



NIGHTWOLF™

The unique handheld
multi-spectral targeting system



NIGHTWOLF POWERED BY

SMARTAC



SAFRAN TECHNOLOGIES TO ENHANCE MISSION SUPERIORITY FOR THE MODERN WARFIGHTER

SMARTAC is a technology suite for handheld electro-optic solutions. These technologies are developed within Safran Group, based on our core competences for Situational Awareness, Information Fusion, GNSS Denied Areas, Target Location and Moving Targets.

MULTIPLY YOUR FORCE IN THE AREA OF OPERATIONS WITH NIGHTWOLF AND SMARTAC



DISMOUNTED TEAM

Fit of NIGHTWOLF



- Lightweight and compact
- 24-7 mission ready. A channel or fusion to suit any time or condition.
- Thermal image ready in <15 sec
- Report to your leaders for shared and immediate situational awareness using REPORTS

JTAC/JFO/FO

Fit of NIGHTWOLF



- TLE CAT I with or without line of sight with MAPS
- Overlaid streaming widget for visual confirmation of correct talk on
- Fusion modes to visualize light sources in thermal channel.
- Afocal for extended ranges
- Fall of Shot 2 point measurement for quick correction of fire

SNIPING TEAM

Fit of NIGHTWOLF



- Detect targets quickly with thermal channel
- Bi-ocular add on for comfortable long term observation with less fatigue
- Report speed and direction of vehicles to command with MAPS and REPORTS

LEADER

Fit of NIGHTWOLF



- Faster and better decision making with complete sensor and information fusion
- COMPASS for eyes on target and on team
- MAPS and 2 point measurement for planning and engagement preparation
- Thermal channel for quick assessment of the situation

COMMAND CENTER

Users of NIGHTWOLF can easily provide information to BMS or share target pictures, video streams or send TLE CAT I target location coordinates and reports based on NATO STD 2525 to the command center.

Vice versa, BMS can be seamlessly integrated into NIGHTWOLF with widgets fused into observation for 360° situational awareness, providing Blue Force tracking, Video IN streaming or BMS remote viewing.



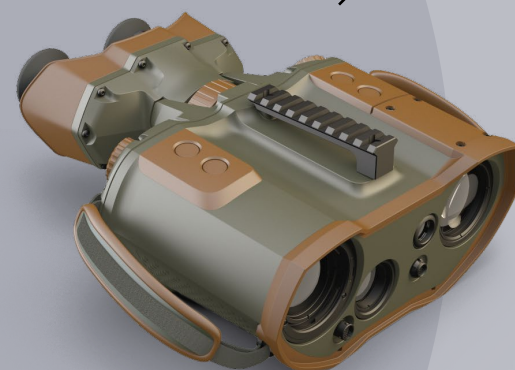
PLRF in combination with STERNA



JIM Compact



MOSKITO TI/TI+



NIGHTWOLF



STERNA TNF



ECOSI



SLAM D

SOLUTIONS POWERED BY SMARTAC

SITUATIONAL AWARENESS

INTUITIVE USE

- Optimized workflow for maximum efficiency
- No distraction: only relevant data displayed
- Flip between pages to cycle between observation or orientation with widgets

SWIR TECHNOLOGY

- See through haze and smoke
- Reveal 1550 nm laser beams
- Enhanced night vision capabilities in conditions down to 10 mili lux (quarter moon)

INTELLIGENT ALGORITHMS

- Improved observation experience with image stabilization
- Improved DRI with image enhancement for high contrast to clearly distinguish objects and persons

LONG RANGE DRI

- Detect at long ranges thanks to high performance 7x day view (glass) optics (working even without power)
- Up to 10 km with DVO
- Up to 8 km with CMOS
- Up to 6 km with SWIR

SIGNATURE MANAGEMENT

- Full control of signal emissions with silent mode

MAPS SOFTWARE

- Orient yourself and plan ahead with online and offline maps

COMPASS

- Overlay blue forces, POI, etc. in your field of view with "Compass" widget for instant awareness

GNSS POSITIONING

- Fast and reliable determination of own position
- Receive signals from Navstar GPS, Galileo, Glonass, QZSS

INFORMATION FUSION

FAST DETECTION

- Fusion of thermal and lowlight sensors for fast detection of visible light, thermal and NIR signatures

SEE-SPOT

- Highlighting laser pointer and designator spots while in thermal mode
- Enhance daytime recognition of laser target designator with additional See-Spot filter kit

MAPS AND REPORTS SOFTWARE

- Digital maps are shown as picture-in-picture
- Visualization of target location and own location
- Provide the type of the target in order to get the right effect

AUGMENTED REALITY AND PICTURE-IN-PICTURE

- Video-in to feed live images from drones or other sources
- Always eyes on target
- Customize your own view with available widgets target type

TARGET LOCATION

FIBER LASER

- World leading laser technology with low energy consumption
- Extreme narrow beam divergence for rapid high precision range measurements at long ranges (+/- 2 m at max. 15 km)

