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Public-Private Partnerships: Traditional and New Space Applications (2)

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STRATEGY FOR SMALL LAUNCH VEHICLE DEVELOPMENT IN SOUTH KOREA BASED ON PUBLIC-PRIVATE PARTNERSHIP

Abstract

With the successful flight of the KSLV-II, South Korea has secured an autonomous access to space. In the KSLV-II program, the Korea Aerospace Research Institute (KARI) led the development project while many industry partners participated in the manufacturing and integration phase, and duly acquired practical skills and knowledge in the development process. In this traditional workflow, however, the KARI researchers were responsible for designing and selecting the launch vehicle system. But things may be changing fast domestically as new space ventures have been dominating the launch market in the world. In 2023, the Korean government released an updated master plan for national space development, and declared their policy of making the private sector a prime in the upcoming government-contracted program. In this article, the effectiveness of introducing a PPP-based approach has been analysed based on a development plan for a commercial SmallSats launch service.

For this, we conducted a survey with a semi-structured questionnaire for domestic public/private satellite demand to be launched during the next decade and investigated international satellite demand, followed by external/internal environment analyses based on trends of global small satellite launch service companies as well as the SWOT analysis. From these endeavours, we obtained key strategic issues, and established the direction of action, high-level strategies, and detailed plans in order to address the strategic issues. In addition, we identified key technologies and proposed development approaches and schedules. Furthermore, we presented an effective project implementation architecture and management methods, given the roles of private companies, KARI, and the government jointly participating the project.

We expect this research to contribute to developing a competitive small satellite commercial launch service in Korea, reinforcing the ecosystem of domestic space launch industry in a sustainable way, and completing the value chain of the space industry.