

ELECTRONICS & DEFENSE



LAND OPTRONICS

Solutions for a world in motion



YOUR REQUIREMENTS FOR SUCCESSFUL MISSIONS



40 YEARS OF EXPERIENCE
AS A MARKET LEADER



N°1 IN EUROPE FOR
OPTRONIC SYSTEMS



PERFORMANCE & RELIABILITY
AT YOUR SERVICE



TAILORED TO YOUR
REQUIREMENTS



COMBAT PROVEN



OPTIMIZED LIFE CYCLE COST



SITUATION
AWARENESS



WEAPON
AIMING



TARGET
ACQUISITION



TRUE
ON-THE-MOVE



GEOLOCATION



VEHICLE
NAVIGATION



ADVANCED
EMBEDDED
FUNCTIONS

MINEO®

Tactical range Targeting Sight

MINEO®, in the continuity of CM3, is a sensor sight designed for Remote Weapon Stations (RWS) and Medium Caliber Turrets, as well as howitzers (direct fire sight), and Main Battle Tank (MBT).

Thanks to its uncooled thermal imager, MINEO® provides an affordable and reliable solution for those applications, either as original equipment or retrofit. MINEO® can be embedded with an inertial reference unit for weapon stabilization and target rate measurement. Based on a common single electrical/software interface, MINEO® is easy to integrate and interchangeable.



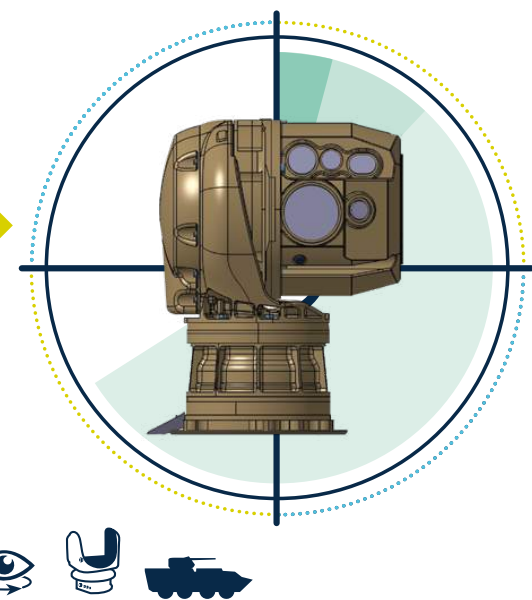
VIGEO®

Tactical range Panoramic & Targeting Sight

Compact and lightweight, VIGEO® is a stabilized gunner & commander sight in the continuity of MPS. It offers on-the-move day and night situational awareness acquisition, target designation and high efficiency engagement to armored vehicles.

Made up of an electronic unit and an independently stabilized head to support the optical payload, VIGEO® is a versatile, modular and scalable equipment.

Compact and lightweight, VIGEO® is ideal for upgrade and new land vehicle programs.



OUR REFERENCES

More than 25,000 land vehicles equipped with optronics and/or inertial solutions



From 7.62 to 155mm weapons



Perfectly suited for wheeled and tracked vehicles

4 UP-TO-DATE SENSORS

UNCOOLED THERMAL IMAGER

Wavelength: 8-12 µm (LWIR)
fixed FOVs up to 4.5°

DAYLIGHT FULL HD TV

Type: Color 4K
3 fixed FOVs with continuous digital motionless zoom up to 3°

LASER

Eye safe laser range finder
Range on NATO target: > 4.5 km



GYRO (optional)
Resonator gyros embedded for Weapon Stabilization & Target Rate Measurement

BENEFITS & MAIN FEATURES

- **Ultra Compact and lightweight:** < 9.5 kg – All in one box
- **ITAR FREE**
- **Serial production**
- **Fully qualified according to the most stringent military standards**
- **Boresighting & harmonization guaranteed**
- **Combat proven**
- **Day/Thermal images fusion**

