SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
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AIRLAUNCH - AN ANTONOW 124-BASED LAUNCH VEHICLE CONCEPT FOR LEO AND GTO PAYLOADS

Abstract

Airlaunch , based on Antonow 124 aircraft, targets a satellite launch capability of 3t (low inclination) to 4t(high inclination) in LEO and 1.5t in GTO. Also direct GEO insertion and transfer orbits will be offered. The system will start from a launching airport at the equator in BIAK, Indonesia, where virtually no constraints on orbit inclinations exist. A rocket of about 100t mass will have to be ejected from the aircraft and then ignited in a safe distance from the aircraft. The rocket design is fully based on liquid technology using an adapted Soyuz 2nd stage as the first Airlaunch stage and a new 2nd stage, but based on existing Russian components. A novel method for ejection derived from submarine technology will be used together with an Antonow flight trajectory resulting in low gravity (about 0.3g) during the ejection. A Payload Pre integration in Europe, Munich is under investigation, with the aim to maximize activities before transfer to BAIK and to minimize activities at the launching airport. A demonstrator program is established to prove this technology gradually increasing the mass to the target mass of 100t. The demonstrator tests are planned for end 2011, early 2012. An overview of the system will be given, with emphasize on the detailed activities on the system verification and the demonstrator program. The characteristics of the system and user interfaces will be described. AirLaunch plans to enter into service in 2015.