

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

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NASA'S HUMAN LANDING SYSTEM: A SUSTAINING PRESENCE ON THE MOON

Abstract

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For more than a decade, efforts have been ongoing at NASA's Marshall Space Flight Center (MSFC) in Huntsville, Alabama, to land humans and cargo on planetary bodies like the Moon and Mars and today this work continues under the Center's Lander Programs (LP) office. In August of 2019, NASA stood up the Human Landing System (HLS) program to be responsible for spacecrafts that will land astronauts on the Moon under Artemis. Work is well underway with the historic Artemis III mission to land the first Americans on the lunar surface in more than 50 years through the Appendix H Option A contract with SpaceX. In November, NASA awarded SpaceX an Option B modification to its existing HLS Appendix H contract, which will further develop its HLS Starship to meet NASA's sustaining lander requirements for lunar missions beyond Artemis III. In September of 2022, NASA issued an HLS Sustaining Lunar Development solicitation under the NextSTEP-2 Appendix P Broad Agency Announcement asking a second provider, in addition to SpaceX, to develop and demonstrate a lander that meets the program's extended set of requirements for missions beyond Artemis III. Under the umbrella of Sustaining Lunar Development, these requirements will meet NASA's needs for recurring, long-term access to the lunar surface. Proposals were received from industry late last year and NASA is planning to award an Appendix P contract in the summer of 2023.

This paper will provide an update of the Lander Program office's progress and will discuss how the program is bridging from the initial demonstration phase of development for the Human Landing System program to the Sustaining Lunar Development phase. The paper will include publicly available information on SpaceX's HLS Starship design as well as near-term and future milestones for HLS and the Artemis program.