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IPN prepares for 4th stratospheric flight with NASA

- **The launch of the Experimental Module for the Iterative Design for Satellite Subsystems version 4 (EMIDSS-4) is expected to take place in August from the Fort Sumner base in New Mexico, United States.**
- **The instrument will carry a model of a Cubesat satellite and will monitor environmental variables in the stratosphere, such as air temperature, among others.**

By invitation of the National Aeronautics and Space Administration (NASA), the Instituto Politécnico Nacional (IPN) will participate in the FY23-FTS mission aboard the EMIDSS-4 module (Experimental Module for the Iterative Design for Satellite Subsystems version 4) to conduct operation tests of two new onboard computers.

Monitoring of stratospheric environmental variables such as air temperature, humidity, magnetic field, and pressure will be carried out, as well as the installation of a Cubesat-like satellite model that will contain solar panels and will be developed using 3D printing.

The platform is expected to be launched from the Fort Sumner base in New Mexico, United States, in the first half of August, with a planned duration of six hours and an altitude of 34 km.

Mario Alberto Mendoza Bárcenas, a researcher at the Center for Aerospace Development and project leader, reported that recently, after a rigorous process of review and technical evaluation of the proposal, they received a formal invitation from NASA to participate with the EMIDSS-4 in the fall campaign of the agency's Scientific Balloon Program.

He added that this mission represents a new opportunity to continue conducting tests and trials with aerospace instrumentation designed and integrated in Mexico.

Particularly, in the development of computers for aerospace vehicles based on commercial-grade microcontrollers, which could be used in future on board scientific exploration and technological demonstration satellites.





The upcoming flight will involve experts led by IPN, the Institute of Applied Sciences and Technology of the National Autonomous University of Mexico (UNAM), and the Instituto Tecnológico y de Estudios Superiores de Occidente (ITESO).

Mendoza Bárcenas indicated that the results obtained from the EMIDSS-4 will reinforce the conceptual design of the instrumentation for the Tepeu-1 space mission promoted by IPN, as well as the Itesat-1 currently in the design phase at ITESO.

He also acknowledged the support of students and teachers from IPN and participating institutions, who enthusiastically collaborate in different tasks and activities of the aerospace project.

The researcher emphasized that they were once again chosen by NASA due to the results and evaluations obtained since the first suborbital flight in 2019, as they designed and developed the device based on the standards of the US space agency and it is linked to ongoing space projects.

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