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**Committee on the Peaceful
Uses of Outer Space**
Scientific and Technical Subcommittee
Forty-ninth session
Vienna, 6-17 February 2012
Item 6 of the provisional agenda*

Contribution to the United Nations Conference on Sustainable Development (Rio+20)

Note by the Secretariat

1. The present document contains the following correspondence:
 - (a) Contribution of the Committee on the Peaceful Uses of Outer Space to the United Nations Conference on Sustainable Development. Letter from Romania in its capacity as Chair of the Committee dated 31 October 2011.
 - (b) Contribution of the Office for Outer Space Affairs of the Secretariat to the United Nations Conference on Sustainable Development. Letter from the Office for Outer Space Affairs dated 1 November 2011.
2. The submissions from COPUOS Chair (Romania) and OOSA are available at the official Rio+20 website (<http://www.uncsd2012.org/>) in the Compilation Document section.

http://www.uncsd2012.org/rio20/comp_un.html

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- United Nations Office for Outer Space Affairs (UNOOSA)

* A/AC.105/C.1/L.310. Item 6. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).





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No. 3211

Vienna, 31 October 2011

Dear Mr. Seth,

On behalf of the Committee on the Peaceful Uses of Outer Space (COPUOS) currently chaired by Romania, I have the pleasure to submit the attached report on the contribution of the Committee to the United Nations Conference on Sustainable Development, reference no. A/AC.105/993 of 20 June 2011.

In the General Assembly resolution 65/97 of 10 December 2010, operative paragraph 35, the Committee is invited to consider how it can contribute to the objectives of the United Nations Conference on Sustainable Development, to be held in Rio de Janeiro, Brazil, in 2012 (Rio+20). COPUOS adopted at its fifty-fourth session, held in Vienna in June 2011, its contribution to the above-mentioned Conference focusing on harnessing space-derived geospatial data for sustainable development.

In its report to Rio+20, the Committee recognizes the value and the importance of geospatial data, including in particular those provided by satellites systems, for the purpose of supporting sustainable development policies, and considers that space-derived geospatial data constitute a resource that could be managed at the local, national, regional or global levels, especially through the establishment of dedicated national spatial data infrastructures.

Furthermore, the Committee emphasizes that the establishment of such national spatial data infrastructures, together with the appropriate training and education, could serve the purpose of supporting development policies in countries that would benefit from a larger use of geospatial data in their policies, notably in the fields of environmental protection, land resources management, agriculture, urbanism, disaster prevention and monitoring and early warning systems.

In this regard, the Committee takes note of the activities of national, regional, and international intergovernmental and non-governmental organizations relevant to the use of space-derived geospatial data, and the range of issues relevant to the use of such data, including the sharing of data, data access policies, the use of open resources software, the role of data dissemination and the importance of capacity-building.

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In order to foster international cooperation in building up national infrastructures to use geospatial data, the Committee recommends ways and means of strengthening the use of space-derived geospatial data for the purpose of supporting sustainable development policies, as contained in Chapter V, paragraph 49, (a) to (k), of the attached document (A/AC.105/993). These recommendations could be summarised as follows:

- Establishing or enhancing non-redundant and sustainable national spatial data infrastructure in accordance with the international legal framework governing outer space activities;
- Enhancing autonomous national capabilities and building the enabling environment in the area of space-derived geospatial data, including the development of associated infrastructure and institutional arrangements;
- Promoting voluntary assistance to be rendered at the governmental or institutional levels by States with relevant expertise to countries wishing to develop their own capacity and expertise in the use of space-derived geospatial data;
- Engaging in or expanding international cooperation in the area of space-derived geospatial data and increasing awareness of existing initiatives and data sources;
- Supporting the United Nations in its efforts to access and use geospatial information in its mandated programmes to assist all Member States.

Romania, in its capacity as Chair of the COPUOS, would like to submit the report as a contribution of COPUOS to Rio+20 for distribution at the Conference and for consideration as a contribution to the zero-draft.

Please accept, Mr. Seth, the assurances of my highest consideration.

Cornel Feruță
Ambassador
Permanent Representative of Romania
to the United Nations in Vienna



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1 November 2011

Dear Mr. Seth,

In observance of my previous letter dated 20 October 2011 with the transmittal of the contribution of the Committee on the Peaceful Uses of Outer Space to the United Nations Conference on Sustainable Development with the special theme of harnessing space-derived geospatial data for sustainable development, as contained in document A/AC.105/993, I hereby submit attached a contribution of the Office for Outer Space Affairs of the Secretariat.

