

## TRANSPARENCY AND CONFIDENCE-BUILDING MEASURES FOR OUTER SPACE

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I am grateful for the opportunity to provide the perspective of the United States on transparency and confidence-building measures (TCBMs) related to outer space.

In making these remarks, I should note that the United States is a strong supporter of pragmatic TCBMs that support the peaceful use of outer space. As Acting Deputy Assistant Secretary of State Donald Mahley noted in a speech earlier this year at the George Washington University in Washington, DC:

It is universally acknowledged that defense and intelligence-related activities in pursuit of a country's national interests fall within the scope of, and are fully consistent with, the 1967 Outer Space Treaty's provisions regarding the peaceful uses of space. Moreover, Article 51 of the United Nations Charter states that '[n]othing in the ... Charter shall impair the inherent right of individual or collective self-defense.' The [United States] also will support its allies and friends in the protection of their space capabilities, with special emphasis for those satellites whose peaceful use supports U.S. national interests.

### A FOUNDATION OF COMMON PRINCIPLES

For the United States and other responsible spacefaring nations, a foundation of common principles starts with the 1967 Outer Space Treaty, which is formally known as the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies. This foundation also includes the provisions of the 1968 Rescue and Return Agreement, the 1972 Liability Convention and the 1974 Registration Convention. These four "core" treaties, along with other elements of established international law activities in outer space, together

with various non-binding instruments, provide a sound basis to respond to the emerging challenges of the twenty-first century.

Although the United States is determined to keep sufficient flexibility to protect its national security interests, we also recognize that some emerging challenges to space security may require new forms of international cooperation with allies, friends and other responsible spacefaring nations to preserve the most important of the mutually shared principles elaborated in these treaties—free access to, and use of, outer space by all nations for peaceful purposes.

This principle was first advanced by President Eisenhower in the late 1950s and formed the basis for key precepts of the Outer Space Treaty. The commitment to peaceful use and benefit for all is embedded firmly in the United States National Space Policy signed by President George W. Bush on 31 August 2006. That policy states explicitly that all activities of the United States Government would be consistent with applicable international law, including treaties to which the United States is a party, which includes the Outer Space Treaty. The importance of the Outer Space Treaty and international cooperation are also fundamental elements of the space policies of other responsible spacefaring nations.

## **BEST PRACTICE GUIDELINES**

The United States and Europe have been leading supporters of international cooperation to preserve the space environment for future generations. Confronted with the fact of persistent debris after rocket explosions and anti-satellite tests during the early and mid-1980s, the United States and Europe began to consider the potential long-term hazards created by the accumulation of space debris. These discussions during the late 1980s and early 1990s soon expanded to include Japan and Russia. These expert exchanges also led to the formation of an Inter-Agency Space Debris Coordination Committee (IADC) in 1993 by the US National Aeronautics and Space Administration (NASA), the European Space Agency (ESA) and the civil space agencies of Russia and Japan.

Today, the IADC includes a total of nine national space agencies as well as the ESA. Its guidelines for orbital debris mitigation have provided a common basis for protecting the space environment from man-made debris. The

IADC's terms of reference also provide a useful framework for providing notifications of potential hazards from what are referred to as "high risk re-entry events".

The technical experts of IADC can take pride that their debris mitigation guidelines formed the basis for guidelines that were endorsed in 2007 by the UN Committee on the Peaceful Uses of Outer Space (COPUOS). Cooperation on debris mitigation also serves as an useful model for a new and promising set of "bottom-up" discussions on a broader set of best practice guidelines for safe space operations.

In this regard, the United States has been pleased to support a recent initiative to establish an informal working group that brings together experts from the public and private space sectors to explore additional measures to ensure the long-term sustainability of space activities. In particular, the United States is grateful for the leadership provided by Gérard Brachet, the current chairman of COPUOS, as well as the Government of France's sponsorship of an initial workshop on this topic last month in Paris.

Looking forward, the United States strongly believes that any consideration of best practice guidelines should include private sector satellite operators. Focused on the bottom line, commercial operators must both ensure uninterrupted service and protect their shareholders' investments. As a result, commercial operators have devoted considerable time and effort to develop cost-effective approaches for satellite control and for coordination with other commercial operators to avoid collisions and minimize harmful radio interference. Many of these measures can serve as the basis for improved information sharing between governments and the private sector.

