"Space debris risk and mitigation options"

"The population of space debris is ever-increasing. We'll discuss the current situation via informative video depictions and graphs, then examine options for protecting the fragile space environment and commercial activities which depend on space activities."



Daniel Oltrogge is the director of AGI's Center for Space Standards and Innovation (CSSI). Dan is Program Manager of the Space Data Center, providing space situational awareness and analysis support to a broad spectrum of space operators in the Space Data Association. Dan is a lead modeling, simulation and analysis analyst for AGI's Commercial Space Operations Center. Dan received a Bachelor's Degree in Aerospace Engineering from Iowa State University and a Master's Degree in Aerospace Engineering from the University of Southern California. Dan has authored over 100 technical papers and professional journal articles including the consensus

international standard on estimating orbit lifetime and two book chapters ("Small Satellite Mission Design and Operations" in <u>Small Satellites: Past, Present and Future</u>, and <u>"</u>Collision Avoidance and Radio Frequency Interference" in <u>Space Systems Modeling and Simulation</u>). Dan is an active participant in the International Standards Organization, where he will become Head of the American Delegation for ISO TC20/SC14 Technical Advisory Group and where he also is the ISO observer to UN COPUOS meetings. Dan actively participates in American Institute of Aeronautics and Astronautics, American Astronautical Society, the International Academy of Astronautics' Committee on Space Debris. Dan authors international standards for the Consultative Committee for Space Data Systems; within the Navigation Working Group, Dan is lead author of the Orbit Data Message for sharing orbital and satellite information. Dan led the development of the nation's first probabilitybased launch and on-orbit collision avoidance system (Collision Vision), which also incorporated RFI analysis capabilities as well. Dan's areas of emphasis include orbital debris mitigation, orbital data exchange, nanosatellites, constellation design, RF interference mitigation, launch and early orbit operations, international space operations and debris mitigation standards development, space situational awareness and astrodynamics analysis.