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Item 6 of the provisional agenda*
Space technology for sustainable socioeconomic development

Fourth Meeting of the Expert Group on Space and Global Health held from 31 January to 1 February 2018

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

I. Executive Summary

1. The fourth meeting of the Expert Group on Space and Global Health was held on the margins of the 55th 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) from 31 January to 1 February 2018. This meeting enabled members of the Committee and their experts to exchange views on work completed to date as well as discuss preparation of the way forward post 2018. A total of 21 participants from 12 Member States as well as 3 permanent observers to the Committee actively engaged in the work of the Expert Group over two sessions.

2. The principle objective of the work held this year was to review the key achievements over the three-year workplan contained in A/AC.105/1088, annex I, para. 7 (b). The Expert Group recognized that this workplan, as initially described, has been completed.

3. The Expert Group also discussed the recommendations of the document entitled "Thematic priority 5. Strengthened space cooperation for global health" (A/AC.105/1172) prepared by the Expert Group in 2017 with substantive support by the Office of Outer Space Affairs of the Secretariat. In discussing this document, the Expert Group noted with satisfaction that these recommendations were consistent with the various discussions held at the United Nations/World Health Organization (WHO)/Switzerland Conference on Strengthening Space Cooperation for Global Health, a flagship conference under Thematic priority 5, which took place at WHO Headquarters in Geneva in August 2017 (A/AC.105/1161) and was attended by 109 participants from 33 Member States as well as several international organisations and

* A/AC.105/C.1/L.363.

non-governmental organisations. In further examining the document on Thematic priority 5 (A/AC.105/1172), the Expert Group noted that future work would be required in order to implement the recommendations contained in there. It consequently noted and reaffirmed the importance of the recommendation that a new item dedicated to space and global health be put on the agenda of the Scientific and Technical Subcommittee under a multi-year workplan, and that a working group be established that was to be tasked with considering and proposing actions, whereby the scope of its work is further proposed below.

4. The Expert Group also noted with satisfaction the presentation made by WHO relative to their active and sustained engagement with the Office for Outer Space Affairs and other United Nations entities as well as non-UN international organizations in pursuing efforts related to strengthening space cooperation for global health. The Expert Group also recognized the leadership of the WHO and the Office for Outer Space Affairs in pursuing progress relating to some key recommendations outlined in the document on Thematic priority 5.

5. An important momentum has been achieved over the past year in raising the broad interest and engaging experts and governmental representatives in recognizing the significant potential of space science and technology in support of global health. At this juncture, the Expert Group strongly recognized the critical importance of maintaining momentum arising from the past years' activities, in particular from the flagship UN/WHO/Switzerland Conference on Strengthening Space Cooperation for Global Health. Accordingly, there was a consensus within the Expert Group to continue pursuing its activities and engagement until the working group, proposed to be established under the proposed new agenda item of the Scientific and Technical Subcommittee from 2019 onwards, begins its work.

6. Following discussion, the Expert Group recognizes the significant strategic potential of Geneva, Switzerland, as an international platform for global health and digital innovation. In line with this strategic vision, the Expert Group nominated the current Expert Group co-chair, Antoine Geissbühler from Geneva University Hospitals, Switzerland, to fully assume leadership of the Expert Group and to be chair of the subsequent proposed working group when established.

II. Meeting Outcomes

7. A series of presentations were provided by members of the Expert Group on Space and Global health in order to provide context and to update the Expert Group on activities performed during the past year.

- Pascal Michel, from the Public Health Agency of Canada and co-chair of the Expert Group provided a summary of discussions and outcomes from the previous Expert Group meetings held over the past three years.
- Ramesh Krishnamurthy of WHO made a presentation focused on the WHO's ongoing implementation of recommendations arising from the document on Thematic priority 5.
- Jason Hatton, from the European Space Agency (ESA) presented an update on the ESA activities in relation with global health and with specific attention to the Human Spaceflight Programme activities in support of the United Nations Sustainable Development Goals (SDGs) and the WHO leadership priorities. A series of examples demonstrated how ESA activities have been mapped against the three WHO focus areas identified above.
- Stefano Ferretti from the European Space Policy Institute (ESPI) provided a summary of the ESPI activities in preparation for UNISPACE+50 and the ESPI-UNOOSA conference "Space2030 and Space 4.0: Synergies for Capacity Building in the XXI Century" that was held on 3 February 2018 in Vienna, Austria.

