



## CREATING AN ENVIRONMENT OF PERMISSIONLESS INNOVATION IN OUTER SPACE

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Chairman Babin, Ranking Member Bera, and members of the subcommittee:

Thank you for inviting me here today to participate in this timely hearing on how to promote innovation and liberty in outer space while meeting our international obligations. My name is Eli Dourado, and I am a senior research fellow at the Mercatus Center at George Mason University, where I study the regulation of emerging technologies and direct Mercatus's Technology Policy Program.

### THE NEED FOR PERMISSIONLESS INNOVATION IN OUTER SPACE

Space is a domain that has until now been dominated by governments. In that respect it is similar to the state of the Internet in the 1980s. Commercial use of the Internet was prohibited until 1989. Once commercial activity was allowed, the Internet began to flourish and grow into the enormous economic and cultural force that it is today.

Vint Cerf, one of the “fathers of the Internet,” credits “permissionless innovation” for the economic benefits that the Internet has generated.<sup>1</sup> As an open platform, the Internet allows entrepreneurs to try new business models and offer new services without seeking the approval of regulators beforehand. Because of the First Amendment and some foresighted, bipartisan policies put in place in the 1990s, there is little prior restraint on the business activities that may be tried online. When harms or failures occur, we address them in an ex post manner.

1. Vinton G. Cerf, “Keep the Internet Open,” *New York Times*, May 24, 2012.

My colleague Adam Thierer has generalized this notion of permissionless innovation in his book by that name.<sup>2</sup> In any number of regulatory domains, there are serious, legitimate concerns that make it tempting to require innovators to seek approval before they proceed. While regulatory approval can address those concerns, it does so by dramatically slowing the pace of innovation. We must build in some tolerance for mistakes, failures, and learning so that innovation can move forward. To a considerable extent, organic, bottom-up solutions will do a better job of solving these complex social problems without unduly slowing the pace of innovation.

Permissionless innovation can also be applied to space. Congress should seek to maximize the latitude the private sector has to experiment with commercial space endeavors. As with other domains, this freedom to experiment will result in some mistakes and failures. Yet over the long run, permissionless innovation will result in faster progress and more robust solutions to policy problems than a precautionary regulatory mentality.

To be sure, space is a unique domain. Space is an extremely hostile and dangerous environment, and there are clear national security interests to consider. Nevertheless, Americans have already observed the benefits of a more permissive approach to space technology, not least in the modernization of the Global Positioning System.

When the Clinton administration ended Selective Availability, giving civilian users access to the same level of granularity in GPS data as the military, numerous commentators decried the irresponsibility of the administration's decision to allow uncontrolled access to higher-resolution location data on national security grounds.

The predicted negative consequences never came to pass, and innovation flourished. Countless applications, from mixed reality to ridesharing, depend on the high-quality data this liberalization produced. Today, almost no one advocates bringing back Selective Availability. Given the closely controlled nature of space technology, further liberalizations are in order and would similarly yield higher levels of innovation.

## **INDIVIDUAL MISSION AUTHORIZATION IS ANTITHETICAL TO PERMISSIONLESS INNOVATION**

Yet there is one recent proposed policy change that is headed in precisely the wrong direction. Last year, the previous administration reported to Congress, pursuant to Section 108 of the Commercial Space Launch Competitive-ness Act, on a framework to regulate commercial activity in space.<sup>3</sup> The administration proposed a framework in which explicit authorization from the Secretary of Transportation would be needed for every mission, which is defined as the operation of any space object.

As others will testify, this framework is unnecessary to meet our international treaty obligations. It is also exceedingly impractical and destructive. In the future that we all are working toward, humanity will establish permanent settlements in orbit and throughout the solar system. Achieving this goal will necessarily entail the operation of millions of space objects, on each occasion triggering a need for authorization from the Secretary of Transportation back on Earth. This state of affairs is unworkable and will hinder our progress into the universe.

The mission authorization framework represents the antithesis of the permissionless innovation my colleagues at the Mercatus Center and I believe is necessary for rapid technological development in space or any other domain. Instead of adopting the Obama administration's proposal, I urge the Congress to consider blanket authorization for all nongovernmental operations in space that do not cause tangible harm to other parties, whether foreign or domestic, in their peaceful exploration and use of outer space. Such an approach would meet our treaty obligations while maximizing the scope for innovation and experimentation in space.

## **CONCLUSION**

I thank the subcommittee for its interest in and attention to these issues, as well as for the opportunity to testify.

2. Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom*, rev. ed. (Arlington, VA: Mercatus Center at George Mason University, 2016).

3. John P. Holdren to Sen. John Thune and Rep. Lamar Smith, April 4, 2016, [https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/csla\\_report\\_4-4-16\\_final.pdf](https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/csla_report_4-4-16_final.pdf).