

# Army Guide monthly



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## Future Technologies

### GE Intelligent Platforms Secures \$100 M from GD UK for British Army SCOUT SV Program



GE's Intelligent Platforms business has announced that it has secured orders from General Dynamics UK valued at BJ64 million (~\$100 million) to provide a range of embedded computing subsystems that will be deployed onboard the British Army's SCOUT Specialist Vehicle (SV) platforms.

The scalable, open architecture subsystems – which include Ethernet switches, gateway processors, data servers and video servers – will allow SCOUT SV platforms to be easily upgraded during their lifetime as new requirements and technologies emerge.

These subsystems provide the backbone of the vehicle electronics architecture. The Ethernet switch connects all the networked elements of the vehicle together; the gateway processor provides all the processing capability for the General Dynamics UK software to run the platform; and the data and video servers allow the vehicle to store and distribute vehicle and scenario data and video around the platform and on into the wider connected battlefield.

The GE offering took advantage of two unique GE capabilities. GE's close working relationship with NVIDIA and its expertise in developing and deploying rugged GPU technology enabled a solution to be proposed that uniquely met the SWaP (size, weight and power) constraints of the requirement.

GE was also able to propose the use of its OpenWare switch software, which allowed the operation of the vehicle's network to be optimized to the specific requirements of the platform.

"A strength of the GE proposal was that it was based exclusively on COTS – commercial off-the-shelf – products, minimizing program risk and cost and reducing time to first deliveries," said Andy MacCaig, Business Segment Leader, Ground at GE's Intelligent Platforms business. "However, an even greater strength was GE's ability to work in close collaboration with General Dynamics UK to fully understand the requirement and to adapt the proposed solution such that it was an exact fit with what was needed."

The SCOUT SV platforms replace the British Army's CVR(T) vehicles and are all-new, heavily protected, high

mobility, fully digital platforms featuring state of the art ISTAR (intelligence, surveillance, target acquisition and reconnaissance) capabilities. According to General Dynamics UK, who have been chosen to deliver 589 of the new platforms, the SCOUT Specialist Vehicle provides a step-change in the armored fighting vehicle capability being delivered to the British Army.

The SCOUT SV program includes six variants: SCOUT Reconnaissance, Protected Mobility Reconnaissance Support (PMRS), Command and Control, Engineering Reconnaissance, Repair, and Recovery. Each SCOUT SV platform variant will be a highly-agile, tracked, medium-weight armored fighting vehicle, providing British troops with state-of-the-art best-in-class protection.

SCOUT SV vehicles are developed upon a highly-adaptable and capable Common Base Platform, maximizing commonality in mobility, electronic architecture and survivability that ensures the British Army has a family of world-class platforms.

Each SCOUT SV platform variant has extensive capabilities, including acoustic detectors, a laser warning system, a local situational awareness system, an electronic countermeasure system, a route marking system, an advanced electronic architecture and a high performance power pack.



## Defence Industry

### Oshkosh Delivers Proposal for JLTV Production



The U.S. Department of Defense (DoD) is taking action to fill a critical capability gap in its tactical wheeled vehicle (TWV) fleet by advancing the Joint Light Tactical Vehicle (JLTV) program.

Oshkosh Defense, LLC, an Oshkosh Corporation company, submitted its proposal today in response to the U.S. Government's Request for Proposal (RFP) for JLTV Low Rate Initial Production (LRIP) and Full Rate Production (FRP). Oshkosh's JLTV proposal addresses the U.S. Army and Marine Corps' need for a lightweight, highly-mobile, net-ready vehicle with unprecedented levels of protection for our nation's Warfighters on the modern battlefield.

"Our troops deserve the best vehicle and technology our Government can provide, and no other company serves this mission more effectively than Oshkosh," said U.S. Army Major General (Retired) John Urias,

executive vice president of Oshkosh Corporation and president of Oshkosh Defense. “Our JLTV proposal reflects Oshkosh’s heritage of building high performance tactical vehicles, and an unparalleled commitment to providing our troops with the most capable and reliable JLTV at an affordable price.”