The Inter-Agency Meeting on Outer Space Activities, at its 31st session hosted by UNHCR in March 2011, welcomed the establishment of a task group of members of the United Nations Geographic Information Working Group (UNGIWG) to be consulted by the Office for Outer Space Affairs in the preparations of its contribution to the United Nations Conference on Sustainable Development (see report of the IAM in document A/AC.105/992).

The Committee on the Peaceful Uses of Outer Space (COPUOS) in its report under reference made an assessment of the governance of international cooperation in the peaceful uses of outer space through the Committee, and the institutional framework for harnessing space-derived geospatial data for sustainable development. Among the recommendations put forward by the Committee, there is a recommendation that States should continue to support the United Nations in its efforts to access and use geospatial information in its mandated programmes to assist all Member States.

In meeting the recommendation of the Committee, the United Nations system should further pursue efforts towards developing capacities of States in the use of space-derived geospatial data; promoting access to and use of geospatial information in all UN-mandated programmes to assist States; strengthening and improving interoperability between the existing network of geospatial information management portals throughout the United Nations system through the establishment of common standards and extending this network further; and eliminating the necessity for separate agreements between United Nations entities, data providers and platform owners.

Yours sincerely,

Mazlan Othman
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Contribution of the Office for Outer Space Affairs of the Secretariat

1. The Committee on the Peaceful Uses of Outer Space, in its contribution to Rio+20, provided a set of recommendations, which can be summarized as the following ways and means of strengthening the use of space-derived geospatial data for the purpose of supporting sustainable development policies (A/AC.105/993, para. 49 (a)-(k)):

- establishing or enhancing non-redundant and sustainable national spatial data infrastructure in accordance with the international legal framework governing outer space activities;
- enhancing autonomous national capabilities and building the enabling environment in the area of space-derived geospatial data, including the development of associated infrastructure and institutional arrangements;
- promoting voluntary assistance to be rendered at the governmental or institutional levels by States with relevant expertise to countries wishing to develop their own capacity and expertise in the use of space-derived geospatial data;
- engaging in or expanding international cooperation in the area of space-derived geospatial data and increasing awareness of existing initiatives and data sources; and
- supporting the United Nations in its efforts to access and use geospatial information in its mandated programmes to assist all Member States.

2. Geographic information (or geospatial information as it is often referred to) is defined as any information/data with explicit geographic positioning. As over 80% of all data and information we use in a wide range of applications which address issues of sustainable development is linked to a location, geographic information becomes essential but its value and importance are often not recognized, especially at the decision-making levels, leading to difficulties in its timely and suitable development.

3. In the same context, space-derived geospatial data refers to geospatial data obtained from space-based platforms. The potential value of such data had been predicted even prior to the beginning of the space age and was confirmed following the successful launch and operation of first remote sensing satellites.

4. In specialized conferences and during technical advisory missions, performed by the Office for Outer Space Affairs, it is often highlighted that there is still a need for better access to and sharing of space-based data and also to enhance capacity-building and technology transfer efforts to ensure that all geospatial data can be exploited to the fullest extent possible. Also addressed are the needs for easier access to reliable geospatial information (including space-derived) to promote greater transparency and enhanced information communication for sustainable development.

5. National Spatial Data Infrastructures (NSDI) and related national geo-information policies are increasingly being established by Member States and a growing number of countries are also actively developing and deploying their own remote-sensing satellite systems and utilizing space-based data to advance socio-economic development. There is also an increasing convergence of space-based data, geographic information systems and GNSS technologies generating valuable information for policy- and decision-making.



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6. A number of national, regional and global initiatives, including activities in the framework of the Group on Earth Observations (GEO), the Committee on Earth Observation Satellites (CEOS) and the Global Spatial Data Infrastructure Association (GSDI) are addressing issues related to data sharing and the consolidating of spatial data infrastructures that can support sustainable development.

7. From peacekeeping to humanitarian relief, from climate change to disaster reduction, response and recovery; from environmental protection to poverty reduction, food security and economic development, United Nations entities deliver more services in more places than ever before. In doing so they produce data and information that needs to be shared among these agencies and programs, with Member States, and with non-governmental organizations and scientific and research institutions. This shared data and information is essential to reducing costs, raising operational efficiency and improving the quality of services.

