

PROTECTION AND PROJECTION FOR THE ARMED FORCES

From upgraded bridging systems to an extended range of surveillance and cybersecurity solutions:
CNIM's latest innovations for the Armed Forces



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As a leading player in Defense & Security in France and internationally, the CNIM Group presents on its **booth H 267 | Hall 5A**, its innovative systems and equipment for the **Projection and Protection of the Armed Forces**.

In the face of changing threats and capacity needs, CNIM is offering tailored **crossing solutions**, while its subsidiary Bertin Technologies continues to expand its range of products in the field of **optronics** and **CBRN threat detection**.

Bertin Technologies now offers a broader range of Surveillance solutions following the **acquisition** in 2017 of **Exensor, world leader in the supply of sensors and networks for sensitive sites protection**.

Bertin IT complements this offer of Protection of Armed Forces and Governments with reliable and efficient **cyber intelligence** and **cybersecurity** solutions.

Eurosatory 2018 will be the occasion for **Bertin** to launch **several solutions for the protection of the Armed Forces on land and cybersecurity**:

- SaphyRAD MS: an **innovative multiprobe military radiation meter** for harsh environment and emergency situations
- **The expansion of Bertin's optronic range**:
 - o CamSight: a family of compact and lightweight camera modules for night & day improved vision
 - o PeriSight Zoom: a new optronic camera system dedicated to military vehicles, for reliable long-range day and night vision
- Crypto Crossing: a **highly secure email gateway solution** designed by Bertin IT

Exensor and **CNIM** solutions will also be showcased on the stand:

- Proven solutions for **unattended ground sensor networks** from Exensor, world leader in the surveillance field
- A **modernized version of the Motorized Floating Bridges** (PFM) for the French Army
- The land force projection systems **SPRAT with improved performances**

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A MODERNIZED VERSION OF MOTORIZED FLOATING BRIDGES (PFM) FOR THE FRENCH ARMY

The CNIM Group's Motorized Floating Bridge (PFM) is a solution dedicated to river and similar type crossings, in service in several armies, in France as well as in Italy, Switzerland and Malaysia. With two possible configurations, bridge and ferry, the PFM offers a sure tactical advantage: it can be deployed easily, in a short time and with a minimum of men; it does not need auxiliary boats and enjoys recognized reliability on land. The implementation performance of the PFM remains unmatched today.

CNIM Group recently announced the award by the French Defense Procurement Agency of a **contract for the development and construction of equipment for the PFM**. The objective of this contract is to develop the bridge to better meet the current and future needs of the Army from 2019 onwards and in three main aspects:

- **Maintain capabilities at an operational level in mainland France**, especially in the framework of the Neptune Plan*;
- **Respond to new support needs for forces in external operations**. Having become air transportable, **the PFM will be able to deploy rapidly to theatres abroad**. / **New short ramps**, incorporated in the modules will allow the construction of a ferry from 2 modules, for a carrying capacity of more than 40 tonnes (standard MLC40 vehicle). Finally, personnel on board the prime movers will now be under **armoured protection**.
- **Provide the PFM with a new logistics transport capacity**: a droppable tray system implemented from PFM trailers will facilitate ease of use and deployment.

With a unique control system, a doorway consisting of 2 modules can be controlled by **a single operator** equipped with a wireless control console. In addition to reducing the headcount required for implementation, this innovation gives the PFM an **additional advantage for rapid crossing**, especially at night.

With this new version of the PFM, CNIM offers equipment best suited to crossing requirements worldwide: **reliable, robust, easy to implement**. The first modified equipment will be delivered to the Army in mid-2019.

** The Neptune Plan is part of the work of planning and anticipating the next hundred-year flood of the Seine. Its objective is to allow the flood waters to rise, then to establish a joint force of 10,000 men likely to be committed from the first effects of the flood onwards.*



Pilot demonstration of the PFM module with the unique control system © Gilles Perbal

SPRAT LAND FORCE PROJECTION SYSTEMS WITH IMPROVED PERFORMANCE

The French Defense Procurement Agency has awarded CNIM a contract for **modernization of SPRAT ground force projection systems** (Fast Bridgelaying System).

