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IPN prepares the third scientific balloon launch to the stratosphere with NASA

- **The U.S. space agency approved the participation of the EMIDSS-3 instrument, after rigorous technical and safety evaluations.**
- **The launch will take place from Fort Sumner, New Mexico, on August 14; It´s expected to reach an altitude of 34 km and a duration of 6 hours.**

For the third consecutive time, the Instituto Politécnico Nacional (IPN) will participate in the Scientific Balloon Program of the National Aeronautics and Space Administration (NASA) within the suborbital mission FY22-FTS, with the contribution of the EMIDSS-3 module, Experimental Module for the Iterative Design for Satellite Subsystems version 3.

It consists of an experimental flight into the stratosphere to monitor several atmospheric variables: air temperature, humidity, magnetic field, and atmospheric pressure. The launch of the module is scheduled for Sunday, August 14, at 4:00 a.m. Mexico City time.

The EMIDSS-3 module will evaluate the performance of two flight computers, as well as the efficiency of ultra-thin solar cells.

Mario Alberto Mendoza Bárcenas, the researcher at the Centro de Desarrollo Aeroespacial (CDA) of the Politécnico and leader of the project, informed us that the suborbital flight will take place from the base of Fort Sumner, in New Mexico, United States; it is expected to last six hours and reach an altitude of about 34 kilometers.

This is the third time that the IPN has been selected by NASA to be part of its near-space missions, after rigorous technical and safety evaluations, where it was demonstrated that the design of the EMIDSS-3 module meets the standards of the North American space agency in safety, systems, component installation, as well as the successful record of the previous EMIDSS 1 and 2 missions.

In this mission, led by the IPN, the Instituto de Ciencias Aplicadas y Tecnología de la Universidad Nacional Autónoma de México (UNAM), the Instituto Tecnológico de Estudios Superiores de Occidente (ITESO), from Guadalajara, Jalisco, as well as the companies AG Electrónica and Prime Glitch, which are co-sponsors. The design of the module will maximize the installation of the electronic components: cards, sensors, and wiring, to avoid interconnection failures. On board EMIDSS-3, two satellites are undergoing proof of concept tests: TEPEU-1, which is being promoted by the IPN in collaboration with UNAM and other mexican educational institutions for the development of a low orbit satellite to study the ionosphere and its relationship with space weather phenomena. ITESAT-1, in turn, will be a low orbit satellite, oriented to the acquisition of images for the prevention of forest fires in the Bosque de la Primavera, in Jalisco. EMIDSS-3 was subjected to vibration tests at the ESIME Ticomán Unit, where the resistance of the materials was checked, as

well as the correction and adjustments to the module's instrumentation to guarantee its optimum operation in flight.

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