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**Committee on the Peaceful
Uses of Outer Space****Legal Subcommittee****Fifty-sixth session**

Vienna, 27 March-7 April 2017

Item 15 of the provisional agenda*

**Review of International mechanisms for cooperation in
the peaceful exploration and use of outer space****Updated Draft Report of the Working Group on the Review
of International Mechanisms for Cooperation in the
Peaceful Exploration and Use of Outer Space****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, in its fifty-first session as an item under a five-year workplan (A/AC.105/1003, para. 179). In accordance with the workplan, 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 used for cooperation in space activities. Special presentations on this agenda item were also made throughout the workplan.

2. The Subcommittee established its Working Group in 2014, under the chairmanship of Setsuko Aoki of Japan, and endorsed the report of the Chair of the Working Group which included a set of questions which 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:

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.

* A/AC.105/C.2/L.299.



- 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 these constituted a tool to enable the Working Group to meet its objectives under its multi-year workplan. This 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, in conducting its work, 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 ILA ([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, Turkey and 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, Turkey and World Meteorological Organization ([A/AC.105/C.2/111](#)); and

(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 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 presented by ESA entitled “The European Space Agency as mechanism and actor of international cooperation” ([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 containing a note by the Secretariat 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 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 uses of outer space: filling the gap between developing and developed countries”, submitted Cuba, Iran (Islamic Republic of) and Venezuela (Bolivarian Republic of) ([A/AC.105/C.2/2017/CRP.22](#)); and

(n) Conference room paper 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](#)).

9. This summary report of the Working Group 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 in serving as example for consideration, as appropriate. The International Space Station Intergovernmental Agreement is explained to serve 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 by States members and permanent observers of the Committee since 2013 seems to suggest certain tendencies with respect to the basic framework for international cooperation, areas and actors of cooperation, modes of frequently used cooperation mechanisms, and the basic principles of cooperative mechanisms. Note has to be taken that the specific references in the document are illustrative and do not constitute an exhaustive list. This report of the Working Group is prepared to serve Member States in their voluntary consideration of cooperation mechanisms, as appropriate, and does not intend to re-interpret or modify international norms applicable to outer space activities or the right 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. As an early example, the General Assembly resolution which established an ad hoc Committee on the Peaceful Uses of Outer Space in 1958 requested it to report to the General Assembly on the “area of international co-operation and programmes in the peaceful uses of outer space which could be appropriately undertaken under the United Nations auspices” as well as “the future organizational arrangements to facilitate international co-operation in this field” (General Assembly resolution 1348 (XIII), 1. (b), (c)). Becoming a permanent body in 1959, the Committee has since been promoting, facilitating and encouraging international space cooperation. This is symbolically demonstrated by the title of, e.g., resolution 1472 (XIV) which established the Committee as permanent body, resolution 1721

(XVI) which refers to the registration of space objects, and, above all, 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. Part of such mechanisms are found in the United Nations treaties and principles on outer space, General Assembly resolutions and other relevant instruments on the peaceful exploration and use of outer space. Likewise, 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. Mechanisms employed by States are numerous in number and of wide variety 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 and they could be either legally binding, legally non-binding, or the combination of both. There are also cases where 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 legally non-binding agreements.

14. Among the most important statements on international space cooperation by the General Assembly is that “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” (GA Res 51/122 (1996), “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” (Space Benefit Declaration, para. 2). 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, 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 cooperations 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, there is a need for consideration of technical assistance and rational and efficient allocation of financial and technical resources, under 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 international cooperation 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:

- (a) Earth science, space science, basic space research, scientific experiments;
- (b) Space exploration, exploration into the deep space, human space exploration;
- (c) Space application;
- (d) Earth observation, 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 as well as ground-based facilities;
- (l) Transparency and confidence-building measures in outer space activities, and in some cases also including cooperation efforts in the field of arms control; and
- (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 fora 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 also 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 essential actors in cooperative mechanisms in the space field, increased importance of commercial and private actors have been noticed in cooperative programmes.

23. Space actors such as 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 concerning choice of modes for cooperation there is also a call to keep in mind consensus, special need of developing countries, and fair, mutually acceptable, and equitable terms and conditions as basis for all parties involved in space cooperation.

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

26. Types of cooperative agreements include:

- (a) Multilateral agreements;
- (b) Bilateral agreements; and
- (c) Regional mechanisms.

