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GOMX-4B, THE MOST ADVANCE NANOSATELLITE FOR IOD PURPOSES

Abstract

After the success of GOMX-3, GomSpace has developed the next generation of nanosatellite platforms. The demonstration mission for these innovative advance nanosatellites is called GOMX-4 and it includes two similar satellites, the GOMX-4A for north area monitoring and the GOMX-4B for innovative payload demonstrations. They are integrated in the same satellite deployer to be launched by a LM-2D around mid-August 2017 and they implement similar system design with the same platform subsystems. Even with different payloads and mission goals, the two satellites will work together using an Inter-Satellite Link to optimize their capabilities to share data and to transmit it to ground.

GOMX-4B is funded by ESA and it has been designed to be the most advanced CubeSat for IOD. It is based on the innovative and flexible 6U platform from GomSpace and it shall demonstrate the operations of 6 payloads on-board. The main payloads are a 6U propulsion module from NanoSpace, the innovative S-band Inter-Satellite Link (ISL) from GomSpace and the High Speed Link (HSL) from GomSpace with high data rate capacities. Additionally, this satellite accommodates the Radiation Harness Assurance Board, called Chimera, developed by ESA to evaluate the behavior in Space of different ceramic memories and two new optical devices, the HyperScout Hyperspectral Camera from Cosine and a Star Tracker developed by ISIS.

The numerous in-orbit experiments included in GOMX-4B are possible thanks to the innovative GomSpace next generation platform. A wide variety of high performance subsystems in a modular bus allow to achieve diverse experiments using several payloads with interface control and system protection above them.

Targeting a launch scheduled for the 16th August, the LEOP phase and first flight data of this mission shall be presented in addition to the mission design. The in-orbit results of this mission shall pioneer the advanced uses of nanosatellites. Based on this flight data, GomSpace will scale the concept to larger platforms and operate advanced constellations with high reliability communication and optical payloads.