

DEFENCE



CAPABILITY APPROACH **ENGINEERING**

FRENCH EXCELLENCE
IN DEFENCE AND SECURITY

GICAT

The French land defence and security
industry association



GICAT.COM

INTRODUCTION

MILITARY ENGINEERING: A WIDE RANGING EXPERTISE OVER THE ENTIRE OPERATIONAL THEATRE

Recent conflicts have shown the necessity to simultaneously deploy coercive actions, establish zone control and provide support to populations within a region or a city. They highlight the relevance of having terrestrial forces that are agile and able to set up adaptable military structures. From the start of operations to the withdrawal of forces, military engineering is structurally organized and equipped to deal with operational constraints of mobility and effects monitoring. The principle of “not a step without support” is integral to the action of military engineering in ensuring forces in the field freedom of action and capacity to endure.

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TWO VISIBLE FIELDS OF ACTION:

Mobility support

Permanently adapting to a changing environment thanks to the simultaneous deployment of high tech equipment and older, proven methods, military engineering provides close support to frontline units by opening axes against the threat of explosive devices and enabling gap crossing.

Military forces' freedom of action is also ensured by constant efforts against networks related to explosive devices. Sappers exploit incidents, carry out in-depth searches of sites or identified zones and participate in the on-the-ground analysis of clues in order to identify the different elements of the networks behind explosive devices.

Deployment support

Along with operational forces, military engineers support initial deployments from airports or by creating - ex nihilo - landing points with a minimum of comfort and protection, then take part in long term support through infrastructure works.

THE ORGANIZATION OF MILITARY ENGINEERING

Within the framework of an army “in contact”, military engineers within land forces are organized in six regiments of combined arms brigades and two divisional

support regiments. The engineering regiment of divisional support is organized in two armored combat companies, a combat support company, a company of vertical infrastructure, and two companies either of power production, or horizontal infrastructure.

The engineering regiment of combined arms brigade is organized in four Combat Engineering companies, currently equipped with medium armored vehicle VAB, then as from 2018 of Griffon and a combination of armored and medium multirole specialized vehicle and one Support Company (work content, Engineering divers, specialized operational search, support for the deployment, production of water and energy).

ENGINEERING ADAPTATIONS FROM RECENT COMMITMENTS IN AFRICA

In the fight against explosive devices

The threat of explosive devices, improvised or not, has become an integral part of operations. It is now the first cause of combat losses and hinders the mobility of French and allied units. In this context, military engineers have developed detection and route clearing systems, methods to preemptively combat the installation of IEDs, and exploit information from detonated explosive devices. They have set up onboard capacity to open booby-trapped routes by vehicle or UGVs, improved operational search detachments, enabled the projection of laboratories to exploit initial data.

Force protection

Facing permanent insecurity, Land Forces in operations put back in application the notion of safeguard and protection so as to be able to last and command over a long time. In this perspective, military engineers have built Forward Operational Bases (FOB) so as to support missions of zone control and operational bases, be they permanent or temporary, in order to allow the full realization of the campaign plan.

Capability trends on middle & long terms

Energy, Production & Flow

The production and management of energy is

becoming a major issue since the current and future weapon systems of the land forces are more and more energy-consuming and that the logistic weight of fuel only increases. The capacity to make the infrastructure autonomous or as much as it can possibly be, to produce other than this energy is a challenge to be realized, even if this problem is also shared by the civilian world.

Counter mobility

Counter-mobility, beyond the implementation of passive obstacles (anti-tank ditches, merlon, concertina), must be reinvented. The principles of gradation of the effects, the reversibility of the actions and the legality have to frame the studies. The objective is to renew the capacity to stop by implementation of upgraded systems of obstacles and of checked anti-vehicles effectors without explosive.

Mobility support

To support the tactical mobility of SCORPION vehicles (class superior to 24 tons), the Engineering has to renew its light crossing vehicles in compliance with the objective of getting a first reinforced combined tactical battlegroup SCORPION by 2025.

Robotics

Robotics is a field of investigation and evolution favorable to the engineering. Already operating a first level of robotics (robot of intervention of bomb disposal units, remote-controlled tank of heavy mine clearance, mini robot or drone of the engineering), the automated systems are particularly adapted to the engineering missions: realization of the remote detection and in front of the friendly forces, for opening the way inside valued antitank obstacles, by participating in the protection of infrastructures... Robotics is characterized by a remote employment, halted or in movement, and to realize technical tasks (detection, neutralization, and cleanup).