27. Various forms of international agreements and specific arrangements in the field of space cooperation include:

- (a) Government-to-Government framework agreements;
- (b) Intergovernmental agreements;
- (c) Agency-to-Agency memorandums of understanding;
- (d) Implementing arrangements;
- (e) Letters of agreement; and
- (f) Letters of intent.

28. Multilateral coordination mechanisms or common forums on space issues of common interests include, inter alia:

- (a) Inter-Agency Space Debris Coordination Committee (IADC);
- (b) 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);
- (c) International Space Exploration Forum (ISEF);
- (d) Group on Earth Observation (GEO);
- (e) Committee on Earth Observation Satellites (CEOS); and
- (f) International Committee on Global Navigation Satellite Systems (ICG).

29. Mechanism of international cooperation cannot always be clearly classified either as strictly bilateral or multilateral, and either legally-binding or legally non-binding. An essentially bilateral cooperative project could be seen also as a multilateral cooperation when, for example, established within multilateral cooperation mechanisms. There is also the case where a bilateral scientific cooperative project was established within two multilateral mechanisms, the ISS/IGA mechanisms and the Asia-Pacific Regional Space Agency Forum (APRSAF), as reported by one State member.

30. Another example is the case with multiple actors while it is essentially a bilateral project. Granting a space agency providing data concludes a partnership agreement with a regional aid organization and the latter organization dispatches necessary personnel to the local government to train and supervise the project. The space agency and the local government concluded a letters 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 the standpoint from where this project is seen, it could be a bilateral cooperation or multilateral cooperation, and also may be legally-binding or legally non-binding.

31. It can be noted that the use of legally non-binding arrangements, such as memorandums of understanding and letters of intent, are often flexible enough and serve as reference for executive institutions and project managers in carrying out a certain type of projects, or even specific missions thereof, 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 for operating systems and equipment could be useful for improving the utilization of the systems and lead to enhanced efficiency, including once the dedicated project is concluded. Likewise, there could be considered taking advantage of different cross-sectorial expertise of participating entities, such as from other sectors involved in societal development.

VI. Regional accent in cooperation mechanisms

33. Regional mechanisms can be a contribution to economic globalization in the long run. Other bilateral instruments such as Memorandums of Understanding (MOU) and Letters of Intent (LOI) were historically not intended to generate legally binding obligations, but were generally intended to cover exploratory talks between two parties, either on general cooperation or specific projects.

34. The European Space Agency (ESA) is a long-standing intergovernmental agency founded by a convention. A more recent regional and interregional cooperation and coordination mechanism in the space field is the Asia-Pacific Space Cooperation Organization (APSCO), which like ESA, is founded by a convention.

35. The Asia-Pacific Regional Space Agency Forum (APRSAF) is a partnership for cooperation among governmental and non-governmental actors. The African Leadership Conference on Space Science and Technology for Sustainable Development (ALC) and the Space Conference of the Americas are intergovernmental platforms that can be used as initiator for more specific cooperation and coordination 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 with connection to the Office for Outer Space Affairs of the Secretariat and to the Committee on the Peaceful Uses of Outer Space.

37. Attention has to be paid to the tendency that regional and geographical aspects have influenced the intensity of cooperative mechanisms. One example is the Association of the Southeast Asian Nations (ASEAN), which uses the ASEAN Ministerial Meeting on Science and Technology as well as the Subcommittee on Space Technology and Applications of the ASEAN Committee on Science and Technology for increasing space cooperation of the region.

38. As reported by one European State member of the Committee, the 1st pillar is the European cooperation at national level as well as at the European level through

ESA and EU, and the 2nd pillar is international cooperation outside Europe. Another European Member State mentions its space activities taking place primarily through participation in European programmes, especially those of ESA.

39. Likewise, examples of cooperative agreements of a Latin American State member of the Committee 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 Member State, the African Leadership Conference and the African Resources and Environmental Management Satellite Constellation Initiative are among regional cooperative mechanisms used.

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

41. It is found from the information by States members of the Committee 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. For example, as reported, ESA is a valuable platform through which more effective cooperation is enabled with major spacefaring nations, developing countries, other international and regional organizations and coordination mechanisms. APRSAF also allows non Asia-Pacific space agencies and governmental bodies to be participants due, in part, to its flexible coordination requirements as a forum and not an intergovernmental organization with international personality.