8. Several United Nations entities are routinely using geospatial and space-based data which provide a vital source of essential information for a wide range of mandated activities. Some (non-exclusive) examples include the Departments of Peacekeeping Operations (DPKO) and Field Support (DFS) or the Office for the Coordination of Humanitarian Affairs (OCHA) which are actively developing valuable large-scale digital geospatial databases with the purpose of making available detailed and updated map products for various operational purposes in the countries covered. Such data could normally also be handed over to the national authorities on completion of UN missions, to further benefit local development.

9. The United Nations Environment Programme (UNEP), the Food and Agriculture Organization (FAO), in close collaboration with national authorities in several countries, are extensively using space-derived geospatial data for environmental monitoring, resource management and biodiversity assessments. Projects, such as “Atlases of Our Changing Environment” developed with UNEP support used satellite imagery to show the significant impact of pollution and human intervention over time on the Earth’s environment, with a view to encourage more sustainable development practices at all levels. The United Nations DevInfo Initiative also utilizes satellite imagery to enhance analysis of development at international, national and local levels.

10. Information derived from space-derived geospatial data is providing essential input for decision-making for disaster management and emergency response. The United Nations is obtaining space-derived geospatial data through contractual purchase arrangements with commercial Earth observation operators as well as in the form of in kind contributions through mechanisms such as the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also called the International Charter on Space and Major Disasters).

11. The processing of space-derived geospatial data for maps and other products is partially conducted by experts of United Nations entities, such as in the Department of Field Support, the Office of the United Nations High Commissioner for Refugees, the World Health Organization, the Office for the Coordination of Humanitarian Affairs and the UNITAR Operational Satellite Applications Programme (UNOSAT).

12. Processed data and information are then shared among United Nations entities and made available, through websites such as ReliefWeb, a global hub for time-critical humanitarian information on complex emergencies and natural disasters (<http://www.reliefweb.int>), as well as the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) Knowledge



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Portal (<http://www.un-spider.org>). Additionally, the UN-SPIDER Programme contributes to capacity-building in the use of space-derived geospatial data in disaster-related situations.

13. The Second Administrative Level Boundaries data set project, launched in 2001 in the context of the activities of the United Nations Geographic Information Working Group (UNGIWG) is providing access to a working platform for the collection, management, visualization and sharing of subnational data and information in a seamless way from the national to the global level. The project involves the Economic Commission for Africa, the Economic Commission for Latin America and the Caribbean, the Economic and Social Commission for Asia and the Pacific, the World Health Organization and the Asian Institute of Technology.

14. The World Meteorological Organization (WMO), through the space-based component of its Global Observing System, and in cooperation with the Coordination Group for Meteorological Satellites, is coordinating the planning and implementation of satellite missions contributing to the Global Observing System in support of meteorology, climate monitoring, hydrology, and of related applications such as agriculture, aeronautics, maritime transportation and oceanic applications, disaster management, resource and environment monitoring. A number of operational satellite operators and research and development space agencies are participating in this global system.

15. The Office for Outer Space Affairs, through its United Nations Programme on Space Applications and in close cooperation with Member States and relevant international and regional governmental and non-governmental organizations, is contributing to capacity-building efforts related to the use of space-derived geospatial data. Specialized courses are held at the regional centres for space science and technology education, affiliated to the United Nations. An education curriculum on remote sensing and geographic information systems has been developed for use in the regional centres and in other educational institutions.

16. United Nations organizations have also established or are exploring various partnerships with the private sector and non-profit organizations for better access to space-derived geospatial data. Specific examples include the ongoing partnership with the Google Mapmaker team, which allows United Nations entities to access user-contributed geospatial data based on space-derived imagery provided free-of-charge, or the cooperation with the OpenStreetMaps organization to access and contribute to the expansion of road network data.

17. The United Nations Geographic Information Working Group (www.ungiwg.org), an *ad hoc* inter-agency coordination group of geo-spatial professionals representing more than 30 United Nations Secretariat departments, funds, programs and specialized agencies was established in 2000 to address technical coordination, geographic data sharing, reduction of duplication and joint efforts in the context of all types of geospatial data use and development. UNGIWG is from 2011 co-chaired by the Office of Information and Communications Technology (OICT) and the Comprehensive Test Ban Treaty Organization (CTBTO).

