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## Committee on the Peaceful Uses of Outer Space

### United Nations Platform for Space-based Information for Disaster Management and Emergency Response

#### Report of the Secretary-General

##### *Summary*

In its resolution 61/110 of 14 December 2006, the General Assembly decided to establish a programme within the United Nations to provide universal access to all countries and all relevant international and regional organizations to all types of space-based information and services relevant to disaster management to support the full disaster management cycle by being a gateway to space information for disaster management support, serving as a bridge to connect the disaster management and space communities and being a facilitator of capacity-building and institutional strengthening, in particular for developing countries; agreed that the programme should be named the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (SPIDER) and that it should be implemented as a programme of the Office for Outer Space Affairs of the Secretariat, under the Director of the Office, as an open network of providers of disaster management support; and endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that the programme have offices in Beijing and in Bonn, Germany. In accordance with paragraph 9 of resolution 61/110, the programme will have a liaison office in Geneva to disseminate and integrate the work of the programme within the disaster reduction and humanitarian response communities.

The programme will be implemented within the agreed upon implementation framework, each office being responsible for leading specific activities. Thus, the Beijing office will be responsible for awareness-raising (activity 3), regional and country profiles (activity 5), support to national activities (activity 9) and support to the establishment of national disaster management planning and policies (activity 10). The Bonn office will be responsible for the systematic compilation of relevant information (activity 1), ensuring that relevant information is easily



accessible and disseminated to all interested end-users on a “24/7” basis (24 hours a day, 7 days a week) (activity 2), the establishment of communities of practice (activity 6), the management and transfer of knowledge (activity 7) and the platform for fostering alliances (activity 8). Staff members based in Vienna will be responsible for outreach activities (activity 4) and support to capacity-building (activity 11). Additionally, SPIDER will work closely with regional and national centres of expertise in the use of space technology in disaster management by forming a network of regional support offices that, under the leadership of the programme, will implement specific activities in their respective regions. That organizational arrangement will make it possible to take advantage of all the commitments and expert contributions made by Member States. That also means that most of the resources needed to implement the activities of the programme will come from interested Member States, with a minimum core of resources to be provided by the United Nations to ensure the overall coordination of SPIDER offices and activities. In its resolution 61/110, the General Assembly agreed that the programme should report to and receive guidance from the Committee on the Peaceful Uses of Outer Space. At the forty-fourth session of the Scientific and Technical Subcommittee, the Working Group of the Whole recommended that the Subcommittee should consider issues related to SPIDER under the regular agenda item on space-system-based disaster management support and that the agenda item should be included in the list of issues to be considered in the Working Group of the Whole, starting at the forty-fifth session of the Subcommittee. The request of the Assembly provides the necessary oversight and reporting framework for the new programme.

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## I. Introduction

1. Under the theme “Space benefits for humanity in the twenty-first century”, the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) was held in Vienna from 19 to 30 July 1999. UNISPACE III adopted a resolution entitled “The Space Millennium: Vienna Declaration on Space and Human Development”, which was subsequently endorsed by the General Assembly in its resolution 54/68 of 6 December 1999. In that resolution, the States participating in UNISPACE III recommended that 33 specific actions be taken to enable space technologies to contribute to the solution of the global challenges of the new millennium. One of those actions was to implement an integrated, global system, especially through international cooperation, to manage natural disaster mitigation, relief and prevention efforts, especially of an international nature, through Earth observation, communications and other space-based services, making maximum use of existing capabilities and filling gaps in worldwide satellite coverage.<sup>1</sup>

2. At its forty-fourth session, the Committee on the Peaceful Uses of Outer Space agreed to establish action teams composed of interested Member States in order to implement the recommendations of UNISPACE III.<sup>2</sup>

### A. Action Team on Disaster Management

3. One of the action teams established by the Committee, known as the Action Team on Disaster Management, focused on the recommendation mentioned in paragraph 1 above. The Action Team was co-chaired by representatives of the Governments of Canada, China and France, while the Office for Outer Space Affairs of the Secretariat provided substantive assistance and secretariat services. The Action Team comprised 41 Member States and 13 intergovernmental and non-governmental organizations.

4. After a comprehensive process of consultations, surveys and analyses of gaps and needs, the Action Team submitted its findings and recommendations to the Scientific and Technical Subcommittee of the Committee (A/AC.105/C.1/L.273) at its forty-first session. In its report, the Action Team stressed that natural and man-made disasters struck all parts of the world indiscriminately and concluded that, in order to successfully reduce their impact and manage their effects, coordinated international efforts were required. Such efforts would supplement the approaches currently in place.

5. The Action Team concluded that while some initiatives in the area of disaster response did take advantage of space technologies, that was not the case for many initiatives in the area of disaster prevention and mitigation. Many countries had little or no access to the benefits of space systems and few national focal points existed for facilitating access to space-based information and services.

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<sup>1</sup> *Report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 19-30 July 1999* (United Nations publication, Sales No. E.00.1.3), chap. I, resolution 1.

