Written Testimony of

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Before the

Subcommittee on Space and Aeronautics of the Committee on Science, Space, and Technology United States House of Representatives

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Chairwoman Horn, Ranking Member Babin, Members of the Committee: Thank you for giving me the opportunity to *address A Review of NASA's Plans for the International Space Station and Future Activities In Low Earth Orbit.* I am delighted to respond. I thank the Subcommittee for giving me this opportunity.

This statement addresses two points of space law that are particularly germane to plans to develop commercial low Earth orbit (LEO), including the *International Space Station (ISS)*. They speak directly to U.S. national interests. There is a brief conclusion.

The first point is that the US Government is internationally responsible for the activities of its nongovernmental space actors in perpetuity.[1]

The second point is that the legal obligations of the U.S. Government continue in force even after the transfer of its *ISS* elements to nongovernmental commercial entities.[2]

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[1] Treaty on Principles Governing the Activities of States in the Exploration and Outer Space Treaty]. Art. VI

[2] Agreement Among the Government of Canada, Governments of the Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of The United States of America Concerning Cooperation on the Civil International Space Station, Jan. 29, 1998, T.I.A.S. No. 12927, State Dep't No. 01-52, 2001 WL 679938 [hereinafter IGA].

I. The United States is Internationally Responsible for Its Nongovernmental Space Actors.

1. Art. VI of the Outer Space Treaty

Article VI states that the "activities of non-governmental entities in outer space…shall require authorization and continuing supervision."[3]

Art. VI is the legal source for recognizing nongovernmental actors as legitimate space actors. During Outer Space Treaty negotiations, it was the position of the Soviet Union that only States could be legitimate space actors. The U.S., of course, did not agree and took the position that private entities were also legitimate space actors. The compromise between the two positions was "to require authorization and continuing supervision" of nongovernmental space actors. To assure that nongovernmental space entities acted in accord with the law, Art. VI also provides that "States Parties…shall bear international responsibility for…activities…carried on…by non-governmental entities."[4]

It is crucial that Art. VI of the Outer Space Treaty is central to plans for commercial LEO development. What constitutes "responsibility" is part of a growing body of law that has strengthened and matured in recent years.[5] The United States Government—and through it—the U.S. taxpayer—will ultimately be responsible for reparation if it is deemed necessary because of events arising from U.S. nongovernmental space activities.

The Government's responsibility exists in perpetuity. Withdrawing from, or altering the terms of, the Outer Space Treaty can change this but that is an option not favored by the space industry[6] or the U.S. State Department.[7]

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[3] Outer Space Treaty, *supra* note 1.
[4] *Id*.
[5] James Crawford, Jacqueline Peel, Simon Olleson, *The ILC's Articles on Responsibility of States for Internationally Wrongful Acts: Completion of the Second Reading*, 12 EJIL 963 (2001).
[6] *Reopening the American Frontier: Exploring How the Outer Space Treaty Will Impact American Commerce and Settlement in Space*, *Before the S. Comm. on Commerce, Science and Transportation Subcommittee on Space, Science, and*

A risk sharing regime has been established for launch and reentry services. In it, a provider "shall obtain liability insurance or demonstrate financial responsibility in amounts to compensate for the maximum probable loss from claims" and the NASA Administrator "…shall prescribe taking into account the availability, cost, and terms of liability insurance, any contract between [NASA] and a provider may provide that the United States will indemnify the provider against successful claims". [8] An analogous risk sharing regime should be developed for all stages of the planned human exploration roadmap in which nongovernmental actors will be part of the roadmap's space activities.[9]

II. United States *ISS* Obligations Remain in Force Even After Transfer of Its *ISS* Elements to Nongovernmental Commercial Entities.

1. The International Space Station Intergovernmental Agreement

The *IGA* is a remarkable space law achievement. It has governed *ISS* cooperation for 15 States over three decades. It has undergone three iterations, first serving Cold War relationships, then meeting the opportunities presented by the fall of the Soviet Bloc, and now in the globalization era. It also facilitates some of Congress' most important policies and purposes for the U.S. space

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Competiveness, 115 Cong., (2017); Marcia Smith, *Congress Looking at Additional Measures to Facilitate Commercial Space,* (May 30, 2017, 12:00 AM), "the Senate hearing…focused on…has the 50-year-old OST been so overtaken by events that the United States should withdraw from or seek to renegotiate it. None of the witnesses supported either of those courses of action." https://spacepolicyonline.com/news/congress-looking-at-additional-measures-to-facilitate-commercial-space/

[7] *The Next Fifty Years of the Outer Space Treaty*, Remarks by Brian J. Eagan, Legal Advisor, U.S. State Department, (Dec. 7, 2016), "the Outer Space Treaty serves a constitutional role in the international legal framework for outer space…If the preparations for future space activities underway in the United States and other nations are any indication, the Treaty will serve this function well into its second half century and beyond." https://2009-2017.state.gov/s/l/releases/remarks/264963.htm

[8] National Aeronautics and Space Administration Transition Authorization Act of 2017, 51 USC § 20148; and Commercial Space Launch Activities § 50915

[9] 51 USC § 20302

program, that activities in space should be devoted to: peaceful purposes for the benefit of all humankind; the expansion of human knowledge; and, cooperation by the U.S. with nations and groups of nations[10]

The *IGA* is part of a three-tier legal framework that includes memoranda of understanding (MOUs), implementing arrangements and, other formal arrangements. It is based on and incorporates the space treaties and addresses 4 bodies of law: jurisdiction, torts, intellectual property, and criminal jurisdiction.

