

# Army Guide monthly



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## Defence Industry

### BAE Submits Bid for Highly Survivable, Affordable AMPV



BAE Systems today announced the submission of its highly survivable low-risk solution for the U.S. Army's Armored Multi-Purpose Vehicle (AMPV) competition. The company's offering addresses the critical need to replace the Vietnam-era M113 that the Army has identified as its top priority for the safety and survivability of soldiers.

"Today's submission is the culmination of more than 15 years of concept development and validation and two years of internal development and responses to the Army to fill a critical capability gap for our soldiers," said Mark Signorelli, vice president and general manager of Combat Vehicles at BAE Systems. "Our AMPV proposal provides an affordable low risk solution that is ready now and meets the Army's survivability, force protection, and mobility requirements."

BAE Systems' AMPV capitalizes on the proven Bradley and Paladin Integrated Management designs, meeting the Army's force protection and all-terrain mobility requirements, enabling the AMPV to maneuver with the rest of the Armored Brigade Combat Team (ABCT). The company maximized commonality within the AMPV family of vehicles and the ABCT to reduce risk and provide significant lifecycle cost savings to the Army.

"BAE Systems built and demonstrated prototypes for each of the five variants in order to provide the best solution for the Army," said Greg Mole, AMPV capture director at BAE Systems. "Given the maturity of our design and the commonality both within the AMPV and ABCT fleets, we feel this offers significant opportunity to accelerate the program's schedule."

The BAE Systems AMPV team includes DRS Technologies, responsible for power management, distribution, and integration; Northrop Grumman Corporation, responsible for Mission Command Mission Equipment Package design and integration; Air Methods Corporation, responsible for the design and integration of medical evacuation and treatment subsystems; and Red River Army Depot, responsible for vehicle teardown and component remanufacture. The company's offering includes proven powertrain and drivetrain components from Cummins, L3 Communications, and LOC Performance that supports the ABCT industrial base.

The Army terminated the M113 program in 2007 and has been working with industry for more than two years to maximize competition for the vehicle's replacement.

The service plans to award an initial contract for the 52-month engineering manufacturing and development phase in January 2015 with prototype delivery 24 months after contract award.

## Defence Industry

### Puma armoured infantry fighting vehicle makes Paris debut following successful desert trials



Now being built in series for the German Army, the new Puma armoured infantry fighting vehicle is on show at this year's Eurosatory for the first time (Stand C220).

During recent heat (UAE 2013), cold (Norway 2012) and live-fire trials conducted in cooperation with experts from the Federal Office of Bundeswehr Equipment (BAAINBw) and the German Army, the Puma performed very well under all climatic conditions.

In terms of technology, the Puma AIFV is on the cutting edge in every respect, with an extremely effective modular protection concept, a remote-control, stabilized turret armed with an ABM-capable 30mm automatic cannon, decoupled running gear with hydro-pneumatic shock absorber elements, and last but not least its compact, newly developed MTU main engine (800 kW).

Another vital aspect of the forward-looking Puma concept is its network-enabled warfare capability, including battle management and future soldier systems and digital communications equipment. This too will make the new AIFV a key element in modern operational scenarios.

To help soldiers sharpen their skills, each vehicle can be quickly transferred to training mode, enabling it to serve as an autonomous training platform. Moreover, special networking technology makes it possible to connect up to four vehicles in a training formation. In addition, advanced simulators (e.g. driving simulators) and computer-supported training aids are available for training the entire crew.

The Puma's unrivalled growth potential – closely linked to systematic use of open interfaces – will enable the system to evolve to meet future challenges, keeping it combat-ready for decades to come.

Its roomy interior, offering roughly nine cubic metres of space, permits integration of various mission equipment kits. From mobile tactical operations centres to field ambulances to armoured recovery systems, the Puma lends itself to a wide variety of different vehicle

families.

The Puma AIFV is the product of a globally unique partnership of Europe's top two makers of land systems, Krauss-Maffei Wegmann and Rheinmetall. Founded specifically to manage the German Puma procurement project on the contractor side, PSM Projekt System & Management GmbH is a 50:50 joint venture owned by the two groups.



