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**Committee on the Peaceful Uses  
of Outer Space****Fifty-fifth session**

Vienna, 6-15 June 2012

**Future role of the Committee****Next Phase in Global Governance for Space Research and  
Utilization****Discussion paper submitted by the Chair of the Committee on the  
Peaceful Uses of Outer Space for the period 2012-2013\*****I. Three main ideas in response to the 50th Anniversary  
Declaration**

1. In 2011, the United Nations celebrated the fiftieth anniversary of human space flight commemorating the flight of cosmonaut Yuri Gagarin, and the fiftieth anniversary of the Committee on the Peaceful Uses of Outer Space recalling its outstanding achievements in ensuring that outer space is used for peaceful purposes. These commemorative events resulted in the adoption by the General Assembly of the Declaration on the Fiftieth Anniversary of Human Space Flight and the Fiftieth Anniversary of the Committee on the Peaceful Uses of Outer Space, annexed to its resolution 66/71 of 9 December 2011 (hereinafter referred to as the "50th Anniversary Declaration").

2. For more than half a century the Committee has continued to resolve complex issues that have influenced space activities of many countries around the world while simultaneously maintaining the principle of consensus in its decision-making process. The Committee has also witnessed and has been at the centre of humankind's efforts to peacefully explore and utilize the outer space environment with the objective of bringing the benefits of space science and technology and their applications to contribute to the social development of all countries.

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\* The ideas and suggestions contained in this discussion paper are being presented by Yasushi Horikawa (Japan), in his capacity as Chair of the Committee for 2012-2013, with the intention to stimulate thought and promote an open dialogue in the Committee on various cross-cutting issues before it.



3. In terms of governance, the overall mandate of the Committee and its subsidiary bodies aims at strengthening the international legal regime governing the use of outer space, resulting in improved conditions for expanding international cooperation in the peaceful uses of outer space. In this connection, the Committee has been instrumental in the development of five United Nations treaties on outer space, with the Outer Space Treaty establishing the fundamental principles of international space law, and five sets of legal principles and declarations on outer space activities. In more recent times the Committee and its subsidiary bodies have made considerable achievements resulting in Assembly resolution 59/115 from 2004 on the “application of the concept of the launching State”, resolution 62/101 from 2007 on “recommendations on enhancing the practice of States and international organizations in registering space objects”, the 2007 Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space, and the 2009 Safety Framework for Nuclear Power Source Applications in Outer Space.

4. The legal regime and corresponding instruments support efforts at the national, regional and global levels, including those of entities of the United Nations system and international space-related entities, in order to maximize the benefits of the use of space science and technology and their applications and to increase coherence and synergy in international cooperation in space activities at all levels. In this spirit, 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, adopted in 1996, emphasizes the need to give particular attention to the benefit and the interests of developing countries through multilateral or bilateral cooperation pursued not only by governmental and intergovernmental entities but also by non-governmental organizations and private sector entities, which is being reflected by the increasing number of collaborative space related projects in the past years that focus on bringing benefits to developing countries.

5. Today, at this unique milestone in the history of this Committee, it will be a good occasion to consider future activities and roles for the Committee. It is becoming increasingly important to reassess the significance of international cooperation and its future perspectives in the next half century based on the past and present situation of space research and utilization for peaceful purposes. We should take concrete steps that will open the door for a new era of international cooperation and international harmonization.

6. The three main ideas I am proposing for targeting space research and utilization in response to the 50th Anniversary Declaration include the following:

A. To promote the role of the Committee and its Subcommittees as a unique platform at the global level for international cooperation in space research and long-term space utilization;

B. To promote greater dialogue between the Committee and regional and interregional cooperation mechanisms in space activities for the benefit of global development;

C. To strengthen the relevance of space science and technology and their applications in meeting the outcomes of the United Nations Conference on Sustainable Development (Rio+20).

