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**Committee on the Peaceful
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Views of the United States on Draft Guidelines for the Long-term Sustainability of Outer Space Activities

1. United States actively supports the Working Group on the Long-term Sustainability of Outer Space Activities (LTS), established by the Committee on the Peaceful Uses of Outer Space (COPUOS) at its forty-seventh session in 2010. The United States welcomes the efforts of the Chair of the LTS Working Group to prepare an updated set of draft guidelines for the long-term sustainability of outer space activities. This effort largely builds upon the consensus reports of four Expert Groups that conducted detailed examinations of specific issues during a series of formal and informal meetings held between October 2011 and June 2014.

2. With the finalization of the four Expert Group reports in 2014, the focus of efforts to advance guidelines has transferred from the Expert Groups to the Working Group. In this regard, the United States believes that the LTS Working Group discussions should focus on developing a set of guidelines that build upon, to the maximum extent possible, the work of the four Expert Groups. The resulting guidelines should be clear, practical, and proven, meaning that both the application and the efficacy of the proposed guidelines have been demonstrated by States and international intergovernmental organizations. Non-legally binding guidelines for the long-term sustainability of outer space activities should complement the existing international legal framework pertaining to outer space activities, and not undermine existing legal obligations or hamper the use of outer space, particularly by emerging space actors. Once adopted, Member States should implement the guidelines through relevant national mechanisms.

3. Acknowledging the need to take collaborative, timely, and pragmatic steps to enhance the long-term safety, security, sustainability, and stability of the space

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environment, the United States looks forward to concluding the work of the LTS Working Group in accordance with the timeline described in its mandate.

U.S. Views on Consistent Formatting and Style of the Guidelines

4. The United States wishes to note the importance of consistency among the guidelines in terms of format and style. Currently, many draft guidelines do not contain action-oriented language that makes clear the behaviour that is expected by States. The United States recommends that the final guidelines be formatted as follows:

The first paragraph of the guideline should be formatted in bold and contain a clear, short, action-oriented statement, such as: States and international intergovernmental organizations should perform conjunction assessment during orbital phases of controlled flight. States should ensure that non-governmental entities carrying out their national activities in outer space perform such conjunction assessment.

The remainder of the guideline should be formatted plainly and contain explanatory text meant to give meaning to and provide additional context for the action-oriented language in the first paragraph. Although we note that several guidelines currently contain a significant amount of explanatory text, the United States would recommend, wherever practicable, that this text be shortened to its essential elements to facilitate understanding and implementation by States and international intergovernmental organizations.

U.S. Views on Additional Guidelines Proposed After the Creation of A/AC.105/C.1/L.340

5. The United States takes note of the new version of “Updated set of draft guidelines for the long-term sustainability of outer space activities,” A/AC.105/L.298. This paper contains both guidelines compiled in an earlier set of draft guidelines (A/AC.105/C.1/L.340, 22 October 2014) and those proposed at the fifty-second session of the Scientific and Technical Subcommittee. Following are U.S. views on how best to address the ten proposals for new guidelines, guidelines 37-46, found throughout A/AC.105/L.298. The guideline proposals are found below in the order in which they appear in A/AC.105/L.298.

Guideline 46: Establishment of normative and organizational frameworks for ensuring effective and sustained implementation of the guidelines and subsequent activity on their review and enhancement outreach (A/AC.105/L.298, p. 5)

6. The United States finds two important concepts of this guideline: (1) the need to ensure that Member States implement the final guidelines through national mechanisms, and (2) the desire for the UN Office of Outer Space Affairs (UNOOSA) to compile and assess such information. Although the United States does not see a need for a guideline on these matters, *per se*, the United States welcomes the inclusion of language in the final Working Group report noting that Member States should implement the guidelines through national or other relevant mechanisms.