Close combat support

As part of the Scorpion program (2025), the engineering will renew its capability of support for the close combat. While becoming integrated into the operation

inside the tactical combined arms Battle Group, the engineering will have to realize its missions of direct support. Studies are in progress to raise the last risks of the operation, with the objective to make the first delivery of an Engineering multirole medium platform (MAC) by 2024.



ENGINEERING

COMPONENT BREAKDOWN



MOBILITY SUPPORT

- Counter Mining and IED.
- Opening of axes.
- Open cut-crossing.
- Area depollution.
- Arrangement of beaches and river banks,...



COUNTER-MOBILITY SUPPORT

- Lethal and Neutralization Obstacles.
- Interdiction of Axes by destruction,...



DEPLOYMENT SUPPORT

- Horizontal and Vertical Infrastructure.
- Water/Energy flows management.
- Area protection systems (fixed or deployable).

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TERRAIN ARRANGEMENT






- Armored vehicle and soldier's combat positions.
- Logistic areas, Command Post,...



SPECIFIC INFORMATION SYSTEM

- Cartographic IS.
- Hydrographic IS,...

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CEFA



CEFA is an independent family-owned company specialized in systems for engineers. CEFA is a prime contractor recognized by the French Ministry of Defense. The EFA, exported to the UAE in 2008, confirmed its position on the international market. CEFA is able to propose a complete range of solutions for crossing operations: bridges, erection boats, and also, for mechanical mine clearance and C-IED equipment.

AMPHIBIOUS CROSSING SYSTEMS, ZONE CLEARANCE AND C-IED EQUIPMENT

AMPHIBIOUS CROSSING SYSTEMS

Forward Crossing vehicle: With a very quick implantation, the EFA is the most efficient crossing vehicle ever designed in the world carrying a heavy tank.

Vedette F2: Bridge erection boat, in service in the French Army Engineers to help crossing operations, it ensures rapid, effective and safe interventions.

STEEL RIBBON BRIDGE: SRB has MLC rating 85T/120W. Very powerful with a very low maintenance, it can be operated by any civil or military trucks in both military and disaster relief operations.

ZONE MINE CLEARANCE AND C-IED EQUIPMENT

Mechanical Demining System: SDZ is a powerful, efficient and remote controlled machine able to respond to all mechanical demining needs.

C-IED EQUIPMENT: SMINEX is an integrated and innovative system with a global approach of all equipments for EOD, WIT and SEARCH units.



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CNIM INDUSTRIAL SYSTEMS

DEFENSE RELIABLE EQUIPMENT AND SOLUTIONS

VERSATILE BRIDGING SYSTEMS

PFM XP - the ultimate Motorized Floating Bridge

CNIM is developing the PFM XP which is the ultimate Motorized Floating Bridge. The PFM XP has significant optimizations over the PFM, giving the PFM XP tactical advantages in line with today's doctrines and vehicles.

The PFM XP is an efficient, highly mobile and flexible system. The PFM XP supports the new generation of MBT MLC85T (STANAG2021) and is designed to fit on 8X8 logistical trucks. It is equipped with high performance outboards motors (OBMs diesel or petrol). Thanks to the remote control & command system and a new ramp section in Naval Class Aluminium, the PFM XP offers an easy navigation in Ferry mode.

The PFM XP is transportable in the A400 aircraft over 4500km and could be easily projected abroad.

The PFM XP is NATO interoperable.

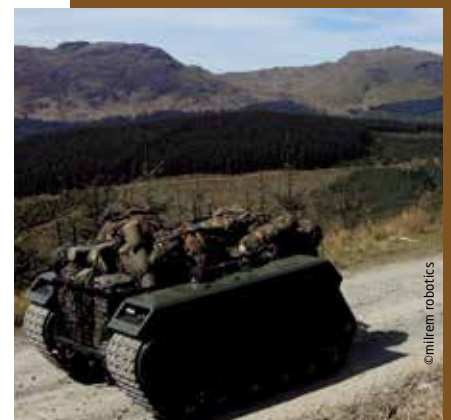
UNMANNED GROUND VEHICLES

The Tracked Hybrid Modular Infantry System, or THeMIS for short, is the first hybrid fully modular unmanned ground vehicle in the world.