<sup>2</sup> *Official Records of the General Assembly, Fifty-sixth Session, Supplement No. 20 and corrigendum (A/56/20 and Corr.1)*, paras. 44-62.

6. The Action Team made three recommendations that, if implemented, would contribute to optimizing access to and use of current and future space-based services for disaster management. The first recommendation was the establishment of an international space coordination body for disaster management that would act as a focal point for global space efforts in support of disaster management. The second recommendation was the establishment of a fund that would enable the application of space technologies in support of disaster management and capacity-building. The third recommendation was that Member States should be encouraged to allocate a portion of their disaster management resources and funds to the use of space technologies and to identify national focal points in order to focus their internal disaster management activities and liaise with their counterparts in other countries.

7. Those recommendations were included in the report of the Committee on the Peaceful Uses of Outer Space on its review of the first five years of implementation of the recommendations of UNISPACE III, which was submitted to the General Assembly at its fifty-ninth session (A/59/174). In its resolution 59/2 of 20 October 2004, the Assembly agreed that a study should be conducted on the possibility of creating an international entity to provide for coordination and the means of realistically optimizing the effectiveness of space-based services for use in disaster management and that the study should be prepared by an ad hoc expert group, with experts to be provided by interested Member States and relevant international organizations.

## **B. Space technology for disaster management**

8. Between 2000 and 2004, while the Action Team on Disaster Management was carrying out its work, the Office for Outer Space Affairs of the Secretariat organized a series of regional workshops on the use of space technology for disaster management, the results of which were presented at an international workshop held in Munich, Germany, in October 2004. At that workshop, 170 participants from 51 countries agreed on a global strategy that would help developing countries to gain access to and be able to use space technology for disaster management. The strategy was named the Munich Vision: a Global Strategy for Improved Risk Reduction and Disaster Management Using Space Technology (A/AC.105/837, annex).

9. Participants in the workshop in Munich recognized that space-based technologies such as Earth observation satellites, communication satellites, meteorological satellites and global navigation satellite systems (GNSS) played an important role in risk reduction and disaster management. They made a number of recommendations in the areas of capacity development and knowledge building; data access, data availability and information extraction; enhancing awareness; and national, regional and global coordination. Participants recognized the urgent need to establish the coordination entity proposed by the Action Team.

## **C. Ad hoc expert group**

10. In accordance with General Assembly resolution 59/2, an ad hoc expert group was established. The ad hoc expert group held a meeting, in 2005, during the forty-

second session of the Scientific and Technical Subcommittee, bringing together experts from 26 Member States and four intergovernmental and non-governmental organizations. The work of the ad hoc expert group was supported by the Office for Outer Space Affairs.

11. The Committee on the Peaceful Uses of Outer Space, at its forty-eighth session, reviewed the progress made by the ad hoc expert group and requested it to finalize and submit the draft study to the Scientific and Technical Subcommittee at its forty-third session, in 2006, for its review and recommendation to the Committee.<sup>3</sup>

12. The ad hoc expert group prepared its draft study and submitted it for consideration by the Scientific and Technical Subcommittee at its forty-third session (A/AC.105/C.1/L.285). The Subcommittee commended the ad hoc expert group for preparing an excellent study, noting that the ad hoc expert group had stressed that the proposed entity would be a “one-stop shop” to provide support to the disaster management community at large and a platform for fostering alliances, that it would be user-driven and that it would contribute to bridging the gap between the disaster management and space communities (A/AC.105/869, para. 159).

13. Recognizing the need to avoid duplication of efforts, the Subcommittee requested that the ad hoc expert group, with the support of the Office for Outer Space Affairs, carry out consultations with representatives of the following initiatives: the Global Earth Observation System of Systems (GEOSS), the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also known as the International Charter on Space and Major Disasters), the Operational Satellite Applications Programme (UNOSAT) of the United Nations Institute for Training and Research, and the secretariat of the International Strategy for Disaster Reduction (ISDR), among others. The aim of the consultation is to reach an agreement on the division of tasks and on how the proposed entity could contribute to achieving the objectives of the initiatives while enhancing the use of space technologies in disaster management, particularly in developing countries. Additionally, the Subcommittee agreed that the Office should correspond with all Member States, requesting them to officially communicate their possible commitments of support to be provided to the proposed entity and that all providers of support would then be invited to harmonize their commitments into one viable proposal for the implementation of the entity (A/AC.105/869, para. 163 (b) and (c)).

14. The ad hoc expert group held a meeting on 8 and 9 June 2006 to finalize its report to the Committee, including a proposed implementation plan based on the secured commitments of support made by member States to the proposed entity, and to propose a final name for the entity.

15. At the forty-ninth session of the Committee, the representative of Romania presented, on behalf of the ad hoc expert group, the final report of the group (A/AC.105/873). The Committee commended the ad hoc expert group for the excellent study that it had presented to the Scientific and Technical Subcommittee

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<sup>3</sup> Ibid., *Sixtieth Session, Supplement No. 20* and corrigendum (A/60/20 and Corr.1), paras. 57 and 58.

