



# FELIN moves to complete final trials before deployment

FELIN's final trial phase is due to conclude in July after which the first of over 22,000 systems will begin being fielded

*"In the last year, we have had two main activities in the programme," began Philippe Riouffret, Programme head for FELIN at Sagem Defence and Security, part of the Safran Group, the programme's prime contractor. "The first was the industrial qualification of the different equipments on the system, which we completed in April this year." A two part field trial was also conducted in conjunction with the DGA. The first phase took place in the first half of last year. These were followed by a second series of field qualification trials, what the French Army call EVTO, for EVAluation Technico Opérationnelle, which began in January and will conclude in July.*

"For that, we provided the Army with more than 300 systems by the end of January to equip three regiments," explained Riouffret. "The first was the Régiment de Marche du Tchad in Noyon which received 130 systems, the second was the 13ème Bataillon de Chasseurs Alpins in Chambéry and the third one was the 8ème Régiment d'Infanterie de Marine in Castres."

These systems were initially tested in their 'home' environment including the French Alps with the Chasseurs. Subsequently they were sent further afield to be assessed in more diverse environments. Riouffret said, "The principle trials were three weeks in the jungles of French Guyana, which began in the beginning of May. Now they are in Djibouti for three weeks of desert

testing and after than they go for live fire training at the Army's Centre for Urban Combat in the South of France, an artificial town for training the soldier in several situations for urban combat."

Summing up Riouffret said, "At the end of June, FELIN will have been tested in operational conditions in every type of theatre – jungle, mountain, desert and urban."

Following these trials, the first regiment will begin equipping which will be completed by the start of 2010, although the identity of the regiment has yet to be determined. After that, four regiments a year will be converted to FELIN from 2009-2014. In all, a total of 22,300 systems will be deployed to 21 regiments.

Riouffret emphasises the underlying simplicity of the systems to users as one of FELIN's key advantages. The basic functions can be learned very rapidly. "It is quite easy to use. The soldier can learn to use the systems in just a few hours. FELIN can be used to support soldiers in how they are used to operating before FELIN but now with new functionality, it is continuous."

The testing process has continued to prompt changes to the system. However, the last large scale changes were made following the first phase of operational testing in the first half of last year. Riouffret explained, "Last year all the 'hard' changes were made. Now we have some further, 'soft' changes. For example [after July] we will have some harmonisation procedures with the gun. I think that the most important thing is that we are not making any hard changes to materiel. Instead we will modify the man machine interface to have more simplicity in the equipment."

Sagem are taking different approaches to meet the needs of other potential customers. Riouffret said, "The first point is to take into account the needs of the customer nation, of missions, legacy equipment how they work and how they fight. For that, we have different



FELIN combat group of the Régiment de Marche du Tchad presenting FAMAS configuration with a new aiming sight, and, on the left, the sniper configuration of FELIN. © Sagem

▶ approaches; FELIN as it appears in France; or what we call the Soldier Modernisation Solution; a progressive approach - the country can ask only for optronics, for C4I or the whole system. In Switzerland with IMESS, EADS is the main contractor providing the C4I part of the systems and Sagem is the main subcontractor for the optronics element of the system. We recently showed a similar approach with the Czech Republic. We cannot say that there is a standard approach because every country is different and of course we have to take into account their legacy equipment.”

Riouffret sites optronics as just one example of the differences between users. “The French Army for example decided to issue JIM MR for the combat group and the JIM LR for the platoon leader. Another country may only want to use one of them or a third product we have developed. We have a large panoply of solutions that fit with the different requirements.”

Sagem’s work on FELIN has helped develop a vehicle digitization solution. Other inputs to this process have included the company’s participation in French military exercises such as Phoenix, held during October

each year since 2007. The approach also includes a flexible means of power resupply.

“Each warrior has four batteries for 24 hours and the batteries can be refuelled in vehicles. The user has options: he can switch his systems on the vehicle, directly connect to the vehicle or he can put his battery in the specific charger which is in the vehicle. After that, you can take the battery charger out of the vehicle and connect them to the electrical net of the country you are in. In operations where you don’t have any electric grid, you will have more batteries so the technique used is down to the specifics of the mission.”

“What is important is that all our equipment connects to the central power source of the system on the body in the smart vest. All the equipment is fed by this power – sights, goggles, radio all the equipment and you can have. They are also fitted with specific batteries to be independent.”



The Battle Management System of FELIN equips the combat group leaders and the platoon leaders © Sagem

**THROUGH LIFE SUPPORT FOR FELIN**

Sagem’s current work is on this version of FELIN. The DGA however, is looking at options for Version 2, concentrating on additional and improved sensors in 2015-2020. There are two parts to the integrated support of the systems. There is already in place, a two and a half year contract for the support of today’s FELIN systems in the French Army. The second element will be the upgrades. Riouffret said, “With FELIN, you can change any equipment for example, sights, or night goggles or radio when you want. It is not a big problem, because the different interfaces are quite simple it is not so difficult to upgrade the system.”

Some of the potential systems are already in place, Riouffret said, “We already have in place for export, upgrades of the equipment which are compatible with the French Army’s FELIN system but for now, the French Army doesn’t want the upgrade. In two or three years however, they may be able to take them. For example, we already have in the area of night vision, the option of fusing infra-red and daylight channels and we can provide it for any client who wants it.”

FELIN is one of the most studied soldier systems to date, in terms of integration. The DGA, Sagem and the Army have worked to create something very close to the needs of the soldier in terms of ergonomics, integration and understanding the battlefield mission. Riouffret said, “The study of the systems has been really very deep indeed. It’s not something that has been decided at the last moment. It has been an integrated effort addressing all the different factors in infantry combat.” ■

**FELIN Timeline**

<b>2002:</b>	Definition contracts awarded to Thales and Sagem Défense and Sécurité
<b>March 2004:</b>	Thirty month €800m Development and production contract awarded to Sagem
<b>June 2004:</b>	Ergonomic and aptitude tests of the system with combatants
<b>March 2006:</b>	Critical Design Review and first order of 1089 systems
<b>End 2006:</b>	Prototypes Completed
<b>Jan-Feb 2007:</b>	Evaluation of key subsystems: sensors; communications, navigation, protection and weapons
<b>March 2007:</b>	Trials with five FELIN Systems completed
<b>September 2007:</b>	Trials with ten FELIN systems completed
<b>April 2008:</b>	Second order of 5045 systems
<b>June 2008:</b>	Trials with 40 FELIN systems completed
<b>July 2008:</b>	Delivery of 358 FELIN Systems for nine month trial
<b>Mid 2009:</b>	Official Tests and Evaluation completed
<b>Early 2010:</b>	First FELIN equipped regiment fielded
<b>2013:</b>	FELIN production completes
<b>2028:</b>	FELIN Leaves Service