While being able to provide autonomously mission support for 15 hours in harsh weather conditions and on difficult terrain, THeMIS UGV is intended to provide support for dismounted troops by serving as a transport platform, IED detection and disposal unit, and much more.

The vehicle's open architecture gives it the full multi-mission capability needed on the modern battlefield.

For the Defense sector and Engineering forces, CNIM designs and manufactures turnkey bridging systems since the 70's which can be used in both military and disaster relief operations. CNIM also supply unmanned ground solution based on the THeMIS UGV developed by Milrem Robotics (exclusive supplier in France).



CNIM

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DCI



Mobility
Support

Created in 1972, the state-owned company **Défense Conseil International (DCI)** acts as reference operator for the French Ministry for Armed Forces. Its mission is to transfer all the technical and operational know-how of the French armed forces to nations friendly with France, adapting them to the needs of the supported forces.

REFERENCE OPERATOR FOR THE FRENCH MINISTRY FOR ARMED FORCES

RECOGNISED EXPERTISE

DCI relies on the best experts to conduct its consulting, training and assistance actions in the fields of excellence developed by the French armed forces. These services are delivered for the benefit of France-friendly units, in a spirit of brotherhood in arms.

The following training courses are proposed in France or in own country:

- Information on Improvised Explosive Device (IED) warfare;
- Explosive Ordnance Reconnaissance;
- Basic EOD training;
- Conventional Munition Disposal (CMD);
- Improvised Explosive Device Disposal (IEDD);
- Reminder of actions during IED operations.

The «Comprehensive Explosives Training» course programme, lasting 9 months, includes all the above courses. It is aimed at training personnel specialised in the disposal of all types of mines, ordnance and booby traps.

TAILOR-MADE TRAINING COURSES

After following such comprehensive training, the trainees are able to identify the various dangers relating to mines, unexploded ordnance and improvised explosive devices, and to safely implement the appropriate techniques to neutralise them. They are able to coordinate and manage a mine clearance site.

Depending on the chosen training courses, the acquired knowledge and know-how are:

- Theoretical part: know the intervention request and the report procedures; know how to safely use the explosives, know the protection measures, detection and protection means; know the mine clearance methods; identify and destroy ordnance; neutralise ordnance; know how to destroy ordnance in a furnace; organise a mine clearance/decontamination site; know IED detection and neutralisation means; know how to carry out disposal of the various IED types;
- Practical part: know how to set up and conduct a mine clearance/decontamination site; know how to carry out disposal of all types of explosive ordnance and devices.



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Mobility
SupportDeployment
SupportTerrain
Arrangement

DESCHAMPS

MOBI-MAT®: GROUND IMPROVEMENT FOR EXPEDITIONNARY UNITS

TEMPORARY ROADWAYS AND TACTICAL MOBILITY

- Amphibious landing roadway BAM™.
- Ground reinforcement mats GRIMAT™.
- Bridge access and egress BRAX™.
- Vehicle crossing and recovery gears Traction-mat™.

TEMPORARY ROADWAY DISPENSERS

- Truck mounted roadway deployment systems.
- Front-loader mounted roadway deployment systems.
- Trailer mounted roadway deployment systems.

FORWARD OPERATION BASE EQUIPMENT

- Personnel pathway flooring Campfloor™.
- Tent and shelter stabilization and insulation mat Tentfloor™.
- Forward workshop and maintenance flooring.
- Vehicle service lane TAMES™.
- Helicopter landing mat TAHEL™.

DESCHAMPS' Mobi-mat® range is dedicated to ground reinforcement and tactical mobility. DESCHAMPS develops and manufactures in France innovative solutions for very demanding applications since 1860. DESCHAMPS operates worldwide and is a reference supplier for the main armed forces such as French, US, German, etc. and international organizations such as NATO/NSPA or the United Nations.



DESCHAMPS
SINCE 1860

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ECM



Mobility
Support



Counter-
Mobility
support



Deployment
Support



Terrain
Arrangement

ECM is a mechanical systems engineering company. ECM advises and assists defense systems manufacturers and operational maintenance organizations in extending the equipment lifespan, developing innovative solutions for spare parts manufacturing, and designing jigs or tools.

