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**Committee on the Peaceful  
Uses of Outer Space**  
Scientific and Technical Subcommittee  
Fifty-fourth session  
Vienna, 30 January-10 February 2017  
Item 5 of the provisional agenda\*  
**Space technology for sustainable socioeconomic  
development**

**Third Meeting of the Expert Group on Space and Global  
Health, held on 2 and 3 February 2017, and initial  
considerations in preparation towards UNISPACE+50**

**Progress report by co-chairs, Dr. Pascal Michel (Canada) and Dr.  
Antoine Geissbühler (Switzerland)**

**Executive Summary**

1. The third meeting of the Expert Group on Space and Global Health was held on the margins of the 54th session of the Scientific and Technical Subcommittee (STSC, or the Subcommittee) of the Committee on the Peaceful Uses of Outer Space (COPUOS, or the Committee) on 2 and 3 February 2017. This meeting enabled members of the Committee and their experts to exchange views and further the planned work that was adopted at the 52nd session of the Subcommittee. A total of 25 participants from 13 Member States as well as 3 permanent observers to the Committee actively engaged in the work of the expert group over three sessions.
2. The principle objectives of the sessions held this year included pursuing workplan items 2 and 3 as endorsed by the Subcommittee at its 52nd session in 2015 ([A/AC.105/1088](#), Annex I, para 7 (b)), which included the compilation of practices and initiatives as well as an analysis of gaps and opportunities in the area of space and global health.
3. Another important objective of the meeting was to engage the expert group for the purposes of preparing the UNISPACE+50 agenda under thematic priority entitled “Strengthened space cooperation for global health” (thematic priority #5), as outlined in the report of the Committee on its fifty-ninth session in 2016 ([A/71/20](#)).
4. The expert group reviewed and discussed various key activities held during the last year with relevance to the application of space science and technology to global health. The expert group discussed approaches to further strengthen interagency

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\* [A/AC.105/C.1/L.355](#).



cooperation, both domestically and internationally, between space and health organizations as well as to further elaborate ways to increase awareness of the benefits space technologies can offer to the global health community.

5. The expert group was pleased to discuss a scoping review currently being finalized by Prof. Antoine Geissbühler and his team from the University of Geneva. The review aims to assess how far the field of space and global health has progressed, to identify innovative and conceptual ideas as well as to identify gaps and obstacles in this domain. The expert group provided comments for their considerations in finalizing this work.

6. In further elaborating the workplan of the expert group for the coming year, there was consensus to establish a roadmap that would further articulate next steps needed towards developing the appropriate components underpinning thematic priority #5.

7. As part of this roadmap, the expert group has agreed to support the preparation of a flagship conference on space and global health to be held in Geneva, Switzerland in 2017. This conference should be organized by the United Nations Office of Outer Space Affairs (UNOOSA) together with the World Health Organization (WHO), and in cooperation with other interested organizations based in Geneva. The conference should be supported by the Government of Switzerland.

8. In conclusion, the expert group expressed its satisfaction with the advancement of its workplan and with success in establishing a consensus by the participants for engaging in a one year set of activities dedicated to further the development of proposed governance and cooperation mechanisms to support the objectives of thematic priority #5 as adopted during the fifty-ninth session of the Committee (A/71/20) and to be brought forth for consideration at the 55th session of the Scientific and Technical Subcommittee in January 2018.

## I. Meeting Outcomes

9. Pascal Michel, co-chair of the expert group from Canada, presented highlights of the High-Level Forum: “Space as a Driver for Socioeconomic Sustainable Development”, organized by the Office of Outer Space Affairs and co-sponsored by the Government of the United Arab Emirates, Dubai, UAE, 24 November 2016. Noting the “Dubai Declaration” in which the four High-Level Forum pillars were declared as constituting an inclusive global Space2030 agenda for exploration, innovation and inspiration that calls for strengthened cooperation and benefit from outer space activities, the pillar “Space society” captures the evolution of society and societal benefits stemming from space-related activities. As it pertains to the Expert Group on Space and Global Health, the Dubai Declaration emphasizes that, in order to strengthen socio-economic development, an integrated approach is required among the space sector and other sectors such as health in order to better understand and meet the needs of end-users and society at large. The expert group noted therefore these outcomes within the context of their discussions on space and global health.

10. Ramesh Krishnamurthy of the WHO is the current focal point for collaborative projects between the WHO and the United Nations Office of Outer Space Affairs and his presentation focused on Space Science for Advancing Health, related to 2030 Agenda for Sustainable Development (Agenda 2030) and the Sustainable Development Goals (SDGs). The presentation emphasized the importance of using appropriate space science and technologies to advance the notion of One Health in the context of UNISPACE+50, SDGs and Universal Health Coverage at national and sub-national levels. To illustrate the current use of space science and technologies, a series of examples related to tele-health and tele-medicine for health services delivery, big

data analytics, WASH (water, sanitation and hygiene), climate change and health, environmental health, remote sensing data and satellite images were also discussed. In addition, the presentation highlighted the importance of full and appropriate integration of space science and technologies to strengthen health systems at all levels of health services delivery. The presentation urged for closer collaboration between Ministries of Health and Ministries of Science/Technology at national and sub-national levels to fully utilize the space science and technologies for improving better health outcomes for the population. R. Krishnamurthy also summarized the three following areas WHO has proposed for technical collaborations with space agencies, namely, (i) space science and technology for epidemic intelligence, (ii) space science and technology for health emergencies, and (iii) shaping the research agenda on benefits of space science and technology to public health.

