of outer space for peaceful purposes has been accomplished as a result of international cooperation, which has been an important principle from the very beginning of the space age. The importance of international cooperation has been clearly stipulated in various instruments, including those adopted under the framework of the United Nations. An early example was General Assembly resolution 1348 (XIII), by which Member States established an ad hoc Committee on the Peaceful Uses of Outer

Space. In that same resolution, the Committee was requested to report to the General Assembly on the area of international cooperation and programmes in the peaceful uses of outer space which could appropriately be undertaken under the United Nations auspices and on the future organizational arrangements to facilitate international cooperation in the field. The Committee became a permanent body in 1959 and has since been promoting, facilitating and encouraging international space cooperation. That fact is illustrated by the title of resolutions 1472 (XIV), by which the Committee was established as a permanent body; 1721 (XVI), which refers to the registration of space objects; and the annual resolutions on international cooperation in the peaceful uses of outer space.

12. The Committee on the Peaceful Uses of Outer Space has been encouraging States to act collectively to promote the peaceful exploration and use of outer space through a variety of mechanisms, including United Nations treaties and principles on outer space, General Assembly resolutions and other relevant instruments on the peaceful exploration and use of outer space. In addition, States and relevant international organizations have initiated various programmes through the conclusion of multilateral and bilateral agreements suitable for the specific programmes concerned, which have further developed the legal basis for space cooperation for the parties concerned. There are numerous mechanisms employed by States and they vary in nature, form and substance.

13. It is often stated that international mechanisms for cooperation are characterized by their diversity and flexibility in form and substance. Some cooperative projects are conducted by a multilateral agreement or a set of agreements among States that are legally binding, non-legally binding or a combination of both. There are also cases in which multilateral cooperation is carried out within the framework of international intergovernmental organizations, including the United Nations and its specialized agencies, international intergovernmental organizations other than the United Nations and other types of forums, such as regional and interregional mechanisms for cooperation. Other cases represent bilateral partnerships based on either legally binding or non-legally binding agreements.

14. Among the most important statements on international space cooperation is the following contained in the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries: "States are free to determine all aspects of their participation in international cooperation in the exploration and use of outer space on an equitable and mutually acceptable basis" (General Assembly resolution 51/122, annex). Space cooperation shall be carried out in accordance with the provisions of international law, including the Charter of the United Nations and the Outer Space Treaty, and for the benefit and in the interest of all States, irrespective of their degree of economic, social or scientific and technological development. Other treaties and principles on outer space provide important specific elements for space cooperation to that effect. In non-legally binding instruments, there are also conditions and recommended standards for space collaboration that provide useful elements for cooperation mechanisms.

15. The Declaration further stipulates that States are free to determine all aspects of their participation in international space cooperation on an equitable and mutually acceptable basis. It is important to note that, as stipulated in the Declaration, contractual terms in such cooperative ventures should be fair and reasonable and they should be in full compliance with the legitimate rights and interests of the parties concerned.

16. According to the Declaration, particular attention should be given to the benefit for and the interest of developing countries and countries with incipient space programmes stemming from such international cooperation with countries with more advanced space capabilities.

17. As recognized by the Declaration, the need for technical assistance and a rational and efficient allocation of financial and technical resources should be considered in working towards achieving the goals of promoting the development of space science and technology and of its applications; fostering the development of relevant and appropriate space capabilities in interested States; and facilitating the exchange of expertise and technology among States on a mutually acceptable basis.

18. Furthermore, the Declaration acknowledges that international cooperation should be conducted in the modes that are considered most effective and appropriate by the countries concerned, including governmental and non-governmental; commercial and non-commercial; global, multilateral, regional or bilateral; and among countries in all levels of development.

III. Areas of cooperation

19. A wide variety of areas and subjects of cooperation have been reported by States members of the Committee. The list below is illustrative and demonstrates the scope of space cooperation among States members.

20. The areas of cooperation reported include, inter alia, the following:

- (a) Earth science, space science, basic space research and scientific experiments;
- (b) Space exploration, exploration into deep space and human space exploration;
- (c) Space application;
- (d) Earth observation and remote sensing;
- (e) Data exchanges and their terrestrial application;
- (f) Telecommunication;
- (g) Satellite navigation;
- (h) Space debris mitigation;
- (i) Commercial cooperation;
- (j) Launches of foreign payloads on a contractual basis;
- (k) Export and import of satellites, rocket engines and other space equipment, and ground-based facilities;
- (l) Transparency and confidence-building measures in outer space activities;
- (m) Assistance to developing countries to obtain space assets including supplying satellites and launch services, constructing ground facilities and providing personnel training.

IV. Actors and forums of cooperation

21. It is noteworthy that the United Nations, including the Committee on the Peaceful Uses of Outer Space, has been described as a platform of international cooperation and as an independent actor participating in international cooperative programmes by many States members and permanent observers of the Committee, which demonstrates the critical importance of the United Nations as a mechanism for cooperation.

