

STARTED AT: April 2023

NAME OF THE PROJECT: Hellenic Space Dawn - *Greek CubeSats in-orbit validation projects*

SHORT NAME: Hellenic Space Dawn

PROGRAM: ESA ITT AO/1-11498/22/UK/ND

DURATION: 18 months



SUMMARY: The *Hellenic Space Dawn* (HSD) project is a multiple CubeSat mission to capture Earth Observation imagery that supports cartography, agriculture, forestry mapping and land use monitoring. The *Hellenic Space Dawn* is part of the wider Greek National Satellite Space Project, which is the first ambitious step of the country aiming to enhance Greece's capabilities in satellite technologies and applications, and to empower the country to produce and exchange satellite data. The wider project includes Seven CubeSat missions that demonstrate a variety of services including connectivity and secure communications. The CubeSats are being developed by small and medium-sized companies and universities in Greece, following an open call and selection by ESA.

Within the framework of the in the framework of the *Hellenic Space Dawn* project (ESA ITT AO/1-11498/22/UK/ND), Geosystems Hellas (GSH) together with EMTECH Space PC, Integrated Systems Development SA, HERON Engineering, LEO Space Photonics, the Aristotle University of Thessaloniki, the Hellenic Naval Academy, and the National and Kapodistrian University of Athens, are creating the first Greek CubeSat twin constellation for Earth Observation (EO). The HSD project partners design, build, test, and will soon launch and operate the two HSD CubeSats (namely *Selene* and *Helios*). The twin 8U CubeSats will carry high resolution. Remote Sensing imaging instruments (4Mpx, RGB, ~17m GSD), and will offer multiple daily revisit as well as nighttime acquisitions. The HSD experiment also includes experimental on-board EO processing capabilities (vessel detection, image compression etc), taking advantage of the on-board high-performance data processor, as well as optical downlink and inter-satellite communication.

Geosystems Hellas (GSH) is participating in the design and the technical specifications of the two CubeSats and is responsible for building and operating the Payload Data Ground Segment (PDGS) of the two satellites. The PDGS, being directly connected with the Mission Control System (MCS):

- a) will be able to perform satellite tasking for acquiring images over specific targets at user request,
- b) will pre-process the acquired satellite imagery to create EO products up to Level-1C, and
- c) will run routinely or on-demand processing of the received data for specific EO applications (mapping, change detection, object detection).

The imagery of the *Selene & Helios* is planned to be freely available and the HSD constellation is intended to become a Copernicus Contributing Mission. The HSD project has passed the design review phase, *Selene* and *Helios* are being assembled, and the MCS and PDGS are being prepared for launch and operation of the two satellites.



The project has received funding from the **ESA – European Space Agency**

CONTRACTOR:



SUBCONTRACTORS:



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