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Joint Small Satellite/Space Debris Session to Promote the Long-Term Sustainability of Space (10-B4.10)

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RESPONSIBLE SATELLITE DESIGN AND OPERATIONAL PRACTICES: A CRITICAL  
COMPONENT OF EFFECTIVE SPACE ENVIRONMENT MANAGEMENT (SEM)

**Abstract**

Today there are about 2,000 active satellites orbiting the Earth, and rapidly declining costs to access space are paving the way for many new players to propose satellite deployments in unprecedented numbers that could increase this number by ten-fold. Space-based global communications, remote sensing, and a host of novel services promise new opportunities for economic development, global education, rural healthcare, location-based services, and advancements in environmental science. However, the success of these initiatives (and the long-term sustainability of low-Earth-orbit (LEO) activities in general) is dependent on our ability as a global community to avoid a tragedy of the commons in space.

NASA drafted the first debris mitigation standards in 1995, and other expert organizations such as the Inter-Agency Space Debris Coordination Committee (IADC), the International Organization for Standardization (ISO), and the European Space Agency (ESA), have since built on this foundational work in publishing their own statements on the topic. None of these, however, had any way to anticipate the tremendous scale of current and proposed satellite activities resulting from the proliferation of small satellites and introduction of large constellations.

It is therefore urgent that we adopt common-sense practices as one critical element of a comprehensive approach to Space Environment Management (SEM). The authors – OneWeb, Iridium, and Digitalglobe (a Maxar Technologies Company) – propose a number of imperatives and invite other industry stakeholders to join us in their promotion and implementation.