SYSTEM & MECHANICAL ENGINEERING FOR VEHICLE AND EQUIPMENT

DESIGN, MULTI-PHYSICS SIMULATION, PROJECT MANAGEMENT

Founded 1973, ECM is one of France's longest-running engineering company. ECM is a subsidiary of CRIT Services Group.

ECM operates in aeronautics, automotive, defense, and naval industries, dealing with OEMs and their Tier 1 suppliers.

Specialized in vehicles architecture, cockpit/cabin layout, systems physical and functional integration, ECM engineers undertake systems development, from first concept, design, to industrialization phase.

The legacy of their relationship with the transportation industry brings ECM teams an extensive and transverse knowledge of various functional specifications and constraints.

ECM owns its design office and a large range of numerical validation means. ECM experts also provide their technical assistance to diagnosis and problem solving on our clients' field.

EXPERTISE, OPTIMIZATION, TROUBLE SHOOTING

- In-vehicle systems integration studies: Hydraulics, loading systems.
- Powertrain: Fuel Cell & Electric PWT integration, Range extender.
- Additive manufacturing for operational maintenance support.
- Mechanical assemblies optimization.
- Multi physics simulation for trouble shooting or lifespan extension.
- Equipment obsolescence management.
- Jigs and tools design.
- Retractable landing areas.
- Integrated Logistics Support.
- Project Management Support.



ECM
Engineering Conception Maintenance

ECM
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Counter-
Mobility
support

CLOSE AREA PROTECTION SYSTEMS

Lacroix develops and manufactures close area protection systems in order to protect various areas from temporary bivouacs to main camps or critical infrastructures. Systems can include threat detection, situation analysis with man-in-the-loop and appropriate reactions (non-lethal to lethal) in order to delay attack by defeating threats.

A COMPLETE RANGE OF SYSTEM

Lacroix offers a full range of close protection systems (Fixed or mobile, wired or remote controlled, stand alone or communicative) adaptable to various crisis situations or battlefield protection forces (FOB).

A COMPLETE RANGE OF REACTION

Lacroix offers a full range of effects for graduated reaction (Multiband Smoke screening, crowd control effects, etc.).

Close protection systems are used in many countries for detection or reaction in the latest theatres of operation.

ETIENNE LACROIX

The Etienne Lacroix Group is an innovative manufacturer of reactive systems and associated ammunition for area protection.



LACROIX

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IGN FI



Specific
Information
System

Since its foundation in 1986, IGN FI has established itself as major player in the field of geomatics. IGN FI offers its expertise in the following areas: geodesy, metrology, mapping / national spatial data infrastructures, databases, geographic information systems, portals. IGN FI's work is entirely based abroad, using the company's know-how in various sectors: defence/geoint, security, borders land administration, agriculture, forests, environment...

MASTERING GEOGRAPHIC INFORMATION FOR DEFENSE AND INTELLIGENCE PURPOSES

AREAS OF EXPERTISE

IGN FI advises, designs and carries out «Defense / Geoint» projects.

- Constructing a geodesic reference system using materialised networks.
- Very high-resolution aerial surveys, LIDAR acquisition, satellite image acquisition / image quality control.
- Building digital terrain models, digital elevation models, centimeter-accurate orthophotographs.
- 3D or 2D image plotting.
- Geographical database modeling and implementation, definition of metadata.
- Collecting field data.
- Devising and building web portals to distribute geographical data.
- Quality control checks (geometrical and semantic) of databases.
- Topographical mapping for military command to international standards / specific thematic mapping.
- Setting up mapping production lines with technology transfer.
- Setting up a GEOINT unit.

SPECIFIC OFFER, RESOURCES & SOME REALISATIONS

IGN FI meets the needs of the security forces and defence in terms of reference geographic data production and geointelligence.

- Geographic unit (data/ equipment/ trainings/ pilot projects).
- Geoint unit.
- Command unit.
- Use of drones.
- Image technical support.

IGN FI makes teams of specialists available to its clients.

- Sector experts from its own internal resources, its shareholders (IGN, GEOFIT),...
- Technical experts (imagery, GIS, IT...).
- Experienced project managers and leaders.

Nearly 1,400 realisations in over 120 countries.

