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THE LOW-COST, LIGHT SATELLITE LAUNCH OPPORTUNITIES (L3) INITIATIVE

Abstract

Small satellites continue to increase their share of the new space market with countless valuable applications. However, access to space solutions are often not adequate to the small satellite's needs. With this in mind the European Space Agency has identified the need for a comprehensive and novel approach for providing low-cost launch service solutions based on Ariane 6 and Vega/Vega C to efficiently combine heterogeneous payloads in the same mission and offer a standardised service to Customers: this is the purpose of the Low-cost, Light satellite Launch opportunities (LLL) initiative aimed to serve also the wide variety of small satellites, from CubeSats to microsats and minisats, from tech-demos to mega-constellations. While aiming primarily at serving the European institutional needs, the LLL Initiative has also broader long-term objectives on the commercial market to pioneer in setting technical and contractual standards for low-cost launch solutions for Light-Sat missions, to secure Europe's uptake of the Light-Sat market based on competitive European launch services and regular flight opportunities, to qualify low-cost, standardised, ESA-launcher based launch services for Light-Sat, to demonstrate European autonomous access to space for Light-Sat missions, economically sustainable after completion of the Proof-of-Concept flights without support from ESA launcher programmes. This will spur European socio-economic benefits, in particular in relation to the Light-Sat applications business, and optimise the Ariane 6 and Vega launch capacities in the Arianespace manifest. The L3 Initiative's scope encompasses a set of activities required to define, develop and qualify the products, processes and organisations necessary to provide timely, low-cost, standardised launch service solutions, based on Ariane 6 and Vega/Vega C launches, which are suited to the needs of satellites below 500 kg of mass. The activity for the definition of a European standardised launch service for Light-Sats ranging from nano to mini-satellite classes with the aim to generate specifications for associated launch service elements in full coordination between Ariane 6 and Vega/Vega C, was kicked off on February 16 with the Prime Contractor Arianespace and with Ariane 6 and Vega C Launcher Systems Prime Contractors, Arianegroup and Avio respectively. The Initiative also includes "Proof-of-concepts" flights on Vega/Vega C and Ariane 6, the first of which is a rideshare mission planned for early 2019 using Vega Launch System and the Vega/Vega C dedicated dispenser SSMS.