Oshkosh’s JLTV Family of Vehicles (FoV), based on the Light Combat Tactical All-Terrain Vehicle (L-ATV) platform, includes both four-seat and two-seat variants to execute a full spectrum of missions – in any climate or terrain. The Oshkosh JLTV is equipped with the Company’s TAK-4i™ independent suspension system to provide superior off-road mobility, maneuverability and ride quality. TAK-4i provides 25 percent more usable wheel travel and 70 percent faster speeds in off-road terrain compared to today’s best-performing TWVs. In addition, the Oshkosh JLTV FoV uses a digitally-controlled engine, which maintains steady, fuel-efficient power without sacrificing the acceleration and cruising speed that Warfighters need in high-threat environments.

“Every aspect of the vehicle—inside and out—is optimized for the Warfighter in anticipation of future environments and threats. Our JLTV is simply the most capable, reliable light tactical vehicle that’s ever been built,” said Urias.

According to John Bryant, senior vice president of Domestic Programs at Oshkosh Defense, protection, transportability, off-road mobility and communications are all major factors on the modern battlefield. “Our JLTV is built to give our troops the technological edge from start to finish – getting them to the fight, helping them win the fight, and getting them back home safely.”

The Oshkosh JLTV FoV merges key design elements of highly survivable combat vehicles and off-road tactical vehicles to operate in high threat environments and some of the world’s toughest terrains. It features the Oshkosh Core1080™ Crew Protection System, an occupant-centric, comprehensive development approach that increases survivability by protecting the crew and optimizing readiness. The Oshkosh JLTV also brings critical network and computing capabilities to the full spectrum of ground missions. Oshkosh has a unique combination of vehicle Original Equipment Manufacturer (OEM) expertise and extensive in-house Command, Control, Communications and Computers (C4) and systems capabilities to deliver a fully integrated, net-ready JLTV FoV.

Oshkosh Defense has manufactured and sustained more than 150,000 TWVs for the U.S. DoD and its allies. In November 2014, Oshkosh completed the Government’s Production Readiness Review (PRR) for the JLTV Engineering and Manufacturing Development (EMD) contract, demonstrating that the Company is fully prepared to manufacture world class JLTVs on its established production line. Employing lean processes, flexible assembly lines and rigorous quality checks, Oshkosh has a history of delivering TWVs on schedule, on budget, and with industry-leading quality. In early 2013, the Company produced its JLTV EMD prototypes

on the same active and proven production line used for its MRAP All-Terrain Vehicles (M-ATV), Family of Heavy Tactical Vehicles (FHTV), Family of Medium Tactical Vehicles (FMTV) and many other platforms.

## Defence Industry

### KONGSBERG to deliver PROTECTOR RWS for the General Dynamics UK SCOUT Programme



KONGSBERG has signed the production contract with General Dynamics UK, for the delivery of PROTECTOR Remote weapon systems for the SCOUT Specialist Vehicle Programme, valued at GBP 61 million.

“It is fantastic to see the efforts and teamwork that developed between KONGSBERG and the General Dynamics UK team during the initial phase of the programme moving forward into the serial production phase. We have delivered systems to the British Forces for several years and we are very proud to be able to continue doing so as part of such an important programme in the UK”, says Mr. Espen Henriksen, President of Kongsberg Protech Systems.

The PROTECTOR system will be available on all SCOUT SV platform variants and can replace the Primary Sight on the SCOUT Reconnaissance variant. The PROTECTOR Systems will be integrated into the advanced electronic architecture inside each platform. The systems will be produced in Kongsberg, Norway and deliveries will commence in the fall of 2016.

The PROTECTOR Remote Weapon Station is designed for small and medium caliber weapons and can be installed on any type of platform; it is a fully stabilized, combat proven system qualified for global operations. The PROTECTOR protects military troops by allowing the vehicle’s weapons to be operated from a protected position inside the vehicle.

As of 2014, the PROTECTOR system has been chosen by 17 nations and KONGSBERG continues to be the world’s leading provider of Remote Weapon Stations.

## Contracts

### GD Awarded \$50 M for Abrams Tank Production

The U.S. Army TACOM Lifecycle Management Command has awarded General Dynamics Land Systems \$49.7 million under an existing contract to upgrade M1A1 Abrams tanks to the M1A2 Systems



Enhancement Package (SEP) V2 configuration. General Dynamics Land Systems is a business unit of General Dynamics.