- MALI, BURKINA FASO, SENEGAL Mapping at 1:200,000 and modernisation of the national geographic institute.
- BENIN Creation of a national map at 1:50,000.
- HAITI Production of an orthophoto and a DTM (aerial photo/LiDAR).
- QATAR/SAUDI ARABIA Demarcation of the land borders and delimitation of offshore boundaries.
- CONGO Support for delimitation of land and maritime borders.
- UGANDA Implementation of a land information system rolled out on a national scale.
- TRINIDAD Implementation of the property business registration system.
- CENTRAL & WESTERN AFRICA Follow-up of land occupation dynamics using satellite images.



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COUNTER MINE & IED ROUTE CLEARANCE SYSTEM

SOUVIM 2

SOUVIM 2 is a countermine system based on a combination of mine decoying subsystems. Able to clear 150 km of route in one day, the system is particularly suitable item for main supply route clearance. It is in service with French armed forces.

SOUVIM 2 is composed of two vehicles and three trailers. The first vehicle (VLB) carries the stand-off mine decoy support frame. The VLB is immune to pressure mines because of its specially designed low pressure tires which will not detonate any mine. It tows a mass decoy trailer (RDM 1), which detonates mines and secures and marks a track for the second vehicle.

The second vehicle (VTR) follows the lane secured and marked by the VLB, and tows two additional mass decoy trailers (RDM 2 & 3), which detonate pressure mines deployed on the track up to a width of 3.9 m.

VDM (MULTI FUNCTION DETECTION VEHICLE)

The VDM is a combat proven vehicle which has been developed as part of the SOUVIM 2 counter mining / Counter IED route clearance program; currently in service with the French armed forces.

The VDM C-IED vehicle is a highly capable specialist route clearance vehicle which combines maximum survivability with excellent gravel road mobility and operational flexibility. It has a comprehensive suite of detection (such as metal detector or ground penetrating radar) and decoy systems which can be configured to meet the wide spectrum of threats and operating environments.

FUTURE SYSTEMS PREPARATION

MBDA is working to prepare future of route clearance systems:

- Mobility improvement;
- Adaptation on different vehicles;
- New proximity and distant detection functions;
- New systems architecture.



MBDA

MBDA, a world leader in missiles and missile systems, is a multinational group with over 10,000 employees. MBDA has three major shareholders - BAE Systems, AIRBUS and Leonardo, and is the first truly integrated European defence company. MBDA is the only Group capable of designing and producing missiles and missile systems to meet the whole range of current and future operational requirements for the three armed forces (army, navy, air force).



MBDA
MISSILE SYSTEMS

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MUSTHANE



Musthane designs and manufactures products made of composites and elastomer coated technical textiles. These light weight and innovative solutions bring smart means offering a very low life-cycle cost given their logistics footprint and their ability to be deployed multiple times.

ROADS AND PLATFORMS

MUSTMOVE® GROUND PREPARATION AND IMPROVEMENT

Mustmove® mats are made with an innovative material compound which offers following advantages: compact, foldable (roll up), light weight, 100% impermeable to dust and mud, anti-sliding rubber coated fabric, repairable, easy to remove & clean.

- **Temporary access roads:** MUSTmove® SIM Surface Improvement Mobility Mats is an innovative ground improvement solution developed to increase the efficiency in operations by offering: Temporary roads for vehicles, Pedestrian Access Ways for soldiers, Impermeable Tent Floors.
- **Beach access mats:** quick access to the beach used by the armed forces in situations of landing by sea. These areas are made from modules which are assembled on site through an easy and quick interconnection system. For example a Beach Access area of 20m x 5m can be deployed in less than 5 minutes using two people.
- **Helicopter landing mats:** a rapid deploy and compact helicopter landing area which can be transported inside a helicopter (such as NH90 or Super Puma) for being installed by 4 people.

MUSTSTORE® WATER OR FUEL STORAGE TANKS

Engineering operations require water and fuel most of the time in large capacities.

Musthane fuel and water flexible tanks are used for having large storage capacities which are very compact and light weight when empty (i.e a 100.000 liters tank is packed in a volume of less than 1000 liter).

This solution has also an advantage in the conservation of the quality of the water or fuel as the tanks are made of flexible textile coated with polymers. Muststore® tanks mitigate the development of bacteria in water tanks and reduce the pollution and contamination of the fuel.