22. In addition to States and relevant international intergovernmental and non-governmental organizations, which are recognized as essential actors in

cooperative mechanisms in the space field, the increased importance of commercial and private actors in cooperative programmes has been noticed.

23. Space actors (including private companies, non-profit organizations, private universities and research laboratories) are involved in various programmes, covering launch and in-orbit delivery of satellites, satellite-based data distribution, space applications, and experiments and exploration of space both in unmanned and manned programmes.

V. Modes of international cooperation

24. International agreements can be seen as major and effective mechanisms for international space cooperation. While States are ultimately autonomous and independent where choice of modes of cooperation is concerned, there is a call for all parties involved in space cooperation to keep in mind consensus, the special needs of developing countries, and fair, mutually acceptable and equitable terms and conditions.

25. Multilateral cooperation agreements include international agreements (e.g., binding international treaties, implementing agreements, memorandums of understanding and exchanges of letters). To be qualified as an international agreement in substance, an agreement must be between subjects of international law, be in written form and be governed by international law. Also non-legally binding multilateral mechanisms also exist. General Assembly resolutions provide important sources for cooperative endeavours. The legal and contractual capacity of relevant international intergovernmental organizations in the space field should be noted.

26. Types of cooperative agreements include multilateral agreements, bilateral agreements and regional mechanisms.

27. Various forms of international agreements and specific arrangements in the field of space cooperation include Government-to-Government framework agreements, intergovernmental agreements, agency-to-agency memorandums of understanding, implementing arrangements, letters of agreement, and letters of intent.

28. Multilateral coordination mechanisms or common forums on space issues of common interests include, inter alia, the following: Inter-Agency Space Debris Coordination Committee, Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (International Charter on Space and Major Disasters), International Space Exploration Forum, Group on Earth Observations, Committee on Earth Observation Satellites, and International Committee on Global Navigation Satellite Systems.

29. Mechanisms of international cooperation cannot always be classified as strictly bilateral or multilateral, or legally binding or non-legally binding. An essentially bilateral cooperative project could also be seen as multilateral, for example, when it is established within multilateral cooperation mechanisms. A bilateral scientific cooperative project can also be established within two multilateral mechanisms, for example, the International Space Station Intergovernmental Agreement mechanism and the Asia-Pacific Regional Space Agency Forum (APRSAF), as reported by one State member.

30. There is also the case of mechanisms involving multiple actors, but which is essentially a bilateral project. One such example is when a space agency that is providing data concludes a partnership agreement with a regional aid organization, and the aid organization dispatches necessary personnel to the local government to train and supervise the project. In such a case, the space agency and the local government would conclude a letter of intent concerning the respective responsibilities regarding the data and software. Such a cooperative project may

even be part of the legally binding comprehensive science and technology cooperation agreement between the two countries. Thus, depending on how the project is viewed, it could be a bilateral cooperation or a multilateral cooperation, and also legally binding or non-legally binding.

31. Non-legally binding arrangements, including memorandums of understanding and letters of intent, are often flexible and serve as points of reference for executive institutions and project managers in carrying out certain types of projects or specific missions under the broader cooperation frameworks.

32. In terms of continuity of assistance and consultations, it should be pointed out that dedicated projects and associated agreements often have limited duration. Capacity-building efforts such as providing regular training opportunities to learn about operating systems and equipment could be useful for improving the utilization of those systems and lead to enhanced efficiency, even after the dedicated project has been concluded. Likewise, there could be the opportunity to take advantage of the varied cross-sectoral expertise of participating entities (e.g., from other sectors involved in societal development).

VI. Regional variation in cooperation mechanisms

33. Regional mechanisms can contribute to economic globalization in the long run. Historically, other bilateral instruments such as memorandums of understanding and letters of intent were not intended to generate legally binding obligations, but rather to cover exploratory talks between two parties, either on general cooperation or specific projects.

34. ESA is a longstanding intergovernmental agency that was founded by a convention. A more recent regional and interregional cooperation and coordination mechanism in the field of space is the Asia-Pacific Space Cooperation Organization (APSCO), which was also founded by a convention.

35. APRSAF is a partnership for cooperation among governmental and non-governmental actors. The African Leadership Conference on Space Science and Technology for Sustainable Development and the Space Conference of the Americas are intergovernmental platforms that can be used to initiate cooperation and coordination of a more specific nature at various levels.

36. The regional centres for space science and technology education, affiliated to the United Nations, are training and education institutions governed by intergovernmental agreements and arrangements in connection with the Office for Outer Space Affairs and the Committee on the Peaceful Uses of Outer Space.

37. Regional and geographical aspects have to influence the intensity of cooperative mechanisms. One example is the Association of Southeast Asian Nations (ASEAN), which increases space cooperation in the region by means of the ASEAN Ministerial Meeting on Science and Technology and the Subcommittee on Space Technology and Applications of ASEAN Committee on Science and Technology.