### Exhibitions

#### Oshkosh Showcases New Variants of MRAP All-Terrain Vehicles at Eurosatory



Oshkosh Defense, a division of Oshkosh Corporation (NYSE: OSK), will unveil its new MRAP All-Terrain Vehicle (M-ATV) variants to military leaders and dignitaries from around the world at Eurosatory 2014 in Paris, starting today through June 20. Oshkosh has expanded its combat-proven M-ATV Family of Vehicles to serve a spectrum of mission requirements and needs for armed forces around the world.

“Our M-ATVs provide extreme off-road mobility and are consistently selected as the MRAP of choice by leading militaries for a full range of missions,” said U.S. Army Major General (retired), John Urias, Oshkosh Corporation executive vice president and president of Oshkosh Defense. “We’ve worked closely with our customers to develop, test and produce our new M-ATV variants – each one equipped for a specific mission profile with specialized functionality to support the most challenging operations you can imagine.”

#### Expanded M-ATV Family of Vehicles

The global M-ATV Family of Vehicles includes two multi-mission models – the M-ATV Standard and M-ATV Extended – with many variants. The M-ATV Standard model provides response and support capabilities for a range of offensive and defensive missions in off-road environments. The M-ATV Extended model delivers increased capacity for additional troops and equipment to support a wider assortment of mission profiles, such as mounted infantry support, explosive ordnance support and command-and-control.



### Exhibitions

#### CMI Defence to Exhibit New COMMANDO™ Select 90mm Direct Fire

#### Vehicle at Eurosatory



Infantry-led mounted and dismounted operations are in ever greater need of effective fire support. Peacekeeping, reconnaissance and counter-insurgency operations have the same need. To help meet this need, Textron Systems' Marine & Land Systems has teamed with CMI Defence to integrate the Cockerill CSE 90LP turret with its COMMANDO Select 4x4 armoured vehicle. The resulting COMMANDO Select 90mm Direct Fire Vehicle (on display at Eurosatory Hall 5, stand numbers K338 & K337) offers heavy organic direct fire-support to light and highly mobile armoured forces.

The Cockerill CSE 90LP is a low-weight two-person turret. Featuring the proven Cockerill 90mm low pressure gun (of which some 2,500 units have been sold) the turret delivers a range of highly effective rounds from bunker-busting HE to APFSDS-T, HEAT-T, Smoke and Canister. These rounds are accurately delivered around the clock using electrically-powered gun drives and a night/day digital fire control system. The low weight of the Cockerill CSE 90LP turret allows the COMMANDO to maintain its highly mobile characteristics. Despite its high capability and advanced design, the Cockerill CSE 90LP turret is simple to use and ruggedly reliable in the field; a real soldier's tool.

Textron Systems' Marine & Land Systems' COMMANDO Select four-wheeled armoured personnel carriers offer an enhanced combination of lethality, survivability, mobility and sustainability. Exceptional crew protection is built into all COMMANDO Select vehicles, which are in use today by the Afghan National Army. Greater survivability, however, doesn't mean sacrificing vehicle mobility. Rigorously tested and proven in the toughest environments, COMMANDO Select vehicles utilize a V-Hull with all systems protected under armor to deliver superior mine-blast protection while also providing unmatched on-road/off-road mobility.

The 90mm Direct Fire Vehicle variant combines the full range of combat-tested COMMANDO Select vehicle capabilities with Cockerill's tested 90mm turret for additional firepower and lethality.

The combination of the Cockerill CSE 90LP turret with the COMMANDO Select 4x4 armoured vehicle offers the user:

- Excellent tactical and strategic mobility
- Highly effective organic direct fire-support by day and by night
- Broad range of tactical options (from peace-keeping to counter-insurgency to conventional war fighting)
- High survivability

- Simplicity of use and support
- Rugged reliability in the field
- The confidence of proven, in-service, systems

The Cockerill CSE 90LP turret, joined with the combat-proven COMMANDO armoured vehicle chassis, promises a great advance in terms of organic direct-fire capability for light armoured forces. The COMMANDO Select 90mm Direct Fire Vehicle is a cost-effective force multiplier that delivers flexible lethality together with high strategic mobility, tactical mobility, survivability and reliability.



