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SPACE PROPULSION AND THERMO-VACUUM LABORATORY AT MEXICO

Abstract

Space technology components need high specialized facilities to perform pre-certification and certification test for flight. These tests are expensive and their cost varies depending on the size and standard chosen to perform the tests. This restricts countries under development to design and to fabricate their space technology following a particular standard. This work presents a thermo-vacuum and propulsion test laboratory for pre-certification test, LPETE. This laboratory is located in Queretaro, Mexico and is part of several facilities considered by the National Laboratory of Space and Automotive Engineering. LPETE is a unique facility in Mexico and Central America to perform thermal-vacuum test following Military Standard and to foster research of space propulsion focused on Hall Thrusters for micro-satellites. The LPETE is formed by a cylindrical chamber 2m diameter times 3.5 m long with capabilities to admit micro satellites of 1 cubic meter of volume with solar panels extended. LPETE is part of a national effort to design, fabricate, test, launch and operate original space technology developed by Mexican experts. This initiative will nurture projects developed in Mexico to help the country to reach a technology independence on the space area.