38. As reported by one State member of the Committee from Europe, the first pillar was European cooperation at both the national and European levels through ESA and the European Union, while the second pillar was international cooperation outside Europe. Another European State member mentioned its space activities taking place primarily through participation in European programmes, especially those of ESA.

39. In addition, examples of cooperative agreements of a State member from Latin America show that about half of its agreements are with regional partners and the rest with major spacefaring nations and an international organization. As reported by one African State member of the Committee, the African Leadership Conference and

the African Resource Management Satellite Constellation Initiative are among regional cooperative mechanisms used.

40. Regional intergovernmental space organizations such as APSCO, ESA and other regional coordination mechanisms (e.g., the Space Conference of the Americas and APRSAF) play an important role in facilitating and promoting regional space programmes.

41. Information supplied by States members of the Committee demonstrates that regional mechanisms often pave the way for wider international cooperation in terms of programmes and/or membership rather than hindering cooperation with States of other regions. ESA is, as already noted, a valuable platform for more effective cooperation with major spacefaring nations, developing countries, other international and regional organizations, and coordination mechanisms. APRSAF also allows space agencies and governmental bodies outside the Asia-Pacific region to be participants, owing to the fact that it is a forum and not an intergovernmental organization.

VII. Bilateral cooperation mechanisms

42. Some States members of the Committee reported that they employ a set of international instruments for bilateral space projects. Most notable are framework agreements, which are binding under international law and used to govern general legal principles and terms and conditions for future cooperation in a broad range of areas of cooperation; and implementing arrangements/agreements, which are used for specific mission details.

43. Framework agreements have been concluded even in the absence of a specific cooperative project. Legal issues often arise in the negotiation of an agreement for space cooperation, and resolving such issues ahead of time allows for the more rapid conclusion of implementing arrangements/agreements for such missions, thereby saving significant time and resources and allowing space agencies to perform their scientific and technical missions more efficiently and effectively. Furthermore, if partners focus on elaborating a specific cooperative project within an already agreed legal framework, it could facilitate and deepen the project concerned.

44. A framework agreement is often signed by the two Governments, but there are also cases in which the signatories are two national space agencies.

45. Whenever specific cooperative activities or missions are contemplated by space agencies, such activities are elaborated in an implementing arrangement/agreement that details the responsibilities of each party involved in the cooperative activity or mission.

46. In many bilateral space missions without a framework agreement, the implementing arrangement/agreement is concluded as a freestanding agreement that covers physical assets and the allocation of operational responsibilities of each party and key legal provisions, which are also found in the framework agreement. Accordingly, as reported by one State member, a natural sequence is a series of bilateral mission-specific implementing arrangements/agreements between two countries that would then develop into two kinds of instruments: a framework agreement and an implementing arrangement/agreement.

47. Existing framework agreements tend to have common provisions which have been streamlined over the past decades. Parties to framework agreements are usually Governments, but framework agreements have also been concluded between two space agencies that have been granted the power to make a legally binding instrument under international law. Typical articles and key provisions in framework agreements cover, inter alia, the following:

(a) *Preamble.* Framework agreements usually contain a preamble that consists of a number of elements. The history of space cooperation of the two States concerned that has led to the conclusion of the framework agreement is often described. Comprehensive science and technology cooperation agreements and/or a series of independent space cooperative agreements are sometimes referred to in that regard. Space exploration and scientific research and capacity-building and knowledge are also covered. The preamble also often makes reference, either implicitly or explicitly, to rules and principles of international law, including the United Nations treaties and principles on outer space and other relevant frameworks of international cooperation in other related fields;

(b) *The application of the United Nations treaties on outer space and principles of international law.* The application of treaties on outer space and relevant principles of international law are sometimes expressly declared in the preamble, especially with respect to the Outer Space Treaty. In other cases, the treaties and legal principles are addressed in a specific operating article, in particular in relation to registration of space objects. That element is often only indirectly referred to, for example, in the article dealing with the purpose of the framework agreement;

(c) *Purpose.* The purpose of the framework agreement is often set out to clarify the obligations and terms and conditions for the cooperation;

(d) *Agencies for cooperation.* Implementing agencies for cooperation of the parties may be specified in the above-mentioned article addressing the purpose of the agreement, but they may also be specified in an independent article or as a part of the article covering definitions. Space agencies are primary agencies as long as the space agency exists in either of the States entering into the agreement. Other related agencies designated by each party and even the possible involvement of the private sector, encouraging industrial and commercial cooperation, are sometimes provided for. Some framework agreements establish a joint committee, joint project committee and/or a programme coordination committee supervising the implementing agencies/entities of the cooperation, often consisting of related Government officials of the parties. This provision can also have an overarching role in different provisions, such as on financial arrangements, exchange of personnel, exchange of expertise and technology, transfer of goods and data, customs clearance, intellectual property and/or liability;

