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TET-BASED SMALL SATELLITE FAMILY CONCEPT

Abstract

After several delays the TET-1 launch is now scheduled for May 15th 2012 from the Baikonur cosmodrome. The TET-1 mission is a national program funded by the German Space Agency. The goal of TET is the support of German industry and research institutes with the On-Orbit Verification (OOV) of new and innovative satellite technologies. For this purpose regular and reliable flight opportunities shall be offered which can be realized on short notice. In total, 11 different payloads were selected to be demonstrated on TET-1. These include optical experiments such as an infrared camera as well as novel solar cells, batteries, on-board computers, GPS receivers and a propulsion system. Finally, TET with its new standardized bus and modular payload supply system shall also serve as standardized platform for On-Orbit-Verification purposes in the future. The payload compartment is large enough to accommodate even complex experiments (or EO-payloads), and the bus performance is powerful enough to provide challenging mission requirements, too, as it will be demonstrated for the IR-payload onboard TET-1.

Based on the TET-1 heritage Kayser-Threde together with its industrial partners has entered in two national follow-up programmes which are TET-2 with the same mission purpose as for TET-1 and the client satellite for the German OOS-mission DEOS. The idea is to derive to a small satellite family concept from 120 kg up to 350 kg with a maximum recurring concept for the platform subsystems.

In preparation of the European ministerial conference end of 2012 defining the next European space programmes, several ideas are under investigation for European application of TET-based small satellite missions. Examples are coming from the area EO, SSA and IOD.

The paper will present impressions and results from the TET-1 launch campaign, LEOP commission phase, outline the two national programme activities and will provide an outlook of the planned ESA applications.