**A. To promote the role of the Committee and its Subcommittees as a unique platform at the global level for international cooperation in space research and long-term space utilization**

**(i) Advancing space research for humanity**

7. In the 50th Anniversary Declaration the Member States of the United Nations express their firm conviction that space science and technology and their applications, such as satellite communications, Earth observation systems and satellite navigation technologies, provide indispensable tools for viable long-term solutions for sustainable development and can contribute more effectively to efforts to promote the development of all countries and regions of the world, to improve people's lives, to conserve natural resources and to enhance the preparedness for and mitigation of the consequences of disasters.

8. Advances in space science and space exploration serve as the pillars for the operational use of space technology and its applications. Thus, there is a need for us, as a Committee, to take a closer look at how the recent advances in space science and technology and associated systems including space exploration activities might contribute to addressing specific issues of global concern, such as the availability of clean and renewable energy, access to water, better management of land and coastal natural resources, food security and wider uses of tele-education and tele-health facilities including the strengthening of capacity-building in each of these areas. Similarly, our Committee should also take a closer look at how scientific research in human spaceflight and their spin-offs could become a useful tool to advance development on Earth. In that sense we should discuss further how cooperative efforts in human space flight, such as the International Space Station, could be used to meet those objectives, as appropriate.

9. Within the framework of the Committee, the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) and the International Committee on Global Navigation Satellite Systems (ICG) provide good examples of sharing the benefits of space technology through national efforts and collective mechanisms. In order to provide a transparent system to the users, international cooperation, which pursues compatibility and interoperability, including information exchange among different operational systems is encouraged.

10. The Committee should encourage and support such new collaborative approaches aimed at yielding tangible results. For example, consideration could be given to possible new cooperative activities that would combine the utilization of GNSS and Earth observations for instance in the field of agricultural applications or food production monitoring. This could usher a new era of space utilization for the improvement in the quality of human life and human security.

**(ii) Promoting long-term space utilization**

11. The 50th Anniversary Declaration acknowledges that significant changes have occurred in the structure and content of the space endeavour, as reflected in the emergence of new technologies and the increasing number of actors at all levels. The Declaration, therefore, notes with satisfaction the progress made in strengthening international cooperation in the peaceful uses of outer space by

enhancing the capacity of States for economic, social and cultural development and by strengthening the regulatory frameworks and mechanisms to that effect. The Member States, through the Declaration, also express deep concern about the fragility of the space environment and the challenges to the long-term sustainability of outer space activities, in particular the impact of space debris.

12. One of the major trends over the past decade and a half has been the steady increase in the presence of private actors in space activities. There have been active discussions for several years in addressing the increasing involvement of private actors in the exploration and use of outer space. The increase in space activities carried out jointly by government agencies and non-governmental entities has also been dealt with, as well as partnerships by non-governmental entities from one or more countries. It will continue to be important to reflect and review the implementation of international obligations and the way in which States can best act and cooperate for the safe, peaceful and sustainable use of outer space, particularly in view of the increased private sector involvement.

13. The work currently being carried out by the Scientific and Technical Subcommittee through its Working Group on the Long-term Sustainability of Outer Space Activities is of critical importance: its goal is to ensure the safe and sustainable use of outer space over many years by future generations. With the aim of coming up with a set of practical and prudent measures that could be implemented in a timely manner to enhance the long-term sustainability of space activities, the Working Group is addressing the following topics: (i) sustainable space utilization supporting sustainable development on Earth, (ii) space debris, (iii) space weather, (iv) space operations, (v) tools to support collaborative space situational awareness, (vi) regulatory regimes, and (vii) guidance for actors in the space arena.

14. In addition to the consideration of the topics listed above, we should also examine new forms or cooperative ways to advance space utilization. Specifically, how can space-faring and non-space-faring nations use space in a collaborative way to achieve common goals. In view of the significance of the issues addressed in this Working Group, the results of its work could influence space utilization in the next half century. Accordingly, the discussions under the selected topics listed above should be dealt with as top priority issues, with a view to yielding constructive results. We should also take this opportunity to look into the overall role and interaction of the Committee and its Subcommittees in view of creating synergies under items of common interest, and study prospects for new collaborative approaches. There is a need to discuss how the Committee as a whole can build a cooperative infrastructure aimed at sustainable and forward looking joint utilization of outer space.

