

Enter the Scorpion: French Army vehicle fleet modernisation

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France's army is a hardened and seasoned fighting force, having been deployed on continuous overseas operations for nearly 40 years. However, much of its inventory was bought before any of these operations began and is in urgent need of replacement. *Nick de Larrinaga* looks at the service's modernisation plan to do just that and more.

Launched in 2014 following more than a decade of trials, the French Army's ambitious vehicle fleet modernisation plan involves "more than just the replacement of old equipment", according to General Bertrand Houitte, the Major General of the Army (deputy chief of staff). As well as replacing the old vehicles, he said the wider aim of the programme is "to get us up to grips with new technologies".

Known as Scorpion (Synergie du contact renforcée par la polyvalence et l'infovalorisation), the plan calls for the complete replacement or renovation of all of the army's frontline combat vehicles at the same time and the linking of these with a new and unified communications and battlefield management system (BMS).

The project was begun by the French Army Staff and the Direction Générale de l'Armement (DGA) in 2000 with a lengthy trial period lasting almost 15 years. In total over EUR200 million (USD224 million) was spent conducting studies and analysing the operational experience of the precursor networked technologies found within the FELIN soldier system and the electronic architectures of the Véhicule Blindé de Combat d'Infanterie (VBCI) 8x8 infantry fighting vehicle (IFV).



Under Scorpion 'Step 1', Nexter will upgrade the French Army's 200 Leclerc MBTs under a EUR330 million contract. (IHS/Patrick Allen)

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In late 2014 France finally kicked off the programme with the launch of Scorpion 'Step 1' and an order for two new 6x6 vehicles. This contract was placed with a French industrial consortium (known as the GME) of Nexter Systems, Renault Trucks Defense, and Thales. With first deliveries planned as soon as 2018, the timeline for the programme is now as ambitious as its goals are transformative.

The Scorpion project aims to transform the equipment and networking of the key operating unit of the French Army: the *groupement tactique inter-armes* (GTIA), or combined arms tactical group. This is a roughly battalion-sized force of around 1,000 personnel, designed for self-sufficient overseas operations. As such it includes infantry, armour, artillery, logistics, and other supporting elements. Under the modernisation plan the French Army expects to be able to deploy its first Scorpion GTIA abroad by 2021, its first Scorpion brigade (including three GTIAs) by 2023, and two Scorpion brigades by 2025.

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French Army Griffon (left) and Jaguar (right) armoured vehicle concept images. (Nexter/Renault/Thales)

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Griffon

By far the largest vehicle order being purchased under the Scorpion programme is for the Griffon 6x6 armoured personnel carrier (APC). Developed under the Véhicule Blindé MultiRôle (VBMR) project, some 1,722 Griffon vehicles are planned. These will replace the Véhicule de l'Avant Blindé (VAB) 4x4, which in 2016 marked 40 years of service in the French Army and which army staff say is now "twice the age of its drivers".

With a maximum gross vehicle weight (GVW) of 24.5 tonnes and carrying up to 10 personnel, the Griffon will be the workhorse of the GTIAs. It is expected to have a range of 800 km, or an endurance for some three days of operations, and will be 7.2 m long, 2.62 m high, and 2.55 m wide.

The Griffon has been designed to have a modular architecture and has just five main variants: troop transport (of which 1,022 will be built); command-and-control (333); engineer and recovery (54); artillery observation (117); and ambulance (196). A 'kit approach', however, will enable the customisation of some of the variants into sub-variants.

Currently there are seven sub-variants planned: four troop transport vehicles (FELIN troop carrier; 81 mm mortar team carrier; sniper carrier; and anti-tank team carrier) and three engineering vehicles (engineer and recovery; response team carrier; and refuelling). Even counting these, there will still be only 11 Griffon variants in total - a major simplification on the 30 VAB variants currently in service. A kit approach has also been taken to the vehicle's armour package, which can be scaled depending on requirements but will be higher than currently offered by the VAB.

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Jaguar

The 'eyes and ears' of the GTIAs will be the new Jaguar 6x6 reconnaissance vehicle, developed under the Engin Blindé de Reconnaissance et de Combat (EBRC) project. In total France is planning to buy 248 Jaguars to replace the AMX-10RC and ERC 90 Sagaie 6x6 reconnaissance vehicles and the VAB 'Mephisto' variant armed with the HOT anti-tank guided missile, all of which will be over 40 years old when replaced.



