

Canadian Statement
Agenda Item 7 – Space Debris
Delivered by: Jordan Miller, Canadian Space Agency

Committee on the Peaceful Uses of Outer Space
Scientific and Technical Subcommittee
Fifty-eight Session, Vienna, April 19-30, 2021

Madame Chair,

Space debris presents a real and ongoing risk to space infrastructure. The space debris environment is constantly changing and needs to be continually and carefully monitored. Addressing space debris in that regard, is critically important to the safety and long-term sustainability of outer space. International collaboration, particularly through the Scientific and Technical Subcommittee, remains essential to ensure the coordination of operational best practices, mitigation strategies, and space debris research activities. The STSC continues to play an important role in promoting dialogue, information sharing and cooperation to move towards tangible solutions and practical recommendations for action.

Madame Chair, distinguished delegates,

In an effort keep pace with evolving best practices in debris mitigation, Canada urges all nations to continue to routinely review and update the compendium of space debris mitigation standards as necessary to help promote transparency and spaceflight safety. We thank the United Nations Office of Outer Space Affairs for continuing to maintain this important compendium, which helps promote dialogue, information sharing and cooperation.

Canada remains an active participant in the Inter-Agency Space Debris Coordination Committee (IADC), where technical work on space debris measurement, modeling, protection and mitigation continues to be coordinated amongst international partners. We encourage member States to apply the IADC Space Debris Mitigation Guidelines to national projects to minimize and mitigate the creation of space debris and press ahead with national implementation of the 21 Guidelines for the Long-Term Sustainability of Outer Space Activities. Canada looks forward to reporting on its implementation of the Guidelines and learning best practices from other States Members through discussions within the future working group on the long-term sustainability of outer space or LTS 2.0.

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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. Canada's Department of National Defense continues to operate Sapphire, a space-based Space Situational Awareness sensor, which contributes up to 3000 metric observations per day on deep-space objects to the larger US-led Space Surveillance Network (SSN) helping to maintain the safety of space objects in Earth orbit. Planning for the Surveillance of Space 2 project, the operational follow-on to Sapphire, is progressing well, and will continue to provide advanced space-based and ground-based tracking data to the SSN.

In addition, Canada continues to operate the Near-Earth Object Surveillance Satellite (NEOSSat), in support of advanced space situational awareness Research and Development. NEOSSat has been adapted to perform LEO-to-LEO (Low Earth Orbit) tracking, an innovative capability enabling NEOSSat to collect tracking data on space objects making close approaches or conjunctions, including objects conjuncting with NEOSSat itself. NEOSSat has made observations of recently launched and maneuvering objects in any orbit regime, such as tracking the approach of the first on-orbit servicing satellites – the Mission Extension Vehicle (MEV-1 and MEV-2) to their client satellites in geostationary orbit. Canada has also begun space-based observations of new orbital mega-constellation infrastructures to help better understand unique visual brightness phenomenology and space surveillance tracking needs.

Based on the success of NEOSSat, Canada is planning the development of a new Space Situational Awareness (SSA) microsatellite, the Multi-purpose Space Situational Awareness microsatellite (MSSSat), which will continue advanced SSA research, development and capability demonstration in LEO. Canada is pleased to invite you to a technical presentation on April 20 where we will share more exciting information with you on SSA advancements in space-based photometric measurements.

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Within the Canadian Space Agency's Satellite Operations Centre, Conjunction Risk Assessment and Mitigation System (CRAMS) continues to provide its users with invaluable analysis of conjunction data delivered by the United States 18th Space Control Squadron. The CRAMS reports are used by satellite operators and the Canadian Space Operations Centre (CANSpOC) to facilitate good decision-making and ensure the protection of space assets against space debris. Following additional requests from Canadian industry, academia and international partners, CRAMS now supports a total of 78 space assets both in LEO and Geostationary Orbit (GEO) and remains an essential space situational awareness tool for Canada.

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. 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 and working towards the establishment of an ISO Standard for these important space-sustainability missions.

Finally, Madame Chair, distinguished delegates,

Space debris is an area where national and international collaboration is imperative to ensure a common understanding of existing risks and to maximize resources invested in these areas. 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 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.