(e) *Applicable law.* Several framework agreements include a clause that confirms that the cooperation pursuant to the agreement shall be conducted in accordance with the national laws and regulations of the parties. Some framework agreements do not have an independent clause on applicable law, but similar phrases are found in other articles, e.g., those dealing with customs clearance or transfer of goods and data;

(f) *Definitions.* Some framework agreements contain an article providing definitions of important terms that have an overarching role in the agreement, such as “agency”, “related entity”, “damage”, “launch vehicle”, “payload” and “protected space operations”. Other agreements define such terms where they have to be precisely specified, e.g., in articles covering cross-waiver of liability and intellectual property rights;

(g) *Scope of cooperation.* Most framework agreements clearly state the planned areas of cooperation (“areas of cooperation”) and more specific programmes or forms of actions in joint activities (“forms of cooperation”). Some agreements specifically state the geographical scope of cooperation (on Earth, in airspace or in outer space);

(h) *Implementing arrangements/agreements.* This is one of the key provisions in framework agreements, in which the parties agree to conclude the implementing arrangements/agreements. While the name of such arrangements/agreements could

be “working protocol”, “memorandum of understanding”, “other agreement”, etc., it follows the conclusion of the framework agreement and is focused on a specific cooperative activity under that framework agreement. Implementing arrangements/agreements provide for detailed descriptions of a mission, specific roles, commitments and responsibilities of each space agency that “will use all reasonable efforts”. “Reasonable efforts” and “the availability of appropriated funds” are terms characterizing the cooperative mission of implementing arrangements/agreements. Some framework agreements confirm that the implementing arrangement/agreement shall be subject to the framework agreements and that implementing arrangements/agreements would not create legally binding rules under international law;

(i) *Financial arrangements.* The majority of framework agreements make it certain that the parties shall be responsible for funding their respective activities under the framework agreements and implementing arrangements/agreements, subject to no exchange of funds and the availability of appropriated funds. It is often expressed that in the case of budgetary problems that may affect the joint mission, the agency encountering those issues shall notify and consult with the other agency in a timely manner. Otherwise, it is provided for that financial arrangements will be decided in further agreements;

(j) *Customs duties and taxes.* Each party agrees on the facilitation of movement of goods or properties related to the purpose, abiding by their respective national laws and regulations. In order to achieve that objective, each party may be tasked with making reasonable efforts to arrange free customs clearance and waiver of all applicable duties and taxes for the transfer of equipment and goods necessary to conduct a joint space activity. When such a waiver is agreed upon, it is usually stated that if such taxes, duties or fees must be levied nonetheless, then the framework agreement usually specifies that such expenses will be borne by the party levying them;

(k) *Exchange of personnel.* This provision is related to entry, temporary residence and exit of personnel and to overflight. Each party shall make reasonable efforts to facilitate the entry, temporary residence and exit of personnel engaging in a space cooperative programme. Some framework agreements explicitly refer to the conditions of the temporal residence of personnel, such as the provision of an office, administrative support, a salary and other expenses, such as travel costs. Those conditions are usually detailed in the implementing arrangements/agreements. Likewise, most of the framework agreements include the party’s obligation to facilitate the provision of aircraft and scientific balloon overflight clearances, as appropriate, in accordance with the implementing arrangements/agreements;

(l) *Transfer of goods and technical data.* A framework agreement usually requires each party to transfer only the goods and technical data necessary to fulfil its commitments/responsibilities under the scope of cooperation, pursuant to the respective national laws and regulations, including information laws, as appropriate. Since such transfer may impact the intellectual property rights of the parties, in particular with respect to trade secrets, confidential information and national security concerns, it is often provided that such data and goods are clearly identifiable through markings, and the agreement usually contains safeguards to prevent misuse and specify return/disposal procedural rules after its intended use;

(m) *Cross-waiver of liability.* Cross-waiver of liability is a special scheme of the allocation of the risks arising from the joint activities. It is one of the most significant and complicated provisions with respect to framework agreements. The general idea of the cross-waiver of liability is that each party waives all claims against any of the entities or persons of (i) the other party, (ii) a related entity of the other party (a contractor, subcontractor, a user or customer, or a contractor or subcontractor of a user or customer of a party, etc.), (iii) the employees of any of the entities of the other party and a related entity thereof. Further, each party shall ensure, by contract or otherwise, that its own related entities agree to waive all

claims against the entities or persons of (i)-(iii) set forth above. This legal technique is needed to promote participation in cooperative space exploration and use that may generate enormous damage and for which States may be unable to estimate the total amount of liability to be claimed by the other party. With a view to achieving this objective, the cross-waiver of liability is often broadly construed and, as a result, is usually applicable to the claims arising from the 1972 Liability Convention. Note should be taken that claims between a party and its own related entity and contract claims between the parties are outside the cross-waiver of liability;

