

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Governmental Human Spaceflight Programmes (Overview) (1)

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GATEWAY PROGRAM PROGRESS AND OVERVIEW

Abstract

This paper provides an overview and status of the Gateway, which will be a small, human-tended space station in orbit around the Moon. The National Aeronautics and Space Administration (NASA) leads the Program and serves as the integrator of the spaceflight capabilities and contributions of U.S. commercial partners and international partners to develop the Gateway. Gateway is the cornerstone of sustainable deep space human exploration and is an essential element of the infrastructure necessary for the execution of the Artemis missions to the Moon. This paper will outline the current planned configuration and deployment of the station, describing the concept of operations and how Gateway supports both lunar surface missions and also serves as the springboard for exploration deeper in space.

Calendar year 2022 will see the accomplishments of major milestones such as over twenty systems preliminary design reviews (PDRs), a Program-wide PDR-informed synchronization review, and NASA Key Decision Point marking the evolution of the program as a whole from the formulation phase and into implementation.

This paper will provide a progress update for each major component of the Gateway: The Power and Propulsion Element; the Habitation and Logistics Outpost (HALO); Deep Space Logistics; the International Habitation module; the European System Providing Refueling, Infrastructure, and Telecommunications (ESPRIT), which includes a Refueler Module and the HALO Lunar Communications System; External Robotics System; and an Airlock with both science and crew capabilities. For each component, the paper will describe the current maturity of the modules, acquisition strategy, contracts, and if applicable, international partnership status. This paper will also outline the integration function the Gateway Program Office performs at the NASA Johnson Space Center, including the multilateral governance structure and cross-program interfaces across Artemis.