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

Author: Mr. Chuck Beames
Vulcan Aerospace Corp., United States, chuck@innovio.com

# MISSION AND SPACE TRANSPORTATION APPLICATIONS FOR THE STRATOLAUNCH SYSTEM

**Abstract**

Vulcan Inc., the investment and project management company founded by Paul G. Allen, is developing the Stratolaunch system to revolutionize space transportation. Stratolaunch utilizes a unique combination of carrier aircraft and multi-stage booster to deliver satellites and human space vehicles to low earth orbit. The unique design enables air launches of payloads of up to 13,500 lbs from nearly any location or latitude throughout the world and to any launch azimuth, minimizing overflight restrictions and providing increased flexibility in insertion orbit inclination and altitude. Freed from the restrictions of ground based launch, Stratolaunch will provide a high cadence, on demand turnkey-to-orbit capability for government, international and commercial customers. We are anticipating roll out of the carrier aircraft next year with test launches at the end of 2015. Beyond the initial demonstration program currently being developed, Vulcan and Sierra Nevada Corporation (SNC) have been exploring a variety of applications for the Stratolaunch system, including unique business models for satellite and human spaceflight system delivery to low earth orbit and beyond. SNC's broad mission experience in the development of high performance, small satellite constellations, unique propulsion systems, airborne ISR systems, and the Dream Chaser reusable crewed space system are natural complements to the Stratolaunch system. Our analyses to date validate the utility of Stratolaunch to change the space transportation paradigm in multiple ways. For example, increasing launch rate capability and reducing costs can enable a more commoditized satellite development. Suborbital transportation capabilities that could revolutionize travel can also be demonstrated. Finally, the Stratolaunch System can provide the means to affordably deliver humans to low earth orbit for a variety of scientific and commercial missions. An update of our findings are provided in this presentation.