Musthane

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Mobility
SupportCounter-
Mobility
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Arrangement

NEXTER

NEXTER: COMBAT PROVEN ENGINEERING FOR TODAY & TOMORROW

TERRAIN ARRANGEMENT HIGH CAPABILITY

NEXTER has developed vehicles to allow engineers to work in any suspicious areas thanks to their high level of survivability.

ARAVIS® protects embedded personnel from mines, IED and ballistic attacks, while guaranteeing the versatility requested by engineers in polluted areas. ARAVIS® was proven in Afghanistan, in the Middle East and by Gabonese forces in Central African Republic.

EBG VAL offers capabilities of terrain arrangement and counter mobility to participate to force protection and to support armoured manoeuvres in both high intensity and stabilization contexts.

ROUTE PROOFING: MAKE MOVEMENT SAFE

DEMETER 2 or DEDALE is fitted for various vehicles or devices supposed to operate in polluted routes or areas (mines, IEDs or other battlefield ammunition). This system prevents equipped vehicles from being hit by duplicating magnetic signature forward. DEMETER 2 is now used by many armed forces worldwide.

SDPMACVAL, created on a transformed EBG VAL vehicle, allows anti-tank mine clearing through pyrotechnic destruction.

NEXTER, through its products, has been involved for many years alongside sappers to proof and arrange the harshest terrains in the theatres of war. From night and day engineering operations to long range route clearances, NEXTER technology provides a key success advantage to fulfill the mission and to save lives of both civilians and military with reliable and combat proven vehicles and materials.



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nexter K+N
A COMPANY OF D+S

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NUANCES TECHNOLOGIES



A wireless communications security expert since 1991, Nuances Technologies designs and integrates advanced solutions dedicated to armed forces and homeland security forces. These tactical systems are intended to control, simulate, detect, intercept, jam, block, locate or secure any type of wireless communication. We equip the NATO and UN forces in conflict zones, Police and Army units through the world.

SECURE ROUTE CLEARANCE OPERATIONS – BATTLE-PROVEN EQUIPMENT

ADVANCED ECM SOLUTIONS AGAINST RCIEDs

Drawing on extensive experience with radio-controlled improvised explosive devices (RCIEDs) and the jamming of communications, Nuances Technologies has developed a comprehensive range of products used by armed forces: protecting soldiers, their combat vehicles, convoys, sensitive positions and places, VIPs etc. From the convoy jammer integrated in vehicles to the portable system on the ground, the whole range has been deployed and battle-proven in theatres of operations.

Nuances Technologies platforms are fully interoperable with weapon, communication and command systems in service. They are regularly updated to take into account the technological breakthroughs and the emergence of new threats.

CAPABILITIES AND SOLUTIONS

The proliferation of improvised explosive devices has made the missions of Explosive Ordnance Disposal teams essential. The equipment provided by Nuances Technologies ensures continuous electronic protection, whatever the method of transport. The mine clearance and protection vehicles of the EOD teams (SOUVIM, BUFFALO, VAB...) are equipped with stand-alone systems specifically designed by Nuances Technologies for each type of mission.

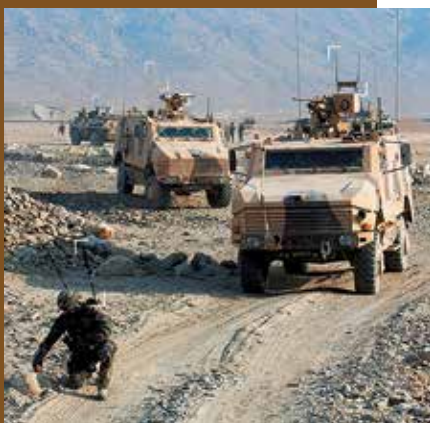
Nuances Technologies also develops customized solutions for dismounted operations. In terms of weight, ease of handling and efficiency, these systems are designed to provide a protective shield to soldiers on the ground. They can be hand-held, integrated into a backpack or transported by robot to be positioned as close as possible to the targets.

Solutions

- RCIED jammers.
- Active, reactive & hybrid technologies.
- Communications jammers.
- Anti-drone solutions.
- Vehicle-borne systems.
- Manpack systems.
- Portable solutions.

Services

- Simulation.
- Customized design.
- Integration.
- Efficiency measures.
- Training.
- Maintenance.