5 UP-TO-DATE SENSORS

VGA OR HD COOLED THERMAL IMAGER

Wavelength: 3-5 µm (MWIR)
2 fixed FOVs up to 1.9° or 2.5°

DAYLIGHT HD TV

Type: Color HD
3 fixed FOVs with continuous digital motionless zoom up to 2.6°

LASERS

- **Eye safe laser range finder**
Range on NATO target: > 4.5 km
- **Eye safe laser pointer**



GYRO
Resonator gyros embedded
LOS stabilization: < 0.2 mrad RMS
Positioning accuracy: < 0.2 mrad

BENEFITS & MAIN FEATURES

- **Compact and lightweight:** < 35 kg
- **ITAR FREE**
- **Serial production**
- **Efficient 1st round hit probability**
- **Improved on-the-move capability**
- **Sensor modularity**
- **Easy to integrate**
- **Automatic target tracking**
- **Day/Thermal images fusion**



2 axis stabilized platform



Vehicles



Artillery Howitzers

PASEO™

Long Range Panoramic & Targeting Sight

PASEO™ is the latest-generation highly-versatile long range observation & targeting sight, beyond engagement line, intended for Infantry Fighting Vehicle (IFV) and Main Battle Tank (MBT).

PASEO™ provides advanced on-the-move identification, targeting & firing capabilities whether on static or moving targets by day & night. It offers a 360° coverage up to optional real time scanning capability as well as sector scan.



6 UP-TO-DATE SENSORS

VGA OR HD COOLED THERMAL IMAGER

Wavelength: **3-5 µm (MWIR)**
x 8 optical zoom with preset positions
up to 1.9° or 2.5°

DAYLIGHT FULL HD TV

Type: **Color Full HD**
3 fixed FOVs up to 2.5°

LASERS


- **Eye safe laser range finder**
Range on NATO target: **> 7 km**
- **Eye safe laser pointer**

GYRO

Resonator gyros embedded
LOS stabilization: **< 0.1 mrad RMS**
Positioning accuracy: **< 0.1 mrad**

SWIR (optional)

BENEFITS & MAIN FEATURES

- **Best seller**
- **ITAR FREE**
- **Serial production**
- High **1st round hit** probability
- **True on-the-move** capability
- **Automatic target tracking**
- Sensors **images fusion**
- Add-on armor **(AOA)** 
- **Anti-tank missile guidance** capability
- Real time **sectorial scan & track** while scanning
- **General Video Architecture (GVA)** compliant
- **Wiper & Windows deicing** (optional)
- Integrated **weaponized** configuration

PASEO™ CRYSTAL

Artillery Forward Sight



7 UP-TO-DATE SENSORS

VGA OR HD COOLED THERMAL IMAGER

Wavelength: **3-5 µm (MWIR)**
x 8 optical zoom with preset positions
up to 1.9° or 2.5°

DAYLIGHT HD TV

Type: **Color HD**
3 fixed FOVs up to 2.3°

LASERS

- **Eye safe laser range finder**
Range on NATO target: **> 10 km**
- **Eye safe laser pointer**
- **Designator**
Range on NATO target: **> 6-10 km**

ONYX™ INERTIAL NAVIGATION SYSTEM

HRG CRYSTAL™ embedded
LOS stabilization: **< 0.1 mrad RMS**
TLE CAT1: **up to 7 km**

SWIR (optional)

BENEFITS & MAIN FEATURES

- **2 key capabilities - Optronics & Navigation** - into **1** solution
- **ITAR FREE**
- **See-spot** (optional)
- True **on-the-move** capability
- **Automatic target tracking**
- Sensors **images fusion** (optional)
- **Anti-Tank missile guidance** capability
- Real-time **sectorial scan & track** while scanning
- **General Video Architecture (GVA)** compliant
- **Wiper & windows deicing**
- **Weapon aiming**
- **-47° elevation angular travel**

SATIS FAMILY

Cooled/Uncooled thermal imagers for sighting system or territory surveillance optical system

Our portfolio of advanced cooled thermal imager provides land vehicles fire control and observation systems with ultimate image quality and superior line-of-sight stability, even in the most demanding operational scenarios.

