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CEPHEUS, A MULTI-PROJECT SATELLITE FOR TECHNOLOGY QUALIFICATION.

**Abstract**

The University of Seville (Spain) and Solar MEMS are participating in the project CEPHEUS, which purpose is the design, implementation and integration of the first testing low-cost satellite. The main objective of the project is to demonstrate the suitability of Cubesats as platforms for payloads experimentation in space. More in detail, a fuel cell, a star tracker, a radio transceiver and an advance attitude control will be tested in this first mission. According to ESA criteria, in flight performance is the highest level of qualification for space products. For this reason, there is an increasing demand for in-flight services to accommodate new devices and systems for their validation. During the last years the low cost and scalability of Cubesats have made possible a dedicated single payload service for developers, optimizing system utilization and customizing mission-specific platforms. Lower TRL payloads can be accepted by the Cubesat, increasing the potential return for developers by providing on-orbit performance data at an earlier stage in development. It is known that nanosatellites, and specially Cubesats, provide an economically feasible alternative for technology validation. So that Solar MEMS is offering dedicated payload slots for universities, research and technological centres or institutions, in the form of a Multi-Project Satellite (MPS). The idea is similar to the Multi-project Chip Wafer (MPW) in microelectronics, where the share of common costs involved in the manufacturing of several integrated circuits on a unique run drastically reduces its price. We offer low cost space transport for payloads to test and qualify electronics, including all the mission steps to place a payload in space: - Cubesat platform assembly fully compliant with ESA standards. - Payload integration with full support services. - Operational tests. - Launch. - Evaluation and qualification services.

The most outstanding feature of this validation process is the standardization of testing procedures, which facilitates the integration of payloads and also the validation results.

Our experience and heritage in the space industry allows Solar MEMS to put scientific payloads in orbit, providing a technology demonstration test bed at affordable prices. The integration of payloads in a

proven quality platform, based in a rapid development approach, provides a flexible solution for technology validation and dramatically reduces the cost of space transportation, opening new opportunities and markets.

Further details of the mission, platform and payloads will be presented in this contribution, together with a presentation of future qualification missions.