



GSDO

GROUND SYSTEMS
DEVELOPMENT & OPERATIONS

EXPLORATION BEGINS HERE



PROGRAM HIGHLIGHTS • MARCH 2014

At NASA's Kennedy Space Center in Florida, the Ground Systems Development and Operations (GSDO) Program Office is leading the center's transformation from a historically government-only launch complex to a spaceport bustling with activity involving government and commercial vehicles alike. GSDO is tasked with developing and using the complex equipment required to safely handle a variety of rockets and spacecraft during assembly, transport and launch. For more information about GSDO accomplishments happening around the center, visit <http://go.nasa.gov/groundsystems>.

NASA Marks Major Milestone for Spaceport of the Future

NASA achieved a major milestone in its effort to transform Kennedy Space Center into a multi-user spaceport by successfully completing the initial design and technology development phase for the Ground Systems Development and Operations (GSDO) Program March 20.

The major program milestone, called the Preliminary Design Review, provided an assessment of the initial designs for infrastructure at Kennedy and allowed development of the ground systems to proceed toward detailed design. The thorough review has validated the baseline architecture is sound and aligns with the agency's exploration objectives.

"The preliminary design review is incredibly important, as it must demonstrate the ground systems designs are on track to process and launch the Space Launch System (SLS) and the Orion from Kennedy," said Mike Bolger, GSDO program manager.

Engineers and managers in GSDO are preparing the spaceport's infrastructure to support several different spacecraft and rockets in development for human exploration. They will provide an entirely new capability for human exploration beyond low-Earth orbit with the flexibility to launch spacecraft for crew and cargo missions to destinations in the solar system, including an asteroid and Mars.

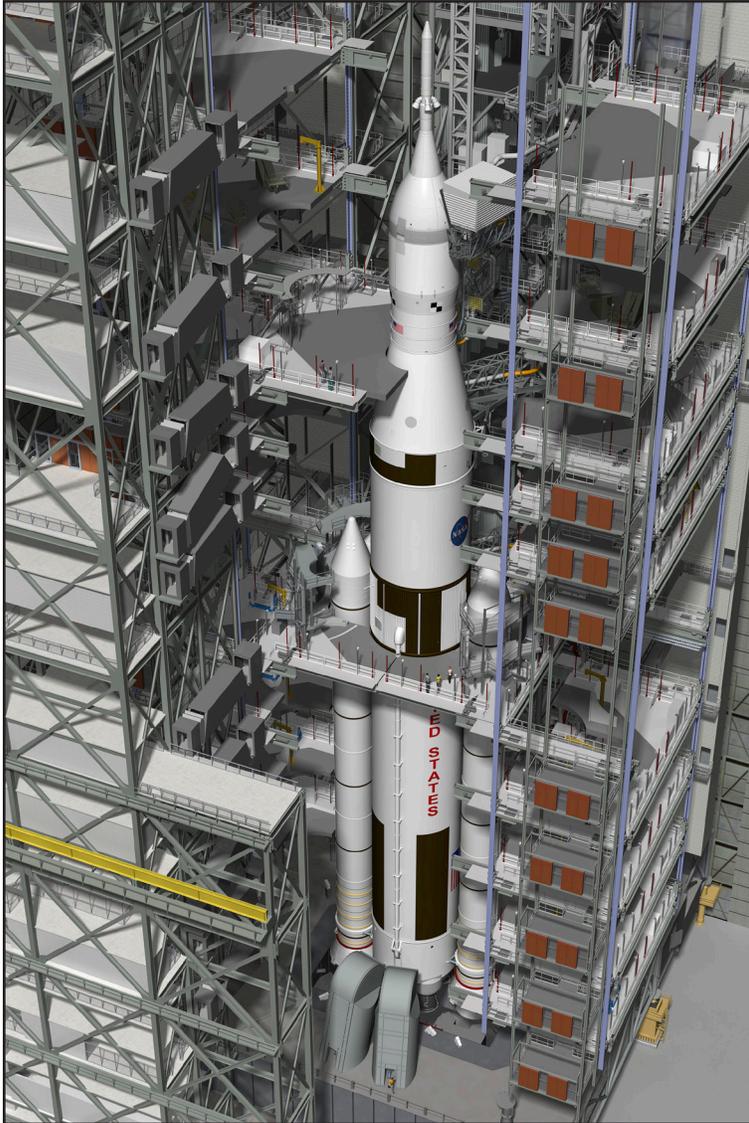
For more information about GSDO, Orion, SLS and NASA's future human spaceflight exploration plans, visit: <http://www.nasa.gov/exploration>.



