

## **JOINT LAND ATTACK CRUISE MISSILE DEFENSE (LACMD) ELEVATED NETTED SENSOR SYSTEM (JLENS)**



The Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) will enhance surveillance capability and provide air defenders with improved ability to observe, assess, and support engagements over the entire air battlespace, enabling precision engagement through information superiority to the dominant maneuver force as they engage the enemy. The full-dimensional protection pillar of Joint Vision 2020 addresses the need to protect U.S. forces from this very technology that the U.S. is attempting to exploit. JLENS provides a critical link against the number-one priority of the full-dimensional protection pillar: countering air and missile threats.

### **BACKGROUND INFORMATION**

The JLENS is an airborne radar platform designed to provide surveillance and targeting quality radar data on Land Attack Cruise Missiles and other airbreathing targets. The system also acquires and tracks surface moving targets and supports detection and trajectory prediction of tactical ballistic missiles. A JLENS system consists of two aerostats, one containing a Surveillance Radar (SuR) and one containing a Precision Target Illumination Radar (PTIR). The aerostats are non-developmental 71-meter, unmanned, tethered, non-rigid aerodynamic structures filled with helium and air. Each aerostat is tethered to a mobile mooring station and attached to a processing station through a fiber optic powered tether. The SuR provides the initial target detection, cueing the PTIR, which generates an engagement quality track. The JLENS system is integrated into the Joint Tactical Architecture via Link 16, CEC, SINGARS, and EPLRS. The system provides key contributions to generation of a Single Integrated Air Picture, through the fusion of high accuracy long-range tracking and target classification information with that of other sensors in the JTAMD architecture. Both radar systems will include Identification Friend or Foe interrogators.

Shooters, such as Patriot, Navy Standard Missile, the Marine Corps Complementary Low Altitude Weapons System and the Army HUMRAAM – can use the JLENS PTIR data to engage low-flying terrain masked cruise missiles before their own ground-based sensors can detect them. JLENS supports air-directed surface-to-air-missile and air-directed air-to-air missile engagements through both the engage on remote and forward pass mechanisms.

The JLENS program is executed in two blocks. Block 1 develops the PTIR fire control radar, which has a sector search capability. Block 2 develops the full azimuth 360 degree SuR and

demonstrates its ability to hand off targets to the PTIR for engagement execution. A complete JLENS system consists of one Block 1 PTIR and one Block 2 SuR. The purchase of 18 JLENS systems consists of the purchase of 18 PTIR, 18 SuR, 36 Mobile Mooring Systems, and 36 processing systems.

### **TEST & EVALUATION ACTIVITY**

The Army has drafted a JLENS TEMP; however, the TEMP cannot be finalized or submitted until the Army completes the JLENS ORD. The operational testing of JLENS will be structured to ensure that it can support Army, Navy, and Air Force air defense systems, including Medium Extended Air Defense System, Patriot, fighter- and ground-launched AMRAAM, and Standard Missile.

The JLENS program office supported a demonstration of the viability and utility of an elevated sensor and the engage on remote (EOR) mechanism. This demonstration leveraged a Patriot/AEGIS EOR Advanced Concept Technology Demonstration. The demonstration consisted of an Aegis cruiser in the Gulf of Mexico and a Patriot located at Eglin AFB. In the demonstrations, JLENS simulated detections of a simulated cruise missile that was below the radar horizon for the weapons platforms. A prototype JLENS processing station passed the simulated detections via CEC to both the AEGIS cruiser and the Patriot, which then simulated engaging the target cruise missile.

### **TEST & EVALUATION ASSESSMENT**

None.