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 notably, such instruments are consisted of Framework Agreements, binding under international law, to govern general legal principles as well as terms and conditions for future cooperation in a broad range of area of cooperation, and Implementing Arrangements (or Implementing Agreements/other names) to provide for specific mission details.

43. Framework Agreements have been concluded even without an immediate specific cooperative project. Resolving in advance all of the legal issues that often arise in negotiating an agreement for space cooperation allows for more rapid conclusions of Implementing Arrangements/Agreements for such missions, and saves significant time and resources, thereby allowing space agencies to focus on performing their underlying scientific and technical missions more efficiently and effectively.

44. A Framework Agreement, bilateral or multilateral, is often used for resolving in advance fundamental legal issues in any future projects so that an Implementing Agreement or Arrangement can be concluded in a more rapid and smooth fashion. If partners focus on elaborating a specific cooperative project within an already agreed legal framework, it could facilitate and deepen the project concerned.

45. A Framework Agreement is often signed by the two Governments, but there are also cases where two national space agencies are the signatories thereof.

46. Whenever specific cooperative activities or missions are contemplated by space agencies, such activities are captured into an Implementing Arrangement/Agreement dealing with responsibilities of each Party specific to the cooperative activity or mission.

47. In many bilateral space missions without a Framework Agreement, the Implementing Arrangement/Agreement is concluded as a freestanding agreement, and contains hardware and operational allocation of responsibilities of each Party as well as key legal provisions which are also found in the Framework Agreement.

Accordingly, as reported by one State member of the Committee, 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.

48. Existing Framework Agreements tend to have common provisions which have been streamlined over the past decades. Parties to Framework Agreements are usually governments, but there are cases where a Framework Agreement is concluded between two space agencies if such agencies are granted a power to make a legally-binding instrument under international law. Typical Articles/key provisions in Framework Agreements cover, inter alia:

(a) *Preamble*: Framework Agreements usually set forth Preamble and it contains a number of elements. The history of space cooperation of the two States concerned which led to the conclusion of the Framework Agreement is often described initially. Comprehensive science and technology cooperation agreements and/or a series of independent space cooperative agreements are sometimes referred to in this regard. Space exploration and scientific research, as well as capacity-building and knowledge, are also being referred to. In many instances, reference to rules and principles of international law, either implicitly or explicitly, including not only the United Nations treaties and principles on outer space, but also other relevant frameworks of international cooperation in other related fields can also be found here;

(b) *The application of the United Nations treaties on outer space, and principles of international law*: It is sometimes expressly declared in the Preamble especially with respect to the Outer Space Treaty, or clearly set forth in a specific operating Article, in particular in relation to registration of space objects. It is also often the case that this element is only indirectly referred to in, e.g., the “purpose” provision of the Framework Agreements;

(c) *Purpose*: The purpose of the Framework Agreement is often set out to clarify the obligations, terms and conditions for the cooperation;

(d) *Agencies for cooperation*: Implementing agencies for cooperation of the Parties are specified either in the Article providing for “Purpose” of the Framework Agreement mentioned above, in an independent Article, or as a part of the Article covering “definitions.” Space agencies are primary agencies as long as space agency exists in either of the States. Other related agencies designated by each Party and even the possible involvements of the private sector for encouraging industrial and commercial cooperation are sometimes provided for. Some Framework Agreements establish a joint committee, joint project committee and/or the programme coordination committee supervising the implementing agencies/entities of the cooperation, which are usually consisted of related government officials of the Parties. This provision can also have an overarching role in different provisions, such as on financial arrangement, 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 present 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 Articles referring to, e.g., customs clearance or transfer of goods and data;

(f) *Definitions*: Some Framework Agreements contain an Article on definitions in which important terms such as “agency”, “related entity”, “damage”, “launch vehicle”, “payload”, “protected space operations”, etc. are defined and which have overarching role in the Framework Agreements. Other Framework Agreements define such terms where they have to be precisely specified, for

example 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”) as well as more specific programs or forms of actions in joint activities (“forms of cooperation”). Some Framework Agreements specifically state the geographical scope of cooperation (on Earth, in air space or in outer space);

