



## Northrop Grumman to Highlight Key Capabilities at the 17th Annual Space and Missile Defense Symposium

August 8, 2014

HUNTSVILLE, Ala., Aug. 8, 2014 /PRNewswire/ -- Northrop Grumman Corporation (NYSE: NOC) is highlighting its space and missile defense capabilities during the 17<sup>th</sup> Annual Space and Missile Defense Symposium to be held here Aug. 11-14 at the Von Braun Center.

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The symposium's 2014 theme is "Space and Missile Defense: Foundational to U.S. Strategy Today and in the Future." Northrop Grumman is this year's Titanium sponsor and will host the Salute to the Warfighter event Aug. 13 at 5 p.m. in Booth #601.

"This year's symposium will address homeland, regional and partner nation missile defense and space and missile defense technology development," said Kevin Campbell, vice president and Huntsville corporate lead executive, Northrop Grumman and 2014 Space and Missile Defense Symposium industry chair. "As the threat continues to grow, it remains our collective imperative to pursue technologies that meet our nation's and partners' needs."

In its displays and online information, Northrop Grumman is featuring foundational and integrated capabilities to enable joint warfighters to meet evolving threats, including:

- Since 1995, Northrop Grumman has been the prime contractor of the Joint National Integration Center Research and Development Contract (JRDC). The Northrop Grumman-led JRDC team conducts Ballistic Missile Defense System (BMDS)-level modeling and simulation, ground and flight tests, wargames, exercises, mission-critical operations and related analysis to facilitate the integration of new BMDS capabilities into warfighter operations.
- The Integrated Air and Missile Defense Battle Command System (IBCS) is a revolutionary command-and-control system developed to deliver a single, unambiguous view of the battlespace. The IBCS "any sensor, best shooter" enhanced aircraft and missile tracking and battle management system improves the ability of combatant commanders and air defenders to make critical decisions and optimizes limited resources.
- Operated by soldiers from the Army Space and Missile Defense Command, the Joint Tactical Ground Station (JTAGS) is a theater-deployed, transportable missile warning system that receives and processes space-based infrared satellite data directly from U.S. Air Force geosynchronous sensors. The JTAGS mission is to release ballistic missile warning messages and other infrared events to theater warfighters over multiple communication systems.
- The Three-Dimensional Expeditionary Long-Range Radar (3DELRR) is the Air Force's future main air defense radar, designed to detect and track hostile aircraft and missiles. Modular, scalable and designed to meet the Air Force's needs for decades to come, Northrop Grumman's S-Band 3DELRR solution has the potential to accelerate the Initial Operational Capability (IOC) by two years – and to save more than \$1 billion in the process.
- Based on proven technology that is already in production, the Highly Adaptable Multi-Mission Radar (HAMMR) provides comprehensive situational awareness to protect the fighting force from current and emerging threats. HAMMR is optimized to detect fixed- and rotary-wing aircraft, unmanned aerial systems, cruise missiles, and rockets and mortars, including those in the "cone of silence" of other radars.
- The Distributed Aperture System (DAS) provides passive, spherical battlespace awareness for F-35 pilots by simultaneously detecting and tracking aircraft and missiles in every direction and providing visual imagery for day/night navigation and targeting. The DAS works in conjunction with the AN/APG-81 active electronically scanned array radar and other onboard systems to give pilots an unprecedented degree of situational awareness.
- The two Space Tracking and Surveillance System demonstration satellites are showing the ability of a space sensor to provide high-precision, real-time tracking of missiles and midcourse objects that enable closing the fire control loops with BMDS. They use sensors capable of detecting visible and infrared light to track missiles through their full course of flight.

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