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PROBA-NEXT: A STANDARD IN SMALL SATELLITES

Abstract

In view of the increasing demand for small satellite missions, QinetiQ Space has developed a number of small satellite missions in close collaboration with ESA. PROBA-1, which started as a technology demonstration mission for on-board autonomy, is currently still an operational Earth observation mission, which is used by thousands of scientists around the world. With its 13 years of in-orbit operations, it has exceeded by far the original 1 year imposed mission lifetime. PROBA-2 was again started as a technology demonstrator, but is currently operated in ESA's SSA program and provides valuable space weather data on a continuous basis. The latest satellite that was launched by QinetiQ Space is PROBA-V. This mission was developed as an operational Earth observation mission to provide data continuity in vegetation data, which were previously delivered by CNES' SPOT 4 and SPOT 5. All three mission have shown the great potential that small satellite missions have.

Following the successes of the PROBA missions, QinetiQ Space and ESA have started an activity to develop the next generation of PROBA satellites: the PROBA-NEXT platform. The new developments are made with 1 main goal in mind: making the platform suitable for a multitude of missions for a commercially attractive price. The developments are focused on the high performance core element of the satellite, which is complemented by mission specific elements and which can carry a variety of payloads. The envisaged approach, based on modularity and standardization, shall also lead to a reduced development time.

This paper will describe the PROBA-NEXT core bus, the possible mission specific elements and the envisaged performance specifications for the satellite.