SATIS Family is capitalizing on a 40-years experience in thermal technology. Based on the latest state-of-the-art technologies, our cameras are designed to be integrated into sighting system for observation and targeting requiring a long range engagement.



SATIS XLR (Extra Long Range)

- Wavelength: **3-5 μ m (MWIR)**
- VGA or HD detector
- X8 Optical zoom with preset positions
- FOV (H): 0.95° - 7.6°



SATIS GS (Gun Sight)

- Wavelength: **3-5 μ m (MWIR)**
- VGA or HD detector
- X8 Optical zoom with preset positions
- FOVs: 1.9° x 15.2° or 2.5° x 20°



SATIS LW (Long Wave)

- Wavelength: **8-12 μ m (LWIR)**
- VGA detector
- X8 Optical zoom with preset positions
- FOV (H): 2.5° - 20°

BENEFITS & MAIN FEATURES

- Combat proven
- Based on the same boxes and fully interchangeable
- Ultimate image processing
- High optronics performance
- Versatile video output
- General Video Architecture (GVA)
- Autofocus
- Digital image stabilization
- Noise reduction
- Super-resolution

A PORTFOLIO FOR ALL YOUR NEEDS, FOR ALL YOUR MISSIONS

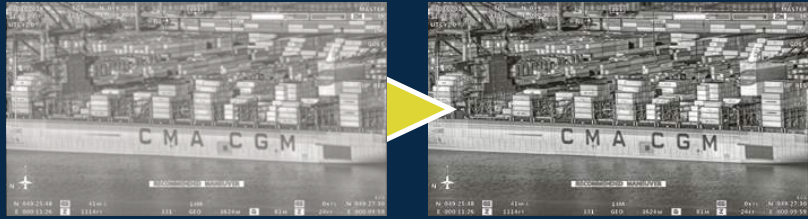
CAMERAS	<div></div> <div>SATIS XLR SATIS GS SATIS LW</div>	COOLED INFRARED, MEDIUM & LONG WAVE
SENSOR BOXES	<div></div> <div>MINEO VIGEO SENSOR BOX PASEO SENSOR BOX</div>	MULTI-SENSORS, UNCOOLED/COOLED INFRARED, EMBEDDED INERTIAL REFERENCE
STABILIZED SIGHTS	<div></div> <div>VIGEO PASEO PASEO Crystal</div>	PANORAMIC TARGETING SIGHTING SYSTEM, MULTI-SENSORS, TARGET GEOLOCATION & DESIGNATION

ADVANCED EMBEDDED FUNCTIONS

Safran offers advanced functions fully embedded in the system, enhancing the operator's situational awareness, while keeping workload manageable.

ENHANCED IMAGE PROCESSING

Improve real-time image quality thanks to a proprietary algorithm that sharply increases detail recognition and identification range.



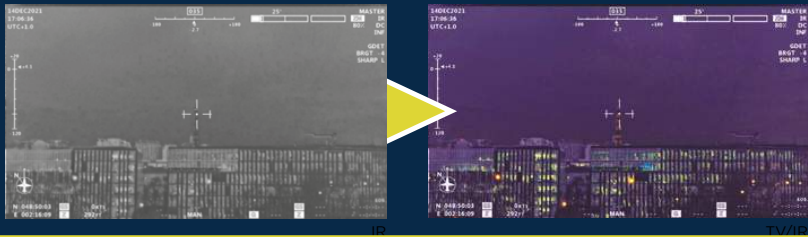
SECTORIAL SCANNING

Azimuth sector-scan with automatic target detection. Panoramic display of the scanned sector with marked detected targets.



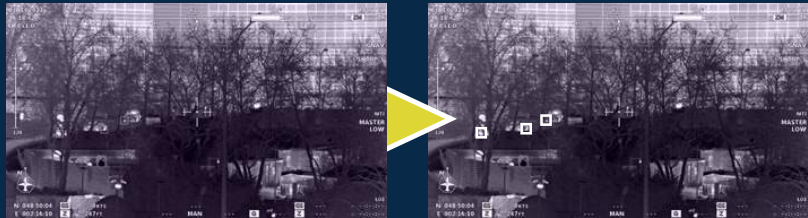
BLENDING & FUSION

Fusion of different wavebands into a single video stream, giving operators the advantages of each wavelength.



