

**STATEMENT OF
COMMISSIONER MICHAEL O'RIELLY**

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)

The fun part of talking about space and new satellite technologies is considering the exciting new applications for service offerings, which we once again consider during today's meeting. For those technologies to work, however, there needs to be a limited, but sound, framework to deal with accompanying policy issues. Orbital debris is certainly one of the components of such a framework. Failure to properly address the residual parts of launch vehicles and failed, damaged or outdated satellites can lead to cataclysmic outcomes, making future space use and the possibility of space exploration more difficult, if not impossible. It's why we have conditioned each recent satellite application approval on compliance with further Commission action on orbital debris. Having spent considerable time studying the subject, I'm pleased that the Commission is finally taking the next step to establish firmer expectations regarding orbital debris mitigation – and hopefully elimination – by satellite providers. In essence, this item isn't glitzy or glamorous, but represents the real workhorse for our meeting today.

To recognize the importance of addressing orbital debris, we all need to understand the problem at hand. According to estimates from the European Space Agency, there are 29,000 objects larger than 10 centimeters and a whopping 750,000 objects between one centimeter and 10 centimeters in various orbits today. To provide a visual perspective on the scope of existing orbital debris, I've borrowed (legally) a few pictures from NASA's Orbital Debris Program Office, provided below. According to NASA, these are computer-generated images of objects in Earth orbit that are currently being tracked. Each dot represents the current location of each item and is scaled according to the image size of the graphic to optimize visibility.

Any successful orbital debris policy will consist of many parts, including modeling, measuring and observation, mitigation, remediation, and planning for orbital re-entry. Importantly, the Commission is not the lead governmental agency dealing with this issue, with both domestic and international entities containing far greater expertise and authority. Our primary role should be to ensure that current satellite providers are good stewards of their orbital and launch activities, to prevent exacerbation of the problem. This important work becomes more difficult when applicants are contemplating satellite constellations with thousands of satellites and multiple launches.

The item before us is a reasonable effort, and I thank the staff for their work. While I find some of the reporting proposals somewhat timid and the preventative ideas may be premature or uncooked, the Notice is in sufficient shape to start the appropriate and necessary conversation on orbital debris.

I appreciate that my colleagues agreed to add information about possible technologies being developed to retrieve orbital debris. While these may be in the early stages, to the extent the Commission is asking about retrieval mechanisms, we should make sure that we have a more complete picture of what is in the works and whether these options, and others, are viable. Proposed solutions involve such devices as harpoons, sails, nets, and others. Consider that just over this last weekend a launch occurred in New Zealand by Rocket Lab that is designed to minimize launch debris and includes an early version of a drag sail to capture and deorbit problematic space junk.

In all, this is a good item on a vital issue. Accordingly, I vote to approve.