## Exhibitions

### CMI Defence and BAE Systems Högglunds present the CV90105



Global demand for medium tanks continues to strengthen. At Eurosatory 2014, CMI Defence and BAE Systems Högglunds present a new medium tank concept. The system integrates the Cockerill XC-8 turret and the CV90 tracked chassis. With a system weight of some 25 tonnes, the concept offers advanced 105mm or 120mm firepower with high operational flexibility and tactical mobility.

The Cockerill XC-8 is a low-weight concept-turret that recognises divergent market requirements; specifically for the broad operational flexibility demanded by the medium-tank requirement, and for the narrower, more specialised anti-armour requirement. Thus one of two low-recoil force guns may be fitted in the XC-8.

The Cockerill 105mm high pressure gun provides crew commanders with a wide choice of ammunition to suit the tactical situation; it fires all NATO-standard 105mm types and the Cockerill Falarick 105 Gun Launched Anti Tank Guided Missile (GLATGM). Elevating to +42° this weapon delivers exceptional engagement capability in complex terrain, an indirect-fire HE capability to beyond 10km range, and the GLATGM permits heavy armour to be engaged at extended ranges.

The Cockerill 120mm high pressure gun provides a strengthened anti-armour capability. This weapon fires all NATO-standard 120mm smoothbore ammunition and the Cockerill Falarick 120 GLATGM, which permits the effective engagement and penetration of heavy armour to beyond 5km range.

Both guns are employed using a common high performance, digital, fully-stabilised, day/night weapon control system. Turret weight is kept low through the use of a bustle-mounted autoloader, which permits a two-person crew. The Cockerill XC-8 concept-turret

draws on the proven modular technology of the established Cockerill CT-CV 105HP turret. This latter turret is now entering production and this permits the XC-8 to be realised at low risk.

The CV90 is the most versatile tracked vehicle available today. In-service with six (6) different nations and combat proven by three (3) of these, it is a stunning example of uncompromising combat vehicle design. Wherever CV90 family is deployed, it provides cutting-edge tactical and strategic mobility, anti-armour capability and class-leading levels of survivability.

CV90 is famous as an Infantry Fighting Vehicle (IFV) but the CV90 family comprises many other successful variants such as Armoured Recovery Vehicle, Forward Observer Vehicle, Command & Control Vehicle and Anti Aircraft Vehicle. Benefitting from BAE Systems Högglunds consistent investment in technology and capability development, the latest incarnation of CV90 is the Armadillo. The CV90 Armadillo, combines unprecedented levels of modularity with even greater levels of protection, operational flexibility and payload capacity.

The combination of the Cockerill XC-8 turret with the combat-proven BAE Systems Högglunds CV90 chassis promises a great advance in terms of medium-weight direct-fire capability. The CV90105 concept offers highly effective and flexible lethality with market-leading strategic mobility, tactical mobility and reliability.

The future is uncertain. CV90105 offers the capability to effectively manage the operational challenges of today, with the operational flexibility and growth potential to do the same into the long-term future.



## Exhibitions

### CMI Defence presents the Cockerill CPWS 20-25-30



To increase the tactical options open to mechanised infantry, reconnaissance units and other light and highly mobile forces, and to increase their operational effectiveness and crew survivability, CMI Defence has developed the Cockerill CPWS protected medium-calibre remote weapon station. The Cockerill CPWS offers a uniquely beneficial combination of high lethality, high crew protection and low weight (high mobility). Available with a wide variety of medium-calibre weapons, the Cockerill CPWS gives real teeth to modern light forces.

CMI Defence is acclaimed for its low-weight, high-impact weapon systems. Maintaining this tradition,

the Cockerill CPWS is a remote weapon system that offers the firepower of a 20-30mm automatic cannon in a package weighing less than one tonne (basic). As exhibited at Eurosatory 2014, the system is full stabilized and offers 24 hour day/night operating capability. Importantly, a crew can fully serve and reload the weapon system from under armour. Because it is highly modular, the basic Cockerill CPWS system can be readily configured according to the Customer's operational need and budget.