NORTH KEEPING

- DMC-IMU with easy compensation: ready for non-magnetic north finding and keeping
- Highly accurate azimuth (0.6° accuracy) and inclination (0.2° accuracy) 10 km)

MAPS SOFTWARE

- Display target measurement on map
- Correct target measurements with digital imagery and achieve up to TLE CAT I
- Provide targets without active laser measurement and beyond line of sight

REPORTS SOFTWARE

- Provide immediate Situational Awareness to BMS-connected users by sending reports based on NATO STD 2525C

GNSS DENIED AREAS

MAPPING SOFTWARE

- Target location independent of GNSS by setting own position with digital map on device (1 m accuracy)

MOVING TARGET

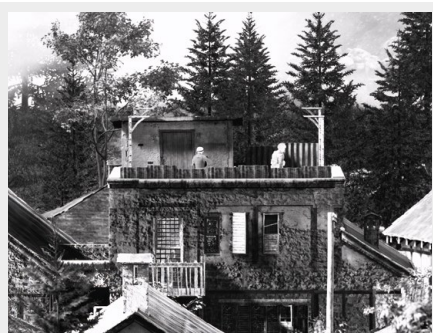
REPORTS SOFTWARE

- Enable anticipation of enemy intent by providing their direction and estimated speed of movement to the BMS

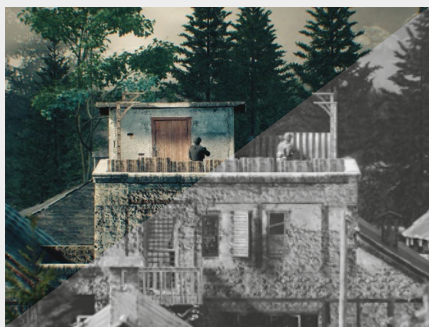
NIGHTWOLF MULTI-SPECTRAL CHANNELS



DVO CHANNEL



THERMAL CHANNEL



COLOR DAY AND LOWLIGHT



SWIR

FIRST SWIR CHANNEL IN A MULTIFUNCTIONAL DEVICE

Thr SWIR channel covers a spectral wave length range between 1100 nm and 1700 nm. It therefore reveals things that are not visible with a DVO or even NIR channel, such as 1550 nm laser beams. SWIR also works much better in compromised environmental conditions and extreme lowlight.



ENGINEERING KNOW-HOW
WITH DIRECT IMPACT ON YOUR MISSION

+ SWIR CHANNEL IN A HANDHELD FUSION DEVICE

Safran NIGHTWOLF's SWIR technology allows penetration of fog/clouds, maritime haze, smoke and turbulence/mirage effects. SWIR also offers enhanced night vision capabilities down to quarter-moon conditions.

+ LIGHT WEIGHT BEST SWAP DESIGN

Class leading performance in combination with size, weight and power

- weight incl. batteries less than 1.9kg
- Internal GNSS saves up to 1kg of total weight in auxiliary devices

+ CONNECTED SENSOR IN YOUR SYSTEM

Our SMARTAC solutions lead the way with the latest connectivity options like Wifi, Bluetooth 4.0 BLE, Ethernet, Gigabit Ethernet. Transfer images or stream video in real time. Transmit target data to BMS/ FCC.

One multi-spectral device – consolidating many capabilities. At Safran our engineering teams have one objective: to put themselves in your shoes as the operator of our solutions and take your perspective.

WIDGETS — ALWAYS EYES ON TARGET



- Multiple split screen modes
- Freely combine channels and spectrums
- Exploit advantages and overcome disadvantages of each spectrum



- Maintain 18° thermal detection awareness without losing sight of details



- Bring visible or invisible light sources into your thermal image
- Combine spectrums from 0 to 100% overlay

NIGHTWOLF — FOR EVEN BETTER SITUATIONAL AWARENESS

FUSION OF SPECTRUMS

Combine channels and spectrums to exploit strengths and overcome weaknesses of any one spectrum. Multiple modes and free combination of any two channels extend your observation spectrum for enhanced detection and identification capabilities.

Video-in feed

Split screen fusion

Compass widget

Targeting results

SD	1247	m	AZ	907 mil	INC	- 17	mil	VD	21	m	HD	1246	m	
UTM								32T	541525	5252314	AMSL		893	m

Fusion widget

NIGHTWOLF



ACCESSORIES



BI-OCULAR EYEPIECE

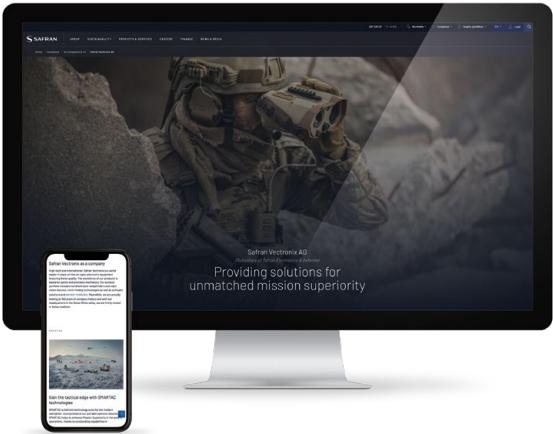
Standard accessory: Longer endurance for observation missions when in SWIR, TI and CMOS channel.