(h) *Implementing Arrangements/Agreements*: This is one of the key provisions in Framework Agreements where the Parties agree to conclude the Implementing Arrangements/Agreements. While the names for such arrangements/agreements could be “working protocols”, “MOU”, “other agreements”, etc., it follows the conclusion of the Framework Agreement in order to conduct 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 Implementing Arrangements/Agreements cooperative mission. Some Framework Agreements confirm that the Implementing Arrangements/Agreements 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 should either agency encounter budgetary problems that may affect the joint mission, that agency shall notify and consult with the other agency in a timely manner. Otherwise, it is provided for that financial arrangements are decided in further agreements;

(j) *Customs duties and taxes*: Each Party agrees on facilitation of movement of goods or properties related to the purpose abiding by their respective national laws and regulations. In order to achieve this 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. In the case such waiver is agreed upon, it is usually stated that if such taxes, duties or fees have to be levied nonetheless, Framework Agreements usually specify 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 as well as overflight. Each Party shall make reasonable efforts to facilitate the entry, temporary residence and exit of personnel engaging in a space cooperative program. Some Framework Agreements explicitly refer to the conditions of the temporal residence of personnel such as provision of office, administrative support and the salary and other expenses such as travelling costs. Usually, those detailed aspects are described in the Implementing Arrangements/Agreements. Likewise, most of the Framework Agreements include the Party’s obligation to facilitate the provision of aircraft and scientific balloons 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 goods and technical data necessary to fulfil its commitments/responsibilities under the scope of cooperation pursuant to the respective national laws and regulations, including security export control and information laws, as appropriate. Since such transfer may impact the intellectual property rights of the parties, particularly with respect to trade secrets, and/or confidential information, as well as national security concerns, it is often provided

that such data and goods are clearly identifiable through markings and contain safeguards from their 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 risks arising out of the joint activities, and 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, 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 which may generate enormous damage where 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 are often broadly construed and, as a result, this is usually applicable to the claims arising from the 1972 Liability Convention. It should be noted that claims between a Party and its own related entity, contract claims between the Parties, etc. are outside of a cross-waiver of liability;

(n) *Protection of intellectual property rights*: Most of Framework Agreements include a provision to protect intellectual property rights, focusing primarily on patents and copyrights, while trade secrets are also sometimes mentioned in relation to transfer of technical data, possibly including classified information as well. The form of stipulations varies: there may be only a general provision for protection of intellectual properties rights; a general provision with an attachment of a detailed annex; or a detailed provision in the body of Framework Agreement itself. Where there is general intellectual property term in Framework Agreement, more detailed protections specific to a project may be found in an Implementing Arrangement/Agreement. Often, the relationship between the Framework Agreement and existing legal frameworks in international law, such as Convention establishing the World Intellectual Property Organization or other bilateral agreements are mentioned. The modality of 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 obliged 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. For copyrights, in general, the level of protection concerns transfer of technical data (l) and publication of public information and results (o), as well as trade secret and confidential information if necessary, based upon reciprocity;

(o) *Publication of public information and results*: Each Party retains the rights 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 by the respective roles of the Parties. It is usually stated that scientific or final results obtained under the Framework Agreement related will be made available to the public and the general scientific community as soon as possible taking note of the restrictions may be incurred pursuant to (l) and (n) in the present section;

(p) *Consultations and Settlement of disputes*: This clause provides for a set of several measures to prevent, manage or settle disputes, while the form of stipulations can vary among Framework Agreements. For prevention of disputes, consultations for review of ongoing joint activities set forth by Implementing Arrangements/Agreements are expected. For management and settlements of disputes, consultations and sometimes tribunals are provided as means. When only consultations (or negotiations) are set forth, they 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 set up and rules to be applied, such as UNCITRAL 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 being 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; and

(q) *Final clauses*: Usually, the duration of the Framework Agreements concerned is specified, which is often ten years or five years unless terminated by the six to twelve months' prior written notice of either Party or extended/renewed either automatically or by written agreement of the Parties. It is often expressly confirmed in the Framework Agreements that the termination of the Framework Agreements or Implementing Arrangements/Agreements concerned will not affect the continuing obligations assumed by the Parties under transfer of goods and technical data, exchange of expertise and technology, intellectual property rights and cross-waiver of liability.

49. An Implementing Arrangement/Agreement, regardless of its name but having a function of implementing specific projects and other kind of programmes within the scope of the Framework Agreement, can elaborate non-legal matters. 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 calculation method of, e.g., data or service fees if this is necessary.

