

# COUNCIL *on* FOREIGN RELATIONS

## *International Institutions and Global Governance Program*

### *POLICY INNOVATION MEMORANDUM NO. 10*

*Date:* November 30, 2011  
*From:* Micah Zenko  
*Re:* A Code of Conduct for Outer Space

The Obama administration has accurately described outer space as increasingly “congested, contested, and competitive.” Eleven countries have space launch capability and over sixty countries own and operate approximately 1,100 active satellites that play an invisible but essential role in almost all facets of our daily lives. However, as nations increasingly rely more on space, orbital space debris resulting from human activities on earth is a rapidly growing threat to civil, military, and commercial satellites.

No country or group of countries possesses the sovereign authority or responsibility for regulating space. Outer space is instead governed by a patchwork of informal industry standards, unofficial UN guidelines, and bilateral agreements to prevent or mitigate potential satellite collisions and interference from space debris. As the leading country in space—and one that depends greatly on its assured availability—the United States has a core national interest to prevent or minimize the inherent risks of space activities. The United States should work with other spacefaring nations to establish a nonlegally binding international code of conduct for outer space activities. Specifically, the Obama administration should start negotiations building upon, but ultimately replacing, the current draft of the Space Code of Conduct put forth by the European Union (EU).

#### *THE PROBLEM*

Presently, existing resources and technology track approximately 22,000 items in space bigger than a softball, including the upper stages of launch vehicles, disabled spacecraft, dead batteries, solid rocket motor waste, and refuse from human missions. In addition, there are hundreds of thousands of other fragments of space junk that measure between one and ten centimeters, and countless millions that are even smaller. Traveling at speeds up to 22,000 miles per hour, even flecks of paint could potentially damage manned or unmanned spacecraft.

Although it took forty years to produce 10,000 pieces of softball-sized space debris, that amount doubled over the next ten years, largely due to accidents and willful neglect. Most of the debris is located at a high orbit, where it could pose a significant threat for decades. Proposals to remove this space debris would be hugely expensive, have numerous technical hurdles, and require unprecedented international collaboration. If this escalating growth of space debris is not halted, U.S. officials worry that space will become a needlessly high-risk environment.

#### *SPACE AS A U.S. NATIONAL INTEREST*

The United States relies more on space for military, intelligence, civilian, scientific, and environmental activities than any other country. Without assured access to space, the United States could not attack suspected terrorists with precision-guided munitions, conduct imagery analysis of suspected nuclear weapons programs, use broadband Internet connectivity for cell phones and financial transactions, measure changes in the sea levels or arctic ice sheets, or forecast the paths of hurricanes.

Though its preeminent global role may be declining, the United States remains the leader among all spacefaring nations. The United States accounts for 75 percent of worldwide governmental space funding, and U.S. government or industry owns and operates roughly 40 percent of all the active spacecraft in orbit. To alleviate the threat posed by space debris, U.S. Strategic Command's Joint Space Operations Center (JSPOC) detects, tracks, and identifies space objects through an elaborate constellation of twenty-nine ground-based radars and optical sensors. In addition to protecting U.S. spacecraft, JSPOC extends this capability—at no cost to the international community—by warning countries and commercial space operators when their satellites are at risk from large space debris or other satellites.

#### *EUROPEAN UNION CODE OF CONDUCT*

In 2008, the EU published a draft Code of Conduct for Outer Space Activities, which it revised in September 2010. The code calls on member states to establish “policies and procedures to minimize the possibility of accidents ... or any form of harmful interference with other States’ right to the peaceful exploration and use of outer space.” It is based on three principles: 1) freedom of access to space for peaceful purposes; 2) preservation of the security and integrity of space objects in orbit; and 3) due consideration for the legitimate defense interests of states. The code is not legally binding, but is rather a voluntary agreement among states with no formal enforcement mechanisms.

In February 2011, thirty-seven Republicans noted that they were “deeply concerned” about the code because inadequate Obama administration briefings led to the mistaken belief that it could constrain missile defenses or antisatellite weapons. These misimpressions have been and must continue to be sufficiently addressed with relevant congressional members and staff; according to Obama administration space officials, the code’s provisions are consistent with all existing practices of the National Aeronautics and Space Administration, Pentagon, and State Department. They believe that the code would lend order and predictability to the space domain by promoting norms of responsible behavior, facilitating the dissemination of best practices, and increasing transparency. The United States and the EU have also engaged in four rounds of consultations about the code, after which the EU incorporated suggested U.S. language, such as on the right to self-defense in space.

For two years, the Obama administration has debated whether to endorse the EU code, pending a Pentagon assessment as to whether it would have an operational impact on the military’s uses of space; most officials believe that it would not, as its provisions concur with all Pentagon space plans and policies. Given that the EU code is in U.S. national interest, if the Pentagon confirms that it would not have any negative impact, President Barack Obama should

endorse it as the first step toward negotiations on an international code of conduct for outer space activities. Furthermore, the majority of spacefaring countries, including Australia, Canada, and Japan, have already endorsed the EU code.

#### *WHY AN INTERNATIONAL CODE OF CONDUCT?*

An international code of conduct for outer space activities is required. Other spacefaring nations—such as Brazil, Russia, India, and China—have indicated that they might not sign the EU code because they were insufficiently consulted in its development and believe it could be a ploy to limit the future capacities of emerging powers in outer space. Since February 2008, China and Russia have repeatedly proposed an alternative legally binding treaty that would outlaw the weaponization of space; the United States and most other spacefaring nations correctly oppose the draft treaty on the grounds that it would be unverifiable and would not cover ground-based systems. Along current trend lines, the EU code will likely suffer the same fate as the Hague Code of Conduct against Ballistic Missile Proliferation, which was endorsed by 132 states, but not Brazil, China, or India, much less Iran and North Korea.

The United States has a clear interest in defining the rules of the road for interstate behavior in space, and it must actively lead the development of an international code of conduct on outer space activities. The United States is uniquely suited to do so as the leading space power, which through JSPOC provides the only reliable and timely information regarding space debris to commercial space operators and spacefaring nations, including Brazil, Russia, India, and China. Endorsing the EU code is an important first step toward ensuring U.S. objectives and would serve as a promising foundation for a more widely accepted international code.

U.S. leadership toward developing an international code is long overdue and must begin with in-depth negotiations with emerging spacefaring nations to assure the document reflects their own interests. In addition to the EU code provisions, the international code must require the timely notification of space launches, planned satellite orbital placements, scheduled space maneuvers, and a ban on the weaponization of space, which is an essential requirement for Russia and China. The U.S. military has no kinetic weapons in space, nor has it indicated any plans to pursue them in the foreseeable future. Furthermore, the current architecture of the U.S. homeland and regional missile defense radars and interceptors would not be affected by the imposition of such an international code.

Though not legally binding, an international code would be the most significant normative step that captures the interests of almost all spacefaring countries while shaping and promoting sustainable outer space conduct. Negotiations will require time and patience, as many states have understaffed space agencies. However, given that the threat from space debris is increasing exponentially and could lead to a domain that is no longer reliable or safe for human use, such discussions cannot start soon enough.

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