(n) *Protection of intellectual property rights.* Most framework agreements include a provision to protect intellectual property rights, focusing primarily on patents and copyrights. Trade secrets are sometimes mentioned in relation to the transfer of technical data, possibly including classified information as a type of trade secret as well. The form of stipulations varies and may include only a general provision for protection of intellectual property rights; a general provision with an attachment of a detailed annex; or a detailed provision in the body of the framework agreement itself. Where there is a general intellectual property term in the framework agreement, more detailed protections specific to a project may be found in an implementing arrangement/agreement. Often, there is mention of the relationship between the framework agreement and existing legal frameworks in international law, such as the Convention establishing the World Intellectual Property Organization or other bilateral agreements. The modality for governing the protection of intellectual property also varies. In framework agreements, for instance, where the parties anticipate that a joint invention will be made, the parties are obligated to consult in good faith for the allocation of patent registration and maintenance duties. Other framework agreements simply provide the obligation of the parties to protect any intellectual property created in accordance with their national law on a reciprocal basis. In general, the level of protection for copyrights concerns the transfer of technical data (addressed in subparagraph (l) above), the publication of public information and results (addressed in subparagraph (o) below), and trade secret and confidential information, if necessary, based upon reciprocity;

(o) *Publication of public information and results.* Each party retains the right to release public information regarding its own activities. If information to be released relates to the other party's performance, coordination shall be conducted in advance and appropriate acknowledgement shall be made of the respective roles of the parties. It is usually stated that scientific or final results obtained under the related framework agreement will be made available to the public and the general scientific community as soon as possible, taking note of the restrictions that may be incurred pursuant to subparagraphs (l) and (n) in the present section;

(p) *Consultations and settlement of disputes.* This clause provides for several measures to prevent, manage or settle disputes, while the form of stipulations can vary from one framework agreement to another. In order to prevent disputes, consultations for the review of ongoing joint activities set forth by the implementing arrangement/agreement should be undertaken. Consultations and, occasionally, tribunals are provided to manage and settle disputes. When only consultations (or negotiations) are set forth, those provisions contain detailed steps, placing a strong emphasis on an amicable and non-judicial solution. When the establishment of a tribunal is called for, it is usually ad hoc and provides requirements for the establishment of the tribunal and the rules to be applied, such as the United Nations Commission on International Trade Law Arbitration Rules. Such tribunals are often arbitral in nature, consisting of three people, one selected from each party and one from a third body, or nominated by, for instance, the Secretary-General of the Permanent Court of Arbitration at the Hague. The Permanent Court of Arbitration itself has also been chosen as the dispute resolution mechanism;

(q) *Final clauses.* The duration of the framework agreements concerned is generally specified and is often 5 or 10 years, unless terminated by one party through prior written notice 6 to 12 months in advance, and is extended or renewed

automatically or by written agreement of the parties. It is often expressly confirmed in the framework agreement that the termination of said agreement or the implementing arrangement/agreement concerned will not affect the continuing obligations assumed by the parties under transfer of goods and technical data, the exchange of expertise and technology, intellectual property rights or the cross-waiver of liability.

48. An implementing arrangement/agreement that has the function of implementing specific projects and other kinds of programmes within the scope of the framework agreement can elaborate non-legal matters, regardless of its name. Such matters include respective responsibilities in a planned project, points of contact and ownership of equipment. Annexes are also often attached to enumerate technical matters, more-detailed procedures on day-to-day operations and a calculation method with respect to data or service fees, for example, if necessary.

49. Some of the provisions contained in framework agreements may also appear, with the necessary modifications, in the implementing arrangement/agreement. In general terms, it may be said that an implementing arrangement/agreement comprises the non-legal provisions that describe the mission, but some legal provisions may be reiterated from the existing framework agreement.

50. Just as framework agreements can be similar to each other, so can implementing arrangements/agreements, if they are in the same mission category (e.g., remote sensing data provision through the setting up of a receiving station, planetary exploration, space research using nanosatellite technologies, etc.). Therefore, a pertinent type of implementing arrangement/agreement can be chosen and used when two countries decide to embark on space cooperation for the first time, and the framework agreement can be addressed after the fact.

51. The existence of bilateral agreements can also provide evidence of the common perspective shared by the two States regarding the peaceful uses of outer space and strong interests in the development of space-related technology.

VIII. Multilateral cooperation mechanisms

A. The example of the International Space Station Intergovernmental Agreement

52. Some States members of the Committee report on cooperation within the framework of the International Space Station (ISS) Intergovernmental Agreement. The ISS programme has employed the most elaborate and detailed mechanisms and is, without any doubt, the most technologically challenging and politically and operationally complex space exploration programme ever undertaken. ISS cooperation is governed by a three-tier legal framework:

(a) 1998 Intergovernmental Agreement on Space Station Cooperation signed by each partner: Canada, Japan, the Russian Federation and the United States, and participating member States of ESA;

(b) 1998 memorandums of understanding between National Aeronautics and Space Administration (NASA) and the following agencies: the Canadian Space Agency, ESA, the Russian Space Agency (Roscosmos) (now known as the State Space Corporation Roscosmos), and the Government of Japan;

(c) Various individual implementing arrangements concluded between NASA and another cooperating agency, as necessary.

