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Dr. Don Krupp is the Associate Program Manager for NASA's Human Landing System Program where he is responsible for Program office business operations, strategic planning and communication, staffing, data management and security. Before this assignment, he held increasingly more responsible leadership and management positions in Marshall Space Flight Center's Engineering Directorate.

Don has more than 33 years of experience in flight control system architecture, algorithm design and development, modeling and simulation, system engineering and system analysis for launch vehicles, experimental spacecraft and flight research vehicles. Managing the Flight Mechanics and Analysis Division within MSFC's Engineering Directorate, he was responsible for the design, development and verification of the guidance, navigation and control (GN&C) and mission and fault management (M&FM) algorithms for NASA's Space Launch System launch vehicle.

Don earned his bachelor's degree in electrical engineering from Tennessee Technological University. He earned his master's and Doctorate degrees in electrical engineering from the University of Alabama in Huntsville.



Artemis Human Landing System (HLS) Overview to Small Business Alliance Meeting

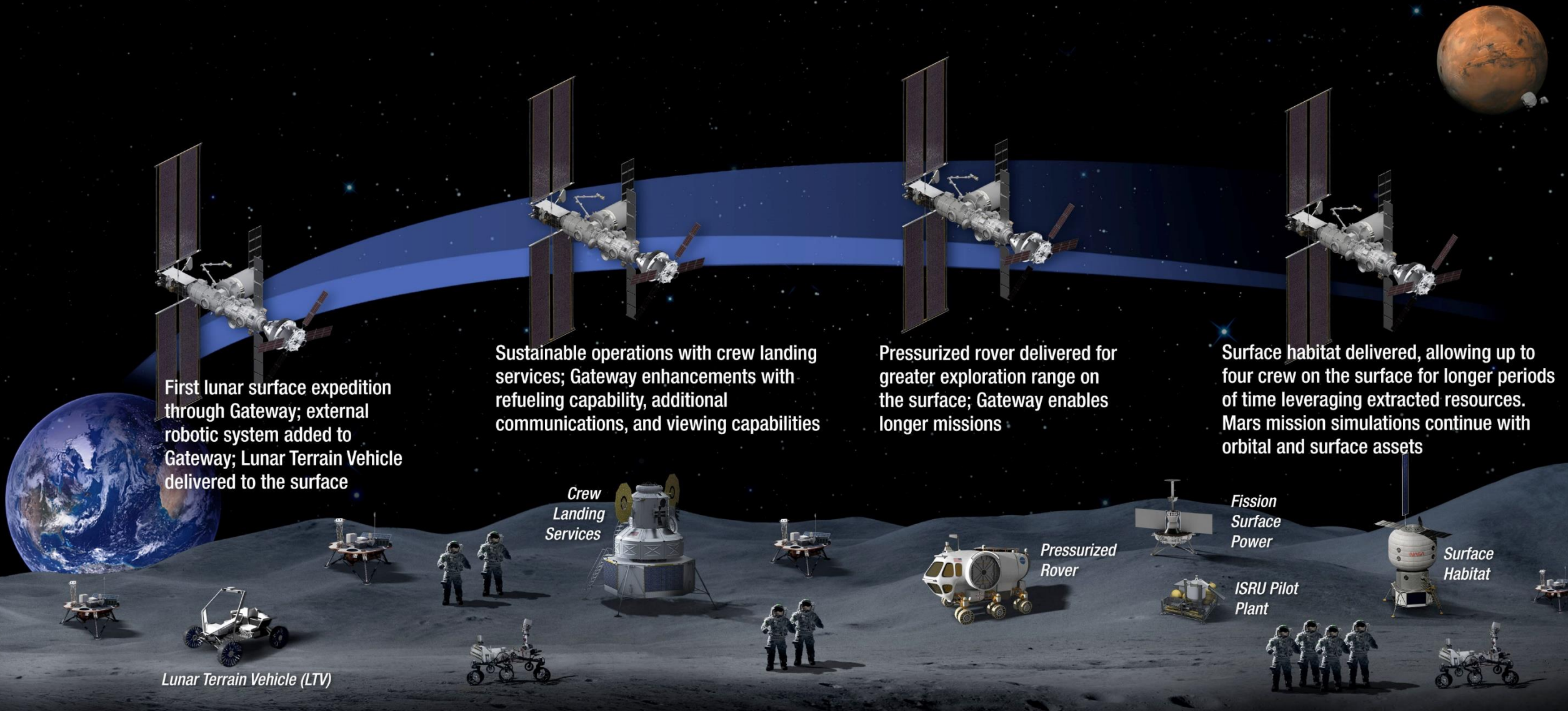
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March 31, 2022

NextSTEP-2 Broad Agency Announcement Current Activities

- Appendix H
 - Base Period (completed)
 - 10-month Period of Performance for 3 Providers
 - Architecture definition, approved standards
 - Option A
 - Single award to SpaceX for initial capabilities
 - Uncrewed Flight Test
 - Crewed Flight Test (Artemis III)
- Appendix N
 - Awards to 5 Providers
 - Concept Development and Risk Reduction Activities





First lunar surface expedition through Gateway; external robotic system added to Gateway; Lunar Terrain Vehicle delivered to the surface

Sustainable operations with crew landing services; Gateway enhancements with refueling capability, additional communications, and viewing capabilities

Pressurized rover delivered for greater exploration range on the surface; Gateway enables longer missions

Surface habitat delivered, allowing up to four crew on the surface for longer periods of time leveraging extracted resources. Mars mission simulations continue with orbital and surface assets

Lunar Terrain Vehicle (LTV)

Crew Landing Services

Pressurized Rover

Fission Surface Power

ISRU Pilot Plant

Surface Habitat

SUSTAINABLE LUNAR ORBIT STAGING CAPABILITY AND SURFACE EXPLORATION

MULTIPLE SCIENCE AND CARGO PAYLOADS | U.S. GOVERNMENT, INDUSTRY, AND INTERNATIONAL PARTNERSHIP OPPORTUNITIES | TECHNOLOGY AND OPERATIONS DEMONSTRATIONS FOR MARS

Consistent HLS Strategy; Updated Procurement Approach



- HLS strategy always included two “phases” of procurements
 - A “Phase I” contract was planned as an initial lunar lander capability (BAA, Appendix H) to validate NASA’s plans for establishing long-term human presence on the Moon under the Artemis Campaign
 - Firm fixed-price contract
 - Uncrewed and crewed flight tests
 - A “Phase II” contract, was always planned to establish Sustaining Lunar Transport Services
 - Firm fixed-price contract
 - Multiple flights that meet Sustaining requirements (e.g. 4 crew, 30+days, increased mass)
- Updated Procurement Approach for “Phase II”
 - Separate the sustaining lunar lander capability development efforts from the regularly occurring lunar landing transportation services
 - Proceed with a second procurement (BAA, Appendix P) for “Sustaining Lander Development”, excluding SpaceX
 - Execute BAA, Appendix H Option B with SpaceX
 - Ensure equivalent scope between the two procurements
 - Initiate acquisition planning for a Sustaining Lunar Transport services competition

HLS Sustaining Strategy: Continues the Best of NASA & Industry

HLS leverages the speed, operational models, and privately-funded development efforts while applying NASA expertise to ensure safety and mission success.

- Milestones and Deliverables tied to hardware-based activity
- Functional Requirements remain lean and Standards adjudication approach consistent with previous solicitation
- Continued use of NASA special clauses to maximize insight and allow NASA data rights
- Insight approach maintains NASA's responsibility for certifying the system(s) and continues codified use of NASA expertise and resources