GSDO Program Manager Mike Bolger speaks to participants during completion of the preliminary design review March 20 in the Mission Briefing Room inside Kennedy's Operations and Checkout Building.

To read the news release, visit:
<http://go.nasa.gov/QDxQuM>.
To view a PDR Concept of Operations video,
visit: **<http://go.nasa.gov/QDxCDU>**.

Contract Awarded to Modify Vehicle Assembly Building High Bay 3



NASA, on March 5, announced the selection of Hensel Phelps Construction Co., of Orlando, Fla., to modify High Bay 3 in the Vehicle Assembly Building (VAB) at Kennedy Space Center. The high bay will be used to process the agency's Space Launch System (SLS) rocket.

Hensel Phelps will receive a fixed-price contract, consisting of the base amount and three options. The period of performance is about two years and one month. The potential maximum value of the contract is \$112.70 million, if additional awarded options are exercised.

Contract services include all required management, labor, facilities, materials and equipment, other than government-furnished equipment, to modify the VAB and construct new vehicle access platforms and related systems for the SLS.

The work includes removing, modifying or reusing current structural component systems, and constructing and installing new structural, mechanical and electrical material, systems and equipment.

The work done on this contract will support the GSDO Program. Building on five decades of launch and processing excellence, GSDO is transforming Kennedy into a multi-user spaceport capable of accommodating a wide array of government and commercial space activities.

This computer-generated image shows NASA's Space Launch System and Orion spacecraft surrounded by new work platforms in Vehicle Assembly Building High Bay 3 at Kennedy Space Center.

Ground support technicians assist as a crane lifts a section of the treads on the C truck of crawler-transporter 2 away from the vehicle March 28 in the Vehicle Assembly Building high bay 2 at Kennedy Space Center.



Doppler Radar Wind Profiler Upgrades Begin

When countdown clocks are ticking, the launch team closely monitors information about the wind speeds and direction along the rocket's planned flight path. Soon forecasters at Kennedy Space Center and nearby Cape Canaveral Air Force Station (CCAFS) will have a new tool to help characterize those winds to maximize launch success.

Kennedy's GSDO Program is replacing NASA's aging 50 megahertz Doppler radar wind profiler with a state-of-the-art version. Decommissioning of the original system began March 3 and will clear the way for the new system to be installed in the same location, a 3.7-acre field northeast of the center's Shuttle Landing Facility (SLF).

Winds below 60,000 feet are a major concern during a countdown. Every liftoff requires a rocket to pass through the atmosphere, and launch team members need accurate data in order to program the vehicle's guidance and steering commands to ensure the vehicle reaches its proper orbit without exceeding its aerodynamic wind load limits.

The new profiler joins a suite of instruments across the spaceport that forecasters use to analyze and predict wind and weather conditions along the Eastern Range.

The profiler comprises a phased array of dipoles, mounted on poles several feet above the ground and arranged across the octagonal antenna field. A trailer at the facility houses the system's electronics.

Once installed, the new system will feature new electronics and a new pattern of dipoles, which together will provide greater flexibility and reliability while reducing interference. A modern system also will be easier to maintain because parts will be readily available.

