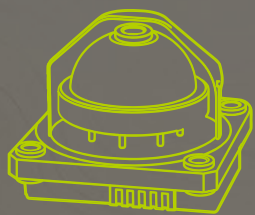


LAND NAVIGATION SOLUTIONS

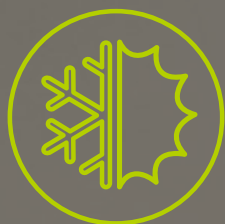


➤ HRG*: THE COMBAT-PROVEN REFERENCE FOR RESILIENT INERTIAL NAVIGATION

25+ YEARS OF MASTERED HRG TECHNOLOGY



Field-proven HRG for
all land platforms
and effectors



Combat-proven in
extreme
environments



Long-term guaranteed
performance,
maintenance-free



Hard-mounted INS,
designed for high-
shock platforms



HIGH PRECISION FOR SUCCESSFUL MISSIONS

ALL YOUR MISSIONS
require precision
navigation & pointing,
even in GNSS* denied
environment.



VEHICLE
NAVIGATION



APC* / IFV*



MBT*



TARGET
ACQUISITION



Forward Observer



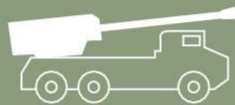
Radars



ARTILLERY
POINTING



Ground-air
defense systems



Howitzers



75 YEARS OF EXPERIENCE
AS A MARKET LEADER



PERFORMANCE & RELIABILITY
AT YOUR SERVICE



TAILORED TO YOUR
REQUIREMENTS



COMBAT PROVEN



OPTIMIZED LIFE CYCLE COST



SPACE & AERONAUTICS
HERITAGE



ANTI JAMMING/SPOOFING
CAPACITY

**Definitions on the last page*

THE FURTHER YOU GO OR STRIKE, THE MORE PRECISION YOU NEED



**SAFRAN INS PORTFOLIO
TAILORED TO YOUR MISSIONS**

INS PORTFOLIO

SAFRAN INS PORTFOLIO: **TAILORED TO YOUR MISSIONS**

FOR ALL YOUR PLATFORMS

- Wheeled or tracked
- Howitzer
- Mortar
- Military vehicle & truck
- Main battle tank
- Light vehicle & truck
- Mobile radar
- Amphibious vehicle
- Unmanned Ground Systems

FOR ALL YOUR NEEDS

- Position
- Navigation
- Pointing
- Laying
- Stabilization
- Forward observation

IN ALL ENVIRONMENT

- GNSS-denied
- Spoofing
- Jamming
- Meaconing

THE FURTHER YOU GO OR STRIKE, THE MORE PRECISION YOU NEED

	EPSILON™ Family 		GEONYX™ Family 			
	GNSS BACK-UP SYSTEM		INS FOR HIGH PRECISION NAVIGATION & POINTING			
	EPSILON™ 10	EPSILON™ XP	GEONYX™ SP/Micro	GEONYX™ HP/Micro	GEONYX™ XP	GEONYX™ XP+
Heading RMS @70° <i>(SecLat)</i>	< 0.85°	< 0.85°	2 mils <i>(0.70 mils)</i>	1 mils <i>(0.35 mils)</i>	0.90 mils <i>(0.30 mils)</i>	0.50 mils <i>(0.20 mils)</i>
Alignment	Aided alignment with GNSS	< 10 min*	< 5 min*			< 10 min*
Pitch & Roll (RMS)	0.30° (dynamic)	0.20° (dynamic)	0.75 mils	0.50 mils	0.35 mils	0.20 mils
H.Position (CEP*)	1% DT		0.15% DT	0.10% DT	0.05% DT	0.04% DT
GNSS-denied survival	Tens of minutes	Hours	Unlimited			
Size	1L		2L (MicroGeonyx™) / 6L (Geonyx™)			
Weight	1.5 Kg		< 3 Kg (MicroGeonyx™) / 6.4 Kg (Geonyx™)			
Consumption	< 13 W		< 17 W			
Interfaces	CANBUS ; Ethernet ; RS-422 ; GNSS (Embedded or external)					
Navigation Standards	MIL-STD-810 ; MIL-STD-1275 ; MIL-STD-461					
MTBF	> 100,000 h					

*Full performance after autonomous alignment without GNSS

EPSILON™

Inertial navigation unit



With the **Epsilon™ family**, Safran provides **cost-effective INS/GNSS** hybrid land navigation systems for a wide range of **tactical vehicle platforms**, from logistics and light vehicles to infantry fighting vehicles and main battle tanks.