50. Implementing Arrangements/Agreements sometimes repeat a part of the provisions in the Framework Agreements with necessary modifications. In general terms, it may be said that an Implementing Arrangement/Agreement is comprised of the non-legal mission description parts and some legal provisions that can be reiterated from an already-made Framework Agreement.

51. As Framework Agreements are similar to each other, so are Implementing Arrangements/Agreements of the same category of missions (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 between two countries which have decided embarking on space cooperation for the first time without spending time for negotiating a Framework Agreement, which could be addressed in the future.

52. The existence of bilateral agreements can also provide evidence on the common perspective shared by the two States regarding 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

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

(a) 1998 Intergovernmental Agreement on Space Station Cooperation (ISS/IGA) signed by each Partner: USA, Russia, Canada, Japan, and participating Member States of ESA;

(b) 1998 Memorandum of Understanding (MOU) between NASA and ESA, Russian Space Agency (Roscosmos) and Canadian Space Agency (CSA), respectively, as well as NASA and the Government of Japan; and

(c) Various individual Implementing Arrangements concluded between NASA and another Cooperating Agency, when the need arises.

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

55. Under the IGA and MOU, 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 Multilateral Coordination Board (MCB).

56. The ISS/IGA as the Framework Agreement contains, inter alia, the following provisions:

(a) *Application of four of the United Nations treaties on outer space:* ISS/IGA provides that the ISS shall be developed, operated and utilized in accordance with international law including the 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 the ISS for peaceful purposes is underlined. (Art. 1.1). After the initial completion, it is envisaged that the ISS shall be further evolved through the addition of capability, but the ISS shall remain 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/IGA only adds some clarifications to the ISS-specific situation. 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 costs of fulfilling its respective responsibilities:* Similar to the basic concept of the Framework Agreements on the financial arrangements, each Partner of the ISS shall bear the costs of fulfilling its respective responsibilities on an equitable basis. (Art. 15.1). Respective responsibilities are specified especially in the Management (Art. 7), Detailed Design and Development (Art. 8) and Utilization (Art. 9) of the ISS/IGS as well as MOUs and Implementing Arrangements. ISS/IGA 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 means that no new budgetary obligations are generated from the ISS/IGA, thus having helped the smoother ratification by the Partner States. The latter, a stronger technical term than “use reasonable efforts” often used in the Framework Agreements on financial arrangements, is the prerequisite for the successful implementation of this huge 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). Also found in many Framework Agreements, in the event that funding problems arise that may affect fulfilling its responsibilities, that Partner shall notify and consult with other Cooperating Agencies and Partners, as appropriate (Art. 15. 3);

(c) *Cross-waiver of liability:* While a certain variation is found in the ISS/IGA due 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 to restrict the risk of the each Partner to the damage caused by its own in a highly dangerous ISS cooperation, this constitutes a solid special rule and the sole exception in the otherwise prevailing the Liability Convention (Art. 17.1). Note has to be taken that the cross-waiver of liability shall not be applied to claims made by a natural person

and his/her estate, survivors or subrogees for the death of, bodily injury to, or other impairment of health of, such natural person except when a subrogee is a Partner State. Nor shall it be applied in 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/IGS, 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. Due to the unique nature of the ISS, this obligation is pronounced more strongly than that found in many bilateral Framework Agreements eased by the term “with reasonable efforts”. In order to comply with the most-favoured-nation clause in the 1994 WTO/GATT Agreement (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 as well as 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 good by the other Partner States would be strictly within its missions in accordance with the terms and conditions of the ISS/IGA, MOU 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 that found in 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/IGA shall not exempt that Partner State from abiding by the obligations on the protection of technical data and goods (Art. 19. 6). Since the continuous operation is needed to operate the ISS program, each Partner State shall allow the expeditious transit of data and goods that are transiting to and from the ISS, which includes the transit between its national border and a launch/landing site within its territory, and between a launch/landing site and the ISS (Art. 20);

