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IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
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INCREASED CAPABILITIES AT ESRANGE SPACE CENTER – TESTS OF REUSABLE MOTORS AND STAGES

Abstract

SSC (Swedish Space Corporation) is investing alongside funding decided by the Swedish Government, in a new test bed facility at SSC's Esrange Space Center. Esrange is since a couple of years undergoing a major upgrade in order to meet the increasing demand of access to space and test facilities for motors and reusable stages. The test bed facility will enable validation of new liquid, hybrid and solid engines as well as of new sounding rockets and reusable first stages through tethered tests, jump tests and controlled landings. A test facility for static firing of solid rocket motors is already in operation, facilities for liquid rocket motors are expected to be operational by Q3 2019. The plan is to carry out validation of new sounding rocket motors by 2019 and reusable stages by 2020. Esrange Space Center, owned and operated by SSC since 1972, has an ideal location in the very north of Sweden, above the Arctic Circle (68N, 21E) with access to a vast, unpopulated recovery area, 5200 km2. It has a well-equipped infrastructure and proven experience of operations, range and launch safety, handling of large rocket motors and launching of guided rockets. The facility is presently used by the international scientific community, space agencies and commercial customers for launching sounding rockets for microgravity and atmospheric research as well as high altitude balloons for astronomy, atmospheric research and drop tests. This paper will develop the test bed services and facilities in more detail.