

STATEMENT OF
ROBERT NELSON, CHIEF ENGINEER, INTERNATIONAL BUREAU,
FEDERAL COMMUNICATIONS COMMISSION,
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BEFORE THE SUBCOMMITTEE ON SPACE
U.S. House of Representatives

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Chairman Palazzo, Ranking Member Edwards, and Distinguished Members of the Subcommittee:

Thank you for inviting me to speak with you today about the FCC's role in orbital debris mitigation, and how we fit into the overall efforts of the United States government with respect to orbital debris.

The Communications Act of 1934, as amended

Under the Communications Act of 1934, the FCC is charged with licensing radio communications. Radio frequencies do not stop at national boundaries. The 1934 Act recognized this bit of physics, and so was drafted with the understanding that regulation would need to extend to transmissions that might originate outside the territorial boundaries of the United States.¹

At the same time, FCC licensing does not extend to U.S. Federal Government transmitters. Although private industry played a major role in developing satellite technology, in the earliest days of the space age, governmental missions and missions conducted by international intergovernmental organizations predominated. It did not take long, however, for commercial non-governmental activities to emerge. In 1973, the FCC licensed the first purely private U.S. communications satellite ventures, and the first such satellite began operations in the geosynchronous orbit in 1974, slightly more than forty years ago.

¹ Because the Communications Act of 1934, when it was promulgated, recognized that radio frequencies do not stop at national boundaries, the later development of the FCC's licensing of purely private satellites—which operate in space and therefore beyond national territory—did not require changes to the provisions of that Act. In contrast, the U.S. participation in the since privatized Inmarsat and Intelsat, which were overseen by an international intergovernmental organization, was the subject of the Communications Satellite Act of 1962, and various amendments to that law over the years.

FCC Licensing and Adoption of Debris Mitigation Regulations

FCC licensing and regulation are governed by a core principle of the Communications Act—that issuing a license requires a finding that the public interest will be served.

Concerns about orbital debris grew during the 1990s, and concurrently there was increasing interest in private commercial use of low-Earth orbit. Understanding of orbital debris grew, and the U.S. government, aided by the scientific and technical work of the National Aeronautics and Space Administration (NASA) and other agencies, developed guidelines for mitigating debris, and worked with other space-faring nations to improve debris mitigation practices.

Adoption of FCC Debris Mitigation Regulations

Recognizing these developments, in 2004, the FCC adopted debris mitigation regulations for the satellites services it licenses. The FCC concluded that debris mitigation rules would help preserve the United States' continued affordable access to space, the continued provision of reliable U.S. space-based services—including services for U.S. commercial, government, and homeland security purposes – as well as the continued safety of persons and property in space and on the surface of the Earth.

Even before these rules were adopted, FCC satellite licenses included as one of their terms the assignment of an orbital location. Then and now, deviation from that license term is a basis for enforcement action. The FCC licensing process also includes an opportunity for public comment, and this has sometimes resulted in objections to a proposed license modification based on collision risk. The debris mitigation rules added a requirement to describe debris mitigation plans. Specifically, the FCC rules require license applicants to describe steps taken to avoid accidental explosions, to identify and avoid collision risks, and to safely dispose of the satellite at the end of its mission. The FCC rules also include a requirement to dispose of geostationary satellites consistent with an International Telecommunication Union recommendation adopted in 2003, and a requirement that all satellites be left in a safe, “low energy” configuration through, for example, the venting of remaining fuels and pressurants.

The satellite applicant's plans are evaluated as part of the licensing process, and the FCC has in some circumstances conditioned licenses on modification of that plan, or worked with applicants prior to licensing in order to modify a plan.

When the FCC first proposed rules, one of the concerns raised by industry was that rules would handicap U.S. satellite operators, since foreign satellites could enjoy cost savings by following less stringent practices. For example, because disposal operations for a geostationary satellite require the use of the satellite's limited supply of fuel, holding in reserve the necessary amount of fuel for such operations can shorten by months the length of time the satellite can engage in revenue-generating operations. The FCC was able to address such concerns through the licensing process for the ground stations that non-U.S. satellite operators would need to access in order to serve the U.S. market, by conditioning the grant of a request to use a non-U.S. satellite to communicate with a U.S. ground station on the applicant providing the same information and assurances about the planned debris mitigation of the non-U.S. satellite as is required for a U.S.-

licensed satellite. As a result, the FCC rules apply to all satellites providing commercial service to the United States.

Relationship with other Federal government agencies.

The FCC is one of three agencies that license U.S. commercial activities in space, the other two being the Federal Aviation Administration (FAA) for launch and re-entry activities, and the National Oceanic and Atmospheric Administration (NOAA) for remote sensing. Consistent with long-established radio-frequency management processes, the FCC is the licensing authority for radio-frequency use by private launch vehicles and remote sensing satellites.

When the FCC adopted regulations in this area, it recognized the FAA's statutory role under the Commercial Space Launch Act, and the FCC recently reiterated that it would not apply its debris mitigation rules to commercial space transportation activities that are subject to FAA regulation. The FCC also recognized NOAA's statutory role concerning post-mission disposal of the remote sensing satellites it licenses. Consequently, the FCC neither requires information concerning disposal of those satellites nor makes any determinations concerning such disposal.

Although the FCC licensing process is independent from the NOAA and FAA processes, the FCC consults with the other licensing agencies as needed. Consultation is often related to status of particular cases and the progress of licensing activities. The FCC, NOAA and FAA also consult from time to time on particular policy issues. The FAA includes the FCC in its policy review process for commercial launches, and this has been helpful in identifying situations in which satellites are being scheduled for launch but FCC licensing is not complete, particularly for the increasing number of small satellites that launch as secondary payloads.

In addition, the FCC's regulations and licensing depend heavily on the scientific and technical work done by NASA. In particular, the NASA Orbital Debris Program Office's standards, handbooks, and computer tools have been particularly useful in the FCC's activities, both to the Commission and to license applicants. Many license applicants use those materials in order to develop their debris mitigation plans for FCC approval. The FCC also consults with NASA on technical issues, related either to individual cases or to emerging policy issues.

The FCC and Debris Tracking

The FCC does not operate any of the tracking equipment, such as radars and telescopes, that are used to track orbital debris. Like much of the commercial satellite industry, the FCC has two main sources of satellite tracking data. One is the Joint Space Operations Center (JSpOC), which distributes information from the Space Surveillance Network. The other source, for tracking data about commercial satellites, is information from the satellite operators themselves, derived from their radio links with the satellites. The JSpOC's conjunction assessment program, and the JSpOC's interaction with the commercial satellite industry to provide warnings of potential satellite collisions, are an important element of an overall debris mitigation strategy. To be clear, though, data sharing between JSpOC and commercial operators is on a spacecraft operator-to-spacecraft operator basis. The FCC is not an intermediary in that process. The same is also true of work by commercial operators to improve their situational awareness by pooling

satellite position data through cooperative arrangements, for example through the Space Data Association.

Conclusion

In conclusion, I thank the Committee for this opportunity to describe the FCC's rules concerning orbital debris mitigation, the source of the FCC's authority for those rules, and the FCC's interaction with other federal government agencies concerning this important issue.