SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES (D5)
Safety of Vehicules and Ground Segment for Aerospace Missions (1)

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SYSTEM SAFETY ACTIVITY FOR IKAROS SPACECRAFT

Abstract

IKAROS (Inter-planetary Kite-craft Accelerated by Radiation Of the Sun) is a Small Solar Power Sail Demonstrator which deploys the membrane and generates solar power by means of thin film solar cells. IKAROS will be launched by H-IIA rocket from Tanegashima Space Center this early summer as a piggy back spacecraft of Planet-C "AKATSUKI" Venus climate orbiter. IKAROS (and also Planet-C) is the first spacecraft managed by JAXA (Japan Aerospace Exploration Agency)'s system safety activity at ISAS (Institute of Space and Astronautical Science). IKAROS itself has to be managed to avoid the critical hazard not only to worker, rocket and facility but also to the main spacecraft because IKAROS is a piggy back spacecraft. GSE (Ground Support Equipment) and operation are also objects for system safety. IKAROS has several hazardous functions like a separation mechanism, an unfolding mechanism, batteries, a pressure system and so on. There is also a problem to solve as for SCC (Stress Corrosion Cracking) of aluminum alloys used for structure material. There are three or four phase for system safety management before it is allowed to bring the spacecraft to the launch site. In this paper, it is shown that how IKAROS demonstration team manage the system safety activity, that is, the design modification, the operation management, the verification experiment for hazard control.