(A/AC.105/C.1/L.285).<sup>4</sup> In its final report, the ad hoc expert group recommended that the proposed entity should be called the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (SPIDER) and that the entity should be launched on 1 January 2007 (A/AC.105/873, paras. 27 and 28).

16. The Committee expressed its appreciation to the member States that had made commitments or had indicated that they were considering making commitments of support to the proposed entity.<sup>5</sup>

17. The Committee at its forty-ninth session considered the recommendations made by the ad hoc expert group and agreed that the entity should be implemented as a programme of the Office for Outer Space Affairs under the Director of the Office as an open network of providers of support. The activities would be planned and carried out in a coordinated manner, initially building upon the commitments made by Austria, China and Germany (A/AC.105/873, paras. 21-32).<sup>6</sup>

18. The Committee at its forty-ninth session noted that, in relation to the indication of support made by the Government of Switzerland, due consideration would be given to the possibility of having a liaison office in Geneva that would contribute to disseminating and integrating the work of the programme within the humanitarian response community.<sup>7</sup>

19. Subsequently, in its resolution 61/110 of 14 December 2006, the General Assembly decided to establish a programme within the United Nations to provide universal access to all countries and all relevant international and regional organizations to all types of space-based information and services relevant to disaster management to support the full disaster management cycle by being a gateway to space information for disaster management support, serving as a bridge to connect the disaster management and space communities and being a facilitator of capacity-building and institutional strengthening, in particular for developing countries; and agreed that the programme should be named the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (SPIDER).

## II. Coordination with existing and planned international organizations and initiatives

20. In its study, the Action Team on Disaster Management highlighted the gaps and constraints on the wide use of space-based technologies to support disaster management activities. The disaster management community, consisting of civil protection agencies, governmental and non-governmental organizations and

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<sup>4</sup> *Official Records of the General Assembly, Sixty-first Session, Supplement No. 20 (A/61/20)*, para. 151.

<sup>5</sup> *Ibid.*

<sup>6</sup> The agreements and considerations of the Committee regarding the establishment of the proposed entity are contained in the report of the Committee on its forty-ninth session, *Official Records of the General Assembly, Sixty-first Session, Supplement No. 20 (A/61/20)*, paras. 150-165).

<sup>7</sup> *Official Records of the General Assembly, Sixty-first Session, Supplement No. 20 (A/61/20)*, para. 158.

scientific organizations, has diverse requirements for information with appropriate temporal and spatial scales; to be useful, the information should be delivered when needed and in sufficient detail. It is essential to identify those requirements and to adopt a unified, coherent approach to meet them in a reliable and timely manner. The gap that exists between the user communities and the space application providers needs to be bridged in order to ensure effective delivery of services. Additionally, the large volume of archived data available from space systems is currently not organized and is thus difficult to access. Finally, another constraint is the limited awareness among the disaster management community of the potentials of space systems to provide vital contributions in areas such as risk assessment, the determination of hazard zones, damage assessment and emergency communications. In sum, a coordinated and global approach to the use of space assets needs to be developed to address the above-mentioned gaps and constraints.

21. Building upon the findings of the Action Team on Disaster Management, the ad hoc expert group confirmed that there are several international mechanisms in place to address specific aspects of the disaster cycle, including activities to better coordinate space assets at the global level. However, such activities are driven by different mandates that often focus on specific disaster phases or types of crisis. Consequently, there is a need for a single global coordination mechanism such as the one that will be made available through the new programme and that will contribute to an integrated space-based system in support of disaster management while making maximum use of available space technologies and services as called for in the Vienna Declaration. That need will increase as technical developments and additional satellites and derived services make available to users more and more information and products.

22. Ultimately, SPIDER should help to make it possible to take advantage of existing opportunities and should provide coherent, integrated support to the disaster management community, improve communications in the disaster management and space communities, facilitate a truly multi-hazard, multi-phase approach, foster alliances and enhance the transfer of knowledge and information between the actors involved, in particular from developed countries to developing countries.

#### **A. Initiatives led by the space community**

23. The ad hoc expert group noted that there were a number of ongoing or planned space-related initiatives that could support different phases of disaster management (i.e. risk reduction, prevention, mitigation, early warning, relief and rehabilitation). Those initiatives included GEOSS, the International Charter on Space and Major Disasters, the Integrated Global Observing Strategy Partnership, the Global Monitoring for Environment and Security (GMES) and the Natural Disaster Prevention and Mitigation Programme of the World Meteorological Organization. There were also initiatives such as Global Map Aid, Map Action, RESPOND of GMES and UNOSAT that provided value-added products for emergency response. However, the group also noted that there was limited awareness among the disaster management community of the existence of those resources, of how to access them and of how to use them (A/AC.105/C.1/L.285, para. 38).



24. SPIDER will contribute directly to the work carried out by such initiatives. The Programme for the period 2007-2009 reflects the coordination with existing initiatives and the contribution of SPIDER to those initiatives. In particular, in 2007, SPIDER is jointly leading two major tasks included in the GEOSS workplan for the period 2007-2009: task DI-06-09 on the use of satellites for risk management and task CB-07-02 on knowledge sharing for improved disaster management and emergency response.

