

**STATEMENT OF
COMMISSIONER BRENDAN CARR**

Re: *Mitigation of Orbital Debris in the New Space Age*, IB Docket No. 18-313; *Mitigation of Orbital Debris*, IB Docket No. 02-54 (Terminated)

There are a few thousand communications satellites orbiting Earth, and most of them are no longer in operation. They've been downgraded to orbital debris. In the coming years, zombie and active satellites alike will have many more neighbors. One company alone plans to launch more than 10,000 satellites that will be smaller and fly closer together than previous generations.

The new space race poses some tough questions. And they touch on everything from law, to policy, to engineering. Who should control space? What are the rules? And how do we ensure that satellites vital to communications, jobs, and security are launched and disposed of safely and economically? After all, the U.S. Joint Space Operations Center is already tracking over 500,000 pieces of orbital debris.

This last question is the subject of today's Notice. In 2004, the Commission issued its first order on orbital debris. Based on our charge to promote nationwide communications, we determined that satellite licensees should provide an orbital debris mitigation plan. This 2004 approach was largely a disclosure regime that built on NASA standards. Five years later, the importance of this issue was brought home when, for the first time, two communications satellites collided at hypervelocity—more than 26,000 miles per hour. A defunct Russian satellite collided with a then-active one owned by an American company, producing over 2,000 pieces of debris.

Given the expected increase in satellites over the coming years, today's Notice proposes to replace our existing orbital debris regime with a more detailed set of rules. For instance, it asks whether the FCC should:

- set the probability of large object collision during an orbital lifetime at no greater than 0.001
- adopt a satellite design and fabrication reliability standard of 0.999
- rely on gravitational forces and solar radiation pressure to lower a satellite's perigee as a preferred satellite disposal method, and
- set 15 joules as the correct kinetic energy of impact for objects that pose human casualty risk.

All of this raises a more basic question: Are we the expert agency to make these assessments?

We can respond by saying, hey, we've got a lot of smart people at this agency, and this isn't rocket science—except it is. It is literally rocket science we are engaging in.

So I was glad to see that the draft circulated by Chairman Pai three weeks ago noted the expertise that exists elsewhere across the federal government. It recognized a number of our sister agencies that have expertise and jurisdiction over the launch and tracking of satellites, including NASA, DOD, the FAA, the State Department, and the new Office of Space Commerce.

Building on that discussion, I asked my colleagues to expand the questions in the Notice that go to our expertise and authority. And I want to thank them for accommodating my requests. The Notice

now takes an even bigger picture view—some would say 30,000 foot view, but this is space, so that would be far too narrow. What are the right agencies and experts to answers these questions? Should the FCC be one of the lead agencies? Should we play a supporting and coordinating role instead? I am glad that we're now asking these questions as well as inviting additional comment on our legal authority.

I want to thank the International Bureau for its hard work on this item. With the additional discussion, it has my support.