

French armour programmes move ahead

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The French armoured fighting vehicle (AFV) industry comprises two key players, Nexter Systems and Renault Trucks Defense. Christopher F Foss looks at these contractors and the AFVs they are developing for domestic requirements and the export market

The French Army's overall modernisation plan, dubbed SCORPION, will provide a network-enabled capability that links not only land platforms, artillery, and infantry systems, but also aerial platforms such as the Tigre attack helicopter and unmanned aircraft.

A key part of the SCORPION programme is the development and fielding of two manned platforms: the Jaguar Engin Blindé de Reconnaissance (EBRC) and the Griffon Véhicule Blindé Multi Rôle (VBMR), which are being developed by a French industrial consortium consisting of Nexter Systems, Renault Trucks Defense, and Thales Communications & Security under a EUR5 billion (USD5.65 billion) contract awarded in late 2014.



A key part of the French Army's SCORPION programme is the development and fielding of the Jaguar 6x6 reconnaissance vehicle (left) and the Griffon 6x6 APC. (Nexter Systems/Renault Trucks Defense/Thales)

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Nexter Systems will be generally responsible for final integration of both vehicles. Renault Trucks Defense will supply the complete running gear and remote weapon station (RWS) and be responsible for through-life support and spare parts. Thales Communications & Security is providing the electronics.

Under current plans, the French Army is expected to receive 248 Jaguar EBRCs to replace Nexter Systems' 105 mm-armed AMX-10RCR 6x6 and 90 mm Panhard Defence Sagaie 6x6 armoured cars, which have been in service for more than 30 years.

The Jaguar EBRC - expected to have a gross vehicle weight (GVW) of around 25 tonnes - will have a commander, gunner, and driver for crew. Its diesel powerpack is located at the rear.

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Nexter Systems' orderbook

The first tangible programme from the newly merged Nexter Systems and Krauss-Maffei Wegmann of Germany could be a main battle tank (MBT)/direct-fire platform to replace the French Leclerc and German Leopard 2 series MBTs, and this is currently being studied at government level. The tank could be armed with a 130 mm smoothbore gun, fed by an automatic loader.

The largest French Army tracked AFV programme in recent years has been the Leclerc MBT, for which Nexter Systems is the prime contractor. A total of 406 Leclerc MBTs were manufactured for France and the United Arab Emirates has received 436 (in several variants) optimised for operations in the Middle East.

The vehicles have a German MTU 1,500 hp powerpack, a battle management system, air conditioning, different armour arrays, an auxiliary power unit (APU), and improved optronics.

France's Leclerc fleet has been reduced to 220 units and in 2015 the Direction Générale de l'Armement (DGA) procurement department awarded Nexter Systems a contract to renovate 200 Leclerc MBTs and 18 Leclerc armoured recovery vehicles (ARVs) to extend their operational life out to 2035 and 2040, respectively.

This work will be conducted at the Nexter Systems facility in Roanne, where final integration of the Leclerc MBT was undertaken. Leclerc turrets were built at the now-closed Nexter Systems facility in Tarbes.

Nexter Systems has completed deliveries of 630 Véhicule Blindé de Combat d'Infanterie (VBCI) 8x8s to the French Army, of which 520 are in the VCI infantry fighting vehicle (IFV) configuration and the remaining 110 in the vehicle command post configuration.

These were also manufactured at Roanne, where the production line is now being used to take earlier VBCIs to a higher standard. Upgrades replace some of the suspension and driveline elements to enable the GVW to be increased from 29 tonnes to 32 tonnes so additional armour can be fitted.

Demonstrating their ease of distribution, VBCIs were recently deployed 2,500 km to Mali without the use of heavy equipment transports and a stated 95% availability.

In September 2015 Nexter Systems unveiled the VBCI-2 8x8 IFV for the export market. Its features include a new hull design for better protection, a newer suspension, a more powerful 600 hp diesel engine, and larger tyres optimised for desert conditions.



The latest Nexter Systems VBCI-2 8x8 infantry fighting vehicles feature a new Nexter Systems two-person turret armed with the 40 mm Case Telescoped Armament System. (Christopher F Foss)

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The standard French Army VCI is fitted with a one-person turret armed with a Nexter Systems 25 mm M811 dual-feed cannon and a 7.62 mm co-axial MG. The commander - seated in the hull to the rear of the driver on the left side - can lay weapons onto the target using the panoramic sighting system mounted on the turret's roof.

VBCI-2 is fitted with the Nexter Systems two-person turret armed with the CTAI 40 mm CTWS mandated by France for the army's Jaguar EBRC reconnaissance vehicle. It has also been picked by the United Kingdom for the General Dynamics Land Systems UK Ajax reconnaissance vehicle and the Lockheed Martin UK Warrior Capability Sustainment programme.