15. In the broader perspective, the work and processes being undertaken within other intergovernmental forums outside the Committee should be recognized. The Working Group on the Long-term Sustainability of Outer Space Activities has through its terms of reference and methods of work set up a mechanism for enhanced sharing of information of several United Nations entities and international intergovernmental and non-governmental organizations, and other forums such as the group of governmental experts on transparency and confidence building measures in space activities, which could be further stimulated in view of the need

to strengthen closer dialogue, as appropriate, for the benefit of long-term space utilization by the international space community as a whole.

16. By its very nature, the space environment is quite different from conditions on the ground and in the air, and the position of a space vehicle cannot be easily changed, as its movement or orbital behaviour is strictly constrained to the orbit onto which it has been launched. Given the already congested space environment with many satellites, the condition has been exacerbated by a large number of space debris. Space utilization for all could become unnecessarily constrained unless the operations of all space vehicles and other space objects are well managed. Except for some specific missions that require the most advanced technologies or specific scientific research, small satellites and even larger Earth observations and communications satellites are not too difficult to manufacture as demonstrated by the development of spacecraft by governmental and non-governmental entities with varying levels of financial and technological resources.

17. The significance of increasing and advancing the ability needed for development and utilization of space science and technology applications in all societies through capacity-building efforts is well recognized. However, the limited human resources and funding sources could be more effectively applied if space development and utilization could be pursued in a coordinated and cooperative manner. For example, a country that wishes to pursue satellite development might wish to focus on the development of payloads for new emerging missions rather than develop by itself spacecraft or launch vehicles and their associated infrastructures. Bringing mission instrumentation developed by other countries to be mated with well-coordinated satellites or platforms of other countries could contribute to the long-term sustainability of space utilization.

18. Today, various kinds of applications, such as those for scientific observation missions, Earth resources observation as well as educational and capacity-building activities, are being planned and carried out by an increasing number of governmental and non-governmental entities. The operation of small and nano-satellites, for example, gives rise to matters that could be further explored and discussed, such as responsibility and liability under the legal regime on outer space. The application of the concept of the launching State in national regulatory frameworks, registration and notification measures, and the continuing development of national regulatory frameworks, as well as guidance to space actors should be understood. The user community should be made aware of these perspectives through various activities, including workshops and symposiums. This is a good example of an area of increasing activities of a growing number of States and other actors, including non-governmental and private sector, where the Committee and its two Subcommittees could play an important role in identifying common standards and perspectives for the long-term utilization of those emerging space assets.

**B. To promote greater dialogue between the Committee and mechanisms for regional and interregional cooperation in space activities for the benefit of global development**

**(i) To foster dialogue with regional mechanisms**

19. Over the years, the Committee has devoted its energies and resources to promote and increase awareness and capacity-building in the use of space science and technology applications, at the international, regional, and national levels. These efforts have been particularly relevant to critical areas of global concern, such as climate change, food security, global health, sustainable use of natural resources, economic development, and disaster management.

20. In addition, through the work of the Committee, the United Nations has also adopted a number of resolutions, declarations, and recommendations that aim at promoting international and interregional cooperation involving both governmental and non-governmental organizations.

21. The Committee has been leading in the global efforts to share the results of space research and applications among countries irrespective of their economic development. Based on its past experience and building upon its achievements, the Committee is well positioned to further strengthen efforts at the national, regional, and interregional levels to achieve the goals enshrined in the United Nations Millennium Declaration.

22. The role of international organizations and other entities in the space field continues to be essential in promoting space activities at the national, regional, and interregional levels. Regional cooperative mechanisms have a specific role in providing platforms to enhance coordination and cooperation between spacefaring nations and emerging space nations and to establish partnerships between users and providers of space-based services.