An essential feature of the *IGA* is that "[t]he transfer of ownership…shall not affect the rights and obligations of the Partners." This is equally applicable to the MOUs and implementing agreements.[11] Therefore, if the *ISS* transition will include "transfer of all or parts of the ISS itself to commercial entities"[12] including ownership, or "exercise of ownership or equipment"[13] then the United States will still have the same rights and obligations that were in force prior to the transfer. Changing post-transfer obligations will require, at a minimum, renegotiating post-transfer rights and obligations among the *ISS* Partners. This moves the issue of U.S. post-transfer obligations more into to the realm of politics than law, increasing uncertainty regarding the degree, the nature, and duration of U.S. obligations.

III. Conclusion

There are legal and economic forces at play that can expose the U.S. Government and the U.S. taxpayer to substantial, reoccurring, long-term obligations that can result in hard to quantify financial obligations. Development of LEO and the *ISS* is beginning at a time when the current value of the space economy is being questioned;[14] when recent U.S. national space law increasingly

[10] P.L. 111-314 § 20102 (Dec. 18 2010)
[11] IGA, *supra* note 2, Article 6.3.
[12] Forecasting Future NASA Demand in Low-Earth Orbit: Revision Two – Quantifying Demand, pg. 1.
[13] IGA, *supra* note 2, Article 6.7.
[14] *Examining the Future of the International Space Station: Hearing Before the S. Subcomm. on Space, Science, and Competitiveness*, 115th Cong. 2 (2018)

places more of the cost of industry risk-taking onto the U.S. taxpayer;[15] and, when recently enacted U.S. national space law has created an uncertain legal environment by the use of illusory language that is mostly aspirational and repetitive and creates little black-letter law.[16] It is in the U.S. national interest for

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(statement of Pail K. Martin, Inspector General National Aeronautics and Space Administration). "[I]t is questionable whether a sufficient business case exists under which private companies can create a self-sustaining and profit-making business independent of significant Government funding…Candidly, the scant commercial interest shown in the Station over its nearly 20 years of operation gives us pause about the Agency's current plan." at 2 https://oig.nasa.gov/docs/CT-18-001.pdf , and,

STPI Questions $1 Trillion Space Economy Claims, By Marcia Smith, June 5, 2019 11:19 pm https://spacepolicyonline.com/news/stpi-questions-1-trillion-space-economy-claims/ ; and,

How Big is the Space Economy?, https://www.nesdis.noaa.gov/CRSRA/pdf/ACCRES_Lal_June_2019_Final.pdf, a

[15]Amanda Robert, *Commercial Spaceflight Industry Faces uncertain legal, regulatory environment*, Legal Newsline, (June 5, 2017) http://legalnewsline.com/stories/511121527-commercial-spaceflight-industry-faces-uncertain-legal-regulatory-environment "Linda Lipsen, chief executive officer of the American Association for Justice, [said] in a statement before the bill's passage that it would force victims and taxpayers to pay the costs of any private space travel crash or disaster. 'The bill jeopardizes both civilians on the ground and the passengers, whose right to hold anyone accountable would be eliminated,' quoting Linda Lipsen, regarding the *Commercial Space Launch Competitiveness Ac*t which "extends the indemnification regime and learning period".

[16] Together, the U.S. national space law statutes enacted since 2015 contain few provisions that actually authorize, require, or prohibit action. They do contain numerous findings, reaffirmations, and Sense of Congress provisions, none of which make law.

Regarding Sense of Congress resolutions, "A 'sense of' resolution is not legally binding because it is not presented to the President for his signature. Even if a 'sense of provision' is incorporated into a bill that becomes law, such provisions merely express the opinion of Congress or of the relevant chamber. **They have no formal effect on public policy and have no force of law**." (emphasis added). Christopher M. Davis, Cong. Research Serv. 98-825, "Sense of" Resolutions and Provisions", (2016).

For example, The National Aeronautics and Space Administration Transition Authorization Act of 2017 contains approximately 33 Sense of Congress provisions; 16 findings; and, 4 reaffirmations. The use of these non-law making provisions is a subject well worth its own paper.

the Subcommittee to consider these forces going forward. Thank you for your work to develop the law of space.