

16th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND
DEVELOPMENT (D3)Systems and Infrastructures to Implement Future Building Blocks in Space Exploration and Development
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GATEWAY EARTH TAKING OFF: DETAILING INFRASTRUCTURE AND MISSION LOGISTICS

Abstract

Gateway Earth Development Group is an international think-tank proposing new modular space access architecture, centred on operating a combined research space station and commercial space hotel in the geostationary orbit (GEO) – the Gateway Earth complex.

At this location, robotic and crewed interplanetary spacecraft could be assembled, including through utilising in-situ (additive) manufactured components, and dock before they travel to, and return from, any Solar System destination. Moreover, space tourism and GEO satellite maintenance could provide a significant part of the funding to build and maintain the complex.

Our current work is related to creating a detailed infrastructure development and mission operation programme, with particular focus on incorporating new technologies (such as electric propulsion, and inflatable/configurable habitats) and innovative efficiencies (re-usability and re-deployment of access vehicles and on-orbit assets). Specifically, a detailed deployment analysis is being undertaken as well as further valorisation of the complex market opportunity.

In this paper we will present the current state of play in our proposal and solicit comments as to further improvements.