The Cockerill CPWS is designed to incorporate a range of 20-30mm automatic weapons. This permits a Customer to select the weapon that best meets his operational, cost and commonality needs. For example Cockerill CPWS is exhibited at Eurosatory 2014 in three different configurations:

- Cockerill CPWS 30 (mounting the ZTM-1 automatic cannon, firing 30mm x 165mm ammunition) on the BTR-3E 8x8 APC chassis
- Cockerill CPWS 25 (mounting the ATK M242 chain gun, firing 25mm x 137mm ammunition) on the RTD VAB Mk3 6x6 APC chassis
- Cockerill CPWS 30 (mounting the ATK M230LF chain gun, firing 30mm x 113mm ammunition) on the RTD CRAB 4x4 chassis

Depending on the type of weapon selected, the system can elevate from -10° to +60°. Similarly the Cockerill CPWS typically carries 150 rounds of ready-to-use medium calibre ammunition.

Through innovative design, the Cockerill CPWS weighs less than one (1) tonne in its basic form. This permits the system to be mounted on a light armoured vehicle. The value of this capability to the serving soldier is powerfully illustrated at Eurosatory by the CPWS 30 mounted on the RTD CRAB 4x4 chassis, giving protected 30mm lethality to a light six (6) tonne 4x4 vehicle.

The exhibited Cockerill CPWS systems are equipped with a stabilized day/night (thermal) high-performance sighting system for 24/7 operation. The sighting system provides the User with a panoramic 360° view, independent of turret position. When used to engage a target, the gun automatically aligns with the sighting system and a digital ballistic computer ensures very high hit probability when firing on the move. The Cockerill CPWS is ready be networked into a computer simulated training environment, permitting crews to undertake tactical training using their combat hardware, before disconnecting and returning the system to its normal duties.

The innovative Cockerill CPWS concept provides armour protection for both equipment and operator. To preserve weapon system function and the safety of the operator during combat, the remote weapon system is completely enclosed in armour. The operator can fully access the weapon system from the safety of the vehicle. This permits him to undertake reloading and other duties without exposing himself to hostile fire. Featuring a stealth profile and selectable levels of ballistic armour, the Cockerill CPWS significantly increase the survivability of both combat-vehicle and crew.

The remotely-operated Cockerill CPWS integrates proven advanced technologies with a range of medium calibre automatic weapons (20mm to 30mm). According to Customer need, the Cockerill CPWS provides stabilized, survivable, high lethality at low weight. It significantly increases the operational capability and flexibility of highly mobile armoured vehicles. The Cockerill CPWS gives real teeth to modern light forces.

## Exhibitions

### PROTECTOR MCT-30 unveiling at Eurosatory



KONGSBERG is unveiling the latest PROTECTOR MCT-30 vehicle integration at the Eurosatory exhibition.

General Dynamics Land Systems and KONGSBERG will unveil its latest vehicle integration at Eurosatory. The PROTECTOR MCT-30 and LAV integration will be exhibited for the first time in Paris during the exhibition.

PROTECTOR MCT-30 provides exceptional lethality at range, growth potential, as well as employment of Air Burst Munitions (ABM). The link-less (ammunition) feeding system, unique to PROTECTOR MCT-30, affords "first round select" as well as reload under armor.

"The PROTECTOR MCT-30 is truly a 'best of breed' product. When you combine experience and innovation at the major component level and combine these into a system that already leverages PROTECTOR commonality and performance, the system is capable of addressing the operational requirements across the turret market," says Espen Henriksen, President Kongsberg Protech Systems.

The system has been undergoing extensive tests and live firing trials over the past year, both in Fort Benning, Georgia in the United States as well as in Kuwait. The live firing events have included static, "static against moving," and "moving against moving" engagements at distances in excess of 2,000m. All the results have been extremely successful. The system has also proven successful in handling anti-tank ground missiles, and has demonstrated excellent results in firing both short and long distances with the Javelin missile.

Over the next year, the KONGSBERG and General Dynamics Land Systems LAV integration will be displayed and demonstrated throughout the world. Soon after Eurosatory the system will make its way to the DVD exhibition in the United Kingdom.