SMALL SATELLITE MISSIONS SYMPOSIUM (B4)
Space Systems and Architectures Featuring Cross-Platform Compatibility (7)

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PROJECT OUTLINE OF THE ADVANCED SATELLITE WITH NEW SYSTEM ARCHITECTURE FOR OBSERVATION (ASNARO)

Abstract

USEF has been engaged in the promotion of the space industrialization since 1986. ASNARO Project was initiated in the year of 2008 to realize small size high performance earth observation satellite despite whose cost and manufacturing time will be less than the current conventional satellite development methodologies. There are three viewpoints regarding the project. The first viewpoint, for further reduction of the development cost and time, is the reconsideration of the space system development and operation scheme and methodologies, such as the system architecture, system/components interface standards, reliability assessments, verification policies, operational aspects, etc. addition to the adoption of commercial parts and technologies. The second viewpoint, mainly due to the progress in the miniaturization of electronic parts and components, is the utilization of the small size spacecraft. The third viewpoint, due to the increase in the need of the high quality images of the ground, is the necessity to establish high performance earth observation technology. The standardized bus system with SpaceWire network, which has been the results of the study work of the NEC and JAXA/ISAS, is introduced for the bus system of the project under the cooperation of ISAS and USEF towards the establishment of the standardized small satellite bus system. Working Groups activities consisted of major aerospace companies and small venture business initiative, cooperated with the university communities were coordinated in the USEF, and started the study of the revolution of the spacecraft development methodologies to reduce cost and time, for the activation of the space industries in Japan. The expected performance of the mission is better than 0.5m /2m of GSD(Panchromatic/Multi-spectrum) from 510km altitude with the mass of 450kg for the entire system. The high rate X band down link data transmission subsystem with 16QAM 800Mbps was adopted to meet the user needs. The ASNARO spacecraft expected to be completed by the end of JFY2011, and the study results of the Working Groups activities are, not only to be proposed at the end of the study period, but also to be reflected in the development of the ASNARO spacecraft system as much as possible. The outline and meaning of the ASNARO Project will be introduced in the presentation.