

21st IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Access to Space for Small Satellite Missions (5)

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THE POSSIBLE EVOLUTION OF LAUNCHERS OVER THE NEXT DECADE

Abstract

Historically the launchers being used for placing satellites in both LEO and GEO orbits have mostly been derived from government military or prestige projects and have not been designed with economic commercial use in mind. This situation is now changing radically with the arrival of Falcon 9, Antares, Angara, Soyuz-1 etc. Serious consideration is being given to (at least partial) recoverability and some air launch projects are becoming increasingly credible. On the horizon, vehicles such as Skylon threaten revolution. The approaches to the commercial launch of satellites will vary considerably with their size, type, value and amount of risk that can be tolerated. The paper examines the current trends and future developments, arriving at pessimistic, likely and optimistic scenarios for the commercial launchers that will be available for commercial users up to 2025. The consequences of revolutionary designs such as Skylon on the future scenarios will also be discussed.