SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Space Transportation Solutions for Deep Space Missions (8-A5.4)

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DEPLOYMENT OF FORMATION FOR MONITORING OF NEAR-EARTH OBJECTS

Abstract

A formation flying of 3 12 microsats or CubeSats will be systematically studied, and applied to monitoring of near-Earth objects. The formation will be deployed from the halo orbits of Earth-Moon Lagrange points or through flying by Moon with low-energy transfer. Each satellite of the formation will possess the capabilities of collision avoidance, imaging, navigation, and inter-satellite link. Since near-Earth objects invade Earth most probably through Lagrange points. The formation will park on a halo orbit for surveillance after deployment. When they detect any near-Earth bodies, they will conduct imaging and tracking immediately. If necessary, some satellites of the formation can follow or impact the bodies. The orbit transfer scenarios will be developed, and the requirements of the satellites configuration will be specified.