## **B. Initiatives led by the user community**

25. More importantly, SPIDER will work directly with the user community and contribute to ongoing and planned initiatives carried out by organizations that work in disaster management by providing information on how to access and use space-based solutions. It will also provide feedback to the space community on the specific needs of that user community.

26. SPIDER will work closely with organizations of the United Nations system and with other major international and regional organizations. Within the United Nations system, SPIDER will work closely with ISDR, the Office for the Coordination of Humanitarian Affairs of the Secretariat and the United Nations Development Programme (UNDP), in particular with the Disaster Reduction and Recovery Unit of the UNDP Bureau for Crisis Prevention and Recovery and through UNDP country offices, among others.

27. Through the Global Platform for Disaster Risk Reduction, SPIDER will contribute to the work of ISDR for the implementation of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters,<sup>8</sup> adopted by the World Conference on Disaster Reduction, held in Kobe, Hyogo, Japan, from 18 to 22 January 2005. The Hyogo Framework for Action is the 10-year international road map for disaster risk reduction. In the Hyogo Framework for Action, the World Conference recognized the need to promote the use, application and affordability of recent information, communication and space-based technologies and related services, including Earth observations, to support disaster risk reduction, particularly for training and for the sharing and dissemination of information among different categories of users.

28. In response to a request made at the 2005 World Summit for greater coherence among agencies working on development by the High-Level Panel on United Nations System-wide Coherence, a group of heads of State and policymakers were tasked to examine ways to strengthen the ability of the United Nations to respond to the challenges of the twenty-first century. The report of the High-Level Panel on United Nations System-wide Coherence in the areas of development, humanitarian assistance and the environment, entitled "Delivering as one" (A/61/583), contains the Proposal of the Panel for a unified and coherent United Nations structure at the country level capable of responding to national needs. In its report, the Panel indicates that the United Nations has a unique and leading role to play in humanitarian disasters and emergencies. It also includes specific recommendations on how to enhance that role, for example through increased investment in risk

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<sup>8</sup> A/CONF.206/6 and Corr.1, chap. I, resolution 2.

reduction, early-warning and innovative disaster assistance strategies and mechanisms. In February 2007, UNDP announced the start of a pilot scheme called One United Nations, which will test how the United Nations family can deliver in a more coordinated way at the country level. The eight pilot countries are Albania, Cape Verde, Mozambique, Pakistan, Rwanda, the United Republic of Tanzania, Uruguay and Viet Nam. SPIDER will work with UNDP country offices in the definition and implementation of activities that incorporate space-based solutions to support disaster management.

### **III. Key characteristics and functions of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response**

29. Based on the identified gaps and the benefits that the new programme could provide, the ad hoc expert group indicated that SPIDER should have certain characteristics and functions. Specifically, it should (A/AC.105/C.1/L.285, para. 45): (a) be a “one-stop shop” for information and a platform for fostering alliances; (b) be user-driven, that is, the disaster management community should be centrally involved and the work should be carried out to benefit the user community; (c) contribute to bridging the gap between the disaster management and space communities by creating a forum where both can meet; (d) make optimal use of the existing resources of space agencies; (e) focus on existing gaps that are limiting the use of space technology in risk reduction and disaster management; (f) be implemented in a way that is incremental and not phased, that is, the entity should be able to fulfil its responsibilities from the beginning; (g) have informational, coordination and operational functions; and (h) fit in with existing global initiatives, identifying synergies and building upon common opportunities, and contribute to the coordination of such initiatives.

30. In its study, the ad hoc expert group proposed an initial list of key activities for the new programme (A/AC.105/C.1/L.285, paras. 47-49). After consulting with representatives of the initiatives mentioned in paragraph 13 above, the ad hoc expert group updated the proposed list and grouped the activities into three functions: a gateway to space information for disaster management support; a bridge to connect the disaster management and space communities; and a facilitator of capacity-building and institutional strengthening, in particular for developing countries. The revised list was included in the final report of the ad hoc expert group (A/AC.105/873, annex I). A brief summary of the activities, which were subsequently amended and endorsed by the Committee at its fiftieth session,<sup>9</sup> is presented below.

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<sup>9</sup> *Official Records of the General Assembly, Sixty-second Session, Supplement No. 20 (A/62/20)*, para. 149.

## **A. A gateway to space-based information for disaster management support**

31. In its function as a gateway, SPIDER will be a “one-stop shop” for accessing and disseminating information, including case histories and best practices on the use of space-based data to support disaster management. It will also help define the content and standards of regional and national spatial databases, including the specific thematic databases that support disaster management, taking into account existing international data standards to facilitate the sharing of data.

32. One necessary step that goes beyond the dissemination of information is awareness-raising. That includes encouraging decision makers to consider the potential impact of various types of disasters against the likely benefits of using solutions based on space technologies. A concerted and sustained effort should be made to raise awareness among decision makers so that they build political support for the adoption of space-based solutions on an operational basis. SPIDER will work with national institutions that use space technology and encourage them to hold periodic awareness-raising activities that demonstrate how the use of space technologies contributes to disaster management and ultimately, to sustainable development.