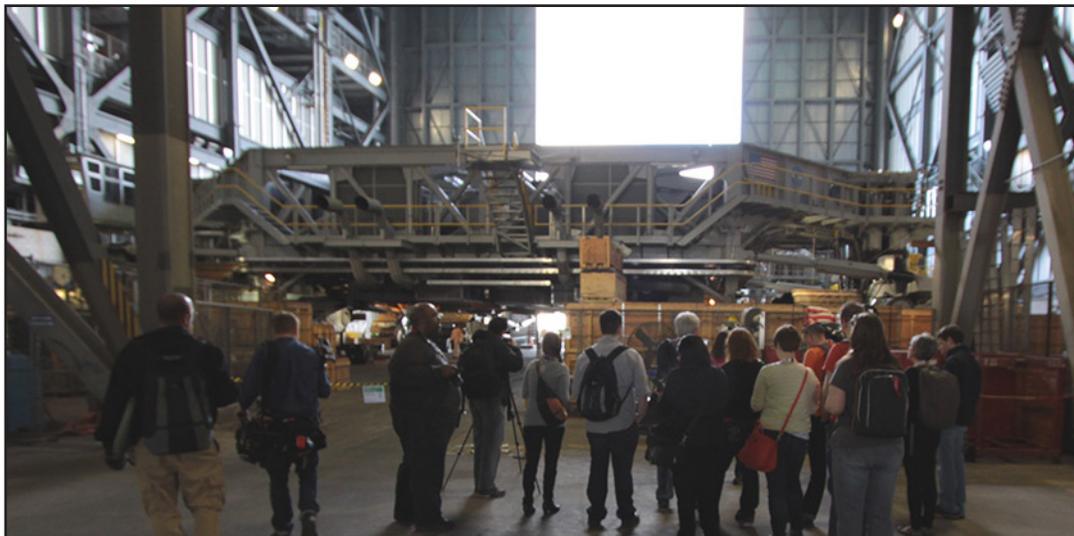
The new profiler is expected to be certified for primary use in the fall of 2015, giving weather forecasters and



William Gober of Kegman, Inc. removes one of the 168 coaxial collinear antennas from the antenna field near Kennedy Space Center's Shuttle Landing Facility.

launch managers one more way to decide whether a rocket is "go" for liftoff.

For the complete story, visit <http://go.nasa.gov/QDxe8k>.



A group of news media and social media tweeters toured the Vehicle Assembly Building at Kennedy Space Center March 14 where they viewed work being done by GSDO to upgrade crawler-transporter 2.

Employee Spotlight – Jessica Parsons

Jessica Parsons is a systems integration lead in the GSDO Program at Kennedy Space Center. In this position, she leads the system integration function for the Exploration Systems Development enterprise. She manages a set of cross-functional, cross-discipline engineering teams to develop program-to-program interface specifications, integrated test and checkout plans, operations and maintenance requirements, and avionics and software integration processes and plans.

Recently, Parsons received the Outstanding Woman Engineer Award from the Society of Women Engineers-Space Coast to recognize her work and contributions to the enhancement of women's status on the job and in the community.

"I was totally surprised," Parsons said. "It's good to be recognized outside of NASA for the work we do here at Kennedy Space Center."

She has served as a judge for NASA's Lunabotics Mining Competition and is a participant in the Gates Millennium Scholars Alumni Association. Through this alumni network, Parsons serves as a mentor to students to help foster new leaders across the nation.

Parsons is originally from Cali, Colombia, and came to the U.S. when she was 15 years old. She earned a bachelor's in aerospace engineering from Embry Riddle Aeronautical University in Daytona Beach, Fla., and a master's in space systems and systems management from Florida Tech in Melbourne. She has received several NASA awards and recognition, including group achievement awards, certificates of commendations, and the



NASA Exceptional Achievement Medal.

Parsons and her husband Jeremy, who also works for GSDO at Kennedy, have a two-year-old daughter, Isabelle, and one on the way.

Her hobbies currently focus on taking care of her daughter and two golden retrievers.

Other hobbies include scrapbooking, baking and travel.



Engineers Jason Hopkins and Lisa Lutz talked to attendees at the GSDO display during the Center Director Update March 6 at the Kennedy Space Center Visitor Complex. Community leaders, business executives, educators, and state and local government leaders were briefed on the center's programs and accomplishments by Kennedy Director Bob Cabana and other senior managers.

To view the latest
ESD Quarterly video, visit
<http://go.nasa.gov/1IAEM8F>