53. In addition, different categories of formal arrangements or programme-related instruments, either legally binding on the parties or affecting their interests in some way, have been concluded.

54. Under the ISS Intergovernmental Agreement and memorandums of understanding, each partner has corresponding utilization rights, responsibilities over the operation of the elements, jurisdiction and control over the elements and personnel of each partner, and coordinates important issues using appropriate mechanisms such as the ISS Multilateral Coordination Board.

55. As a framework agreement, the ISS Intergovernmental Agreement contains, inter alia, the following provisions:

(a) *Application of four of the United Nations treaties on outer space.* The ISS Intergovernmental Agreement provides that ISS shall be developed, operated and utilized in accordance with international law, including four of the United Nations treaties on outer space (art. 2.1). With respect to a specific principle, e.g., non-appropriation of outer space is reconfirmed (art. 2.2 (c)) and the establishment of ISS for peaceful purposes is underlined (art. 1.1). After the initial completion, it is envisaged that ISS shall be further developed through the addition of capability, but the use of ISS shall continue to be for peaceful purposes (art. 14.1). Four of the United Nations treaties on outer space also play a role of providing underlying order relating to the registration of flight elements as space objects and the jurisdiction and control thereover (art. 5.1-2). The ISS Intergovernmental Agreement adds only partial clarification to the situation specific to ISS. The only exception, in this regard, is the cross-waiver of liability provision, which modifies the rights and obligations of partner States relating to the Liability Convention (art. 2.2 (a));

(b) *Each partner bears the costs of fulfilling its respective responsibilities.* Similar to the basic concept of the framework agreements on the financial arrangements, each partner of ISS shall bear the costs of fulfilling its respective responsibilities on an equitable basis (art. 15.1). Respective responsibilities are specified, especially with regard to management (art. 7), detailed design and development (art. 8) and utilization (art. 9) of the ISS Intergovernmental Agreement and in memorandums of understanding and implementing arrangements. The ISS Intergovernmental Agreement strikes a fine balance between “the availability of appropriated funds” (art. 15.2) and the obligation to “make its best efforts” (art. 15.2). The former term means that no new budgetary obligations are generated from the ISS Intergovernmental Agreement, thus assisting in the achievement of a smoother ratification by partner States. The latter term, which is a stronger technical term than “use reasonable efforts” as often used in framework agreements on financial arrangements, is the prerequisite for the successful implementation of this large-scale international cooperation. As in the case of the many framework agreements that recommend “no exchange of funds”, “to minimize the exchange of funds” is required in this agreement (art. 15.5). In the event that funding problems arise that could affect a partner’s ability to fulfil its responsibilities, that partner shall notify and consult with other cooperating agencies and partners, as appropriate (art. 15.3). Such a provision appears in many framework agreements;

(c) *Cross-waiver of liability.* While a certain variation is found in the ISS Intergovernmental Agreement, owing to its complex membership and the different legal status of one cooperating agency (art. 16.3 (e)), the provisions present a remarkable resemblance to those found in the majority of the bilateral framework agreements. As the cross-waiver of liability plays a critically important role in restricting the risk of each partner to any damage it may cause in a highly dangerous ISS cooperation, this constitutes a solid special rule and the sole exception in the otherwise prevailing Liability Convention (art. 17.1). Note should be taken that the cross-waiver of liability shall not be applied to claims made by a natural person and that person’s estate, survivors or subrogees with regard to the death of, bodily injury to or other impairment of the health of, such natural person except when a subrogee is a partner State. Nor shall it be applied in the case of a claim for damage caused by wilful misconduct, intellectual property claims, etc. (art. 16.3 (d) (1)-(5));

(d) *Customs and immigration.* With a view to implementing the ISS Intergovernmental Agreement, the movement of persons (entry, residence and exit) and goods shall be facilitated. Exemption from any taxes and duties on the importation and exportation of goods and software shall be granted to and from the territory of the partner State (art. 18.1-3). Those obligations are non-conditional except the limitation by the laws and regulations of each partner State. Owing to the unique nature of ISS, this obligation is worded more strongly than that found in many bilateral framework agreements, which are eased by the term “with reasonable efforts”. In order to comply with the most-favoured nation clause in the World Trade Organization General Agreement on Tariffs and Trade 1994 (art. 1.1 thereof), duty-free importation shall be implemented irrespective of the country of origin on such necessary goods and software (art. 18.3);

