

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Allocation of Spectrum for Non-Federal Space Launch Operations)	ET Docket No. 13-115
)	
Amendment of Part 2 of the Commission’s Rules for Federal Earth Stations Communicating with Non-Federal Fixed Satellite Service Space Stations; and)	RM 11341
)	
Federal Space Station Use of the 399.9 – 400.05 MHz Band)	

REPLY COMMENTS OF THE CONSORTIUM FOR THE EXECUTION OF RENDEZVOUS AND SERVICING OPERATIONS

The Consortium for the Execution of Rendezvous and Servicing Operations (CONFERS)¹ is pleased to provide this Reply to address the Commission’s above-captioned *Further Notice of Proposed Rulemaking*.² Through this rulemaking, the Commission has created a valuable opportunity to discuss an important and growing aspect of the commercial space services market: on-orbit activities.

The commercial space industry is rapidly maturing—what is currently a billion-dollar industry is projected to generate more than \$1 trillion in revenue by 2040.³ What was once fiction is quickly becoming

¹ CONFERS is an industry-led initiative that strives to create non-binding, consensus-derived technical and operational standards for on-orbit servicing (OOS) and rendezvous and proximity operations (RPO) from best practices of industry and government. *The Consortium for Execution of Rendezvous and Servicing Operations (CONFERS)*, CONFERS (2020), <https://www.satelliteconfers.org/about-us/>.

² *Allocation of Spectrum for Non-Federal Space Launch Operators; Amendment of Part 2 of the Commission’s Rules for Federal Earth Stations Communicating with Non-Federal Fixed Satellite Service Space Stations; and Federal Space Station Use of the 399.9-400.05 MHz Band*, Report and Order and Further Notice of Proposed Rulemaking, ET Docket No. 13-115, RM-11341 (released Apr. 22, 2021) (*hereinafter* “Launch Spectrum FNPRM”).

³ *See Space: Investing in the Final Frontier*, MORGAN STANLEY (July 24, 2020), <https://www.morganstanley.com/ideas/investing-in-space>.

reality: from construction of commercial space habitats⁴ to signed commercial contracts for the creation of a Lunar Gateway⁵ and demonstration of active debris removal,⁶ humanity continues to boldly go. Vital to these new missions and furtherance of the commercial space economy will be the ability to rendezvous and service in space.

On-orbit servicing will be leveraged to create new space possibilities, as well as to protect current space assets.⁷ Increasingly pressing, as the number of space objects grows, so too does the risk of collision and a positive-feedback loop of runaway debris creation.⁸ Rendezvous and servicing operations will support sustainable space. Through on-orbit servicing (OOS) and rendezvous and proximity operations (RPO), debris can be inspected, captured, and removed. On-orbit servicing is the capability of the future—enabling sustainable space stewardship, as well as complex multi-object interactions and rendezvous.

There is an immediate need for conversation about spectrum management and allocation practices for on-orbit servicing. As commercial OOS and RPO missions mature into a routine part of space activities, safe OOS and RPO operations will require attention to spectrum access. Currently, there is no specific spectrum allocation for OOS and RPO operations. If the Commission wishes to support these nascent space service economies, definitive access to spectrum is needed.⁹

Beyond the technical need for spectrum access to support OOS and RPO, complementary regulatory modernization is also needed. This proceeding itself has highlighted the inability of current

⁴ See Mariam Kramer, *Companies Race to Design Private Space Stations Before ISS Goes Offline*, Axios (Apr. 3, 2021), <https://www.axios.com/nasa-private-space-stations-399a9bf8-f97e-42c9-8586-79d172f86264.html>.

⁵ Kelli Mars, *Gateway*, NASA (Aug. 19, 2021), <https://www.nasa.gov/gateway/overview>.

⁶ Samantha Mathewson, *Tiny Astroscale Satellite Will Test Space Junk Cleanup Tech with Magnets*, SPACE (Apr. 8, 2021), <https://www.space.com/astroscale-launches-space-junk-cleanup-mission>.

⁷ See Comments of Astroscale U.S. Inc., Axiom Space Inc., Atomos Space, Sierra Space Corp., and Scout Inc., IB Docket No. 13-115, at 2-3, 4 (Aug. 11, 2021) (discussing the different on-orbit services being developed, including GEO life extension, LEO debris removal, and orbital inspection).

⁸ Judy Corbett, *Micrometeoroids and Orbital Debris (MMDO)*, NASA (June 14, 2016), https://www.nasa.gov/centers/wstf/site_tour/remote_hypervelocity_test_laboratory/micrometeoroid_and_orbital_debris.html (“Once collisional cascading begins, the risk to satellites and spacecraft increases until the orbit is no longer usable. Kessler proposed it would take 30 to 40 years for such a threshold to be reached and today, some experts think we are already at critical mass in low-Earth orbit at about 560 to 620 miles (900 to 1,000 kilometers).”).

⁹ See, e.g., Comments of the National Telecommunications and Information Administration, IB Docket No. 13-115, at 5 (Sept. 1, 2021) (noting that “[t]he expectations for continued growth in the spectrum needs of the commercial space industry...and its understandable need for stable and reliable spectrum access prompt NTIA to urge the Commission...to focus on identifying...bands.”) (“NTIA Comment”).

regulations to sufficiently delineate between a launch and on-orbit activity when complex services are offered.¹⁰ CONFERS suggests that the Commission open a Notice of Proposed Rulemaking to investigate regulatory modernization and spectrum allocation necessitated by the growth of OOS and RPO economies. A new rulemaking will allow the Commission to collect empirical data and other substantive inputs. Further, taking these actions now will allow the Commission to preemptively support a new commercial space enterprise rather than feverishly working to fit OOS and RPO licenses into a system designed for a previous space age.

CONFERS thanks the Commission for its service, and for the opportunity to highlight the great benefit that adapting the regulatory environment to empower on-orbit servicing will have.

Respectfully submitted,

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¹⁰ See, e.g., FNPRM at ¶ 145 (questioning whether space-to-space communications could be authorized as part of a launch vehicle license); see also NTIA Comment at NASA Comments on FNPRM, Enclosure, p. 3 (stating that payload communications are not a part of the launch sequence of events).