

Technology Roadmaps for Space Exploration (09)
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CSA ON-ORBIT ROBOTICS SERVICING ROADMAP – OVERVIEW AND APPLICATION
HIGHLIGHTS

Abstract

This paper presents the On-Orbit Robotic Servicing (ORS) roadmap under development at CSA, which aims to ensure Canada is well positioned to make strategic space robotics contributions to future international space exploration initiatives, and to advance the technology and operational readiness levels of ORS for CSA. The rationale, importance and scope of On-Orbit Robotic Servicing is briefly described along with a snapshot of past, present and potential international ORS missions spanning: technology demonstrations, satellite servicing, human spaceflight, orbital debris removal, and commercial spin-off applications. The Design Reference Missions in Earth and Lagrange Point orbits that were used as drivers to identify the ORS technology and functionality gaps are summarized before presenting the resulting roadmap and the target TRL progressions. Finally, current CSA terrestrial and ISS-based activities on the Roadmap are presented along with their potential application to future exploration missions.