This automatic launching system, designed and developed by CNIM, delivered in 2011, **in just 10 minutes deploys two MLC 100 bridges, 14 metres long or one MLC 80 long bridge,, 26 metres long**, in order to **project military tanks* over an obstacle** (wet or dry gaps, such as a river or crevasse), the number of operators being limited to two with controls. Each SPRAT is made up of two vehicles (bridging** and additional semi-trailer bridge carriers), and is designed to drop or recover the bridge elements it transports automatically.

The Army is currently equipped with 10 vehicles incorporating the bridge (or pontoon) launching and recovery systems, with 10 semi-trailers carrying additional bridge elements, and 40 bridge elements. CNIM's mission as part of this modernization contract is to **increase the operational performance of the French Army's modular assault bridge over its entire lifespan**.

In order to facilitate haulage and bridging operations while ensuring optimal detection of external threats, a **latest generation optronic vision system**, produced by the subsidiary Bertin Technologies, will be integrated. It will offer the pilot and his skipper an **all-round vision by day and by night**. Thus, a larger number of cameras will observe the immediate SPRAT environment.

The **supervisory command and control system** for all SPRAT technical parameters will be **modernized** with the integration of a new IT architecture, offering a high level of maintainability. The first modified equipment will be delivered to the Army in mid-2019.

* *Leclerc tank type vehicle*

** *Vehicle incorporating the bridge element launch and recovery system*



Implementation of the SPRAT during EURETEX 2016 of Eurocorps. © Hervé GOUSSET

PROTECTION OF MEN, CRITICAL INFRASTRUCTURES AND SENSITIVE DATA

AN INNOVATIVE MULTI-PROBE MILITARY RADIATION METER FOR HARSH ENVIRONMENT AND EMERGENCY SITUATIONS: SAPHYRAD MS (EX-DOM 420)

Bertin has developed the new multiprobe military survey meter (with the expertise of Saphymo*) under a contract awarded by the French Defense Procurement Agency. This **latest generation portable monitor is designed to detect and measure radioactivity in harsh environment**. Two years of research and development led to the launch of the SaphyRAD MS (also called DOM 420 by the French Army).

Its **wide range of innovative probes covers the needs of all Army corps and emergency teams** (including HAZMAT** teams for hazardous materials management). The SaphyRAD MS thus **searches and locates real-time radioactive sources in the environment and measures contamination on all surfaces**. Following a nuclear incident or accident, the SaphyRAD MS carries out the first checks, particularly on people and/or vehicles. Thanks to its integrated simulation mode, users can be trained in real conditions, without using radioactive sources. The **robust design** of the SaphyRAD MS has been specially thought out for use with CBRN*** protection equipment. Its **ergonomic interface** allows fast use even by non-specialists to measure radioactivity.

With the development of this new military radiation meter, **Bertin has improved its existing CBRN*** threat detection and identification range**, providing complete systems to the Armed Forces and civil security agencies (rapid response teams, public health and emergency services. The production launch is scheduled for the end of 2018.

* acquired in 2015, since merged with Bertin Technologies

** HAZardous MATerials

***Chemical, Biological, Radiological and Nuclear [CBRN]



Figures 6 & 7 : The new multiprobe military survey meter SaphyRAD MS. Copyright : Thomas Léaud

A NEW OPTRONIC CAMERA SYSTEM DEDICATED TO MILITARY VEHICLES, FOR RELIABLE LONG-RANGE NIGHT & DAY VISION: PERISIGHT ZOOM

Dedicated to integrators for land and maritime applications, the PeriSight Zoom is a **high performance integrated optronic solution**, designed for vision from armoured vehicles and site surveillance. This compact camera system, incorporating the latest optronic vision technologies, combines an uncooled thermal imaging camera ideal for **better night vision** and a visible colour Low Light camera (up to night 3) for **increased sensitivity**.