The latest artist's impression of the French Army's new 6x6 Jaguar reconnaissance vehicle armed with a CTAI 40 mm Case Telescoped Armament System, roof-mounted 7.62 mm RWS, and showing missile pod in raised position in right side of turret roof. (MBDA)

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The Jaguar is fitted with a two-man turret armed with the powerful and compact Anglo-French CTAI Case Telescoped Armament System 40 mm cannon and two ready-to-fire MBDA Missile Moyenne Portée anti-tank missiles (being developed to replace the MILAN and HOT anti-tank missiles in French service). Two missiles will be mounted in an elevating launcher within the turret, while two reload missiles will also be carried.

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The Jaguar will replace the French Army's existing reconnaissance vehicles, including the AMX-10RC, seen here dug in during Exercise 'Dongradi 2016' in Djibouti. (French Army)

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Leclerc

Scorpion 'Step 1' also includes the modernisation of France's 200 Leclerc main battle tanks (MBTs), for which Nexter Systems was awarded a EUR330 million contract in March 2015. The modernisation effort is fairly limited but has three broad themes: to integrate the Leclerc into the Scorpion GTIAs; improve its maintenance cycle; and adapt it for the modern battlefield.

The Leclerc was built with a digital databus for its on-board systems, so that much of the work for the first two themes will involve a fairly straightforward integration of the new CONTACT radios; the SICS; a mission data multimedia recorder; new GPS and INS; a health and usage monitoring system (HUMS); and a diagnostic test device. The modernisation effort will also include a redesign of the vehicle's main computer system, while the gunner's and commander's interfaces will also be modernised to broadly match those found in the Jaguar vehicle.



A French FELIN-equipped soldier stands in front of a VBCI 8x8 infantry fighting vehicle while deployed as part of Operation 'Sangaris': France's military operation in the Central African Republic. Both FELIN and VBCI will be upgraded as part of Scorpion 'Stage Two'. (French Army)

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VBMR-L

The Scorpion programme will also see the procurement of a lighter armoured vehicle to complement the Griffon. Currently, this vehicle is known only by the project name Véhicule Blindé Multi-Rôle Léger (VBMR-L). This lighter 10- to 12-tonne vehicle is intended to replace the VLRA and P4 light trucks and some VAB variants, while also complementing the PVP 4x4 protected vehicle.

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Scorpion Step 2

With the first stage of Scorpion coming to a conclusion in the early 2020s, France will launch the second step in 2023. This will include the completion of the deliveries of the Jaguar, Griffon, and VBMR-L vehicles, as well as the modernisation of the French Army's existing combat equipment. Principally, the latter will include the modernisation of France's Nexter VBCI 8x8s and an update to the FELIN soldier system. Step 2 is planned to last until 2035.

In total France has 630 VBCI vehicles: 520 Véhicule de Combat d'Infanterie (VCI) IVFs and 110 Véhicule Poste de Commandement (VPC) command post vehicles. Step 2 will see these vehicles updated to allow them to integrate seamlessly with the rest of the Scorpion vehicles. Accordingly, this will see them fitted with the SICS and CONTACT radio systems as well as Scorpion avionics and theatre kits. Additionally, the effort will provide an engineering mid-life update to the vehicles

and will incorporate some new capabilities. Among the new capabilities expected to be added are: fitting MMP missiles to the IFV's turret, enhancing the vehicle's optics, and incorporating new ammunition types for its 25 mm main gun.

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A French soldier deployed in the Central African Republic in November 2015 equipped with a FAMAS assault rifle and FELIN soldier system, including SWORD weapon site. 'Step 2' of the Scorpion programme will include the upgrade of FELIN and the integration of it into the replacement for France's existing FAMAS rifles. (French Army)

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Other procurement

While the EUR6 billion Scorpion programme is by far the largest game in town, the French Army has other programmes to modernise its equipment fleet that fall outside the traditional GTIAs. One of the largest of these is the Système de Drones Tactiques (SDT) requirement to replace the service's Sagem Sperwer tactical unmanned aerial vehicles (UAVs). Beating out competition from the Thales Watchkeeper, Sagem was awarded the contract for the SDT programme in April.

Under the roughly EUR300 million SDT programme Sagem (soon to be known only as Safran) will provide 14 Patroller UAVs and four ground control stations (GCSs) to the French Army. These will be divided between two operational systems, each comprising five UAVs and a GCS, and a training package of four UAVs and two GCSs.

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