18. In 2005 UNGIWG agreed on the need to establish the United Nations Spatial Data Infrastructure (UNSDI) to begin to institutionalize common standards, adoption of best practices, and the governance required to develop and sustain mechanisms for successful geospatial information-sharing. Subsequently, UNGIWG developed the UNSDI Strategy¹, a multi-phased roadmap that situates individual agency geospatial initiatives and inter-agency

¹ http://www.ungiwg.org/docs/unsdi/UNSDI_Compendum_13_02_2007.pdf



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activities within a coherent information and communications technology (ITC) action plan. This is intended to achieve substantial strides towards interoperability and contribute to the United Nations Reform objective of “Delivering as One”.

19. In pursuing the UNSDI project in 2010 UNGIWG members agreed with the establishment of a Centre of Excellence for UNSDI under the responsibility of the Office of Information and Communications Technology (OICT) of the UN Secretariat. OICT assumed this responsibility in conformity with its mandate (endorsed by the General Assembly in 2010) to harmonize ICT practices across the United Nations System. In parallel, leading members of UNGIWG have constituted the UNSDI Steering Committee² as the governance body to provide strategic direction to the UNSDI process. A trust fund has been established to receive voluntary contributions for project implementation.

20. In July 2011 the United Nations Economic and Social Council (ECOSOC) established the United Nations Committee of Experts on Global Geospatial Information Management (UNCE-GGIM) (ECOSOC resolution 2011/24) as the official UN consultative mechanism on GGIM. The main objectives of the UN Committee are to provide a forum for coordination and dialogue among Member States, and between Member States and relevant international organizations and to propose work-plans and guidelines with a view to promoting common principles, policies, methods, mechanisms and standards for the interoperability and inter-changeability of geospatial data and services. The Committee is supported by the Statistics Division of the Department of Economic and Social Affairs and the Cartographic Section of the Department of Field Support.

21. The first meeting of the United Nations Committee of Experts of GGIM was held in Seoul on 26 October 2011 when among other decisions it agreed to establish a working group to prepare a contribution of the Committee to Rio+20 and also agreed to establish a working group to prepare an inventory of the issues that should be addressed at future sessions of the Committee.

22. Additionally, United Nations entities are ensuring coordination of its efforts in the area of geospatial data with the Group on Earth Observation (GEO) as well as with the Committee on Earth Observation Satellites (CEOS).

The Way Forward

23. Since the 1992 Earth Summit, the United Nations system has increased its use of geo-based solutions in carrying out its mandates. In the past two decades new technologies and opportunities have dramatically transformed the availability of geospatial information, including space-based information, and their potential use. An increasing amount of such data is being generated in real time through space-based sensors as well as other internet-based data collection techniques which are being used on a variety of scales, from community to global level.

24. On average there have been 70-80 satellite launches a year during the last decade with an expected increase of over 50% in the decade from 2011-2020 with a forecast of over

² 2011-13 UNSDI Steering Committee members are: Comprehensive Test Ban Treaty Organization (CTBTO), Global Pulse Project (GP), Office of Information and Communications Technology (OICT), United Nations Children’s Education Fund (UNICEF), United Nations Department of Safety and Security (UNDSS), United Nations Environmental Program (UNEP), United Nations High Commissioner for Refugees (UNHCR), United Nations Office of Outer Space Affairs (UNOOSA), and World Food Program (WFP).



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1100 satellites. A large share of launches will be to the low earth orbit (high-resolution imaging sensors), strengthening the trend of increasing availability of space-based information to support the needs of humanity, and contributing to the United Nations work.

25. In observance of the overall objectives of the United Nations Conference on Sustainable Development and in meeting the recommendations of the Committee on the Peaceful Uses of Outer Space, the United Nations system should support the:

- promotion of voluntary assistance rendered at the governmental or institutional level by States with relevant expertise to countries wishing to develop their capacity and expertise in the use of space-derived geospatial data;
- engagement in and expansion of international cooperation in the area of space-derived geospatial data and increasing awareness of existing initiatives and data sources;
- promotion of access to and use of geospatial information in all UN-mandated programmes to assist all Member States;
- strengthening and improvement of interoperability between the existing network of geospatial information management portals throughout the UN system through establishment of common standards and extending this network further; and
- elimination of the necessity for separate agreements between UN entities, data providers and platform owners through the development of favourable blanket agreements.