## **ESTABLISHING A COMMON FRAME OF REFERENCE**

Using commercial best practices as a baseline also can promote efforts to establish a common vernacular and reference framework for technical data exchanges on spaceflight safety. This may be particularly useful for many US aerospace engineers, who are noted for their ability to provide status reports that sometimes cite pounds of spacecraft weight and relative velocities of kilometers per second in the same sentence. Usually the "measurement bilingualism" works out fine. But sometimes it leads to a mishap like the

Mars Climate Orbiter, which crashed into the Martian atmosphere due to what investigators called “a failure to recognize and correct an error in a transfer of information” between industry spacecraft engineers in Colorado and a NASA mission navigation team in California.

When US engineering students examine this case study, they usually provide several explanations for why the mishap occurred. The thoughtful explanation they provide for the loss of the Mars Climate Orbiter is that it reflects the fact that scientists and engineers working in different organizations can and do have differing frames of reference. Such differences often encompass not only systems of measurement but also broader approaches to systems engineering and spacecraft operations.

During the first four decades of the space age, these differences had little effect. Satellites operated by various companies and governments were relatively few in number, and spacecraft operated by different nations were usually separated by fairly large distances. Although the United States and other governments did and do pay close attention to flight safety for the International Space Station and other human spaceflight missions, the question of how different nations’ robotic spacecraft interacted with each other was not a major concern.

But as outer space becomes increasingly vital to economic prosperity and international security, there is increasing interest in exploring new approaches for collision avoidance and improved responses to purposeful interference incidents. There also has been increasing international interest in new approaches for shared space situational awareness.

In this regard, it is worth noting that civil society has provided a range of options for new approaches for international cooperation in spaceflight safety. In addition to commercial operators, academic institutions such as the International Space University and non-governmental organizations such as the International Academy of Astronautics have devoted considerable effort to initial studies that can serve as valuable catalysts for further discussion between government and industry experts.

Our past experience with expert discussions on space debris mitigation shows how dialogues between experts can help to educate non-technical policymakers and establish clear guidelines and standard practices for responsible operators to exchange information and coordinate their

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actions. As these groups develop consensus, the results can be forwarded to COPUOS for consideration.

## **ENHANCING TRANSPARENCY AND BUILDING CONFIDENCE IN INTENTIONS**

Given the complexity of these topics, the deliberations may take some time. As a result, it is important that they not become distorted by parochial political agendas or unnecessarily duplicated by competing discussions in other venues. COPUOS scientific and technical subcommittee meetings should remain the key multilateral forum for considering general best practice guidelines regarding the peaceful use of outer space. Any consideration of outer space TCBMs in other bilateral and multilateral settings should take into full account what goes on in both civil society and at COPUOS.

With regard to TCBMs specifically relating to the use of outer space to maintain international peace and security, the United States also favours a bottom-up approach that begins with bilateral dialogues with foreign governments on space security issues. In particular, these discussions can explore measures that can increase transparency regarding national security space policies and strategies, thus reducing uncertainty over intentions. Bilateral discussions also could consider new measures that could decrease the risk of misinterpretation or miscalculation during, for example, a crisis or confrontation.

One such measure could be creating new or expanding established “hotlines” between capitals, allowing political and military leaders to communicate directly with each other regarding space incidents. Specific measures could include regular exchanges between senior space commanders and their staffs as well as launch and satellite operations officers.

US officers in Florida, Colorado and California look forward to welcoming their Russian counterparts, and to reciprocal future visits to launch centres and movement control centres in Russia. Such exchanges can help to build mutual understanding and enhance trust—two key prerequisites for enhanced cooperation and crisis management.

The United States trusts our record of cooperation with Russia will be considered as part of a broader examination of options for voluntary

TCBMs. In 2007, the United States sought to work with Russia to draft a UN General Assembly resolution supporting an expert study of options for voluntary TCBMs. Regrettably, we were unable to reach agreement with Russia for the Sixty-Second General Assembly on a resolution that did not tie pragmatic TCBMs to proposals for binding space arms control treaties. But the United States still hopes to continue working with Russia and other major spacefaring nations in ways that could build on our ongoing work with our friends in Europe on concrete proposals for voluntary TCBMs that can gain wide acceptance.

In particular, we have welcomed the opportunity for trans-Atlantic dialogue with the European Union regarding proposals for a set of TCBMs that focuses upon a pragmatic and incremental approach to space security. Our discussions with Europe over the past six months have already identified many opportunities for consensus; over the coming months we look forward to continued exchanges with the European Union and its member states as well as substantive discussions on TCBMs here at the Conference on Disarmament.

## **CONCLUSION**

In summary, let me note that the United States looks forward to participating in exchanges with, and learning from, academic and non-governmental experts such as the participants in today's conference. As with our endeavours on Earth, our priority for outer space is pursuing peaceful uses within cooperative relationships, particularly with our oldest and closest friends and allies.