VIDEO MOVING TARGET IDENTIFICATION (VMTI)

Highlight moving objects to help operators to detect moving points in the video stream.



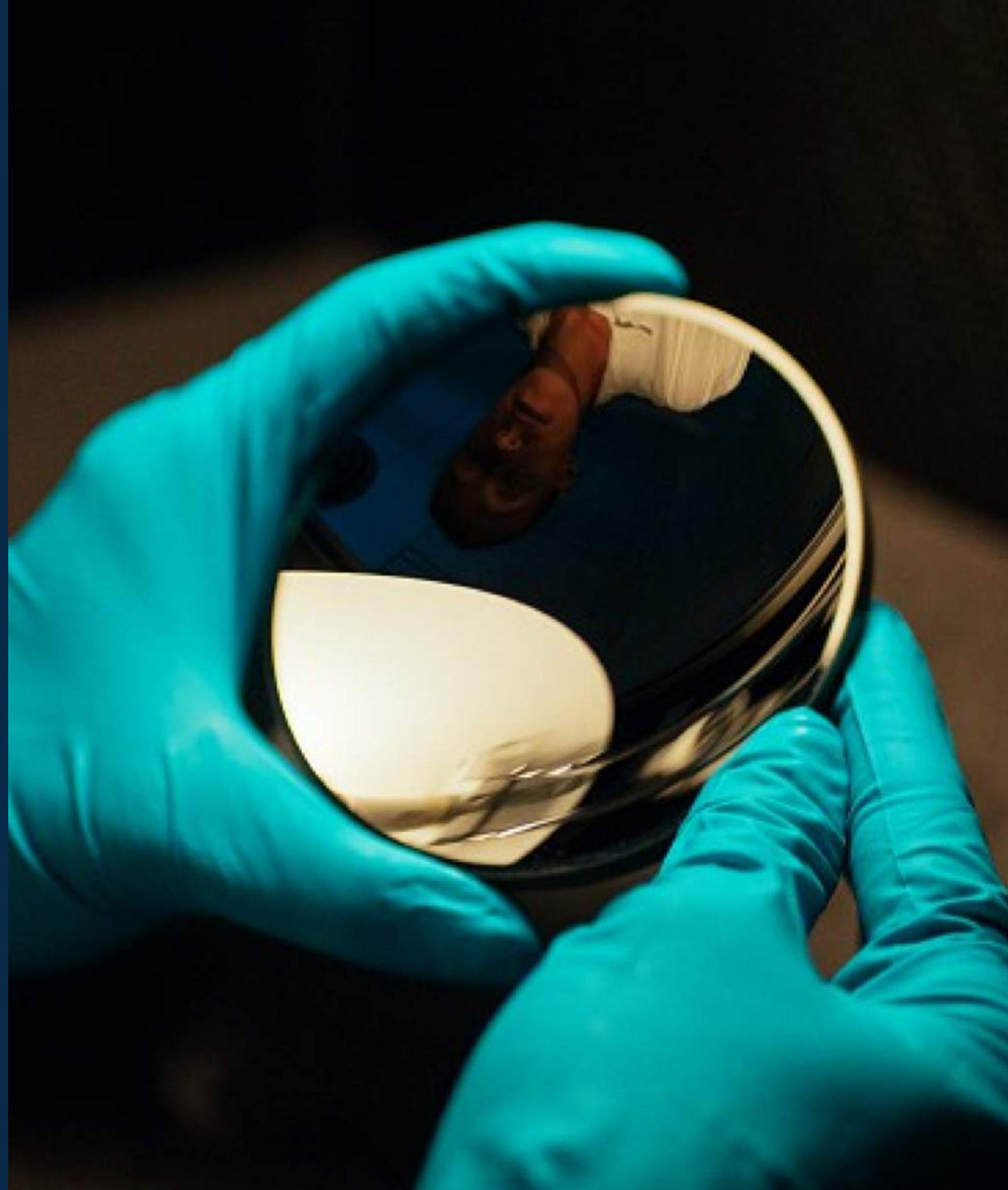
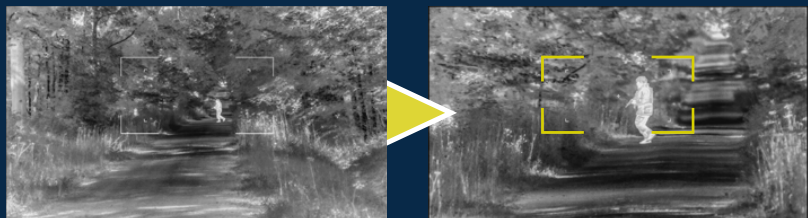
HOT SPOT DETECTION (HSD)