The United States could also envision the Subcommittee, under the existing agenda item on long-term sustainability, encouraging Member States to exchange views on how they have implemented the final long-term sustainability guidelines. In fact, many Member States already provide relevant information in their statements and technical presentations. Encouraging this would be consistent with the Subcommittee's practice following the adoption of the Space Debris Mitigation Guidelines in 2008.

7. Although in principle the United States supports compiling and assessing the information provided by Member States in implementing the long-term sustainability guidelines, the Committee must carefully consider the resource implications should such a responsibility be assigned to UNOOSA. The United States believes it is most appropriate to debate this topic after the guidelines have been adopted, so as to have a more realistic understanding of the level of effort required to undertake this task.

Guideline 40: Consistent enhancement of the practice in registering space objects (*A/AC.105/L.298, p.8*)

8. The United States agrees that States must implement their obligations under the Convention on Registration of Objects Launched into Outer Space ("Registration Convention") and should consider furnishing enhanced registration information, as recommended by the General Assembly in its resolution 62/101. This concept is reflected in the existing draft guideline on "Registration of space objects (guideline 6)." The United States does not believe it is necessary to have an additional guideline detailing the specific registration practices outlined in 62/101, but rather that a reference to 62/101 is sufficient. To place additional emphasis on registration practices, the United States could support adding language to existing draft guideline 6 highlighting that States should establish policies and regulatory frameworks to ensure the registration of space objects under their jurisdiction and control. The United States also supports encouraging cooperation among launching states to ensure relevant space objects are appropriately registered.

9. The United States recognizes that the Committee could give further consideration to State practice in complying with the obligations of the Registration Convention and Article VI of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies ("Outer Space Treaty"). However, Members of the Committee may recall the extensive work undertaken in 2004-2007 under the Working Group on the "Practice of States and international organizations in registering space objects" that ultimately yielded resolution 62/101. Whether this issue is ripe for additional focused consideration should be discussed by the Committee, rather than the Scientific and Technical Subcommittee.

Guideline 38: States should to commit, in their national legal frameworks, to conducting solely activities of a peaceful nature in the outer space environment. When doing so, States should bear in mind the report of the Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities. (*A/AC.105/L.298, p. 15*)

10. Consistent with this draft guideline, the U.S. national space policy recognizes the freedom of all nations to explore and use space for peaceful purposes, and for the benefit of all humanity, in accordance with international law. The United States supports language that encourages similar declarations by States in national policy and/or law. This language could be contained in a stand-alone guideline, as recommended here, or as part of existing guidelines pertaining to developing regulatory frameworks (such as “Adoption of national regulatory frameworks (guidelines 9+12)” or “Elements to be taken into consideration when developing national regulatory frameworks (guidelines 10+11+13+22+23).”

11. Furthermore, the United States agrees that States should bear in mind the report of the Group of Governmental Experts (GGE) on Transparency and Confidence-Building Measures in Outer Space Activities. The United States was an active participant in the 2012-2013 Outer Space GGE and welcomed its achievement of landmark consensus. As described in A/AC.105/1080, the United States is actively implementing many of its recommendations and encourages other Member States to do the same.

Guideline 39: Implementation of operational and technological measures of self-restraints to forestall adverse developments in outer space (*A/AC.105/L.298, p. 16*)

12. The United States agrees with several of the concepts that may be addressed by this guideline. In particular, the United States emphasizes the importance of States complying with their international obligations, noting here the relevance of the Charter of the United Nations and the Outer Space Treaty. The United States believes this concept is already reflected in several of the existing draft guidelines concerning the establishment of regulatory frameworks, in particular “Adoption of national regulatory frameworks (guidelines 9+12)” and “Elements to be taken into consideration when developing national regulatory frameworks (guidelines 10+11+13+22+23).” The United States does not believe an additional guideline covering this concept is necessary, but would welcome further modifications to the existing guidelines to highlight the importance of States complying with their international obligations.

