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HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Commercial Human Spaceflight Programs (2)

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VIABILITY OF THE PRIVATE SUBORBITAL FLIGHT PROJECTS IN RUSSIA: "KOSMOKURS" CASE

Abstract

The recent years have become the time of change for the Russian space sector. Along with long-expected reform of public space sector, one more tectonic shift takes place with the emergence of Russian private space sector never existed before. Big part of those companies exists under the status of Skolkovo residents. After several years of existence of Skolkovo ecosystem, we can see the emergence of companies developing the solutions for affordable access to space. Companies developing launch vehicles are oriented towards two main markets: launch vehicles for affordable launch of small satellites and suborbital vehicles for space tourism. This is also the case for "KosmoKurs" company, developing the vehicle for suborbital tourism. The core of the company consists of the young engineers and entrepreneurs with technical background gained inside of the Russian space industry, namely Khrunichev center. The technical idea of the project is the launch vehicle with the suborbital crew module. Powered by open cycle bipropellant rocket engine, first stage lifts the pressurized 12-passenger cabin to the height up to 220 km with 5g acceleration. Estimated microgravity period for upper stage will reach 6 minutes. The feature of the system is its full reusability – after the launch both first stage and passenger cabin use the parachutes and rocket propulsion for descent. Total flight time will range from 15 to 18 minutes. The system will be based on Russian territory and will probably use some of the existing ground facilities. Based on well-developed technologies, the system includes multi-level emergency protection system ensuring safe and low-cost suborbital flight for passengers. After initial operations, launch vehicle for small satellites planned to be developed based on the system. Currently, the project team has conducted feasibility study with initial mathematical modelling and market research. The company has acquired the firm commitment from venture investor for initial study of the project. The stage of flight proven prototype supposed to be achieved until 2020. Skolkovo Foundation gives strong support to "Kosmokurs" with tax and customs benefits, PR and GR support.