33. The gateway function includes the following five activities identified by the ad hoc expert group:

(a) Activity 1. Systematic compilation of relevant information: define and implement a platform-wide strategy to ensure the identification and compilation of all relevant information on a continuous basis, including ongoing and planned initiatives, case studies and best practices, archived data for disaster studies and capacity-building opportunities (activity to be carried out in close coordination and integration with all other relevant activities);

(b) Activity 2. Ensuring that relevant information is easily accessible and disseminated to all interested end-users on a “24/7” basis (24 hours a day, 7 days a week): define and implement the knowledge portal, which will ensure that all relevant information is widely available, including by designing and implementing a database management system, maintaining a 24/7 hotline and preparing periodic e-newsletters and disseminating information through discussion lists;

(c) Activity 3. Awareness-raising: plan and develop initial and follow-up awareness-raising campaigns, focusing on specific interest groups, such as civil protection organizations, funding agencies, schoolchildren, news media and intergovernmental and non-governmental organizations, and involving key partners, particularly the national focal points and the humanitarian and emergency response community, including the user community in Geneva;

(d) Activity 4. Outreach activities: organize outreach activities, ensure the participation of expert speakers in relevant conferences and meetings and support regional and international seminars and workshops;

(e) Activity 5. Regional and country profiles: support the development and compilation of risk-related information at the national level by type of disaster (country profiles); support the development of regional and subregional vulnerability assessments, increasingly incorporating space-based technology

solutions to develop the assessments; and, to the extent possible and as part of activity 9, support national focal points in the development of national vulnerability assessments (activity to be carried out in close coordination with the work carried out by the secretariat of ISDR and by the country offices of UNDP).

## **B. A bridge to connect the disaster management and space communities**

34. SPIDER will function as a bridge between the disaster management and space communities by fostering alliances, creating a forum where both communities can meet and discuss and ensuring that the disaster community is centrally involved in defining its needs and requirements.

35. SPIDER will work closely with the space community to help it understand the specific needs of the disaster management community and to develop end-to-end solutions that meet the requirements of the user community. In particular, the programme will assist the space community to understand the operational mechanisms, the interactions within the disaster management community and the interdependence among players at the local, provincial and national levels.

36. The function of bridge includes the following three activities:

(a) Activity 6. Establishment of communities of practice: support existing communities of practice and contribute to the establishment of new ones, thus bringing together the space-based technology and disaster management communities (activity to be built on the work being carried out by the secretariat of the Group on Earth Observations (GEO) in the implementation of the 10-year workplan of GEOSS;

(b) Activity 7. Management and transfer of knowledge: develop a knowledge management and transfer framework and implement specific activities that will contribute to the transfer of knowledge (case studies, best practices, definition of user requirements), involving the participants of the established network of practice in the compilation of a knowledge base;

(c) Activity 8. Platform for fostering alliances: ensure the harmonization of the various initiatives that are contributing to helping developing countries access and use space-based technologies for disaster management and risk reduction, in other words, horizontal coordination; develop guidelines to assist national focal points in the implementation of a vertical coordination strategy; and ensure SPIDER participation in relevant forums and coordination with relevant programmes, including GEO, GMES, the secretariat of ISDR (including the Advisory Group of the Platform for the Promotion of Early Warning, the Global Platform for Disaster Risk Reduction and the Hyogo Framework for Action), the United Nations Educational, Scientific and Cultural Organization, the International Charter on Space and Major Disasters and other relevant activities.

## **C. A facilitator of capacity-building and institutional strengthening**

37. The third function of SPIDER will be to facilitate capacity-building and institutional strengthening. Building capacity and strengthening institutions at all

levels are the key to increasing the ability of organizations and individuals to effectively use space-based services for disaster reduction, preparedness, response and recovery.

38. There is a continuous need to educate people at the technical, institutional and decision-making levels on space capabilities, in order to develop national and regional expertise. SPIDER will support long- and short-term training and education programmes at the regional centres for space science and technology education, affiliated to the United Nations, and at other academic and thematic centres of excellence throughout the world. Such programmes should include curriculum-specific case studies relevant to the participating countries.

39. The facilitator function includes the following three activities:

(a) Activity 9. Support to national activities: support the implementation of risk reduction and emergency response activities and projects identified in conjunction with designated national focal points (activity to be carried out in close coordination with the work carried out by the secretariat of ISDR and by the UNDP country offices);

(b) Activity 10. Support to the establishment of national disaster management planning and policies: contribute, at the request of the relevant national focal points, to the definition of disaster management planning and policies with regard to the use of space-based technologies;

(c) Activity 11. Support to capacity-building: capacity-building and the strengthening of institutional arrangements at all levels are the key to increasing the ability of organizations and individuals to effectively use space-based services for disaster preparedness, response and recovery. Those activities will include compiling information relevant to capacity-building opportunities and the facilitation of capacity-building also among practitioners and end-users. Activity 11 will contribute to the development of a proposed curriculum, working with the regional centres for space science and technology education, affiliated to the United Nations, and other national and regional centres of excellence to train end-users and strengthen national institutions.