13. The United States also agrees with the importance of considering the safety of space operations that occur in close proximity with other space objects. Aspects of this concept are covered in the existing draft guideline “Perform conjunction assessment during orbital phases of controlled flight (guideline 25)” by encouraging the screening of current and planned trajectories for potential collisions and coordinating with other operators to reduce the risk of collision. The United States does not believe an additional guideline for this concept is necessary, but could consider additional language in guideline 25 noting the importance of safe conduct when conducting space operations in close proximity to other space objects.

14. The United States welcomes the pragmatic suggestion that States and international intergovernmental organizations should voluntarily provide their respective views on various aspects of threats to space objects, with the extent of the information provided to be determined by each State or international intergovernmental organization. The United States, on an annual basis, makes this

type of information public and would welcome similar information from other Member States. Rather than establish a guideline recommending the exchange of such information, the United States believes the Committee could agree instead to encourage Member States to share this information under the existing COPUOS agenda item on ways and means of maintaining outer space for peaceful purposes.

Guideline 43: Implementation of policy aimed at precluding interference with the operation of foreign space objects through unauthorized access to their on-board hardware and software (*A/AC.105/L298, p. 17*)

15. The United States agrees that the LTS guidelines should include measures noting the importance of the safe and secure operation of all elements of a space system – the satellite, its ground station, and the information links between the two – in support of the long-term sustainability of outer space activities. Although many of the draft guidelines concern the satellite or space object itself, the United States welcomes the inclusion of concepts relevant to the protection of ground and information infrastructure as well. The United States believes that this concept is largely covered by Guideline 37.

16. The unique aspect of this proposed guideline is its recognition of the increasingly globalized nature of the marketplace for satellites and satellite components. The United States could support adding the following sentence to the end of the last paragraph of Guideline 37 to make clear the need to protect the supply chains of space systems: “States and relevant international intergovernmental organizations also should enhance the security of their supply chains for space systems.”

Guideline 37: States and international intergovernmental organizations should recognize that the security of terrestrial infrastructure is integral to space flight safety, which supports the long-term sustainability of outer space activities, and adopt policy measures relevant to the security and resilience of terrestrial infrastructure upon which the operation of space systems and services depend. (*A/AC.105/L.298, p. 19*)

17. The United States supports inclusion of this guideline as a constructive alternative to existing Guideline 35. This guideline, proposed jointly by the United States and Belgium, seeks to build upon a core element of Guideline 35 – recognizing that the security of terrestrial infrastructure, including supporting information infrastructure, is integral to space flight safety – by also emphasizing the importance of enhancing the resilience of terrestrial infrastructure upon which the operation of space systems and services depend. Guideline 37 also includes the important concept of protecting terrestrial infrastructure commensurate with the criticality of the space system or service that relies upon it.

Guideline 41: Achievement of basic understanding and development of practical approaches with regard to identifying, in the course of the preparation and conduct of launches, probable conjunctions of newly launched objects with objects already present in near-Earth space (*A/AC.105/L.298, p. 22*)

18. This guideline correctly notes the lack of common practice in performing conjunction assessment for the launch and orbital insertion phase of space objects, a gap noted by Expert Group B in its final report. While some launch vehicle operators, such as the United States, adjust launch times by screening for collisions with functioning spacecraft, many screen only for collisions with the International Space Stations. The United States, through its Space Situational Awareness Sharing Program, also offers pre-launch collision avoidance screening services to assist launch vehicle operators in performing screening and adjusting launch times.

19. Expert Group B also noted that even with the capability to perform launch collision avoidance screening, the ability to adjust launch trajectories is limited by launch vehicle design and technology. Given that further technical research and development would be required to address this gap, Expert Group B did not recommend a guideline in this area. Although the United States appreciates that the intention of this guideline, in part, is to encourage the development of policies, technologies, and standards to close this gap, such decisions must be made at a national level before developing an international best practice guideline.