Ruggedized for military needs, it **detects long-range threats (beyond 5 km)**. It is used as a viewfinder for target recognition and identification, as well as for the protection of sensitive sites.

Discreet thanks to its uncooled track, the PeriSight Zoom **secures and improves day & night observation capabilities thanks to its zoom and optical channels**. Installed on a Pan&Tilt turret, it stabilizes and orients the image field for all-round surveillance. Finally, the optional laser telemetry module calculates the precise distance from the observed target.

This module now complements the range of PeriSight systems for long-range needs during Land Situational Awareness missions. **PeriSight Zoom can be used alone, or in a network** with other modules from the existing PeriSight range.



Figure 8 : PeriSight Zoom, optronic camera system for military vehicles. Copyright : Thomas Léaud

COMPACT AND LIGHTWEIGHT CAMERA MODULES FOR IMPROVED DAY AND NIGHT VISION: CAMSIGHT

Targeting integrators and vehicle manufacturers, CamSight are **integrated core camera modules inside complex optronic systems**. They are based on FusionSight's (monocular for day and night vision) and PeriSight's (perimeter vision system) optronics technology.

Reliable and easy to maintain, CamSight modules come in two versions: thermal (infrared) and colour low light (high sensitivity).

- the CamSight IR version includes an **uncooled thermal imaging technology, without shutter** (for permanent observation).
- The CamSight LL colour low light version offers **extreme sensitivity performances** (until 3 mlx - night 3).

Reactive, these high-performance camera modules start in a very short time. Light, compact and low energy consumers, **they fit into all systems, regardless of integration constraints**. They are designed for perimeter surveillance missions by aircraft and land vehicles, to improve the vision of the drivers of armoured vehicles, for the surveillance of sensitive sites, as well as on-board observation from drones.



Figure 9 : CamSight, integrated camera modules for complex optronic systems. Copyright : Thomas Léaud

CamSight was notably **integrated in Exensor's Scout* ground sensor**, part of the Flexnet network control and command platform, delivered to military and civilian customers around the world. The set will be delivered to one of Exensor's customers in Asia. This first collaboration comes 4 months after the acquisition of Exensor by Bertin Technologies.

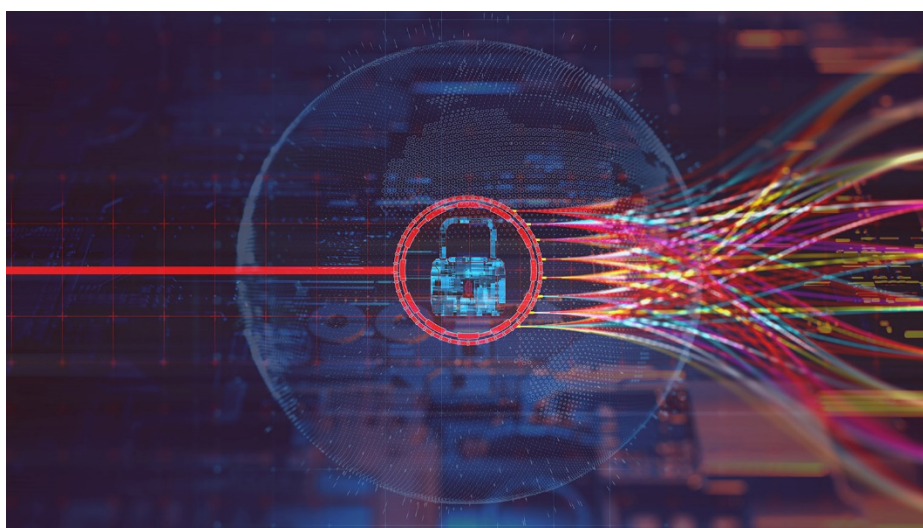
** intelligent wireless camera with integrated motion detection,*

A HIGHLY SECURE EMAIL GATEWAY DEDICATED TO THE EXCHANGE OF SENSITIVE DATA: CRYPTO CROSSING®

Bertin IT and Wallix have combined their know-how to **launch Crypto Crossing®**, a solution combining advanced security mechanisms (protocol breach, harmlessness, filtering) of CrossinG®, the trusted gateway designed by Bertin IT, and DataPeps®, Wallix's 'as-a-service' encryption technology.