(e) *Exchange of data and goods and treatment of data and goods in transition.* In summary, the obligation of each partner is to transfer technical data and goods to fulfil its respective responsibilities pursuant to its national laws and regulations and to ensure that the use of such technical data and goods by other partner States would be strictly within its missions in accordance with the terms and conditions of the ISS Intergovernmental Agreement, memorandums of understanding and implementing arrangements (art. 19.1-8). The core of such provisions bears a resemblance to that of framework agreements referred to above, but the complex nature of the ISS projects and memberships naturally makes this mechanism much more complicated than the corresponding provisions found in other framework agreements. For instance, partners shall “make their best efforts” to facilitate an expeditious company-to-company transfer of such data and goods, etc., to implement the required mission within their export control laws, etc. (art. 19.2). Withdrawal from the ISS Intergovernmental Agreement shall not exempt that partner State from abiding by the obligations on the protection of technical data and goods (art. 19.6). Since continuous operation is needed to operate the ISS programme, each partner State shall allow the expeditious transit of data and goods that are transiting to and from ISS, which includes the transit between its national border and a launch/landing site within its territory and between a launch/landing site and ISS (art. 20);

(f) *Intellectual property.* This is one of the most ISS-specific provisions. While the basic concept is shared with the intellectual property provisions in the many framework agreements, those in the ISS Intergovernmental Agreement are conspicuous and include some points set out below. The most important rule is that an invention made in or on a space flight element shall be deemed to have taken place in the territory of the State of that element’s registry. This rule accommodates the filing of a patent application (territorial principle, art. 21.2). There is also a provision preventing the concurrent jurisdiction among ESA partner States, as ESA registers the European flight element relating to the first point (art. 21.4-5). Furthermore, each partner State shall not apply its intellectual property laws and regulations concerning the secrecy of inventions to prevent a foreign person who made an invention in or on its flight element from filing of a patent application in any other partner State that provides for the protection of the secrecy of patent applications (art. 21.3);

(g) *Criminal jurisdiction.* This is another example of an ISS-specific provision. The choice of only the personal jurisdiction is not a logical consequence of the ISS project but rather a conclusion drawn under certain circumstances in terms of the respective mission responsibilities and membership, among others. The traits of the criminal jurisdiction in the ISS Intergovernmental Agreement are listed below:

- (i) Partner States may exercise criminal jurisdiction over personnel who are their nationals regardless of the flight elements where an incident took place (personal jurisdiction) (art. 22.1);

(ii) An affected partner State may exercise criminal jurisdiction over the alleged perpetrator after consulting with the partner State of which the alleged perpetrator is a national and once certain conditions have been met. An affected partner State is one whose national's life or safety has been affected or whose flight element suffered damage as a result of misconduct (art. 22.2);

(iii) The ISS Intergovernmental Agreement may be used as a substitute for the extradition treaty. Doing so may facilitate the extradition of an alleged perpetrator since an extradition treaty is a prerequisite for that purpose in some partner States, including Canada, the United Kingdom of Great Britain and Northern Ireland and the United States (art. 22.3);

(h) *Consultations.* As ISS is the single biggest cooperative space project ever undertaken, the settlement of disputes among partner States is also critically important. Therefore, the contents of the consultation in the ISS Intergovernmental Agreement (art. 23) may be different from those often specified in the framework agreements in that it contains not only consultations but other means. First, cooperating agencies of the partner States may consult with each other, exerting their best efforts to resolve questions arising out of the ISS cooperative mission (art. 23.1). Second, government-level consultations may be held on the basis of the request of any partner State. In addition, the United States shall convene consultations comprising all partner States on the basis of a specific type of request made under the article (art. 23.2). The intention of the significant flight element design changes by a partner State would require a multilateral consultation (art. 23.3). If consultations do not resolve the differences, concerned partner States may seek other types of dispute settlement measures including conciliation, mediation or arbitration (art. 23.4).

56. A legal framework for the commercial use of ISS is also set forth in the ISS Intergovernmental Agreement and in various documents agreed upon, as appropriate, among partner States. In using Commercial Orbital Transportation Services, the engagement of the private sector in the delivery of transportation services has led to a decrease in overall programme costs and has stimulated space industry involvement.

B. Examples of legally binding mechanisms for multilateral cooperation

57. Multilateral endeavours, including the ISS Intergovernmental Agreement, require a long-term commitment and are costly. The clear allocation of responsibilities of participating States is, therefore, essential and tends to be conducted through legally binding agreements, with or without accompanying non-legally binding instruments.

58. A legally binding agreement used for a multilateral project may be negotiated among participating States at the commencement of the project. In addition, a multilateral project may be conducted through a network of bilateral binding agreements, most notably through framework agreements. One example is the Mars Science Laboratory mission. Operational instruments of the mission contain five bilateral agreements of two types, with the United States being the hub. The first type consists of framework agreements concluded between the United States and Canada and between the United States and France. The second type comprises the bilateral cooperative agreements, which are binding under international law and are agreed upon between the United States and the three following countries: Germany, the Russian Federation and Spain. This example may also demonstrate the pivotal role of framework agreements in both bilateral and multilateral cooperative mechanisms.

