

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
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DEVELOPMENT OF KSLV-II AND FLIGHT TEST OF ITS ONE STAGED TEST VEHICLE
EMPLOYING NEWLY DEVELOPED MAIN ENGINE(KRE-75)

Abstract

Since its establishment in 1989, Korea Aerospace Research Institute(KARI) has been developing rockets for nearly 30 years for purely scientific and civilian purposes. Since KARI successfully launched its first space launch vehicle KSLV-I(Korea Satellite Launch Vehicle – I) in corporation with Russian partners in 2013, KARI has been developing KSLV-II which has a capability of putting 1.5ton class satellite into 700km Sun synchronous Orbit. KSLV-II is 3-staged, and utilizes Kerosene and liquid oxygen as propellants for all the 3 stages. For the power plant of the KSLV-II, KARI is developing 75tonf class liquid rocket engine(KRE-075) and 7tonf class(KRE-007) liquid rocket engine at the same time. After long period of development including around 100 times of combustion tests on ground engine test facility, a test vehicle equipped with a KRE-075 was launched in Nov. 28, 2018 from Naro Space Center which is located in the southern part of the Korean peninsula. The test vehicle was mainly constructed based upon the 2nd stage of the KSLV-II, in order to test the performance of major subsystems of KSLV-II including the newly developed engine, KRE-075. The post flight analysis of the test flight confirmed that all the onboard subsystems including the main engine operated nominally during flight, which is a good sign for the successful development of the whole vehicle, KSLV-II. Herein, we present the development status of KSLV-II and the brief flight test result of the test vehicle. In addition, future activities for the currently undergoing development of the KSLV-II and the planned programs using the completed KSLV-II is presented.