PREMIUM TRIPODS

Specially developed for the high demands of our customers, we offer a broad range of tripods – optimized for weight and specific functions.

ADDITIONAL INFORMATION



On our website, you will find not only extensive additional information, downloads, and films, but also a direct point of contact for a product demonstration.

Visit www.safran-vectronix.ch

TECHNICAL SPECIFICATIONS

UNMATCHED HANDHELD MULTI-SPECTRAL TARGETING SYSTEM

OPTICS GENERAL		RANGE FINDER (DISTANCE)	
Observation	monocular, bi-ocular (optional)	Laser type	1550nm, Class 1, eye safe per EN 60825-1:2014 Ed. 3
Eye relief	23mm	Range capability	10m to 12000m
Dioptric setting	-4 to +4 diopters	Specified performance Standard LRF	6000m at visibility 20km, 2.3m×2.3m target, albedo 0.3, detection probability 99%
Focus	manual focus	Accuracy (1σ)	±1.5m from 20m to 12000m
OPTICS GENERAL		False alarm rate	≤1%
Magnification	7× / ±5%	Resolution on display	0.1m / 1ft
Field of view	≥6° / 106mil	Multiple targets	3 targets
Objective diameter	25mm	Time per measurement	≤0.8sec
Reticle	etched glass reticle, 5mil graduation	Repetition rate	24 per minute
1064nm Laser protection	attenuation factor O.D. >6	Beam divergence	0.4mrad
750nm to 1100nm Laser protection	attenuation factor O.D. >5	DIGITAL MAGNETIC COMPASS (AZIMUTH AND INCLINATION)	
OPTICS THERMAL IMAGING		Resolution on display	1mil / 0.1°
Sensor resolution	1280×1024 pixel / SXGA, 12μm	Azimuth accuracy (1σ)	±10mil / ±0.6°
Spectral band	8μm to 12μm	Inclination accuracy (1σ)	±3mil / ±0.2°
Zoom	digital	Maximum inclination angle	45° in any direction (inclination and blank)
F-number	≤1.27 / 1.25, typical	Declination	±3200mil / ±180°
Field of view	H = 18° / 320mil / ±0.5° V = 14.4° / 256mil / ±0.4°	Compass calibration	menu guided, IMU-supported fast compensation
Objective diameter	39mm	LASER POINTER	
Reticle	digital reticle	Position	integrated
OPTICS SWIR		Laser type	830nm, Class 1, eye safe per EN 60825-1:2014 Ed. 3 850nm, Class 3B (optional)
Sensor resolution	640×512 pixel / VGA, 10μm	INTERNAL GPS RECEIVER (OPTIONAL)	
Spectral band	800nm to 1700nm	Supported GNSS-Services ¹⁾	GPS/QZSS (L1 C/A), Galileo (E1-B/C), GLONASS, BeiDou / EGNOS, MSAS, WAAS, L1S
Zoom	digital	DISPLAY	
F-number	≤1.38 / 1.36, typical	Type	OLED, SXGA (1280×1024 pixel)
Field of view	H = ≥6° / 106mil V = ≥4.8° / 85mil	Unit settings	distance: meter, foot angle: 6400mil, degree, mrad altitude: meter, foot
Objective diameter	44mm	DATA & MULTIMEDIA INTERFACES	
Reticle	digital reticle	Standard Interfaces	Fischer 9 pin – RS232, Power In, Fischer 19 pin – USB 3, Ethernet, micro SD (removable)
OPTICS LLCMOS CAMERA		Wireless	Bluetooth, WiFi
Sensor resolution	1920×1280 pixel / fHD	Please refer to the product datasheet for additional technical specifications.	
Spectral band	400nm to 700nm RGB 800 to 1100nm NIR		
Zoom	digital		
Field of view	H = ≥6° / 106mil V = ≥4° / 71mil		
Objective diameter	25mm		
Reticle	digital reticle		
POWER SUPPLY			
Standard on board	Battery pack for 8× L91 AA, lithium battery with battery status indicator		
Battery capacity (at 20°C) ²⁾	DVO ≥9.6h LLCMOS ≥4h TI ≥3.7h SWIR ≥3.8h		
External power	6-34 VDC, stabilized		

ULTI SENSE.



Your reliable partner for integrating innovative and tailor-made sensors used for orientation and distance measurement.

INSTALLED IN THE NIGHTWOLF.

www.ultisense.ch



POWERED BY TRUST

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