The most technologically advanced digital tank, the M1A2 SEP V2 includes improved color displays, day and night thermal sights, commander remote operated weapon station (CROWS II), a Thermal Management System (TMS) and a tank-infantry phone. The M1A2 SEP V2 maximizes the fighting ability of the tank on today's battlefield while preparing the platform for tomorrow's challenges.

The original multi-year contract was awarded in February 2008, which authorized the upgrade of 435 M1A1 tanks that have been in the Army's inventory for more than 20 years. General Dynamics is continuing the conversion of the tanks in the Army's active component to the M1A2 SEP V2 configuration.

Production will be performed by existing employees in Anniston, Ala.; Tallahassee, Fla.; Sterling Heights, Mich.; Lima, Ohio; and Scranton, Pa., and is expected to be completed by January 2017.



## Exhibitions

### Oshkosh Showcases UGV Technology at IDEX 2015



Oshkosh Defense, LLC, an Oshkosh Corporation company, will present its TerraMax® Unmanned Ground Vehicle (UGV) technology at the Future Defence Summit Unmanned Systems Conference luncheon on Feb. 23 during the International Defence Exhibition and Conference (IDEX) 2015. IDEX will host military leaders and dignitaries from around the world from Feb. 22-26 in Abu Dhabi, United Arab Emirates.

“In today’s high-threat environment, crew protection and safety are critical, especially as militaries worldwide look to maximize their current troops and equipment,” said U.S. Army Major General (Retired) John Urias, executive vice president of Oshkosh Corporation and president of Oshkosh Defense. “Our extensively tested TerraMax technology provides armed forces the option to complete missions in dangerous situations with fewer

troops, protecting countless lives.”

The Oshkosh TerraMax UGV technology has proven capable of being seamlessly integrated into convoy operations during live-force military evaluations and has been tested in virtually every manner of tactical environment. Unlike remote-controlled or tele-operated systems, TerraMax UGVs leverage the latest robotics technology that enables them to perceive and navigate complex, off-road environments entirely unmanned, with minimal operator supervision. TerraMax UGVs autonomously complete predetermined missions in the lead, or any position within a convoy while cooperating with other convoy vehicles and maintaining prescribed separation distances. TerraMax UGVs can be commanded on the fly to follow the same path as a lead vehicle, and because they do not rely on actively tracking the lead vehicle with its sensors, following distances beyond line of sight are possible. This flexibility is critical for troop safety, providing safe standoff from IEDs.

Oshkosh has produced and sustained more than 150,000 tactical wheeled vehicles for the United States and International militaries. Oshkosh serves armed forces around the globe by offering a full portfolio of heavy, medium, mine-resistant ambush protected (MRAP), airport rescue fire fighting (ARFF), and light vehicles. As the leading military vehicle manufacturer and ground operations experts, Oshkosh delivers an autonomous system with an unrivaled level of integration that can boost the performance and protection levels of logistics convoys. TerraMax UGV technology is delivered as a scalable kit that can be tightly integrated onto any tactical vehicle without compromising the vehicle’s original payload and performance capabilities. TerraMax UGVs are built to operate for extended periods of time, day or night, through dust and adverse weather without the fatigue or loss of awareness that can commonly afflict human operators.

TerraMax is designed to support rapid deployment allowing troops to be trained on TerraMax-equipped vehicles in only a few days. The user-friendly TerraMax operator control unit (OCU) serves as a significant force multiplier that empowers a single operator to supervise multiple unmanned ground vehicles from a stand-off distance. TerraMax UGV technology enables commanders to remove drivers from the vehicle entirely and minimize the number of troops exposed to potential threats such as IEDs.

Oshkosh has been supporting militaries in the Middle East for nearly 30 years and has a well-established presence with program offices in the United Arab Emirates and Kingdom of Saudi Arabia. Countries throughout the region, including the United Arab Emirates, the Kingdom of Saudi Arabia, Egypt, Jordan, Iraq and Oman, rely on Oshkosh vehicles for tactical and logistical operations. Oshkosh retains partnerships with industries in select markets and provides the full spectrum of vehicle life-cycle sustainment capabilities through its Integrated Product Support services.

