



## **Small Explorer for Advanced Missions - cubesat for scientific mission**

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A class of nanosatellites is defined by the cubesat standard, primarily setting the interface to the launcher, which allows standardizing cubesat preparation and launch, thus making the projects more affordable. The majority of cubesats have been launched are demonstration or educational missions. For scientific and other advanced missions to fully realize the potential offered by the low cost nanosatellites, there are challenges related to limitations of the existing cubesat platforms and to the availability of small yet sufficiently sensitive sensors. The new project SEAM (Small Explorer for Advanced Missions) was selected for realization in frames of FP-7 European program to develop a set of improved critical subsystems and to construct a prototype nanosatellite in the 3U cubesat envelope for electromagnetic measurements in low Earth orbit. The SEAM consortium will develop and demonstrate in flight for the first time the concept of an electromagnetically clean nanosatellite with precision attitude determination, flexible autonomous data acquisition system, high-bandwidth telemetry and an integrated solution for ground control and data handling. As the first demonstration, the satellite is planned to perform the Space Weather (SW) mission using novel miniature electric and magnetic sensors, able to provide science-grade measurements. To enable sensitive magnetic measurements onboard, the sensors must be deployed on booms to bring them away from the spacecraft body. Also other thorough yet efficient procedures will be developed to provide electromagnetic cleanliness (EMC) of the spacecraft.

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