#### **D. Benefits and beneficiaries**

40. The mission statement of SPIDER is: “ensure that all countries have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle”.

41. The use of space data has been proved to provide vital information to all phases of the disaster management cycle, from prevention, preparedness, monitoring and response to reconstruction. Space-based information, with its spatial contents, also empowers local communities by making them better prepared to confront disaster.

42. The new programme will enable Member States to make better use of space-based solutions to effectively support the management of disasters and provide a coordinating mechanism for sharing experiences and initiating collaborative efforts. There are many benefits that may accrue from a coordinated

programme developed around the capabilities of space technology. One unique benefit is that a multi-hazard approach can be used to tackle disasters in terms of hazard zonation, risk assessment, monitoring and appropriate relief planning.

43. The primary beneficiaries from such a coordination effort will be the disaster management community, in particular: those entities responsible either for responding to an event or for mitigating the effects of predictable disasters; space technology institutions interested in providing support to the disaster management community; non-governmental organizations providing support; and all academic and scientific institutions involved in monitoring events, providing capacity-building and carrying out research in best practices in the use of space technology for disaster management.

44. Other beneficiaries include the private space technology companies interested in providing support or in developing products needed to support disasters and insurance companies interested in supporting best practices to reduce community and individual risks.

45. Ultimately, the general population will benefit from the coordination of efforts, and all contributions invested in SPIDER will lead to saved lives and property.

#### **IV. Organizational framework**

46. The ad hoc expert group studied various organizational options for the establishment of the proposed coordinating entity. One option was to establish the entity as a new programme within the United Nations system (i.e. a mandate would be given to an existing entity) or as an intergovernmental organization operating outside the United Nations, but linked to the work of a specific United Nations entity. Following an in-depth review of the advantages and disadvantages of the options, the ad hoc expert group concluded that the entity should be implemented as a United Nations programme of the Office for Outer Space Affairs.

47. In its resolution 61/110, the General Assembly agreed that SPIDER should be implemented as a programme of the Office for Outer Space Affairs under the Director of the Office, as an open network of providers of disaster management support; and endorsed the recommendation of the Committee that the programme have an office in Beijing and an office in Bonn, Germany.

48. Furthermore, in paragraph 11 of its resolution 61/110, the General Assembly agreed that the programme should work closely with regional and national centres of expertise in the use of space technology in disaster management to form a network of regional support offices for implementing the activities of the programme in their respective regions in a coordinated manner and to take advantage of the important experience and capabilities being offered, and to be offered, by Member States, particularly by developing countries. The regional support offices should be leading national or regional institutions with notable expertise in the use of space technology for disaster management, each nominated by its Government or, in the case of a regional institution, by its governing body.

49. The network of regional support offices should be able to contribute to any of the specific activities included in the workplan by taking on the responsibility for

funding and implementing a specific activity jointly and in coordination with SPIDER. Such activities could include: hosting a regional workshop, promoting capacity-building activities in a region, carrying out missions in a region to support national disaster management planning, supporting national and regional vulnerability assessments, providing mapping support during emergencies, contributing to the systematic compilation of relevant information (including the development of country profiles and the compilation of specific geospatial databases), supporting awareness-raising campaigns and promoting the establishment of regional and national communities of practice.

50. SPIDER will also be working closely with national focal points. National focal points will be the national institutions representing the disaster management and/or space application communities that are nominated by their respective Governments to work with the programme to strengthen national disaster management planning and policies and to implement specific national activities that incorporate space-based technology solutions to support disaster management.

51. In paragraph 9 of its resolution 61/110, the General Assembly noted that due consideration would be given to the possibility that the programme could have a liaison office in Geneva that would contribute to disseminating and integrating the work of the programme within the disaster reduction and humanitarian response communities in Geneva. The Committee at its fiftieth session agreed that the workplan for the biennium 2008-2009 should include specific target activities for the SPIDER liaison office in Geneva.<sup>10</sup>

#### **A. Framework for operating procedures and coordination**

52. The ad hoc expert group indicated that an optimal organizational framework would be to have the new programme as a centralized United Nations programme implemented by the Office for Outer Space Affairs. However, the Committee at its forty-ninth session recommended that the programme be implemented by a team distributed in three locations, with the additional support of a network of regional support offices and a liaison office in Geneva to take advantage of all offers made by member States to establish the new programme.

53. In accordance with paragraph 8 of its resolution 61/110, the General Assembly endorsed the recommendation of the Committee that the activities of the programme be carried out within the proposed implementation framework agreed to by the Committee at its forty-ninth session, as presented in the final report of the ad hoc expert group (A/AC.105/873, annex III).