(f) *Intellectual Property*: This is one of the most ISS-specific provisions, and while the basic concept is shared with the intellectual property provisions in the many Framework Agreements, those in the ISS/IGA are conspicuous including some points set out below: most importantly, the invention made in or on a space flight element shall be deemed to have been occurred 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 concurring jurisdiction among Partner States in ESA as the ESA registers the European flight element relating to the first point (Art. 21. 4-5.); and each Partner States shall not apply its intellectual property laws and regulations 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 has the secret patent application (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 from the ISS project, rather than a conclusion under certain circumstances in terms of the respective mission responsibilities, membership, etc. The traits of the criminal Jurisdiction in the ISS/IGA are: first, Partner States may exercise criminal jurisdiction over personnel who are their nationals irrespective of the flight elements where they existed (personal jurisdiction) (Art. 22. 1). Second, an affected Partner (the life or safety of its national is affected or the misconduct was occurred in or on or caused damage to its flight element) may exercise criminal jurisdiction over the alleged perpetrator after the consultation with the Partner State the alleged perpetrator is its national and a certain conditions are met (Art. 22 2). Third, the ISS/IGA may be used as a substitute of the extradition treaty. This may facilitate the

extradition of an alleged perpetrator as extradition treaty is prerequisite for that purpose in some of the Partner States (ex. Canada, UK, USA) (Art. 22. 3); and

(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/IGA (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 Partners may consult with each other, exerting their “best efforts” over their questions arising out of the ISS cooperative mission. (Art. 23. 1) Second, government-level consultation may be held based on the request of any Partner. The U.S. shall convene consultation comprising all Partners based on a certain type of request. The intention of the significant flight element design changes by a Partner would be a case where a multilateral consultation is needed (Art. 23. 3). If consultations do not solve the differences, concerned Partners may seek other types of dispute settlement measures such as conciliation, mediation, or arbitration (Art. 23. 4).

57. A legal framework for commercial use of the ISS is also set forth in the ISS/IGA and in various documents agreed upon as appropriate among Partners. In using Commercial Orbital Transportation Services (COTS) the engagement of private sector in transportation service has led to a decrease in overall programme costs and has stimulated space industry involvement.

B. Examples of legally binding mechanisms for multilateral cooperation

58. Including the ISS/IGA, multilateral endeavours which require long-lasting commitment and large cost, thus needing the clear allocation of responsibilities of participating States, tend to be conducted through legally binding agreements with or without accompanying legally non-binding instruments.

59. A legally binding agreement used for a multilateral project may be negotiated among participating States at the time of starting the project. Also, a multilateral project may be conducted through a network of bilateral binding agreements most notably through Framework Agreements. One example would be the Mars Science Laboratory (MSL) Mission. Operational instruments of this mission contain five bilateral agreements of two types with the United States being the hub: First type is the Framework Agreements concluded between US-Canada and US-France. Second type is the bilateral cooperative agreements, binding under international law, which are agreed upon between the United States and Germany, Russia and Spain, respectively. This example may also demonstrate the pivotal role of Framework Agreements in both bilateral and multilateral cooperative mechanisms.

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

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

61. The importance of multilateral coordination mechanism such as Group on Earth Observation (GEO), International Charter on Space and Major Disasters, International Space Exploration Coordination Group (ISECG), and Committee on Earth Observation Satellites (CEOS) is not lessened by the fact that such mechanism are not constructed by legally binding multilateral agreements. Their value would be assessed by the accomplishment of the mission originally aimed at and in the longer term, by the degree of well-being and safety of the international society as a whole.

62. It could be mentioning, as reported by some States members of the Committee, that some of the multilateral coordination mechanisms are assessed as having arisen based on and/or stimulated by the resolution 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”. This reiterates the importance of the United Nations in international cooperation in space activities.

63. Due to the increasing number of spacefaring nations and diversifying interests in space activities, legally non-binding space-related multilateral agreements are increasing in the last three decades. The advantages of legally non-binding agreements are commonly to facilitate the drafting of new rules for reference and guidance; being persuasive in reality; parties have a moral obligation not to violate these rules; and they help the development of customary rules in the space field.

64. Some space projects employ the combination of a Framework Agreement and an Implementing Agreement, including Memorandums of Understanding (MOU), such as the ISS/IGA, as indicated above. In other cases a separate Implementing Agreement is concluded which in its form is independent from the main agreement, such as the Convention on the Transfer and Use of Data of Remote Sensing of the Earth from Outer Space of 1978. This 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) in 1976.

IX. Conclusions

65. The Working Group recalls the fundamental principles laid down in article 1 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 this 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 “Space Benefit Declaration”, 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, provides 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, and serving as guidance for further joint undertakings at different levels;

(b) Space cooperation has entered a new phase where 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 for reaching their development goals,

as stipulated in the “Space Benefit Declaration”. In this context, note should be taken on 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; and

(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 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 of the Secretariat 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.

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