INDEX:ADVANCED SMALL SATELITE FOR AURORA OBSERVATION AND TECHNOLOGY DEMONSTRATION

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This paper describes outline of the piggy-back satellite INDEX for demonstration of advanced satellite technologies as well as for observation of fine structure of aurora. Aurora observation will be carried out by three cameras(MAC) with a monochromatic UV filter. Electron and ion spectrum analyzer (ESA/ISA) will measure the particle phenomena together with the aurora imaging. INDEX satellite will be launched in 2004 by Japanese H2-A. The satellite is mainly controlled by the high-speed, fault-tolerant on-board RISC processor (three-voting system of SH-3). The attitude control is a compact system of three-axis stabilization. Although the size of INDEX is small (60Kg class), several newly-developed technologies are applied to the satellite system, including silicon-on-insulator devices,variable emittance radiator, solar-concentrated paddles, lithium-ion battery, and GPS receiver with all-sky antenna-coverage. At present of January 2004, INDEX has finished all the proto-model (PM) tests and manufacturing of the flight-model (FM). Flight-model test will start from February,2004.