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MISSION POSSIBLE - REENTRY CAPSULE & IN ORBIT DEMONSTRATION PLATFORM

Abstract

After successfully completing the flight qualification of the Bikini capsule, The Exploration Company is currently developing its next re-entry capsule 'Mission Possible', which will fly in October 2024 on a SpaceX Falcon 9.

Mission Possible will after roughly 2 orbits connected to the Falcon 9 upper stage be inserted on a reentry trajectory. The capsule will then activate its propulsion system to demonstrate a set of attitude maneuvers before orienting its heat shield forward to prepare for re-entry. During the re-entry, the capsule will control its bank angle and perform a number of roll reversal to aim at the parachute opening point. After parachute deployment and splashdown, the capsule will be recovered and returned to the integration facilities. The Mission Possible Capsule has an Apollo shape, is 2.5 meter wide and has a launch mass of 1600 kg. The capsule will be battery powered, and it will host 300 kg of payloads.

This paper describes the status of the Mission Possible program of The Exploration Company and its objectives as demonstrator for the future mission of the company. After Mission Possible The Exploration Company will focus on their next program Nyx-Earth which is a 4m wide capsule for resupplying current and future space stations.

Keywords: space exploration, capsule, reentry, reusable, modular