11. Jason Hatton, from the European Space Agency (ESA), subsequently presented an update on the ESA Human Spaceflight Programme activities in support of the United Nations SDGs and the WHO leadership priorities. A key workshop with stakeholders entitled “ESA Space meets Health” was held on 8 November 2016 in partnership with stakeholders and represents a pillar of the ESA engagement strategy. At the core of this engagement is an open innovation approach aimed at increasing awareness among stakeholders, disrupting barriers to unlock resources, exploring opportunities for partnerships, addressing the strategy for humankind’s benefits and strengthening European collaborations to serve Global Challenges. The Space meets Health workshop and follow on activities are closely coordinated between units of the different ESA directorates with health related activities in their programmes. A series of examples demonstrated how ESA programmes and activities have been mapped against the three WHO focus areas identified above.

12. Stefano Ferretti from the European Space Policy Institute (ESPI) provided a summary of the ESPI 10th autumn conference, “Space for Sustainable Development”, held on 28 October 2016. Its outcome has been included in ESPI Report 60, “Engaging with Stakeholders in Preparation for UNISPACE+50” which summarizes recommendations with regard to the implementation of the United Nations Agenda 2030 and focuses on the autumn conference. Furthermore, the report discusses the relationship between SDGs and space, underscoring the importance of a structured dialogue with all relevant stakeholders, in particular with those directly engaged in the field. Finally, the report highlights the main ESPI contributions, from the organization of a dedicated conference, to the participation at relevant fora and conferences in which the role of space as an enabler of sustainable development was discussed as part of the preparatory activities leading up to UNISPACE+50.

13. Antoine Geissbühler, co-chair of the expert group, and Damien Dietrich, from Switzerland, provided an overview of applications of space technologies to global health in the form of a scoping review that was mandated previously by the expert group. The aim was to assess how far the field of space and global health has progressed, to identify innovative and conceptual ideas as well as to identify gaps and obstacles in this domain. The expert group provided comments for their consideration in finalizing this work.

14. James Polk from NASA provided an overview of how remote sensing is being applied in the United States to support intervention to control the spread of the Zika virus nationally. NASA is also part of the Office of Science and Technology Policy’s National Science and Technology Task Force on Science and Technology for Zika Vector Control, which includes partners at the Centers for Disease Control and Prevention and other federal agencies. The presentation highlighted how remote sensing scientists from NASA’s Marshall Spaceflight Center worked alongside colleagues from the National Center for Atmospheric Research (NCAR) to create a

map to anticipate and predict the spread of Zika in the United States based on satellite imagery data and predictive modelling programs. The final product, a Zika risk map, can help government agencies and health organizations better prepare for possible disease outbreaks related to the spread of the virus. The researchers described their findings in the peer-reviewed journal *PLOS Currents Outbreaks* (Mar 16 2016). The expert group acknowledged the value of this work as an excellent illustrative example of the use of space technologies and space-based information and systems in the global health domain.

15. Engelbert Niehaus, leader of the community practice for the Expert Group on Space and Global Health from the University of Landau, Germany, maintains and pursues capacity building activities which enable a growing network of experts engaged in applying space science and technologies for socio-economic benefits. E. Niehaus together with Melanie Platz also from University of Landau introduced a series of presentations: Two presented by remote access (*The current state and issues faced by Living Lab in El Salvador*, Edgar Quinteros and Roberto, Mejia; *Living Labs Methodology*, CSIR Meraka Institute, South Africa, Marlien Herselman; and one on-site presentation: *Dengue Modeling, Prediction and Prevention using Mobile Apps: Gaining Community Engagement*, Ajit Babu, Director, Center for Advancement of Global Health, Cochin, India). The expert group expressed great appreciation for the ongoing efforts of E. Niehaus and his collaborators of practice and unanimously agreed that the work of the community of practice was critical to realizing practical outcomes within the domains of scope of the expert group.

16. Through the summary presentations highlighted above and discussions held during the three sessions, the expert group effectively addressed items 2 and 3 outlined in the expert group's workplan, which included the compilation of practices and initiatives as well as the analysis of gaps and opportunities in the areas of space and global health.

17. The expert group discussed the work of the Committee and its ongoing preparations for the UNISPACE+50 conference that will take place in 2018, in particular, thematic priority #5, "Strengthened space cooperation for global health" (A/71/20) and the linkage of this priority to the work of the Expert Group on Space and Global Health. Within this context, the mandate and workplan of the expert group was reviewed and discussed and there was unanimous support to ensure that the expert group outcomes and recommendations directly align and support the objectives of thematic priority #5.