23. The General Assembly, in its resolution 66/71, emphasizes that regional and interregional cooperation in the field of space activities is essential to strengthen the peaceful uses of outer space, assist States in the development of their space capabilities and contribute to the achievement of the goals of the United Nations Millennium Declaration and, to that end, requests relevant regional organizations to offer the assistance necessary so that countries can carry out the recommendations of regional conferences. The General Assembly recognizes, in this regard, the important role played by conferences and other mechanisms in strengthening regional and international cooperation among States, such as the African Leadership Conference on Space Science and Technology for Sustainable Development (ALC), the Asia-Pacific Regional Space Agency Forum (APRSAF), the Asia-Pacific Space Cooperation Organization (APSCO), and the Space Conference of the Americas (SCA). The Assembly, in the same resolution, notes with satisfaction the activities of these four main regional mechanisms for space cooperation.

24. Regional policymaking mechanisms for space cooperation and coordination are given attention and are important to the work of the Committee and its Subcommittees. In order to meet the objectives of resolution 66/71, including the 50th Anniversary Declaration, it might be worthwhile for this Committee to discuss

the possibility of establishing greater dialogue between the Committee and the main regional mechanisms identified by the Committee and the General Assembly.

25. In addition, the Regional Centres for Space Science and Technology Education, affiliated to the United Nations, play an important role in capacity-building and in strengthening regional cooperative efforts. The work carried out by the Regional Centres with support from the United Nations Office for Outer Space Affairs (UNOOSA) through the United Nations Programme on Space Applications (PSA) is highly commendable. The new network of Regional Support Offices (RSO) under the UN-SPIDER Programme is innovative and caters for more concerted efforts in bringing national and regional perspectives closer to the global level in disaster risk reduction. The role of these institutional mechanisms in promoting regional and interregional coordination and cooperation could be enhanced.

**(ii) Promoting global knowledge and expertise**

26. In the coming years, closer and more intense cooperation is expected between countries with established space capabilities and those gaining experience in space utilization. Over the past fifty years, spacefaring nations have significantly advanced their space technologies, overcoming numerous technical, programmatic and political challenges. The path toward attaining a similar level of excellence and accomplishment in space technology capabilities will not be easy for developing countries without making comparable commitments particularly in research, development and funding.

27. The past fifty years of space research and development have produced many experts with significant experience and knowledge in this respect. More and more of these experts are retiring, but the knowledge, lessons learned and best practices gained from their expertise and involvement should be utilized for space activities in the interest of emerging space countries. It would be very useful to discuss how such expertise could be made available on request, globally.

**C. To strengthen the relevance of space science and technology and their applications in meeting the outcomes of the United Nations Conference on Sustainable Development (Rio+20)**

28. The 50th Anniversary Declaration confirms the need for closer coordination between the Committee on the Peaceful Uses of Outer Space and other intergovernmental bodies involved in the global development agenda of the United Nations, including the major United Nations conferences and summits for economic, social and cultural development.

29. Over the past decade, the Committee has made efforts to align many of its activities with the global efforts to attain the internationally agreed development goals, as set out by the Millennium Summit in 2000, subsequently articulated by the World Summit on Sustainable Development in 2002 and reaffirmed by the World Summit in 2005.

30. The implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), held in 1999, has been one of the main pillars of the work of the Committee and

resulted in the establishment of ICG, UN-SPIDER, and the International Charter on Space and Major Disasters. Starting from 2000, the Committee and its Subcommittees have monitored the progress achieved in the implementation of the recommendations of UNISPACE III, including the work undertaken by the Action Teams established by the Committee to implement those recommendations that had been given priority by its member States.