54. The proposed implementation framework designates which office will lead and have responsibility for each category of specific activities. Thus, the Beijing office will be responsible for awareness-raising (activity 3), regional and country profiles (activity 5), support to national activities (activity 9) and support to the establishment of national disaster management planning and policies (activity 10). The Bonn office will be responsible for the systematic compilation of relevant information (activity 1), ensuring that relevant information is easily accessible and disseminated to all interested end-users on a “24/7” basis (24 hours a day, 7 days a

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<sup>10</sup> Ibid.

week) (activity 2), the establishment of communities of practice (activity 6), the management and transfer of knowledge (activity 7) and the platform for fostering alliances (activity 8). Staff members based in Vienna will be responsible for outreach activities (activity 4) and support to capacity-building (activity 11).

55. As agreed by the Committee at its fiftieth session, the liaison office in Geneva will focus on the following actions: hold regular meetings with the risk reduction and humanitarian and emergency response communities in Geneva to raise awareness of the work of SPIDER (linked to activity 3); facilitate those communities' access to space-related data and products to support their work and provide feedback on the specific needs and expectations of those communities to staff members involved in SPIDER (linked to activity 5); ensure that representatives of various Geneva-based agencies participate in the global outreach activities promoted by SPIDER (linked to activity 4); provide input for the preparation of specific awareness-raising material targeting those specific user communities and promote the distribution of the material (linked to activity 3); contribute to the compilation of available information to be included in the SPIDER knowledge portal (for example, reports, case studies, best practices, announcements) (linked to activities 1 and 7); and identify capacity-building needs and carry out and support capacity-building activities (linked to activity 11).

56. Building upon the proposed implementation framework, the Office for Outer Space Affairs presented a proposed SPIDER programme for the period 2007-2009 and a detailed workplan for SPIDER for 2007 to the Scientific and Technical Subcommittee, for consideration at its forty-fourth session. Both documents were considered by the Subcommittee and subsequently endorsed, as amended, by the Committee on the Peaceful Uses of Outer Space at its fiftieth session.

57. Since the team implementing the activities will be spread out over four offices in four countries, the members of the team will need to coordinate closely. Hence, the establishment of a decentralized and cohesive management team is essential. The Director of the Office for Outer Space Affairs is the supervisor of SPIDER and is responsible for its implementation. The Director will be assisted by a programme coordinator and a programme assistant to plan and coordinate activities with programme officers from each SPIDER office (Beijing and Bonn) and the Office for Outer Space Affairs, United Nations Office at Vienna. SPIDER activities will be planned and coordinated, by consensus, by the three programme officers and the programme coordinator and approved by the Director of the Office for Outer Space Affairs.

58. The Director, the programme officers (the heads of the offices in Beijing and Bonn and the head of the staff members in the Office for Outer Space Affairs, United Nations Office at Vienna, responsible for SPIDER) and the programme coordinator will constitute the management team of SPIDER. For activities involving the liaison office in Geneva, a staff member (the liaison officer) from that office will also be included in planning and coordination activities. That coordination mechanism should be reviewed every two years.

59. Once the workplan has been agreed, each programme officer will manage the implementation of those activities for which his or her office is responsible, in accordance with the implementation framework (see para. 54 above). Programme



officers will also implement other workplan activities that involve coordination or exchange of information, and ensure that such coordination takes place.

60. The programme officers and the programme coordinator will be jointly responsible for setting the expected accomplishments, the indicators for measuring achievement, the baseline, the performance measures and the evaluation methodology for those activities for which they are responsible. The Director of the Office for Outer Space Affairs will make arrangements for training the senior staff in the process followed to plan programmes at the United Nations, the preparation of the programme budget proposal and the reporting of programme performance. The programme officers will be responsible for ensuring that the inputs of SPIDER are submitted in time to meet the deadlines set by the planning and accountability process of the United Nations.

61. To ensure that SPIDER products are useful, the Office for Outer Space Affairs will establish feedback mechanisms with the disaster management and space application communities. The SPIDER management team will also conduct workshops with the representatives of the network of regional support offices to receive information on their experiences in implementing specific activities and to agree on future directions. The management team will conduct periodic evaluations of the acquired information and agree on modifications to the workplan or implementation procedures on the basis of an analysis of accumulated best practices, lessons learned and guidance received from the Committee on the Peaceful Uses of Outer Space.

62. As an initial measure for 2007, the Office for Outer Space Affairs provided the part-time services of one senior staff member at the Professional level to assist the Director in establishing the SPIDER offices in Beijing and Bonn and the liaison office in Geneva; to enable and administer support already offered by the Governments of Austria, China, Germany, India, Indonesia and Switzerland; to coordinate the implementation of the activities in the workplan for 2007; to coordinate the preparation of the workplan for the biennium 2008-2009; and to secure additional offers of support for SPIDER activities by Member States. The Office for Outer Space Affairs also provided the part-time services of one administrative staff member to support the work to be carried out in 2007.

## **B. Reporting to the Committee on the Peaceful Uses of Outer Space**

63. In paragraph 16 of its resolution 61/110, the General Assembly agreed that the programme should report to and receive guidance from the Committee through the Office for Outer Space Affairs.

64. The Director of the Office for Outer Space Affairs, with the support of the programme officers and the programme coordinator, will be responsible for preparing and submitting to the Scientific and Technical Subcommittee an annual report on the activities of the programme and the workplan for the next biennium.

