

June 6, 2022

Mr. Justin Moore
Head of Space and Science
Ofcom
Riverside House
2A Southwark Bridge Road
London SE1 9HA
UK

**Subject: Enabling Spectrum Access For On-Orbit-Servicing (OOS)
 Response to Ofcom Space Spectrum Strategy & Related ITU WRC-2023 Matters**

Dear Mr. Moore,

The Consortium for the Execution of Rendezvous and Servicing (CONFERS)¹ is pleased to provide this comment into Ofcom’s consultation on its Space Spectrum Strategy published in March 2022. We regret this delayed submission but we would like to generally support the comments provided to Ofcom in regard to spectrum provisioning for OOS space systems by Global Satellite Operators Association (GSOA), ClearSpace, and Astroscale Ltd.

OOS includes diverse activities such as the transportation and repair of spacecraft in orbit, the refuelling and life extension of spacecraft, and assisted disposal services, including active debris removal (ADR)². This last one is a key activity to address growing threats from space debris and limit collision risk.

The commercial space industry is rapidly maturing – what is currently a USD \$400 billion-dollar industry is projected to generate more than USD \$1 trillion in revenue by 2040.³ To support the increased number of satellites placed into orbit and ensure the continuity of critical space-based services, a wide variety of on-orbit services are being proposed and starting to be offered – including by CONFERS member companies. Subsequently, the OOS market is currently projected to have USD \$14.3 billion in revenue cumulatively to 2031.⁴

On-orbit servicing will be leveraged to create new space possibilities, as well as to protect current space assets. 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. Rendezvous and servicing operations will support sustainable space. Through OOS and rendezvous and proximity operations

¹ CONFERS is an industry-led initiative comprised currently of over 55 member companies that strive 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>, member list can be found at: <https://www.satelliteconfers.org/members/>

² See CONFERS On-Orbit Servicing Mission Phases: https://www.satelliteconfers.org/wp-content/uploads/2019/10/OOS_Mission_Phases.pdf

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

⁴ See <https://www.nsr.com/nsrs-in-orbit-services-report-projects-14-3-billion-in-revenues-as-non-geo-constellations-grow-demand/>

(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 Ofcom wishes to support these nascent space service economies, definitive access to spectrum is needed.

We agree with ClearSpace that, *“The licensing process at the national level and the filing process at the ITU level should consider the peculiarity of IOS, with missions spanning various orbital regimes, having short periods with critical communications needs, and servicing different client objects. These processes should make sure missions that support safe and sustainable operations have assured spectrum access...”*⁵

CONFERS also strongly supports the comments of GSOA, *“Concerning IOS, in the next 2-4 years, Non-GEO IOS space systems will be launched ...to enable space debris removal. GSOA believes an important area to be progressed by Ofcom is enabling early regulatory action at national and ITU level (at WRC-23) to facilitate reliable TT&C frequency access for such Non-GEO IOS space systems. GSOA welcomes that Ofcom have submitted initial documents on this topic to the CEPT ECC in mid 2021 and to CEPT CPG PTB later in 2021; further timely pro-active action by Ofcom in this regard would be welcomed.”*⁶

CONFERS also welcomes that the recent meeting of ITU-R WP-4A (May 2022) took a decision to accommodate in its work plan activities to develop approaches for addressing the TT&C spectrum needs of OOS space systems at ITU WRC-2023 under its agenda item 7. CONFERS would encourage Ofcom to take pro-active steps in the relevant ongoing ITU-R WRC-2023 preparatory processes.

CONFERS believes that an assured and efficient pathway to secure access, including by relevant pro-active timely action at ITU WRC-2023, to TT&C frequencies for OOS missions is an enabler for a reliable, sustainable, and thriving space industry which also promotes the sustainable use of the space environment.

Yours Sincerely,

/signed/

Brian Weeden, Ph.D.
CONFERS Executive Director
Consortium for the Execution of Rendezvous and Servicing
315 Sigma Drive Summerville, SC 29486

⁵ See ClearSpace submission to Ofcom regarding this consultation, 1 June 2022.

⁶ See GSOA submission to Ofcom regarding this consultation, 24 May 2022.