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U.S. AIR FORCE EELV CERTIFICATION FOR SMALL SATELLITE MISSIONS

Abstract

The National Security Space Launch (NSSL, formerly Evolved Expendable Launch Vehicle) program has expanded its mandate to be the “front door” for launch of National Security Space (NSS) missions of all sizes and risk tolerances. The heritage of the NSSL program is rooted in a capability to launch medium, intermediate and heavy spacecraft with low risk tolerance. The Launch Enterprise at the Air Force Space Missile System Center (SMC/LE) also provides launch services for relatively light spacecraft with a higher tolerance for risk of launch failure, a responsibility they took over in 2015 from another SMC organization. SMC/LE leadership has established the Multi Manifest Office (MMO) to manage launch services for these smaller spacecraft. While rideshare opportunities provide a path to launch for many of these spacecraft, dedicated launch on a “small” launch vehicle is also in the trade space, particularly for missions which cannot tolerate a relatively long integration timeline or missions that require a specific orbit. Given the recent increases in capabilities of smaller spacecraft, it is easy to imagine a future where such small spacecraft can accomplish missions of high or very high national significance, and would therefore require a low risk or very low risk launch vehicle to meet mission timelines and/or orbit requirements. Prior and ongoing NSSL launch vehicle certification efforts require a resource-intensive engagement between launch service providers and the USAF; however, this is not necessarily required – the New Entrant Certification Guide (NECG) provides a path to “cheaper” low or very low risk certification which might be particularly relevant to the emerging small launch providers. This opportunity is well-aligned with the Air Force restructuring of its space acquisition capability in the “SMC 2.0” effort. This paper will explore the portion of the NSSL portfolio which addresses low mass spacecraft, low risk tolerance, and mission responsiveness requirements.