31. In 2004, the General Assembly conducted a review based on the report prepared by the Committee on the matter. On the occasion of each UNISPACE Conference held in the past and in the process of the implementation of its follow-up actions, the Committee took stock of its achievements and identified areas of focus of its work and prioritized actions. Especially the applications for human health, tele-medicine and tele-epidemiology are being identified as significant space application fields through the dedicated Action Team report. It is important and encouraged to investigate such new useful applications of space capabilities.

32. In view of the emphasis of its efforts over the recent years on aligning its work with the global agenda to achieve internationally agreed development goals and given the timing for the convening of the United Nations Conference on Sustainable Development, known as “Rio+20”, to be held in June 2012 in Rio de Janeiro, Brazil, it might be worthwhile for the Committee to identify possible elements for follow-up actions meeting the objectives of Rio+20, and seeking ways and means in which the outcome of the Conference could be implemented in a significantly accelerated way by using space applications. Furthermore, it might be useful to devise cooperation schemes that would foster the integration of space-based services and products into the implementation of regional and national plans to achieve sustainable development.

33. Last year, the Committee submitted its contribution to Rio+20 entitled “Harnessing space-derived geospatial data for sustainable development” (A/AC.105/993). The Working Group of the Whole of the Scientific and Technical Subcommittee agreed in 2012 that at the next session of the Subcommittee in 2013, the Working Group should study the outcome of the Rio+20 Conference with a view to discussing ways and means of assisting the Subcommittee and the Committee in future activities that could be considered appropriate in relation to results of the Conference. It would be worthwhile for the Committee to further look into its response to those endeavours.

34. There are thus a number of upcoming events at the global level that might impact future deliberations of the Committee. These include the upcoming Rio+20 Conference, mentioned above, which is expected to take up various topics relating to climate change, food security and sustainable use of valued resources, but also the process leading towards the post 2015 development agenda and review of the Millennium Development Goals. With this in mind, and in order to avoid duplication of efforts in its overall consideration and outputs, the Committee might wish to consider how it could combine relevant items on its agenda in order to create an efficient method of work to meet those future demands at the global level.

35. In addition there are also some concerns that the work and achievements of the Committee are not well known to other communities. For example, the work on the long-term sustainability of outer space activities should be understood and shared



with other relevant forums and space-related entities in order to ensure the effective use of outer space by all actors involved and for the protection of Earth and its space environment for future generations.

36. With increasing awareness of and concern for the environmental impacts on Earth caused by global warming and related climate changes, our Committee should recognize the critical importance of monitoring these changes and devise climate change mitigation and adaptation measures by all countries. Joint development of interoperable systems to address such issues is an important area for international cooperation. Although the issues relating to Earth observation satellite systems, or information accessibility and data policy of such satellites are being discussed at the meetings of the Group on Earth Observations (GEO) or the Committee on Earth Observation Satellites (CEOS), in view of the global nature of its work, COPUOS should also address data utilization issues and further promotion of relevant research in data analysis and utilization in order to strengthen international cooperation among its member States.

37. In this regard there is a need to strengthen international collaboration and support for data sharing and access to geospatial information, which is expected to be useful to address climate change associated with global warming, carbon cycle, water cycle, as well as human health, food security relating to agriculture and fisheries, and natural disasters. More specifically, actions to be undertaken by the regional centres for space science and technology education affiliated to the United Nations or new projects to be carried out through regional cooperation efforts could further advance the promotion of data utilization and relevant scientific research.

## **II. Concluding remarks**

38. It is important for the Committee to continue assessing its role and its work in view of the continuously changing environment that surrounds the peaceful uses of outer space and with an increasing number of countries and actors of the private sector that are now participating in space activities. It is also important that the Committee continues to work towards improving efficiency and effectiveness with regard to the implementation of its mandate. In that sense, it would be timely to look into the overall role of the Committee in meeting the needs for long-term space utilization by identifying synergies under items of common interest, as appropriate; and assess the possibility to make efficient use of the agenda of the Committee by possibly harmonizing and merging certain items in the interest of our common outputs and contributions to the global development agenda beyond Rio+20.