20. This guideline also correctly notes the importance of providing pre-launch notification of launch vehicles. The United States, as a subscriber to the Hague Code of Conduct Against Ballistic Missile Proliferation (HCOG), encourages other States with launch vehicles to subscribe to the HCOG and, in accordance with its processes, provide pre-launch notifications of space vehicle launches. The Working Group on Long-term Sustainability should not recommend a new process that duplicates the pre-launch notification mechanism of HCOG.

Guideline 44: Modalities for ascertaining the substantially relevant bases for addressing and satisfying requirements for the safe conduct, in extreme cases, of operations resulting in the destruction of in-orbit space objects
(A/AC.105/L.298, p. 24)

21. This guideline correctly notes that avoiding the intentional destruction of space activities is part of Guideline 4 of the Committee's Space Debris Mitigation Guidelines. The United States also notes that the UN Group of Governmental Experts (GGE) on Transparency and Confidence-Building Measures in Outer Space Activities considered the need for providing notification of intentional orbital break-ups. The United States supports the provision of such notifications, not only as a transparency and confidence-building measure, but also as a pragmatic mechanism to minimize, to the greatest extent practicable, the spaceflight safety implications of such events.

22. The United States also supports conducting such activities in a responsible manner. The United States recommends that the Working Group consider, as a constructive alternative to the language provided here, utilizing the consensus text from the GGE's report, which is in part drawn from the Committee's Space Debris Mitigation Guidelines:

States and relevant international intergovernmental organizations should notify of intentional orbital break-ups.

Intentional destruction of any on-orbit spacecraft and launch vehicle orbital stages or other harmful activities that generate long-lived debris should be avoided. When intentional break-ups are determined to be necessary, States should inform other potentially affected States of their plans, including measures that will be taken to ensure that intentional destruction is conducted at sufficiently low altitudes to limit the orbital lifetime of resulting fragments. All actions should be carried out in conformity with the Space Debris Mitigation Guidelines of the United Nations as endorsed by the General Assembly in its resolution 62/217, entitled “International cooperation in the peaceful uses of outer space.”

Guideline 45: Integrating and sustaining a shared cross-functional perception of, and definition of incremental steps to ensure, the safe implementation of operations for the active removal and intentional destruction of space objects, specifically, as applied to non-registered objects (*A/AC.105, L.298, p. 25*)

23. The United States notes the growing discussion of concepts and technologies for active removal of space objects. The United States believes that such activities can be accomplished within the framework of the existing treaties relevant to space activities and recognizes the need for further international dialogue on how, at a national level, to regulate such activities and how to conduct such activities in a safe and responsible manner in accordance with existing international obligations.

24. Expert Group B considered whether best practice guidelines could be developed in this area and concluded that technical developments and possibilities regarding space debris removal was a topic for further consideration by the Scientific and Technical Subcommittee. Should the Subcommittee conclude that additional consideration of this topic is appropriate, the United States believes it may merit focused attention outside the context of the Working Group on Long-Term Sustainability. Therefore, the United States recommends that a review of both technical and regulatory aspects of active debris removal be noted in the Working Group report as a topic for further study by the Subcommittee.

Guideline 42: Prevention of dangerous alterations of space environment parameters resulting from intentional modifications (*A/AC.105/L.298, p. 31*)

25. The United States notes this unique proposal to reiterate the terms of the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (“Environmental Modification Convention”) addressing specifically the outer space environment. The United States will require additional information and time to study this proposal.

26. The United States also notes that the information exchange aspects of this proposed guideline and those within the Environmental Modification Convention itself relate to: (1) the existing obligations under the Outer Space Treaty to immediately inform other States or the Secretary General of the United Nations of any phenomena they discover in outer space, including on the Moon and other celestial bodies, which could constitute a danger to the lives or health of astronauts or to other human spaceflight activity; and (2) existing draft guidelines on the

sharing of space debris and space weather information (“Promotion of research on orbital debris and sharing of space debris monitoring information (guideline 21)” and “Sharing operational space weather data and forecasts (guidelines 27+29)”). Taken collectively, the United States believes these obligations and guidelines are sufficient for the sharing of information relevant to the space environment.
