SPACE SYSTEMS SYMPOSIUM (D1)
Space Systems Architectures (4)

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PROBA-3 MISSION: HOW MULTINATIONAL COOPERATIVE PROJECTS CAN OPEN UP SPACE TO NEW ACTORS

Abstract

The ESA's Proba-3 is the world's first precision formation flying space mission. Two satellites, launched by the end of 2018, will fly together as a "large rigid structure" of 150 m long or more maintaining millimeter and arc second relative precision. And this will be achieved autonomously, without relying on guidance from the ground. In effect the paired satellites will be flying as a virtual giant satellite carrying an accurate coronagraph to study the Sun's faint corona closer to the solar rim than has ever before been achieved. Besides its scientific interest, the experiment will be a perfect instrument to measure the achievement of the precise positioning of the two spacecraft. Many other scientific applications to multi-satellite missions flying as one virtual structure are envisaged for the coming years: telescopes with longer focal lengths and baselines that are beyond what can be achieved with a single spacecraft; Earth observation; in-orbit satellite servicing; etc... A broad range of state-of-the art technologies will be necessary to make Proba-3 a success. A large number of companies across Europe are called upon to play a role in the mission, with Spanish SENER on the lead. As the ESA stated: "besides being a world first from a technological point of view, the Proba-3 mission will open up space for smaller Member States and small and medium sized businesses". The purpose of the presentation is twofold: to describe the technologies and challenges of Proba-3 Mission, and to show the opportunities that a multinational and cooperative project of this nature can offer to make space accessible and affordable to all countries.