

SYMPOSIUM ON STEPPING STONES TO THE FUTURE: STRATEGIES, ARCHITECTURES,
CONCEPTS AND TECHNOLOGIES (D3)

Novel Concepts and Technologies for the Exploration and Utilization of Space (2)

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ON-ORBIT SERVICING OF A GEOSTATIONARY SATELLITE FLEET - OLEV AS A NOVEL
CONCEPT FOR FUTURE TELECOMMUNICATION SERVICES

Abstract

Orbital Satellite Services AB (OSS AB) is a satellite servicing company that is developing an Orbit Life Extension Vehicle (OLEV) to extend the operational lifetime of 3 axis stabilised geostationary satellites and to serve as a fleet management system for geostationary satellites. The industrial consortium of SSC (Sweden), KAYSER-THREDE (Germany) and SENER (Spain), also shareholders of OSS AB, is in charge of the development and industrialization the space and ground segment of this system. It is a commercial program with some national co-funding support during the development phase to cope with the high non-recurring costs.

The business plan is based on the reduction of transponder costs through life extension of high value commercial satellites that have generally been amortised and providing the satellite operators with a fleet management tool, mainly to perform slot transfers, continuation of operations of satellites suffering from major anomalies in the propulsion and attitude subsystems, gap filling to protect the services against failure or delay of replacement satellites, to provide in-orbit spare and in-orbit backup, to recover nominal SK windows for satellites left in inclined orbits close to end-of-life and to analyse and validate new markets at low transponder prices limiting the risks of investments. The OLEV spacecraft will be able to dock and undock up to five times with geostationary satellites and uses an electrical propulsion system to extend their life by taking over the attitude control and station keeping functions.

EUTELSAT will be the launching customer for the program and has defined a deployment scenario for OLEV. With the program to be started in the second quarter of 2009 the paper will present details of the development program, the planning of the first mission and elements of the OLEV business plan. The mission goals from the customer point of view shall be presented to show the advantages of such a novel tool to enhance the management capabilities of a fleet of geostationary satellites.