18. In reviewing and considering the scope of the expert group's workplan within the context of addressing the 5 principal objectives outlined under thematic priority 5 (A/71/20), the expert group reaffirmed its original scoping and the relationship between space activities and global health applications as appropriate for the purposes of setting out the long-term vision of the field of space and global health.

19. Furthermore, during its deliberations on the aligning the workplan towards thematic priority # 5, the expert group reaffirmed the need to engage other international actors that would provide a broad perspective on One-health in the context of space applications for global health. Such actors could include intergovernmental entities such as the World Organization for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO).

20. In further developing the expert group workplan for the coming year there was consensus to establish a roadmap that would further articulate the next steps needed towards developing the appropriate components underpinning thematic priority #5. Furthermore, towards realizing this roadmap it was also agreed that the expert group would benefit from the various activities (e.g., conferences, workshops, etc.) taking

place over the coming year as they would provide a means for considering and validating the various topical areas through a consultative process.

21. Finally, and as part of this roadmap, the expert group has agreed to support the development of a flagship conference on space and global health to be held in Geneva, Switzerland this year.

## II. Roadmap for Targeting Outcomes and Recommendations in support of Thematic Priority #5

22. The expert group discussed the overall approach it would use to provide recommendations to the Subcommittee for its consideration at the 55th session in 2018. Towards realizing UNISPACE+50 and Space2030 and in accordance with the framework laid out by the Committee (A/71/20), the expert group unanimously agreed to establish the roadmap in accordance with the cross-cutting areas underpinning the thematic priorities. The cross-cutting areas, namely 1) governance; 2) capacity building; 3) resiliency; 4) interoperability; 5) space for sustainable development, hence, will provide the conceptual framework and guide the development of recommendations that will be summarized in the form of a final report in time for the 55th session of the Subcommittee in 2018. To this end, the expert group considered roadmap activities by examining gaps and opportunities in order to determine the most suitable approach to address these five areas over the next 12 months.

23. A summary of the key roadmap activities and timelines agreed to by the expert group which collectively will serve to address the five cross-cutting areas, are as follows:

- A *Task Group* composed of members of the expert group will be convened in February 2017 to address policy, governance and cooperation mechanisms and will proceed in parallel with other activities;
- A side-meeting will be held at the World Health Assembly in Geneva, Switzerland, 22-31 May, 2017 that would take the form of an informational meeting with a focus on active engagement of cross-sectoral actors;
- A flagship conference on Space and Global Health is proposed to be held in late June 2017 in Geneva, Switzerland that will address the cross-cutting areas of both resiliency and interoperability;
- In support and preparation of the June flagship conference on Space and Global Health, another dedicated *Task Group* composed of members of the expert group will also be convened with the goal to map space activities against SDGs within the framework of global health;
- A workshop addressing capacity building, for the 21st century, including for the SDG monitoring process will be organized by UNOOSA and supported by the Government of Austria (Graz, Austria, 5-7 September 2017). As input to this workshop, a report on capacity building will be developed during summer 2017;
- The 2nd High-Level Forum will be held in Dubai, UAE and will provide an additional opportunity to seek final considerations and validation of recommendations stemming from this roadmap process.

### **III. Other Events relevant to Space and Global Health in 2017-2018**

24. Additional forthcoming meetings currently under preparation or being planned for the coming year are listed below and may also further support the roadmap activities and coordinated engagement as well as allow expert members of the working group to target these events in order to foster cooperation between the space and global health communities:

- 5th Manfred Lachs International Conference on Global Space Governance and the UN 2030 Agenda (Montreal, Canada, 5-6 May 2017);
- One Earth – One Health: Contribution of Satellite Earth Observation to Public Health Practices (Montreal, Canada, 21 June 2017);
- ESPI – Space Economy with OECD (Vienna, Austria, 13-15 September 2017);
- ESPI workshop on Earth Observation (Copernicus) (Vienna, Austria, late 2017);
- A UN/Russian Federation international workshop on development of human potential in space science and technology for sustainable social and economic development (Samara, Russian Federation, 30 October - 2 November 2017);
- 24th Asia-Pacific Regional Space Agency Forum (Bangalore, India, 14-18 November 2017);
- ESA – Big Data from Space (Toulouse, France, 28-30 November 2017);
- The 68th International Astronautical Congress (Adelaide, Australia, 25-27 September 2017);
- Geneva Health Forum 7th Edition (Geneva, Switzerland, 10-12 April 2018).

### **IV. Next Steps and Conclusion**

25. The expert group recognized the need to prepare a concept note to scope the proposed June 2017 flagship conference on space and global health as an immediate next step.

26. In moving forward with the development of proposed governance and cooperation mechanisms to support the objectives of thematic priority #5, the expert group will begin implementing the roadmap following the 54th session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space.

27. The expert group concluded to meet in person at the 55th session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space in 2018. The expert group also agreed that it would convene teleconference calls, as required, as it implements its roadmap towards UNISPACE+50 over the coming year.

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