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

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UPDATE ON NASA'S HUMAN LANDING SYSTEM (HLS) PROGRAM: PUBLIC-PRIVATE PARTNERSHIP ADVANCING ARTEMIS SUSTAINABLE LUNAR EXPLORATION

Abstract

NASA's Human Landing System (HLS) program plays a key role in the development of the landers that will land the next astronauts on the Moon under the Artemis campaign. Based out of NASA's Marshall Space Flight Center in Huntsville, Ala., and charged with procuring and managing landing services for humans and large cargo for Artemis, the HLS program is using the best of government and industry to develop key technologies needed for mission success, while providing key insight and engineering collaboration work toward lander development. In addition to the development of landers for Artemis crew by HLS providers SpaceX and Blue Origin, the HLS program in 2024 gave both companies authority to proceed on preliminary development of large cargo delivery variants of their crew landers. Expected to share about 80 percent design and systems commonality with the human-class landers, the large cargo landers from SpaceX and Blue Origin will deliver 12-15 metric tons (t) to the lunar surface. After an eventful 2024, the HLS program expects to surpass several significant progress points in 2025, including a robust Starship test flight campaign by SpaceX, and maturation of designs and systems by Blue Origin as both providers work toward Critical Design Review (CDR). This paper will review progress the HLS program and its providers made during the past year and look ahead to significant developments leading up to Artemis III, the first human lunar landing of the 21st century.