



# GSDO

GROUND SYSTEMS  
DEVELOPMENT & OPERATIONS

## EXPLORATION BEGINS HERE



### PROGRAM HIGHLIGHTS • JULY 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>.

## Shawn Quinn Named Exploration Systems Manager

Shawn Quinn recently was selected for the position of Exploration Systems manager in the Ground Systems Development and Operations Program at Kennedy Space Center.

In his new position, Quinn will be responsible for ground systems development activities, including design, development, integration, fabrication, construction, activation, and validation and verification of facilities, systems and ground support equipment, and operations planning and execution activities leading to NASA's Exploration Mission 1.

"Over the last three years, GSDO has made tremendous progress completing several milestones," Quinn said. "We are entering what will be the most challenging phases of the program, including fabrication, completion of the software development work, verification and validation, site activation, and operations, planning and procedure development."

Most recently, he was the Vehicle Integration and Launch (VIL) Integrated Product Team (IPT) manager. The VIL IPT is responsible for the operations and development of systems at Kennedy's Launch Complex 39, including the launch pads, mobile launcher, crawler-transporter and Vehicle Assembly Building.

"This new position expands on the breadth of my prior responsibilities, and I look forward to helping out with challenges across all four integrated product teams as well as the analysis integration team," Quinn said.

Quinn has almost 30 years of experience at the center. He joined NASA in 1985 in the Engineering Coop-

erative Education Program while studying for his degree in electrical engineering. As an undergraduate, he also assisted in the development of computer vision systems at the Georgia Tech Research Institute.

He has led several shuttle launch processing system upgrade projects

and was selected as shuttle processing chief for the Ground, Command and Data Systems Branch in 1999. In 2002, he served as a project manager in the Biological Sciences Office, and in 2003, he was selected as the deputy of the Orbital Space Plane Operations and Integration Office at Kennedy.

"NASA's Space Launch System and Orion will allow human exploration to continue beyond the moon in ways that were once a glimmer in our minds eye. Now we are building the hardware and developing the engineering operations teams that will launch the vehicle that will one day take people to Mars," Quinn said.



# NASA Prepares for Second Orion Underway Recovery Test

For NASA's new Orion spacecraft, part of getting ready for its first launch is getting ready for its first splashdown.

Orion is the exploration spacecraft designed to carry astronauts to destinations not yet explored by humans, including an asteroid and Mars. It will have emergency abort capability, sustain the crew during space travel and provide safe re-entry from deep-space return velocities.

After traveling 3,600 miles into space in December on the uncrewed Exploration Flight Test-1, Orion will return to Earth at a speed of 20,000 miles per hour and endure temperatures near 4,000 degrees Fahrenheit before landing in the Pacific Ocean. For the team tasked with recovering it, that is where the work begins.

NASA and Orion prime contractor Lockheed Martin are teaming up with the U.S. Navy and Department of Defense's Human Space Flight Support Detachment 3 to test techniques for recovering Orion from the water during Underway Recovery Test (URT) 2, Aug. 1-4, off the coast of San Diego, California.

URT 2 will pick up where URT 1 left off. During that first underway recovery test in February, dynamic conditions caused activities to conclude before all of the test objectives were met. Since then, the team has been working on concepts that would allow them to safely recover Orion despite such conditions.

"During this test, the team will investigate alternative procedures and recovery methods," said Mike Generale, Orion Recovery Operations manager and Recovery Test director at NASA's Kennedy Space Center in Florida. "One of the goals of the test is to have a primary and alternate means of recovering the Orion crew module for Exploration Flight Test-1 later this year."

For URT 2, the Orion test vehicle



At the U.S. Naval Base San Diego in California, the Orion boilerplate test vehicle and support hardware are secured in the well deck of the USS Anchorage on July 29 for Underway Recovery Test 2. NASA, Lockheed Martin and the U.S. Navy will conduct tests in the Pacific Ocean to prepare for recovery of the Orion crew module, forward bay cover and parachutes on its return from a deep-space mission. The Ground Systems Development and Operations Program is conducting the underway recovery tests. Photo credit: NASA/Kim Shifflett



At the U.S. Naval Base San Diego in California, visitors take photographs in front of the Orion boilerplate test vehicle during an outreach event July 28. The USS Anchorage is being prepared for the Orion Underway Recovery Test 2. Photo credit: NASA/Kim Shifflett

will be loaded into the well deck of the USS Anchorage (LPD 23), and the team will head out to sea, off the coast of San Diego, in search of sea conditions to support test needs.

New support equipment developed for URT 2 will accompany the test vehicle.

For the complete story, visit <http://go.nasa.gov/1say2yX>.

# Modifications Underway in VAB for Space Launch System



*A view looking down from one of the higher levels in the Vehicle Assembly Building on July 23 reveals High Bay 3 at Kennedy Space Center. Photo credit: NASA/Dimitri Gerondidakis*

History was made in the 525-foot-tall Vehicle Assembly Building (VAB) at NASA's Kennedy Space Center in Florida. It was inside the VAB that NASA's Apollo/Saturn V rockets and space shuttles were prepared for their roll-out to Launch Pads 39A and B to begin their missions.

Today, the Ground Systems Development and Operations Program and support contractors at Kennedy are busy upgrading the massive building for the next chapter in human exploration. The Space Launch System (SLS), NASA's new heavy-lift rocket, will be the largest launch vehicle ever built and more powerful than the Saturn V rocket. The SLS will send astronauts aboard the Orion spacecraft to explore deep-space destinations including an asteroid and eventually Mars.

"We have a lot of work to complete, and now is the time to refurbish and upgrade the VAB before we begin processing launch vehicles," said Steve Starr, a senior project manager with Vencore on the Engineering Services Contract.

In the five decades since the VAB was built, safety codes have changed, technology has advanced

dramatically, and the facility's steel structure and machinery have aged.

In 2013, all of the platforms in High Bay 3 were removed to make way for a new platform system that will be used to access the SLS and Orion spacecraft that will launch atop the rocket. The high bay also will accommodate the 355-foot-tall mobile launcher that will carry the rocket and spacecraft atop the crawler-transporter to the launch pad.

"The VAB project team, along with the entire GSDO Program office, continues to be on fire with excitement as we take a concept of providing a reconfigurable high bay, and initiate the construction effort," said Jose Lopez, VAB senior project manager. "This project is something that NASA and the entire nation can be proud of."

Lopez said when the project is complete, the VAB will be able to adapt to evolving launch vehicle configurations, without major construction efforts, something that has never been done before.

For the complete story, visit <http://go.nasa.gov/1sazoty>.



GSDO showcased the modifications underway at Launch Pad 39B at Kennedy Space Center on July 21 to Apollo astronauts visiting the center. From left are NASA Administrator Charles Bolden, Apollos 8 and 13 astronaut Jim Lovell, Apollo 11 astronauts Buzz Aldrin and Mike Collins, and Center Director Bob Cabana. The pad is being modified to support the agency's new Orion spacecraft which will lift off atop the Space Launch System rocket. The visit of the former astronauts was part of NASA's 45th anniversary celebration of the Apollo 11 moon landing. Photo credit: NASA/Kim Shiflett



GSDO supported the third annual Space and Science Festival, held July 17-20, at the Intrepid Sea, Air & Space Museum in New York.