

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Future Space Transportation Systems (4)

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A NEW COMMERCIAL AIR LAUNCH SOLUTION FOR MEDIUM LIFT CARGO MISSIONS

Abstract

The demise of the Delta II medium lift launch system workhorse coupled with the dramatic rise in costs for the Delta IV and Atlas V Evolved Expendable Launch Vehicles (EELV) has left satellite developers in the U.S. with few solutions for responsive and affordable launch. A subsonic, air-dropped launch system offers the capability to deliver payloads in this class. The system can utilize an aircraft capable of flying to a launch point and dropping the launch vehicle (LV). This approach allows the system a maximum degree of flexibility, greatly increases the responsiveness and lowers the cost since it will not be constrained by expensive fixed launch sites and ranges. Once dropped, the LV will ignite its 1st stage and begin the transit to orbit. At 1st stage burnout, the 2nd stage will ignite to deliver the payload safely to orbit. When not in use for launching payloads to orbit, the aircraft may be capable of ferrying large payloads. This paper will describe a potential commercial air-launch technical and programmatic approach and describe upcoming opportunities for future civil, defense and commercial satellites.