NUANCES TECHNOLOGIES
Sales Team
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www.nuances.fr



Mobility
SupportDeployment
SupportTerrain
Arrangement

SPECIALIST IN USED MILITARY VEHICLES AND OPERATIONAL MAINTENANCE

OVERHAUL, RECONDITIONING, TRANSFORMATION

OMAT can both refurbish your fleet of vehicles and provide you with former military vehicles reconditioned in our workshops.

We have got a wide range of different materials all from the French Army that can be used in different field like:

- MATEM which is a water purification system, manufactured for getting clean freshwater and mainly using a filtering principle;
- Motorised Floating Bridge (PFM Unit Bridge) which is a military system designed to cross rivers and lakes or for water transportation. It is composed of different elements, a pontoon, an approach ramp and a trailer. These elements are carried by TRM 10.000;
- MPG which is a tractor loader on wheels with an articulated frame, equipped with a bucket 4 in one and a winch.

OUR KNOW-HOW:

- Maintenance in operational conditions: OMAT can do the maintenance in operational conditions of a whole vehicle fleet;
- Technical assistance for project management: OMAT's experts are able to assist you in the implementation, the development and validation of your projects (implementation of production lines, technical expertise...).
- Mechanical overhauls: Our team of specialized technicians carry out all necessary mechanical overhauls and repairs;
- Reconditioning to new: We can study and realize every desired refurbishing (new engine, modernized lighting system...);
- Vehicles transformations: Raised exhaust pipe, rollover protection added or any kind of bodywork modification; our teams of technicians can study your requests and develop adapted solutions;
- Custom made options added: We can equip your vehicles with additional options such as rear-view camera, shield and add-armour... We also have certified technicians able to insulate and air-condition them. OMAT also has developed its own air-conditioning system;
- Logistic support and transport: OMAT is working with reliable partners in the road and maritime transport sectors.

OMAT

OMAT is specialized in national and international sales of reconditioned and valuable used military equipment and in the maintenance in operational condition. Our team composed of specialised mechanics, of experts and of ex-servicemen is ready to go on site to study needs and propose adapted solutions.



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OROLIA



Mobility
Support



Counter-
Mobility
support



Deployment
Support



Terrain
Arrangement



Specific
Information
System

Today's military forces rely on continuous and accurate Positioning, Navigation and Timing (PNT) signals to make timely and effective decisions, even in GPS/GNSS denied environments. Orolia's PNT technology ensures that armed forces have the situational awareness data needed for rapid, informed decision-making in all conditions.

OROLIA, THE WORLD LEADER IN RESILIENT POSITIONING, NAVIGATION AND TIMING (PNT) SOLUTIONS

TIME AND LOCATION YOU CAN TRUST™

Founded in 2006, Orolia became the world leader in Resilient PNT in just a few years.

With 12 acquisitions across US and Europe, successfully integrated in less than 10 years, Orolia rapidly became one of the few global providers of precise, rugged and reliable positioning, navigation, timing (PNT) solutions that are critical for governments, military, aerospace and Defense markets. With a team of over 450 people, our success is rooted in a shared culture including entrepreneurial spirit, innovation, operational excellence and a high level of customer service.

Orolia offers an affordable, bolt-on approach to Resilient PNT to meet specific requirements without over-engineering a solution that is complex, expensive and difficult to maintain.

OUR MISSION - RESILIENT PNT SOLUTIONS

- **Mobile Mission - PNT Critical Systems** - Based atomic clock technologies, integrated GPS/GNSS disciplined clocks and position & navigation systems.
- **PNT Signal and Threat Generation** - GPS/GNSS vulnerability testing and sophisticated multi-constellation simulation solutions for the confident deployment of battlefield systems.
- **PNT Networks & Applications** - High precision time servers and anti-jamming/spoofing detection software to synchronize critical networks and infrastructure operations while protecting system integrity.
- **Integrated Security** - Rugged, mounted timing, frequency and position systems with dismounted wearable devices to provide virtually failsafe PNT solutions integrating Interference Detection and Mitigation options.

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OROLIA

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SERA INGÉNIERIE

COUNTER MINE AND IED EXPERTISE

OPENING A TRAPPED OR MINED ROAD

Pushed decoy or detection systems are an efficient, quick and cost effective solution against the threat of mines and IED. They can be operated by any existing armored vehicle without purchase and supply of a dedicated one. Pushed systems operating a NIITEK GPR designed and delivered is an example SERA furnished to the Italian MoD through MBDA Fr and IT.