- Engelbert Niehaus, from the University of Landau, Germany and leader of the community practice for the Expert Group on Space and Global Health from the University of Landau, Germany presented a verbal update on the capacity building activities with an emphasis on engaging the community from an Open lens perspective. Prof. Niehaus reminded the Expert Group members of the Report on the United Nations/Italy Workshop on the Open Universe initiative (A/AC.105/1175) which represent an important reference for experts in terms of ideas relating to Open Data, Open Source and Open Educational Resources (OER) for capacity building.
- James Polk, from NASA, provided an overview of exploration activities with various highlights on the many health challenges linked to space flight. His presentation highlighted health and space related medical innovation opportunities emerging from these activities of NASA.
- Antoine Geissbühler, from Geneva University Hospitals, Switzerland and co-chair of the Expert Group provided highlights of United Nations/United Arab Emirates High Level Forum entitled "Space as a Driver for Socio-Economic Sustainable Development", organized by the Office for Outer Space Affairs and co-sponsored by the Government of the United Arab Emirates, held in Dubai, United Arab Emirates, from 6 to 9 November 2017. He also added his own perspectives from the flagship UN/WHO/Switzerland Geneva Conference on Strengthening Space Cooperation for Global Health.

8. The Expert Group reviewed and discussed its workplan as originally developed at the first meeting of the Expert Group on Space and Global Health (A/AC.105/C.1/2015/CRP.29) and endorsed by the Scientific and Technical Subcommittee at its fifty-second session (A/AC.105/1088, annex I, para. 7 (b)). The Expert Group recognized that over the course of the past three years, the objectives set forth in that work plan have been realized.

9. The Expert Group reviewed and discussed the recommendations presented in the document on Thematic priority 5 (A/AC.105/1172). The Expert Group recognizes these recommendations as being consistent with the various discussions held among experts and member state representatives during the last three years as well as being consistent with the discussions held during the flagship UN/WHO/Switzerland Conference on Strengthening Space Cooperation for Global Health as reported in the document A/AC.105/1161.

10. Further to the success of the flagship Geneva conference on Strengthening Space Cooperation for Global Health which successfully engaged a number of relevant organizations located in Geneva as well as the significant leadership played by WHO in enabling inter-sectoral engagement in this domain, the Expert Group recognized the significant strategic potential of harnessing Geneva, Switzerland as an international platform for global health and digital innovation, while integrating all relevant Geneva-based and other international organisations in this effort.

11. The Expert Group noted with satisfaction the presentation made by the WHO relative to their active and continuous engagement with the Office for Outer Space Affairs and other United Nations entities in pursuing efforts related to strengthening space cooperation for global health, and with particular attention to the following efforts by WHO in implementing recommendations arising from Thematic priority 5 document and namely: "(1) The WHO should establish a dedicated high-level focal point for space-related affairs to advance the use of space science and technology in global health; (2) The WHO should be actively engaged in some of the activities of the Office for Outer Space Affairs that are relevant to global health, including, but not limited to, technical advisory missions of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER); (3) The Office should also be more closely involved in activities of WHO on a reciprocal basis, as appropriate; (4) There should be strengthened institutional arrangements between the Office for Outer Space Affairs and WHO for effective collaboration".

12. The Expert Group also recognized the strong leadership role that the Canadian Space Agency and Pascal Michel of the Public Health Agency of Canada have played in establishing space and global health as an important thematic priority relevant to the Space2030 agenda and a key topic addressing several of the Sustainability Development Goals.

III. Recommendations

13. The Expert Group reaffirmed the importance of the findings in the document on Thematic priority 5 (A/AC.105/1172) and recommended as stated that "a new item dedicated to space and global health be put on the agenda of the Scientific and Technical Subcommittee under a multi-year workplan, and that a working group be established that is to be tasked with considering and proposing actions, with the scope of its work to be further determined, relating to the future uses of space (technology, applications, practices and initiatives) in support of global health needs in the wider context of sustainable development on Earth, including the contribution of space science and technology and their applications to the achievement of the Sustainable Development Goals, and taking into account the concerns and interests of all countries, in particular those of developing countries".

