

**Canadian Statement**  
**Agenda Item 8 – Space Debris**  
**delivered by: Jordan Miller, CSA**

Committee on the Peaceful Uses of Outer Space  
Scientific and Technical Subcommittee  
Fifty-seventh Session, Vienna, Feb 3-14, 2020

Merci Madame la Présidente,

As this is the first time I take the floor, I congratulate and wish you the very best in your new role as the chairperson of this Committee. We also welcome Dominican Republic, Rwanda and Singapore as new members to the Committee.

Madame Chair,

Addressing space debris is critically important to the long-term sustainability of space operations. International collaboration remains essential to ensure the coordination of operational best practices, mitigation strategies, and space debris research activities. In this regard, the Scientific and Technical Subcommittee plays an important role by promoting dialogue, information sharing and cooperation to move towards tangible solutions and practical recommendations for action.

Madame Chair, distinguished delegates,

Canada applauds the recognition, by the United Nations, of COPUOS' approval of the Guidelines for the Long-Term Sustainability of Outer Space Activities and has begun the process of evaluating its current level of implementation and identifying ways of increasing compliance. Canada looks forward to reporting on its implementation of the Guidelines and learning best practices from other Member States.

Canada would also like to thank the United Nations Office of Outer Space Affairs for continuing to maintain the compendium of space debris mitigation standards, initially developed by Canada, the Czech Republic and Germany. As the space-debris environment becomes more complex with the advent of mega-constellations and with the added input from improved sensor technologies, best practices in mitigation will ultimately evolve. We urge all nations to continue to routinely review and update the compendium as necessary to help promote transparency and spaceflight safety.

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Continuous, high-precision tracking of resident space objects is essential to ensuring the safety of all operational space assets. Satellite operators around the world, including those in Canada, depend on the high quality conjunction data messages, shared by the United States Combined Space Operations Centre to support the analysis of close approaches in space. This timely and relevant information helps to assure that appropriate operational mitigation strategies are used to avoid collisions in space. We thank the United States for their continued leadership in this area.

Canada supports the surveillance of space objects with two key national space assets – Sapphire and NEOSSAT. Since 2013, the Canadian satellite, Sapphire, operated by the Canadian Department of National Defense, has been tracking man-made space objects in medium and high Earth orbit on a 24-hour basis. Sapphire currently contributes 2000-3000 metric observations per day on deep-space objects to the larger US-led Space Surveillance Network (SSN), contributing to the safety of space objects in Earth’s orbits.

Madame Chair, distinguished delegates,

“The Surveillance of Space 2 project”, the follow-on to Sapphire, is in the initial planning stages at the Department of National Defence. This capability will continue to provide tracking data to the SSN. The project includes plans to develop a new space-based sensor designed to detect smaller debris objects in geosynchronous orbits in a more responsive manner than Sapphire. It may also include, two or more, ground-based optical tracking facilities developed and deployed within Canada as risk mitigation for the space-based system.

In addition, Canada continues to advance space situational awareness Research and Development using Near-Earth Object Surveillance Satellite (NEOSSat), the Canadian microsatellite launched in 2013 to sun-synchronous low-Earth orbit (LEO) with a dual mission supporting both space astronomy and space surveillance. Capable of maintaining near continuous tracking of man-made objects in geostationary orbit even at low solar elongations, NEOSSat now also routinely performs LEO-to-LEO tracking, a unique capability in the field.

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The success of NEOSat has also prompted a follow-up Space Situational Awareness (SSA) microsatellite project, which should, in a few years, provide another platform from which advanced space-based space surveillance research, development and operations may be performed.

Madame Chair, distinguished delegates,

Space debris is an area where national and international collaboration is imperative to ensure a common understanding of existing threats and to maximize resources invested in these areas. In particular, satellite operators, working to deliver mission results, need to continue to work together for the benefit of all.

In this regard, The Canadian Space Agency (CSA) organized and hosted the OECD Economics of Space Debris Workshop in collaboration with the OECD and NASA to explore issues related to the tragedy of the commons; the current state of the space environment; risk mitigation cost; managing space debris in the future – costs and opportunities; and policy and law decisions – all informed by economic indicators. The report will be published very shortly on the OECD website. This first of its kind event, along with others such as the Inter Agency Debris Coordination Committee (IADC) and International Orbital Debris (IOD) Conference remain key for the continuous improvement in processes and procedures for satellite operators in managing close approaches.

The operational community will need to continue to evolve and adapt in the coming years, as the number of space assets continues to grow, new tracking systems come online with the ability to track smaller debris objects, and new propulsion technologies become more widespread. Continued technical and policy coordination within the international community will be essential to ensuring the long-term sustainability of space operations.

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While the immediate focus remains on understanding and mitigating the risk from close approaches, Canada has invested in research and technology development related to on-orbit satellite servicing and space debris removal in low-Earth orbit. The IADC and others have identified this as necessary to reduce risks in the most crowded orbital regimes. With world-class and flight-proven capabilities in laser ranging, rendezvous, docking, robotics, satellite servicing and deployable drag sails, Canadian industry appears to be well positioned technologically for orbital debris removal. However, this technology is not without its risks. It will be important for the international community to work together to identify and reduce the barriers and risks for feasible orbital debris removal missions. Increased international understandings on the appropriate framework for these missions will be essential to ensuring that they can make positive, transparent contributions to the sustainment of the space environment. To this end, Canada applauds the work of CONFERS towards the development of best practices for these important space-sustainability missions.

Finally, Madame Chair, distinguished delegates,

Canada remains committed to working with industrial and international partners to reduce the risk of space debris for the sustainability of outer space now and for the future. Canada's licensing regime already requires all Canadian satellite operators to have a space debris mitigation plan for end of life, in compliance with the recommended guidelines.

The threat posed to our satellites from an increasingly congested space environment is ever-present and at risk of growing. We must continue to work together to ensure we are collectively taking the right actions to reduce the threat of space debris. Thus, Canada continues to support the efforts of UN-COPUOS, its Scientific and Technical Committee, as well as those of the IADC and other technical forums dedicated to collaboration and information exchange on space-debris activities.

Thank you for your kind attention.