Based on high-performance **vibrating gyroscope technology**, Epsilon™ delivers **reliable position**, heading, driving aid and aiming aid capabilities **for hours**, even in **GNSS-denied environments**.



Resonator Gyro Technology

Accurate position and heading for hours thanks to the Quapason



Magnetic Immunity

Reliable accuracy despite magnetic disturbances



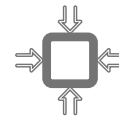
True North Finding

Autonomous heading reference without external aids



On-the-Move Alignment

Alignment without stopping or relying on GNSS



Optimized SWaP

One-liter unit under 1.5 kg



Very High Reliability

More than 100,000 hours MTBF



Easy Vehicle Integration

BMS-ready with modern digital interfaces



Small-Caliber RCWS Pointing

Precision pointing for remote weapon stations

As a full inertial navigation system, it is **insensitive to magnetic disturbances**, **easier to integrate** than legacy magnetic-sensor-based systems and can support **precision pointing applications** such as RCWS integration.



GEONYX™

Inertial navigation System

Integrating HRG Crystal™ technology, **Geonyx™** delivers **navigation-grade INS performance** for demanding land and naval missions. It provides **high pointing accuracy** under harsh operational conditions and offers very short alignment time, with or without GNSS hybridization.

Geonyx™ is designed for **flexible integration** across land and naval platforms. Its compact architecture allows installation on land and sea **vehicles, turrets** and **artillery systems**, with mounting possible in **any orientation** to simplify platform integration.

Built for **robustness** and **long service life**, Geonyx™ can be **hard-mounted on artillery guns** and withstand high shock environments **without external support**. It also strengthens **PNT resilience**, supporting reliable navigation and pointing in GNSS-denied, **spoofed or jammed conditions**.



HRG Crystal™ Technology

Virtually unlimited and maintenance-free lifetime



Very High-Precision Pointing

Pointing accuracy below 0.5 mils



Quick & Flexible Alignment

Full alignment in under 5 to 10 minutes without GNSS



Hard-Mounted on Guns

Direct artillery integration without external support



NAVWAR Capacity

Resilient PNT against spoofing/jamming/meaconing threats



Very High Reliability

More than 100,000 hours MTBF



Compact Navigation-Grade INS

High performance in an optimized SWaP format



GEONYX-M

Naval & Amphibious Applications



NEW !

MICROGEONYX™

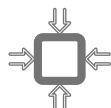
Inertial navigation System

2L / <3Kg



The **MicroGeonix™** is the **most compact INS** for its class of performance. It brings the **battle-proven performance** of the **Geonix™** into a **miniaturized footprint**, specifically engineered for **space-constrained platforms** where **SWaP-C** is a **critical** constraint.

Powered by **HRG Crystal™** technology, this **navigation-grade** system delivers **reliable, high-precision** inertial **navigation** and **positioning** in demanding operational environments. Its **optimized design** supports **seamless integration** for **navigation purposes** across **all types of vehicle platforms** and **mission-critical** onboard systems.



Reduced SWaP Architecture

Navigation-grade performance in a compact footprint



Geonix™-Class Performance

High-end inertial capability for constrained platforms



HRG Crystal™ Technology

Robust and reliable inertial performance



Fast & Flexible Alignment

Rapid mission readiness with or without GNSS



NAVWAR Capacity

Resilient PNT against spoofing and jamming threats



Very High Reliability

More than 100,000 hours MTBF



Easy Vehicle Integration

BMS-ready with modern digital interfaces



Any-Orientation Mounting

Flexible installation in any orientation on land vehicles



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 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



**POWERED
BY TRUST**