65. At the forty-fourth session of the Scientific and Technical Subcommittee, its Working Group of the Whole recommended that the Subcommittee should consider issues related to SPIDER under the regular agenda item on space-system-based disaster management support and that the agenda item should be included in the list

of issues to be considered in the Working Group, starting at the forty-fifth session of the Subcommittee (A/AC.105/890, annex I, para. 18).

66. The ad hoc expert group recommended setting up an advisory board to work closely with the Office for Outer Space Affairs, United Nations Office at Vienna, reviewing the proposed workplan for each biennium, assessing whether the necessary resources were in place and making recommendations on the various aspects of the work to be carried out. However, since the General Assembly agreed, in paragraph 16 of its resolution 61/110, that the programme should report to and receive guidance from the Committee on the Peaceful Uses of Outer Space Affairs, it will not be necessary to establish an advisory board to SPIDER.

## **V. Workplan for the biennium 2008-2009 and required resources**

67. In paragraph 7 of its resolution 61/110, the General Assembly agreed that the programme would be supported through voluntary contributions and through a rearrangement of priorities within the framework of the United Nations reform process and, if necessary, a rearrangement of priorities of the Office for Outer Space Affairs and that the additional activities would not, as far as possible, have a negative impact on the current programme activities of the Office and should not result in an increase in the total regular budget of the United Nations.

68. In accordance with the request made by the Scientific and Technical Subcommittee at its forty-fourth session concerning the steps to be included in the implementation of the programme (A/AC.105/890, para. 137 (c)), the Office for Outer Space Affairs has corresponded with all Member States, inviting them to make possible commitments of support for the SPIDER workplan for the biennium 2008-2009.

69. The Governments of Algeria, Argentina, Chile, Colombia, Ecuador, Finland, India, Indonesia, Iran (Islamic Republic of), Italy, Morocco, Nigeria, Romania, the Russian Federation, Saudi Arabia, South Africa, the Syrian Arab Republic and Turkey have either made commitments or indicated their intention to make commitments to SPIDER activities. Those offers of support include the provision of access to space assets, disaster management services, value-added products for disaster reduction and emergency response at the national and regional levels, the services of local experts to liaise with SPIDER, as well as local facilities, data and experts to carry out capacity-building activities at the regional level.

70. More specifically, the extrabudgetary resources being offered by the Governments of Austria, China and Germany to establish SPIDER and carry out its workplan for the biennium 2008-2009 include staff offices and meeting rooms, initial furniture and equipment to establish the SPIDER offices in Beijing and Bonn, and to strengthen the Office for Outer Space Affairs, United Nations Office at Vienna, a yearly amount of 450,000 United States dollars in cash contributions to implement activities in the workplan for the biennium 2008-2009 and the services of seven staff members at the Professional level at no cost to SPIDER. In addition, the Government of Switzerland has offered 240,000 Swiss francs for meeting the start-up costs of office equipment and infrastructure arrangements for the SPIDER liaison office in Geneva in 2007.

71. Additionally, in accordance with paragraph 7 of General Assembly resolution 61/110, the Office for Outer Space Affairs has rearranged its priorities for the budget proposal of the biennium 2008-2009 to provide some support for SPIDER activities while minimizing the negative impact of such a re-direction of funds on its other programme activities.

72. Pursuant to the request made by the Scientific and Technical Subcommittee at its forty-fourth session, the Office has developed a workplan for the biennium 2008-2009 (A/AC.105/890, para. 137 (d)) that was considered by the Committee at its fiftieth session and that took into consideration the indication of commitments received for the biennium 2008-2009 and that built upon the opportunities provided by the network of regional support offices. The Committee endorsed the SPIDER workplan for the biennium 2008-2009, as amended, with specific target activities for the liaison office in Geneva.

73. The SPIDER workplan for the biennium 2008-2009 indicated the need for an annual operating budget of \$1.78 million to cover the cost of personnel, data processing and information technology equipment, fellowships and grants, printing and publication, operating expenses and official travel. It also indicated that approximately two thirds of the resources needed would be made available by those Member States which had already indicated financial and in-kind support for the programme for the biennium 2008-2009.

74. Additional resources from the regular budget of the United Nations will be required to strengthen the existing capabilities of the Office for Outer Space Affairs to carry out the following elements of the SPIDER programme: (a) three programme officers, to be located in Beijing, Bonn and Vienna. Each officer will be responsible for coordinating and implementing activities to be carried out by his or her office and in collaboration with the liaison office in Geneva, and for coordinating the activities to be carried out in collaboration with the network of regional support offices; (b) travel and subsistence allowance for participants to attend an annual expert meeting of representatives of the network of regional support offices, and a nominal amount for the official travel of the staff members involved in the programme.

75. In the event that SPIDER does not receive all the resources from the regular budget of the United Nations that are being requested for the biennium 2008-2009, the Committee requested that the Office for Outer Space Affairs prepare for consideration by the Scientific and Technical Subcommittee, at its forty-fifth session, a reduced workplan based on the workplan for the biennium 2008-2009 endorsed by the Committee.