

SPACE DEBRIS SYMPOSIUM (A6)

Political, Economic and Institutional Aspects of Space Debris Mitigation and Removal (Joint with Space Security Committee) (6)

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COMMERCIAL ON-ORBIT SATELLITE SERVICING AND ACTIVE DEBRIS REMOVAL: POLICY
CONSIDERATIONS RAISED BY INDUSTRY PLANS

Abstract

The international community is beginning to recognize the need to actively remove space debris in parts of both low Earth orbit and geosynchronous orbit. However, technological and economic factors have long posed obstacles to performing debris removal.

That situation may soon change. Several commercial entities are developing servicing programs that could enable debris removal in ways previously though unfeasible. For example, in the spring of 2011, two commercial space actors, MacDonald, Dettwiler and Associates (MDA) and Intelsat, announced plans to develop an on-orbit servicing capability that, if evolved, could be used to remove debris. These and other servicing capabilities developed for missions to commercial satellites are among the most promising means to performing future debris removal.

On-orbit servicing capabilities with debris removal potential will co-evolve with their policy, legal, and regulatory environment. Plans announced by companies such as MDA and Intelsat are among the first to raise concrete policy considerations for decisions makers in national governments and international fora. Others are prepared to follow. The policy choices of national governments, acting either individually or in concert, will determine whether a commercial servicing industry develops in the first place and will affect whether and how easily commercial servicing capabilities could be used to remove space debris in the future. Factoring debris removal goals into policy responses today will ensure that the policy environment is supportive of using industry's servicing capabilities toward this end tomorrow.

This paper begins by describing what is commercial on-orbit servicing and its potential to serve debris removal goals. It then examines recent and proposed efforts at developing commercial servicing capabilities from technical and business perspectives. In the second part of the paper, we discuss the national and international policy implications and choices that will shape whether and how a viable commercial servicing industry develops and whether and how easily it could pursue debris removal.

This paper is based on original research, including extensive interviews with space debris and satellite servicing experts in government, industry, and academia in Canada, Germany, and the United States.