14. In this context, the Expert Group recommended the following initial scope of activities to be considered by the work group over the next 4 years:

(a) Recognizing the importance of the recommendation on establishing a dedicated platform for effective coordination among United Nations entities, other international organizations and relevant actors on space and global health, the working group would be tasked to support the establishment of such a platform.

(b) Recognizing the broad scope of applications of space technologies and science to global health, the working group would monitor and compile all key activities, reference documents and plans relevant to "Space for Global Health" activities by United Nations entities, including those of the World Health Organization and other international organisations, member States of the Committee as well as, as far as possible, non-governmental organisations and other non-governmental actors. This annual compilation of activities will serve as a reference to identify and discuss gaps and opportunities and will be shared broadly in an effort to raise awareness and promote cooperation among relevant actors in this domain.

(c) In an effort to promote inter-sectorial collaboration at the national level, the working group would take appropriate efforts to document all institutional arrangements (MoUs, letters of agreement, frameworks of collaboration etc.) among the health sector and all sectors directly linked to space activities at the national level. This effort is consistent with the objective of promoting an active engagement of health organizations in expressing their needs (pull model) relating to technologies and knowledge arising from space science and technology. This measurable activity would provide an ongoing indication of progress under this objective.

(d) Recognizing a growing number of interested actors from various sectors, the working group would be tasked to develop an engagement strategy to analyse and assess current actors' roles and interests in the domain of Space and Global Health. This engagement strategy is expected to be used to help to promote synergy, complementarity, cooperation and coordination among all actors.

(e) As recognized in the 2017 Geneva UN/WHO/Switzerland Conference on Strengthening Space Cooperation for Global Health, space is directly relevant to human health, animal health, plant health, environmental health and ocean health in an inter-connected framework known as "One Health". The working group would be tasked to promote capacity-building events, to be organized by United Nations entities and other relevant actors, with the objective to further promote awareness and engagement of the important contribution of space science and technology among "One Health" actors. These efforts will aim to broaden the number of organizations

and of other actors of the health domain actively engaged in using space science and technology.

(f) Attentive to the broad needs expressed over the years in the field of space and global health and taking into account future evolving needs, the Working Group will be tasked to review its terms of reference and to update it workplan as appropriate.

15. Recognized the significant strategic potential of Geneva, Switzerland, as an international platform for global health and digital innovation, the Expert Group recommended that the current Expert Group co-chair, Antoine Geissbühler from Geneva University Hospitals, Switzerland, take the lead of the Expert Group in the transitional phase and be elected chair of the subsequent proposed working group when established.

16. With particular attention to the efforts by WHO in implementing recommendations arising from the document on the Thematic priority 5, the Expert Group recommended for the WHO and the Office for Outer Space Affairs to take appropriate steps in actively pursuing progress relating to these recommendations and to engage in the work of the proposed working group and other relevant activities related to space and global health.

17. Recognizing the critical importance of maintaining momentum arising from the past year's activities, in particular, stemming from the flagship UN/WHO/Switzerland Conference, the Expert Group recommended to continue pursuing its activities and engagement and to support the Subcommittee until the formal establishment of the proposed working group on Space and Global health. It is understood that when and if the working group is formally established, the Expert Group on Space and Global health would then re-orient its efforts in the framework of the new working group.

18. In this context, in future anticipation of the potential role of Geneva, Switzerland as a strategic locus in the domain of space and global health, the Expert Group nominated the current Expert Group co-chair, Prof Antoine Geissbühler from Switzerland, to fully assume the leadership of the Expert Group from now on and recommended his election as chair of the subsequent proposed working group.

IV. Other Events relevant to Space and Global Health in 2018-2019

19. Additional forthcoming meetings currently under preparation or being planned for the coming year are listed below and are meant to foster cooperation between the space and global health communities.

