BUSINESS INNOVATION SYMPOSIUM (E6)
New Space Industry Applications (3)

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THE BUSINESS CASE FOR DELIVERING BROADBAND TO ANTARCTICA USING MICRO-SATELLITES

Abstract

Communications in the Antarctic region is heavily constrained by the harsh environment, and the low population density has made the deployment of a high speed digital communications systems infeasible to date. The Antarctic Broadband consortium has investigated the business case for a minimalist broadband network based on low-cost micro-satellite platforms. End users in Antarctica have only a few usage scenarios, however they are quite divergent in terms of performance and value, including high reliability voice communications, low-speed remote monitoring and control of equipment, high volume data backhaul and "morale boosting" activities such as downloading videos and web surfing. The market is further complicated by the dominance of national research programs with often obscure decision-making and budgeting processes. On the supply side, a number of geostationary satellites are providing services to Antarctic bases on the edge of the continent, where they are visible on the horizon and usually at the edge of their beam patten. This results in large variations in the current price and quality of internet connectivity, making the business case for Antarctic Broadband overly complex and difficult to close on a commercial basis. This paper highlights the key features of micro-satellite system as it has matured through the design process, describes the challenges faced by prospective commercial operators in this market niche, and presents options for delivering Antarctic Broadband as an operational system.