- Pushed decoy and detection systems (GPR, Metal detector, IR or Electromagnetic decoys...).
- Easily interfaced system with many armored vehicles (VTMM, VAB, ARAVIS, MOWAG, RATEL, BTR,...).
- Easy to maintain due to a maximal of carry-over parts.
- Others sensors or effectors can easily develop to respond for each threat.

SECURE AN AREA BEFORE OPERATIONAL DEPLOYMENT

A Global opening and securing capability with **SOUVIM** as used by French armed forces and combat proven in Afghanistan and Sahel. Developed by SERA Ingénierie under MBDA Design Authority, SOUVIM is a countermine system based on a combination of mine decoying subsystems.

- A **stand-off mine decoy** support frame fits the vehicle which is immune to pressure mines with its low pressure tires. The vehicle is able to decoy mines with infrared or electromagnetic and pressure means and can be fitted with jammers.
- The second equipment is a **metal detection** capability which alert when a too big piece of metal is detected. You can stop and explore the suspicious object.
- Then, are **heavy trailers** to make explode undetected mines. The cleared road is automatically marked and your convoy has just to follow the secured way.

The new version EPEE3 is fitted with a **ground penetrating radar** (GPR) from COBHAM; even mines with no metal are detected.

A Robotic solution with the airdropable **ROBBOX**:

- A platform with diesel, electric and hybrid versions (autonomy up to 300kms);
- Central mission module over or/and under the main frame (Payload up to 1000kgs);
- Human Machine Interface for teleoperation or semi-autonomous capabilities (range more than 1km).

SERA Ingénierie has the expertise to develop and product your counter mine and IED capabilities. With the SOUVIM (developed as subcontractor of MBDA), the BUFFALO, the ROBBOX or your own vehicles fitted with specific equipment, your Forces will be able to secure operational lines or procure a secured area to the civilian population. SOUVIM is now proposed to export market by SERA Ingénierie.



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UNAC



UNAC is manufacturer of hydrostatic vehicles in small and medium series for engineering. The particularity of UNAC is to design tailor-made products from a particular requirement written by our customer. Our vehicles are combat proven, they resist to all climatic conditions. We supply French Land forces since 20 years.

HYDROSTATIC VEHICLE CREATOR

CAPACITIES

- UNAC builds multifunction engineering vehicles with many functions: earthworks, ground stripping, snow clearance, road clearance, laying mats for mobility improvement.
- UNAC integrates specific tools for mine clearance.
- UNAC develops for each function, different tools: bucket, blade, mats laying system, backhoe, and specific railway tool.
- UNAC is also able to develop high technology vehicles like the bulldozer TNA which can be airdropped by a C130, C160 or A400M. For all of its products, UNAC is able to provide all the support to the user in operational conditions: User Technical Documentation, e-learning, training, Integrated Logistic Support.
- UNAC is also able to armor its vehicles according to STANAG 4569. This additional armour can be included in the vehicle or removable. The removable kits can be assembled by the user in less than two hours.

VEHICLES

- The TNA is an airdropable bulldozer of 6.3 tons. used by the Parachutist Engineering Regiment. Its main missions are: preparation and improvement of airport to allow air plane landing and take-off, the opening and basic landscaping of access roads, creation or restoration lanes for recovering loads.
- The EGAME is a multi-purpose wheeled earth mover. Its main missions are mining clearance, earthworks, urban combat including barricade destruction. With Its tools it can also remove snow and lay mats for mobility improvement on sand or mud.
- The 20TRR is a high-capacity road-rail excavator which can perform earthwork tasks directly from a railroad track with great freedom of movement and with a large lifting capacity. Delivered with its tools, it permits to build or repair a railway network.



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NOTES





The French land defence and security
industry association

GICAT, a professional group, created in 1978, has over 270 subscribers, corporations, midmarket companies, SMEs and startups. These members cover a wide range of industrial, research, service and consulting activities for military and civil organizations, of national or international scope, involved in land and/or airland security and/or defence.

The international ambitions of GICAT are reflected in its international exhibitions, EUROSATORY in France, Expodefensa in Colombia, ShieldAfrica in Ivory Coast, and Platinum Security Exhibition in Monaco, organised by its subsidiary, COGES, and a certain number of other defence and/or security exhibitions overseas.



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