C. Examples of non-legally binding mechanisms for multilateral cooperation

59. The characteristics of cooperative mechanisms for multilateral projects seem to lie, in part, in the fact that the legal nature of the instruments is less important than the substantive contents of the mission and the continued commitment of its members, participants and contributors.

60. The importance of multilateral coordination mechanisms — including the Group on Earth Observations, the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also called the International Charter on Space and Major Disasters), the International Space Exploration Coordination Group, and the Committee on Earth Observation Satellites — is not lessened by the fact that such mechanisms are not constructed by legally binding multilateral agreements. The value of such mechanisms should be assessed on the basis of the accomplishment of the respective mission and, in the longer term, the degree of well-being and safety of international society as a whole.

61. As reported by some States members of the Committee, some of the multilateral coordination mechanisms are believed to have been established as a result of the declaration of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) entitled “The Space Millennium: Vienna Declaration on Space and Human Development”, which reiterates the importance of the United Nations in international cooperation in space activities.

62. Owing to the increasing number of spacefaring nations and the diversity of interests in space activities, non-legally binding space-related multilateral agreements have been increasing in the past three decades. The advantages of non-legally binding agreements include facilitating the drafting of new rules for reference and guidance; acting as persuasive guidance of the behaviour of the parties, as they have a moral obligation not to violate these rules; and assisting in the development of customary rules in the space field.

63. Some space projects employ the combination of a framework agreement and an implementing agreement, including memorandums of understanding, such as the ISS Intergovernmental Agreement, as indicated above. In other cases, a separate implementing agreement is concluded, independent of the main agreement, e.g., the Convention on the Transfer and Use of Data of Remote Sensing of the Earth from Outer Space. That convention was adopted independently but within the framework of the Agreement on Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes (INTERCOSMOS).

IX. Conclusions

64. The Working Group recalls the fundamental principles laid down in article I of the Outer Space Treaty, whereby the exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. In that respect, the Working Group, being guided in its work by the principles of international space law for international cooperation in the peaceful uses of outer space, including the Outer Space Treaty and the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries, makes the following conclusions:

(a) The exploration and use of outer space for peaceful purposes to a large extent requires international cooperation, coordination and joint undertakings at the governmental and non-governmental level, often in combination. The present report of

the Working Group explains the nature and content of a broad framework of cooperative mechanisms at the multilateral and bilateral level for space cooperation. The report, in that sense, can provide a reference point for States in their further engagement in cooperative endeavours, in particular between spacefaring nations and emerging space nations. For this purpose, the present report endeavours to provide examples of current cooperative mechanisms, serving as guidance for further joint undertakings at different levels;

(b) Space cooperation has entered a new phase, in which closer cooperation among States, including through national space agencies, in partnership with industry and private sector entities, and with relevant international organizations, has become essential. New types of such mechanisms are being developed. The Working Group is of the view that, through its findings, the present report will provide useful guidance to this complex area of various layers of cooperation mechanisms;

(c) Having considered the need to work towards bridging the gap between developed and developing countries, there is a need for national and international agencies, research institutions, organizations for development aid, and developed and developing countries alike to consider the appropriate use of space applications and the potential of international cooperation to assist in reaching their development goals, as stipulated in the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries. In this context, note should be taken of the outstanding importance of space science and technology applications for meeting sustainable development goals in various areas of economic, societal and environmental importance, including agriculture, land use and management, rural development, disaster management, humanitarian assistance, global health, transportation, communication, education and research;

(d) In this regard, multilateral and bilateral cooperation in the exploration and use of outer space for peaceful purposes should be strengthened through the exchange of expertise and technology among countries on a mutually acceptable basis. It is important to note the need for enhanced capacity-building in know-how, assistance in strengthened access to data and information, and support with equipment and experiments for enhanced applications of space science and technology;

(e) The Committee on the Peaceful Uses of Outer Space and its Scientific and Technical Subcommittee and Legal Subcommittee, as the unique common platform at the global level for the promotion of international cooperation in the peaceful uses of outer space, should consider in a coordinated manner further actions to foster international cooperation and coordination in the strengthening of infrastructures and institutional capacity at the national level as a prerequisite for cooperation efforts among all countries. The capabilities of the Office for Outer Space Affairs should, in this regard, be strengthened in order for the Office to carry out, in close coordination with Member States, enhanced capacity-building and technical assistance in space science, technology, policy and law, in particular for the benefit of developing countries.

65. The Working Group, in observance of the fiftieth anniversary of the Outer Space Treaty, in 2017, concludes that the present report, as a result of its multi-year programme of work, provides an important source of information for further joint undertakings by spacefaring nations and emerging space nations, as appropriate.