

Current Status of Space Robotics Activities in Asia

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This paper briefly introduces current status of space activities related to space robot development in Asia.

NASDA has accomplished MFD (Manipulator Flight Demonstration) on Space Shuttle STS-85 in 1996. MFD is the flight demonstration of JEMRMS (JEM Remote Manipulator System) fine arm capability. On November 1997, ETS-VII (Engineering Test Satellite No.7) was launched by H-II rocket. During the mission period of eighteen months, teleoperated space robotics and autonomous rendezvous docking experiments had been successfully achieved. After the mission period, ETS-VII was operated under house keeping mode to gather information of on-orbit data and eventually terminated on October 2002.

The PFM (Proto Flight Model) of JEM (Japanese Experimental Module "Kibo") RMS has been developed and integrated into Kibo system. Figure 1 shows the final qualification test of JEMRMS main arm on the air bearing table.

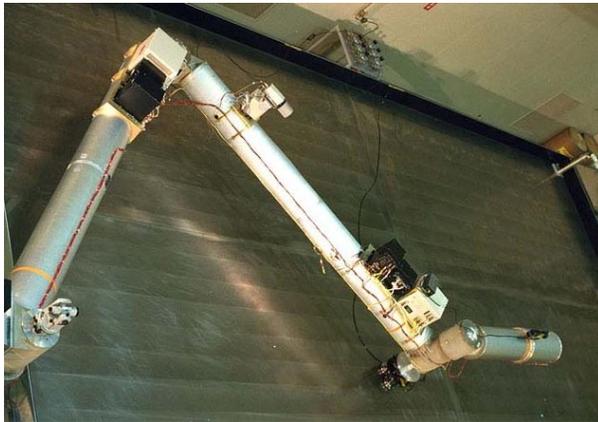


Fig 1: JEMRMS Air Table Test

HTV (H-II Transfer Vehicle) shown in Figure 2 is designed to carry resources and experimental facility from the ground to ISS. HTV requires both automatic rendezvous to ISS and capture by SSRMS. Currently critical design is been performed, and qualification test of Engineering Model components has been attained.

ISAS has developed Muses-C satellite which will be launched on May, 2003. This mission is to pick up samples from an asteroid and to return the capsule to the Earth.

The future mission related to robotics includes SELENE-B (the second of SELEnological and ENgineering Explorer) and SSPS (Space Solar Power System) which described details in technical session of this symposium.

NASDA (National Space Development Agency of Japan), NAL (National Aerospace Laboratory) and ISAS (Institute of Space and Astronautical Science) will to be united into one space agency on coming October 2003. We are preparing for business plans, strategies with overriding priority, and the organization of the new agency.

The more activities in Asia will be presented later at the specific sessions.



Fig 2: Concept of H-II Transfer Vehicle (HTV)