

July 21, 2021

Hon. Senator John Hickenlooper
Chair of the Subcommittee on Space and Science
Russell Senate Office Building
Suite SR-374



Hon. Cynthia Lummis
Ranking Member
Subcommittee on Space and Science
Russell Senate Office Building
Suite SR-124

Re: Space Situational Awareness, Space Traffic Management,
and Orbital Debris: Examining Solutions for Emerging Threats
Hearing, July 22, 2021

Dear Senators:

On behalf of TechFreedom, a nonprofit, nonpartisan think tank promoting technological progress that improves the human condition, we would like to include in the record of the above-referenced subcommittee hearing the attached SpaceNews Op-Ed.¹

U.S. companies lead the world space economy in terms of both providing and consuming services delivered from space. The United States also has led, and continues to lead, the world community in addressing the problem of orbital debris. Our scientists have been at the forefront of developing international norms of orbital debris mitigation and remediation. We have played a major role in creating the current international treaty regime, which includes not only the 1967 Outer Space Treaty (OST), but also the Liability Convention and Registration Convention. We have the most robust and detailed set of orbital debris regulations in the world.²

Unfortunately, a large loophole in our regulatory regime allows companies (even U.S.-based companies) to obtain a spectrum license from a foreign country and then seek “market access” to serve the United States from the Federal Communications Commission (FCC). In

¹ A digital version of the Op-Ed can be found at:
<https://spacenews.com/op-ed-who-wants-to-step-up-to-a-10-billion-risk/>.

² For a deeper discussion of the history of orbital debris standards, see J. Dunstan, ‘Space Trash:’ Lessons Learned (and Ignored) from Space Law and Government, 39 J. Space Law 23 (2013).

addition to circumventing the U.S. licensing process, such “flag of convenience” end-runs endanger the international community when the original licensing country is not a signatory to the key U.N. treaties on outer space law. These arrangements result in a situation where there is no clear international responsibility should an accident occur in space which creates new orbital debris. At best, this situation leaves an ambiguity. At worst, it creates a situation where the United States may become internationally liable even though it lacks the proper ability to “authorize” and “supervise” the activities of these foreign-licensed companies under Article VI of the OST.

We should continue to lead by example: We should not authorize entities to conduct business in the United States if the countries from which they obtain their licenses refuse to abide by the norms of international space law.

As the Senate explores the problem of, and solutions to, orbital debris, we hope that you will consider the vital role that the FCC plays within this ecosystem, and the need for the FCC to require any entity authorized to do business in the United States to be licensed by a government willing to step up to the responsibilities and liabilities inherent in the U.N. treaty regime.

Respectfully submitted,

James E. Dunstan
General Counsel, TechFreedom

SPACE NEWS

Op-Ed | Who wants to step up to a \$10 billion risk?

SpaceNews, June 25, 2021

International space law and the treaty regime have remained largely theoretical constructs for most of the Space Age. While great for **moot-court exercises** or the occasional **congressional hearing** on treaty obligations, their real-world applications were scarce. Yet those of us who have practiced commercial space law have long warned that a time would come when “Space Law 101” would play an important part in opening the high frontier.

That time is now. The FCC faces a decision that goes beyond whether to grant AST & Science a **“market access” request** for a new constellation of non-geostationary spacecraft in the crowded 700-kilometer orbit. Far more important is whether the FCC will require companies seeking authority to operate in the United States to be licensed by countries which agree to be bound by the norms of international space law.

The AST & Science application itself is problematic enough, with its 243 gigantic satellites each with a cross-section of 450 square meters. NASA initially filed a report **raising significant concerns** with this application, arguing that the number and size of the satellites in the AST constellation posed a significant risk and would cause NASA to “experience a very large number of satellite conjunctions, certainly with debris objects and potentially with A-Train satellites themselves, both as part of the AST satellites’ ascent/descent to on-orbit locations and during regular operations.”

TechFreedom filed comments raising similar concerns, adding that AST & Science has zero experience building large structures in space.

But the greater problem is that rather than seek a license directly from the FCC for their enormous satellites, AST & Science got a license for its system from Papua New Guinea (PNG). This is more than a “flag of convenience” situation, however, as PNG has signed neither the 1971 **Liability Convention** nor the 1974 **Registration Convention**. While PNG has signed the 1967 Outer Space Treaty (OST), those latter two treaties are what put actual “meat on the bone” of the OST. Choosing not to sign these leaves PNG outside of the sphere of countries which have agreed to both norms of governance and resolution procedures for outer space disputes.

In short, PNG has not stepped up to accept specific international responsibility or liability for the activities of commercial entities it has licensed. Under the Liability Convention, countries agree to be liable for any damages caused in space “due to its fault or the fault of

persons for whom it is responsible.” AST & Science recently **admitted** to the FCC that PNG has not “acceded” to the Registration Convention but claimed that PNG would voluntarily register the constellation. This narrative brushes over the fact that voluntarily registering the constellation, which PNG has **only done once previously**, isn’t the same as taking legal responsibility for it.

PNG has in no way assumed the potentially huge liability of a collision. To put this in perspective, PNG’s entire governmental budget is **less than \$6 billion**, and its entire gross domestic product (GDP) is roughly **\$25 billion**. The value of the satellites in the 700-kilometer orbit easily exceeds \$10 billion. AST & Science’s request is much like asking the United States to shoulder a \$10 trillion dollar risk — half the U.S. GDP of **\$21 trillion**. Who, then, will shoulder the risk of the liability? Is the United States going to step into PNG’s shoes and absorb that risk?

I have been critical of the FCC in the past in its decisions to **authorize** or **extend** satellite licenses in the face of demonstrable orbital debris risk, as opposed to the ginned-up allegations of companies seeking to slow down new competitors. Here, the FCC is asking all the right questions, and unless PNG is willing to accept international liability, or AST & Science seeks a license from a country willing to abide by international space norms, the FCC should not grant the market access request.

We live in exciting times where satellite systems are being developed and launched at an exponential rate. But we can’t proceed at that pace without requiring all players to observe international norms of conduct. That’s what “Space Law 101” is all about, and we shouldn’t abandon it now.

James E. Dunstan serves as General Counsel for TechFreedom as well as operating his own private practice at Mobius Legal Group, and has represented innovative space companies for nearly 40 years.