



NEWS RELEASE

UNITED STATES AIR FORCE



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April 21, 2011
Release #11-16

Innovative spacecraft readied to support the warfighter

KIRTLAND AIR FORCE BASE, N.M. – Within a few weeks, the warfighter serving in the deployed theater will have a new space-based asset to employ in defeating the adversary.

Scheduled to launch late spring 2011, from NASA's Wallops Flight Facility, Wallops Island, Va., the ORS-1 satellite, led by the Operationally Responsive Space office here, features a modified version of the SYERS-2 sensor, currently flown on the U-2 aircraft, which will provide rapid, crucial data to U.S. Central Command.

We are working directly with USCENTCOM to make sure that the capability we are providing meets both their requirements and expectations and that a significant part of the past two years during the design, development, testing and pre-launch phases, has been keeping them involved in each process," said Thom Davis, ORS-1 mission manager, ORS office. "ORS-1 is a joint effort between the services including USCENTCOM, the U.S. Army, the U.S. Naval Research Laboratory, and Air Force Space Command. The key to date, in terms of our success, has been the ability of the team to work together."

ORS-1's genesis began in October 2008 following a dialogue between U.S. Strategic Command and USCENTCOM. The latter identified a requirement for enhanced intelligence, surveillance and reconnaissance assets and requested assistance from the former. Then, USSTRATCOM turned to the ORS office to examine possible solutions. ORS-1 became the agreed upon answer. In the 30 months since its initiation, the satellite has gone from the drawing board to almost ready for launch, a remarkable milestone considering most spacecraft take 7 - 10 years to design, develop, assemble, and eventually operate in the

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cosmos. ORS-1 has, so far, lived up to its spelled-out name.

“We executed preliminary design review and critical design review within eight months, which is phenomenal. Goodrich Corporation ISR Systems and Alliant Techsystems, Inc., Aerospace Systems Group, to their credit, have taken on something (modifying and integrating the modified SYERS-2 sensor and building the spacecraft bus, respectively) that normally takes years and have been able to do it in less than two and a half years,” Thom Davis said. “They have done that by working around as issues have come up. They’ve scheduled things around each other. As technical problems came up, they quickly put teams together to review and resolve them.”

ATK, Inc., Beltsville, Md., constructed ORS-1’s frame utilizing the same model as that for Tactical Satellite-3, which in June 2010, after a successful 13-month mission, transferred from an Air Force Research Laboratory experimental demonstration to an operational unit managed by Air Force Space Command. Currently, ORS-1 resides at the Goodrich ISR Division Danbury, Ct., facility until transport next month to the NASA Wallops Island launch site for integration with the Minotaur I launch vehicle. In October 2010, the company integrated the modified SYERS-2 sensor with the spacecraft bus and two months later, started environmental testing of ORS-1. The space vehicle is currently undergoing thermal vacuum testing, which began on March 17.

As the executing agent for the ORS Office, the Space and Missile Systems Center’s Space Development and Test Directorate, also at Kirtland AFB, has acted as the system program office and managed the design, development, integration and test activities of ORS-1’s road to liftoff. This includes the spacecraft, the satellite command and control system, the mission data processing and the launch vehicle. SMC/SD also coordinated the integrated testing of the Naval Research Laboratory’s Virtual Missions Operations center and the U.S. Army’s Common Data Link antennas into the ORS-1 system.

“Right now, the satellite is undergoing thermal vacuum testing, which is the last major significant milestone before we ship ORS-1 to the launch facility,” said Lt. Col. Tim Rade, ORS-1 program manager,

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SMC/SD. “Things are going pretty well and we’re excited to get to the end of the pre-launch activities. It’s been an exciting program, but very exhausting to push all the boundaries this operational prototype spacecraft happen as fast as we have.”

SMC/SD will lead the ORS-1 launch and on-orbit checkout, with support from the 1st Space Operations Squadron, Schriever AFB, Colo. Following liftoff from NASA’s Wallops Island Flight Facility, ORS-1 will undergo a 30-day, on-orbit checkout to initialize the satellite, calibrate the sensor and validate the ground systems. Once checkout is complete, SMC/SD will transfer control of ORS-1 to the 1st SOPS and 14th Air Force who will operate it out of their Multi-Mission Satellite Operations Center on behalf of USSTRATCOM and in support of USCENTCOM.

“My responsibilities are to ensure that our combined SMC/SD and 1st SOPS team is up, trained and ready to checkout and operate the satellite after launch. Once we get through our initialization and sensor checkout, we’ll turn the satellite over to them and they’ll execute the mission for the next one to two years dependent on the spacecraft’s life,” said Craig Howe, ORS-1 deputy program manager, SMC/SD. “We will also maintain contractor support for 1st SOPS to ensure they’ve got reach back into the infrastructure should there be anomalies.”

Established in May 2007 by the same year’s Defense Authorization Act, the ORS office, a DOD agency who reports to the Secretary of the Air Force in his capacity as the department’s executive agent for space, has been charged to contribute to development of low-cost, rapid-reaction payloads, buses, space lift and launch-control capabilities to meet joint military operational requirements for on-demand space support and regeneration. ORS-1 serves as the organization’s inaugural attempt to reach its calling.

“The ORS office has two fundamental jobs. The first one is to develop the technology enablers to allow the country to respond to needs for space capabilities on very short time periods. The second job is to respond to specific needs that come from the joint force commanders around the world. The ORS-1 mission falls into that category,” Dr. Peter Wegner, ORS office director, said. “We got authority to proceed on the

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ORS-1 program in October 2008, so a little bit over two and a half years from project start to launch. This is an incredible achievement in today's space acquisition environment."

Information obtained by ORS-1's SYERS-2 modified sensor will be transmitted to the ground via a common data link radio, similar to the kind of radio used to deliver ISR-modified data to the ground from airborne platforms like unmanned aerial vehicles. At that point, Army exploitation analysts will analyze the transmissions and then send the information back to USCENTCOM operators for use by the warfighter.

"It is an incredible team that has worked very, very hard over the last two and a half years to make this mission possible and it's really focused on providing capability to USCENTCOM," said Dr. Wegner. "We focus very much everyday on those Sailors, Soldiers, Airmen, and Marines that are deployed around the world in harm's way. If we can do our part to give them situational awareness about what is going on around them, we can help protect them and make sure they return home safely."

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GRAPHIC AND PHOTO CAPTIONS:

Graphic.jpg: Illustration of the ORS-1 satellite, an operational prototype, scheduled for a one- to two-year mission. The spacecraft features a modified version of the SYERS-2 sensor used on U-2 aircraft.

U.S. Air Force illustration

Goodrich.jpg: The ORS-1 satellite photographed during environmental testing last year at the Goodrich Corp's Danbury, Ct., facility.

Photograph courtesy of Goodrich Corp.