Safran showcases offerings for tomorrow's air-land combat environment at Eurosatory 2016

Boulogne-Billancourt, Friday, June 10, 2016

At Eurosatory 2016, the international defense and security trade show and exhibition, Safran Electronics & Defense, a key contributor to major defense programs, is showcasing its innovative systems and equipment for intelligence gathering, decision-aid, protection, mobility and high-precision engagement. These solutions call on the company's proven expertise in differentiating technologies for navigation, optronics, electronics and safety-critical software. Safran Electronics & Defense will be displaying the following solutions at the show:

Systems and equipment for the French army's Scorpion modernization program. Safran Electronics & Defense is a major partner in Scorpion, a program designed to upgrade the front-line combat capabilities of the French army, starting in 2018. As prime contractor for the FELIN 1.3 integrated equipment suite, Safran, along with the Scorpion GME consortium, develops and produces the optronics system for the Jaguar and Griffon based on the Paseo sighting system. The European leader in inertial navigation, Safran Electronics & Defense will provide the navigation systems for Griffon vehicles, calling on its proprietary vibrating gyroscopes (Epsilon and Sigma 20 families) and the high precision navigation and pointing unit of Griffon VOA (artillery observation vehicle).

FELIN 1.3 and infantry modernization. Safran Electronics & Defense will be introducing FELIN 1.3. This latest version of the FELIN (Integrated dismounted combat system of the French Army) integrated equipment suite for soldier modernization programs is designed to optimize the observation and combat functions. Upgraded software will offer new functions to sharpshooters and mortar support units. FELIN 1.3 incorporates a new-generation information network (RIF-NG) with extended range. Already in service on the VBCI and VAB armored vehicles, RIF-NG will be fitted to the new Jaguar and Griffon vehicles as part of Scorpion, ensuring mounted/dismounted combat continuity for the infantry. FELIN 1.3 will be available in 2016 for deployment in foreign theaters of operation.

Calling on this expertise, Safran is developing enhancement kits centered on key infantry combat functions (command, observation, protection, engagement). The company will also be displaying new portable optronic systems, all featuring high-level integration.

Patroller™ drone. In April 2016, following a tightly fought competition, the French ministry of defense chose the Patroller drone from Safran Electronics & Defense as the army's new tactical drone system. Representing a quantum leap in technology and capability for foreign operations, or for homeland missions if needed, the Patroller drone features a modular architecture, multiple payload capacity (optronic sensor such as the Euroflir 410, electronic warfare radar) and
endurance three times that of the Sperwer tactical drone now in service. The Patroller is an integral part of the new digital battlefield, and will be at the heart of multi-sensor intelligence and targeting operations to support joint service structures.

**Reconnaissance mini-drones.** Safran Electronics & Defense is proposing a mini-drone reconnaissance system, designed to meet the exact needs of intelligence units, special forces and front-line troops. The aircraft is a hand-launched model weighing 11 kg, with three hours of endurance. Safran brings to the table its proven expertise in all key factors for mission success: optronic sensors, image processing, information analysis and interoperability. These proposed mini-drone solutions capitalize on synergies with army modernization programs already underway, especially FELIN and Patroller.

**Euroflir gyrostabilized optronic pods.** The Euroflir family of gyrostabilized optronic pods, featuring high-resolution sensors, is now deployed on a wide range of transport and combat helicopters. Safran will also be extending its use on new intelligence platforms, including the Patroller drone, Diamond-42 twin-engine airplane (in collaboration with DCI) and the T-C350 airship from the company ANSE. A Euroflir 410 is on display at the French defense ministry’s stand.

**Paseo** – A new-generation optronic system, Paseo is a generic part of the Scorpion program. It handles real-time surveillance and designation, meeting requirements for both infantry fighting vehicles and main battle tanks. Calling on very-high-resolution digital sensors, coupled with high-performance line-of-sight stabilization, it offers unrivaled detection, identification and target engagement performance. The Paseo family features a modular design, and could easily be adapted for different versions, including very-long-range naval identification, tracking and artillery fire control. To date, some 2,000 Paseo units have been ordered by France and other countries.

**New-generation navigation systems with vibrating gyros.** Safran Electronics & Defense has chosen vibrating gyros for its new-generation navigation systems. This robust inertial technology, patented by Safran Electronics & Defense, meets the emerging needs of today’s armed forces and also helps improve weapon system performance. With its highly compact design, the vibrating gyro paves the way for new applications on optronic sensors, mini-drones, robotics and exoskeletons. Safran is the only company to date to have geared up for the production of vibrating gyros in navigation and pointing systems, as well as stabilization systems for weapons. Vibrating gyros are already in production for Safran’s new Sigma 20 and Epsilon 10 navigation units.

**eRider, a new tactical robot concept.** Safran Electronics & Defense offers a solution based on the “dronization” of a multi-mission platform, dubbed eRider, which is a 4-seat, 4WD vehicle with optional manned driving. Safran makes a number of contributions to this new robotized vehicle, including all-weather vision, an MPS gyrostabilized optronic turret, geolocation, autonomous platform and mission control, and C4I components, all technologies at the heart of standalone
mobility. In addition to carrying out logistic support missions, the eRider robotic vehicle can carry a rapid deployment team, then provide autonomous support for intelligence gathering and engagement.

**Exo-skeleton.** Exo-skeletons are a biomechanical structure attached to the human body to assist and enhance movements, or restore mobility. Safran Electronics & Defense is contributing to current analyses on how to improve these systems for tomorrow's infantry soldiers. Safran's technologies offer very promising prospects for military, civil security and industrial applications. An exo-skeleton prototype integrated with FÉLIN was tested in May and June 2015 under a design study contract with French defense procurement agency DGA. Safran's exo-skeleton solution calls on composite materials, compact and robust electric motors and a processing unit with self-learning software. The system could also offer a geolocation function based on MEMS (micro-electromechanical system) type gyros. Safran is also developing lighter structures (dermo-skeletons) to assist normal movements, and thus relieve and reduce fatigue.

At the Eurosatory show from June 13-17, 2016, Safran is in Hall 6, on Stand F-80. The Patroller drone system is displayed outside, in the exhibition space G400.

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**Safran** is a leading international high-technology group with three core businesses: Aerospace (propulsion and equipment), Defence and Security. Operating worldwide, the Group has 70,000 employees and generated sales of 17.4 billion euros in 2015. Safran is listed on Euronext Paris and is part of the CAC40 index, as well as the Euro Stoxx 50 European index.

**Safran Electronics & Defense** is a world leader in optronics, avionics, electronics and critical software for both civil and defense applications. The company's products are deployed worldwide on more than 500 ships, 7,000 armored vehicles and 10,000 aircraft.

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**PRESS RELATION**
Philippe WODKA-GALLIEN
Communication
Safran Electronics & Defense
+33 (0)1 55 60 38 54
philippe.wodka-gallien@sagem.com
[www.safran-electronics-defense.com](http://www.safran-electronics-defense.com)