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DEVELOPMENT STATUS OF EXPERIMENTAL WINGED ROCKET WIRES#015 AND ITS FLIGHT DEMONSTRATION PLAN AT ESRANGE OF SWEDEN IN COOPERATION WITH UNIVERSITY, AGENCY, INDUSTIES AND INTERNATIONAL PARTNERSHIP

Abstract

Tokyo University of Science/ Space Systems Laboratory and Japan Aerospace Exploration Agency are developing a scaled winged experimental rocket called WIRES015 (WInged REusable Sounding rocket), which has the dimensions of 4.6m and initial mass of 1,000kg, for the purpose of comprehensive flight demonstration of the technologies for realizing suborbital flight[1] such as LOX/LNG (Liquid OXygen/Liquefied Natural Gas) engine, autonomous NGC (Navigation, Guidance and Control) system, and fully composite propellant tanks.

This paper presents the development status of WIRES015 and its flight demonstration plan at Esrange of Sweden in cooperation with Japanese industry partners, such as SPACE WALKER, IHI, IHI Aerospace, I-NET, Toray Carbon Magic and MoonCraft, and with DLR (German Aerospace Center), SSC (Swedish Space Corporation), ISAE-SUPAERO (L'Institut supérieur de l'aéronautique et de l'espace) and University of Costa Rica by concluding international partnership.

[1] Yonemoto, K., Fujikawa, T., Yamasaki, Y., Asakawa H., Noguchi, Y., Ishikawa, T. and Morito, T., "Preliminary Design Status of Unmanned Suborbital Spaceplane with LOX/Methane Engines by Tokyo University of Science's Start-up with the Partnership of Industries: Part 2," IAC-20,D2,4,9.