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SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Launch Vehicles in Service or in Development (1)

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ENHANCED EPSILON'S DEVELOPMENT RESULT AND PREPARATION STATUS FOR THE SECOND LAUNCH

Abstract

The Epsilon Launch Vehicle, the newest version of Japan's solid propulsion rocket, has been further developed under the name of "Enhanced Epsilon" since its first flight in September 2013. The development of Enhanced Epsilon includes the increase of the launch capacity and payload usable volume by the development of the new second stage motor and the arrangement of the second stage outside the nose fairing, the application of our new "Low Shock Separation System" for payload environment improvement, and the modification of the avionics system for the operational simplification. This development will make the vehicle much more versatile and user-friendly. This development of Enhanced Epsilon will finish in the spring of 2016. We completed the ground firing test of a real-scale new second stage in the winter of 2015 and are now testing the prototype model with totally improved structures. Enhanced Epsilon will be applied to the coming launches of small payloads. In 2016, we will conduct a flight demonstration of its second launch in the basic configuration without PBS, or Post Boost Stage with liquid propulsion system. Then the third launch will be demonstrated in the optional configuration with PBS. This paper describes the results of Enhanced Epsilon's development on the total system, subsystems and components and the preparation status of Epsilon's second launch.