- Concordia Science Workshop (ESA ESTEC, Noordwijk, The Netherlands, 19-20 February 2018, http://www.esa.int/Our_Activities/Human_Spaceflight/Research/Research_Announcements). ESA, together with its Concordia partners, Institut polaire français Paul-Emile Victor (IPEV) and Italian National Antarctic Research Program (PNRA), will organize the first Concordia Science Workshop during which scientists who have implemented ESA-selected human research experiments on Concordia station in the past will be able to share their results and findings with other science teams as well as with ESA, IPEV and PNRA.
- Mapping Water Bodies (mwbs) from Space 2nd Conference (Frascati, Italy, 27-28 March 2018, http://mwbs2018.esa.int/). In the frame of the Earth observation (EO) Science for Society Programme Element, ESA is organizing the 2nd Mapping Water Bodies from Space Conference. The purpose of this conference is to provide scientists and data users with the opportunity to present first-hand and up-to-date results from their on-going research and application development activities by using data from past and current satellites.

- Geneva Health Forum (GHF; Geneva, Switzerland, 10-12 April 2018, http://ghf2018.g2hp.net/). GHF 2018 will explore the impact of the digital revolution in the field of global health. The GHF will address emerging global health issues such as future pandemics and health security, antimicrobial resistance, non-communicable diseases, access and affordability to essential medicine and health equality, chronic diseases, universal health coverage, neglected tropical diseases, essential diagnostics with a special focus on health initiatives from Central Asian countries, by inviting the Russian Federation as guest of honour, and the Republic of Tajikistan and the Kyrgyz Republic as special guests of the GHF 2018. A session dedicated to Space and Global Health will feature key thought leaders in this domain.
- Training on Space Cooperation for Global Health (Beijing and Harbin, China, 12-26 April 2018, http://rcssteap.org/) in response to the implementation of UNISPACE+50. Expected participants are professional researchers, managers (including local space officers) working in the field of public health and space technology applications.
- Aerospace Medical Association (AsMA) Annual Scientific Meeting (Dallas, Texas, United States, 6-10 May 2018, https://www.asma.org/scientific-meetings/asma-annual-scientific-meeting). Aerospace medicine is truly multi-disciplinary and international. Annual Scientific Meeting presentations come from diverse experts who will enhance the world's knowledge and understanding of the current challenges in aerospace medicine and demonstrate an impact on improving the health, safety, and human performance of those involved in aviation, space, and extreme environments.
- Innovation Science Technology Africa (IST-Africa; Botswana, 9-11 May 2018, http://www.ist-africa.org/Conference2018/). Supported by the European Commission (EC) and African Union Commission (AUC), IST-Africa Week 2018 is the thirteenth in an annual series of ministerial level technology research conferences. Focused on information society and Information and Communication Technology (ICT) policy dialogues, international development, research and innovation cooperation and community building, each conference brings together senior representatives of leading public, private, education and research organizations from many countries to discuss policy, share insight and identify collaboration opportunities.
- 39th Annual International Gravitational Physiology Meeting (ESA-ESTEC, Noordwijk, the Netherlands, 17-22 June 2018, http://isgp1979.org/)
- Health Informatics Conference (HIC; Sydney, Australia, 29 July - 1 August 2018, https://www.hisa.org.au/hic/). HIC is Australia's premier digital health, health informatics and e-health conference and seeks to bring the healthcare sector together to highlight the power of digital health innovation and health informatics and to observe case studies and successes from across the sector. Global healthcare demands innovation and new ways of thinking, new models of care centred on the individual and empowered by digital technologies. The conference platform could potentially discuss the idea of space as a driver for harnessing digital technologies, in facilitating a global health agenda of one health driven by this Expert Group, moving forward.

V. Conclusion

20. In light of the significant momentum gained over the past 15 years to recognize global health as a critical domain for promoting space science and technology, for promoting the peaceful uses of outer-space and for strengthening cooperation among member states, international organisations and other relevant actors, the Expert Group

strongly recommends for the Committee to implement the first recommendation of the final report on Thematic priority 5 (A/AC.105/1172) and to take appropriate measures to have a new item dedicated to space and global health to be put on the Agenda of the Scientific and Technical Subcommittee as of its 56th session under a multi-year workplan with an associated working group under the leadership of Antoine Geissbühler, Switzerland, tasked with an in initial workplan as proposed in paragraph 14 of this document.

21. The implementation of this recommendation will not only set a solid foundation for the work to come addressing strategically “space and global health” in support of the 2030 Agenda for sustainable development but will also represent a tangible success for the Subcommittee in enhancing space cooperation and space diplomacy in regards to the mobilization achieved among its member states.