First production 40 mm CTWS weapons were completed in early 2016 at Bourges and this has now become Europe's largest medium-calibre programme. The VBCI-2 IFV typically has three crew - commander, gunner, driver - and seats eight dismounts. It can also be fitted with a variety of RWSs.

According to Nexter Systems, "A number of pre-production VBCI-2 have been built which are used for company trials and development as well as overseas demonstrations."

Sources told *IHS Jane's* the vehicle with a 40 mm turret underwent successful fire power and mobility trials in the Middle East in 2015.

Separately, in September 2013, Nexter Systems launched its Tactical Infantry Transport & Utility System (TITUS), which was developed to bridge a gap in its product range between the VBCI 8x8 and the Aravis 4x4 wheeled AFV. The company envisions it as a potential replacement for the still widely deployed M113 APC.



The Nexter Systems TITUS 6x6, developed for the export market, is based on a Tatra chassis to provide a high level of cross-country mobility. It is shown here fitted with the Nexter Systems ARX20 RWS armed with a 20 mm cannon and 7.62 mm MG. (Nexter Systems)

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The Aravis 4x4 APC, originally developed by Nexter Systems as a private venture, has been ordered by three countries. It is shown here deployed by the French Army as part of a route-clearing package. (Nexter Systems)

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Renault Trucks Defense

Renault Trucks Defense is the largest element of Volvo Group Government Sales (VGGS), which also includes ACMAT Defense, Panhard Defense, and Mack Defense.

Its largest customer is the French Army, which currently deploys 25,000 wheeled armoured vehicles and tactical support vehicles, but the company also exports to more than 40 countries.

In addition to manufacturing complete vehicles, the company said it provides "through-life support as well as complete protection and driveline solutions".

Renault Trucks Defense's best-selling wheeled AFV is the VAB, of which 5,000 have been built. Most of these were in a 4x4 configuration, but some export customers opted for the 6x6 model, which has greater cross-country mobility.



The latest Renault Trucks Defense VAB Mk 3 6x6 has been developed for the export market, where it has already won orders. (Renault Trucks Defense)

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Under a contract to the DGA, Renault Trucks Defense upgraded many VABs for the French Army to the VAB Ultima configuration. The main improvement area is survivability, with increased armour protection and blast-attenuating seats.

Firepower was also improved with the installation of a Norwegian Kongsberg Protector RWS armed with a stabilised .50 calibre M2 HB MG. The suspension and braking system have also been upgraded for the vehicle's heavier weight.



Some 5,000 VABs have been manufactured by Renault Trucks Defense for the home and export markets, with the largest user being the French Army. Shown here is an upgraded VAB with a raft of improvements such as a Kongsberg Protector RWS armed with a .50 calibre M2 HB MG. (Christopher F Foss)

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There are still many export customers for the VAB family and Renault Trucks Defense can supply kits to enable existing users to upgrade their vehicles and extend operational lives.

While there is a trend towards fielding larger and heavier 8x8 vehicles, Renault Trucks Defense sees a significant gap in the market for 6x6 APCs. This has led to the VAB Mk 3 6x6 vehicle's development. It was launched in 2012 with five prototypes and pre-production vehicles so far being completed and fully qualified by the company.

The original VAB was developed in 1972 and, according to the company, "the latest VAB has more internal volume and payload, which enables it to undertake a larger range of battlefield missions".

While the VAB Mk 3's GVW depends on the configuration, it is typically 20 tonnes including crew, weapons, ammunition, and the modular armour package (MAP), which enables the vehicle to be tailored to meet user-specified threat levels.

The VAB Mk 3 is powered by a Renault Dxi Euro III-compliant diesel engine developing 340 hp, coupled to a ZF fully automatic transmission, giving a road speed of up to 105 km/h and a power-to-weight ratio of 17 hp/tonne.

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Mack Defense aims for exports

While in the United States Mack has traditionally concentrated on the commercial market, it has started to move into the defence business.

Following a Canadian competition, Mack Defense won a CAD725 million (USD550 million) contract to supply 1,500 8x8 trucks for the Medium Support Vehicle System (MSVS) Standard Military Pattern (SMP) programme. The baseline chassis for this is the Kerax 8x8, which is a member of a tactical vehicles family available in various configurations.

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Subsystem supplier

In addition to selling complete wheeled AFVs, Renault Trucks Defense supplies chassis, complete diesel powerpacks, engines, and drivelines to other equipment manufacturers.

The company supplies the complete driveline for the French Army VBCI 8x8 IFV and will supply the complete driveline for the French Army's new Jaguar 6x6 reconnaissance vehicle and Griffon 6x6 APC for the service. It has also supplied more than 300 DXi7 6-cylinder diesel engines developing 320 hp for installation on the Indonesian PT Pindad Anoa 6x6 APC.

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