Reveal objects that are invisible to the naked eye by highlighting hot targets in the image background.



AUTOMATIC VIDEO TRACKING

Allow to follow a target of interest automatically without any continuous input from the operator, by day or by night. Video tracking allows to determine the speed of the target.



MY E&D SERVICES

SAFRAN ELECTRONICS & DEFENSE OFFERS SPECIAL ACCESS TO A FULL RANGE OF CUSTOMER SUPPORT SERVICES VIA AN ONLINE PORTAL.

ONLINE CONTRACT MANAGEMENT

- Full online access to your repair status, contract information and technical documentation

CYBER-SECURED ONLINE PLATFORM

- Data sharing and documents transfer

E-LEARNING

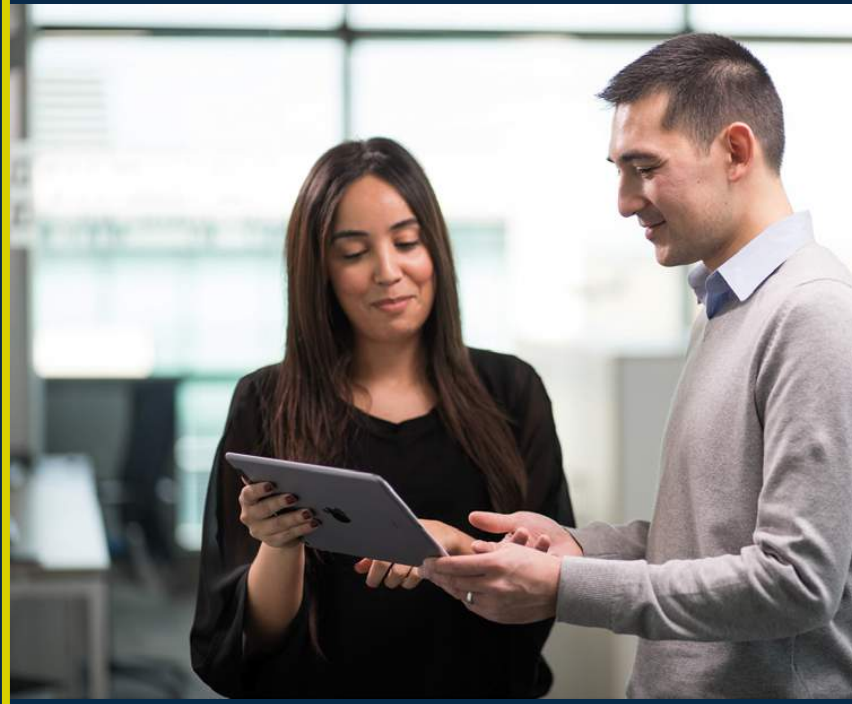
- Access to e-Learning modules

HELPDESK AND TICKETING

- 24/7 access to Safran Service Managers

If you have any other questions or if you would like our assistance, please contact us by email.

We look forward to hearing from you.
Your Safran Support Team.



Email: contact-defense@safrangroup.com



SafranDefense



SafranElecDef



Our understanding of your requirements combined with our expertise in inertial and electro-optics solutions



Ease of integration



POWERED
BY TRUST

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