

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Upper Stages, Space Transfer, Entry & Landing Systems (3)

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HTV-X DEVELOPMENT STATUS AND MISSION SCENARIO WITH OFFERING ON-ORBIT
DEMONSTRATION OPPORTUNITY

Abstract

Since the ISS operation extended up to 2024, a new spacecraft HTV-X development started from around 2017. HTV-X is planned to be launched by H3 rocket in Japanese FY2022. HTV-X is an advanced version of HTV (H-II Transfer Vehicle) that completed all 9 cargo supply missions successfully on August 2020. HTV-X development status is on the final stage of the detailed design phase. We have evaluated its improved transport capability, operability, and expandability in comparison to HTV. Its expandability can offer on-orbit demonstration opportunity for mission payload users during a year and a half at the maximum. 1st HTV-X plans to install 4 mission payloads on its platform. Those missions will start after HTV-X transports its cargo to the ISS. HTV-X plans to change the flight attitude/ altitude and send downlink telemetry for mission request. Furthermore, 2nd HTV-X studies to install the docking system as the demonstration for future mission, such as the manned cis-lunar station, Gateway, planned in NASA Artemis program. This paper shows developing status of HTV-X, including the evaluation for the 1st and 2nd special payloads mission.