Crypto Crossing® thus guarantees the integrity and confidentiality of sensitive data transiting via e-mail between a protected network and an unsecured external infrastructure. Roaming, teleworking, travelling abroad ... whatever the place or the direction of the exchanges, this new solution makes it possible to fight against cyber-attacks, to encrypt emails end-to-end and to apply a specific security policy depending on the direction of the data flow (control of authorized files for dispatch and/or reception).

In addition, automated encryption key management offers a **simple and transparent user experience** (no action required), with the DataPeps® mail plug-in. Crypto Crossing® can also trace all exchanges.



ABOUT THE CNIM GROUP

Founded in 1856, **CNIM** is a French equipment manufacturer and industrial contractor operating on a worldwide basis. The Group supplies products and services to major public and private sector organizations, local authorities and national governments in the Defense and High Technology markets. Technological innovation is at the core of the equipment and services designed and manufactured by the Group. They contribute to making sensitive facilities and infrastructures safer, and protecting individuals and nation states. CNIM is listed on the Euronext exchange in Paris. It relies on a stable family-based majority shareholding structure committed to its development. CNIM employs 2,600 employees for a turnover of €635 million, of which 52% is posted for export.

A major industrial partner for the Defense and Security community, CNIM has been supporting the Armed Forces since 1856. Its robust, proven and state-of-the-art equipment and solutions meet the sovereign challenges of companies and Governments: **from the projection of land and sea forces to the protection of people and critical infrastructures**.

For 30 years, CNIM has been providing **bridging systems** adopted by many armies around the world. CNIM notably develops technologically ambitious ground force projection systems. Their exceptional strength allows heavy vehicles to cross dry or wet gaps quickly. Proven in operational conditions, they reinforce tactical capabilities during military or humanitarian operations.

Specialists in **systems for amphibious operations**, CNIM designed and developed a fast landing catamaran, the L-CAT®, which has proved its ability to support the Armed Forces during military or humanitarian operations. It can conduct missions from any infrastructure (port, wharf, beach) or from protection and command vessels.

www.cnim.com

Its subsidiary **BERTIN TECHNOLOGIES** draws on its long history of innovation to develop, produce and market innovative systems and instruments worldwide.

Its international activity dedicated to the Defense, Security and Safety markets is structured around two major activities:

- **The development and supply of world class instrumentation solutions for surveillance and protection of humans and infrastructure:** Bertin develops and provides complete solutions for the detection of Chemical, Biological, Radiological and Nuclear (CBRN) threats, high performance optronic equipment and systems. Following the acquisition of Exensor, one of the world's leading suppliers of ground-based unattended sensor solutions (UGS), Bertin now offers additional network monitoring solutions. Bertin and Exensor products are operational and used in a wide range of ground and military security applications around the world.

www.bertin-technologies.com | www.exensor.com

- **Publishing and integration of software solutions dedicated to information systems security and the advanced processing of digital and voice data.** Based on 15 years of collaboration with the French Defense Procurement Agency (DGA) on issues of compartmentalization of classified information, as well as with various Defense & Security government agencies, Bertin IT offers a unique range of cybersecurity products, covering both defense in depth of sensitive information systems and the anticipation of threats, detection of data leaks or fraudulent activities. Its cyber intelligence platforms are used by several intelligence entities. Through its cyber threat intelligence offering, Bertin IT puts its expert analysts and investigative technologies at the service of leading private and public account customers to probe their level of exposure to cyber risk and identify any type of threat that may affect them. www.bertin-it.com

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