Oshkosh will showcase its TerraMax technology and

its capabilities at IDEX booth #02-B11 along with the MRAP All-Terrain Vehicle (M-ATV) Extended Wheel Base Medical (EXM) and Light Combat Tactical All-Terrain Vehicle (L-ATV). Oshkosh Defense leadership will be available throughout IDEX to discuss the company's commitment to the Middle East and North Africa region and its full range of vehicles, technology and service offerings.

to the Norwegian Defence Logistics Organisation (FLO) on time and on budget.



## Defence Industry

### Mobile Secure and Rugged Radio Terminals



AT Communication International Introduces Mobile, Secure, and Rugged Radio Terminals.

We happy to introduce a new line of ultra-rugged data terminals and messaging applications, providing rapid implementation of secure data services for HF, VHF, or UHF radio networks.

The RT5 Tactical Data Terminal for mobile military communications extends digital messaging from the front line to mobile or fixed command centers.

The RA5 Secure Data Terminal provides an intuitive user interface and minimal training, for rapid deployment by first responders, security, government agencies and paramilitary users.

By offering an extensive collection of software applications and modems to complement the line of HF, VHF, and UHF radio systems, AT Communication International is significantly improving our ability to serve the rapid mobilization requirements for military/security, first responders, naval and government organizations.

In addition to the new line of data terminals, the company is providing high performance modems with enhanced data rates and a secure gateway between tactical radios, and email messaging. Enabling efficient and simple to use messaging, users can rapidly deploy radio networks for data messaging; even when voice communication is not possible.

For more information, please visit our page:  
<http://at-communication.com/en/data-terminals.html>

A roll-out ceremony was held yesterday in Moelv, Norway, at the facilities of BAE Systems Høgglunds' business partner CHSnor AS. More than 200 guests attended, representing FLO and the Norwegian Armed Forces, as well as BAE Systems Høgglunds and its Norwegian industrial partners.

BAE Systems Høgglunds' contract, signed in 2012, includes the upgrade of the Norwegian Army's existing fleet of 103 CV9030s and 41 new-build vehicles, giving the Army a total of 144 state-of-the-art CV90s in varying configurations. They will all include enhanced capabilities for future battlefield and conflict scenarios, such as in the areas of protection, survivability, situational awareness, intelligence, and interoperability.

"I'm really pleased that we are able to reach this key milestone," said Colonel Ragnar Wennevik, Norwegian Army CV90 project leader. "BAE Systems Høgglunds is an impressive supplier, and with the new CV90, we are buying the world's most advanced armored combat vehicle family. Already proven in combat, we are now taking it to the next generation with state-of-the-art survivability, lethality, digitalization, and mobility."

This program is a key element of the modernization of the Norwegian Army, providing them with the next-generation CV90, one of the world's most advanced IFV and a low-risk proven solution. The Norwegian Army will incorporate five different configurations of the CV90 from 2015 onwards: 74 infantry fighting, 21 reconnaissance, 15 command, 16 engineering, and 16 multi-role and tow driver training vehicles. The multi-role vehicles can fulfill different functions, including mortar carrier and logistics roles.

In 2014, BAE Systems rolled out three variants of the Norwegian vehicles in Sweden, which were subsequently handed over to Norwegian industry for completion, as part of in-country partnerships.

Both the Norwegian customer and BAE Systems Høgglunds have been extremely focused on meeting every milestone in the contract from the outset. This focus has ensured that the two parties have developed a strong relationship based on mutual respect and openness, which has ensured project success.

BAE Systems Høgglunds is working closely with Norwegian industry in a comprehensive industrial cooperation contract, which is part of the main vehicle contract. Companies such as Kongsberg Defence & Aerospace, Nammo Raufoss AS, CHSnor AS, Moelv, and Ritek AS Levanger are key parties to the contract. The turret upgrade work, for example, takes place at CHSnor AS, and yesterday's handover was the first in a

## Defence Industry

### BAE Systems Delivers First Of 144 CV90s To Norway

BAE Systems has handed over the first CV90 Infantry Fighting Vehicle (IFV) in serial production

series of vehicle deliveries from CHSnor AS and Ritek through 2018.

“The Norwegian industrial cooperation is extensive and important to us, especially when industrial cooperation is one of the major factors for international success,” said Tommy Gustafsson-Rask, managing director for BAE Systems HIØggglunds. “We want to thank all industry partners for their commitment and dedication, and also our professional and supportive customer.”

