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THE HEINRICH HERTZ SATELLITE

Abstract

In July 2017 the contract for the Phase C/D of the German national telecommunication mission Heinrich Hertz was awarded to OHB System AG. The objective of the mission is twofold: On the one hand a total of 11 new equipment for telecommunication satellites will receive their first flight on Heinrich Hertz; on the other hand a variety of novel communication experiments will be conducted with the Heinrich Hertz payloads. With this mission Germany aims at consolidating their leading role in today's satellite telecommunication industry. The mission will be conducted in geostationary orbit with a projected lifetime of 15 years and a launch scheduled for end of 2021.

The OHB SmallGEO platform has been selected for the mission and thereby becomes the 4th SmallGEO telecommunication contract after the ESA missions H36W-1, EDRS-C and Electra. Compared to its predecessors H36W-1 and EDRS-C the Heinrich Hertz mission provides new and stronger demands for accommodation space, antenna configuration, mass and operational flexibility. The SmallGEO for the Heinrich Hertz mission now accommodates a total of eight reflector antennas; has improved the payload accommodation space and includes a hybrid propulsion system using the novel High-Efficiency Multistage Plasma Thruster as the primary thruster for North/South Station Keeping. Furthermore the platform design is adapted to the OHB concept for distributed avionics with an on-board computer a number of flexible remote terminal units interfacing with the satellite equipment.

This paper presents an overview of the current design status of the Heinrich Hertz satellite followed by descriptions of a selected number of modifications introduced to the SmallGEO satellite platform to improve its overall competitiveness in general and to accommodate the Heinrich Hertz mission.