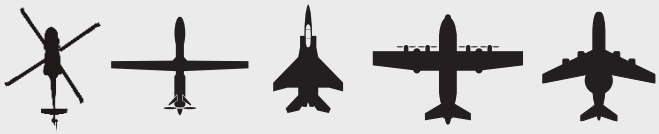
BLACKNAUTE™

THE MOST RESILIENT POSITION, NAVIGATION AND TIMING SOLUTION FOR HIGH-END MILITARY AIRBORNE CARRIERS

Designed for existing in-service EGI upgrade and compatibility with open architecture requirements.

Perfectly suited for military helicopters, aircraft, fighter jets and UAVs, the BlackNaute™ Embedded GNSS and Time INS (EGTI) sets the new standard for resilient navigation performance.



- INERTIAL PERFORMANCE
  <0.4NM/H
  RNP 0.1 Compliant
- ATOMIC CLOCK PRECISE TIME DELIVERY
- GNSS-DENIED ENVIRONMENT RESILIENCE
- HRG UNLIMITED LIFE DURATION

SAFRAN

BLACKNAUTE™

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As a global leader in Navigation Systems for more than 60 years, Safran Electronics & Defense has delivered thousands of military Embedded GPS/INS (EGI) systems for airborne platforms, advanced fighter jets , rotorcraft, aircraft and UAVs.

As the embodiment of this extensive expertise, the BlackNaute™ is the only Embedded GNSS and Time INS (EGTI) system able to provide resilient and precise navigation within GNSS-challenged environment (jamming, spoofing, meaconing,...) along with civil airspace interoperability.

BLACKNAUTE™		
SWaP	7L/7kg	
Environmental Qualification	MIL-STD-810 including gunfire, catapult-take-off, arrested landing shocks...	
MTBF	MTBF >33,000FH	
Interface	A429 In	9 (incl. External Reference Alignment)
	A429 Out	6 (incl. redundant Blended INS/GNSS, free inertial and GNSS only)
	Ethernet 100Mbs	1 (Operational NAV, Maintenance, Instrum)
	RS422 In	3 (DAGR, CRPA compatible, dGNSS provision, ToD external Time Server init.)
	RS422 Out	2 (CRPA beamforming provision)
	1553B	Bus A/Bus B
	1 PPS	1 In (external Time Server initialization), 2 Out
	Precise Timing	1PPS x3, IRIG-B x2*, HQ x2*, 10MHz x2, Ethernet 1Gbs NTP/PTP x1
	External Time server init.	1PPS
	Key Loading	GPS DS101/PRS Loading
	RF	1 (CRPA compatible)
Certification	TSO	TSO C-145d / DO-229 TSO C-201 / DO-334 TSO C-220 / DO-384
	SW	DO-178C/DAL A
	AEH	DO-254/DAL A
	Civil Procedure	LPV approach / ADS-B
GNSS	Dual-constellation	GPS C/A SBAS, M-Code, Galileo PRS
	Acquisition	direct-Y and direct-M, direct-PRS
Atomic clock	Precise time	Embedded atomic clock
IDM	Anti-spoofing Anti-jamming	Interference Detection & Mitigation Patented Function
Function	Alignment modes	Gyrocompass, In-Flight/In-Motion, On-Ship, Stored Heading, Fast Realign
	Integrity	RAIM/AAIM

*Time Server outputs configurable

Alignment Time	4min (longer alignment will improve performance)	
TCEP50/RMS	Pure Inertial	Hybrid GNSS/Inertia
Attitudes	0.01°	0.002°
Heading	0.06°lat±60°	0.02°lat±60°
	0.15°lat±78°	0.05°lat±78°
Hor. Velocities (per axis)	<0.6m/s	<0.05m/s
Hor. Position	<0.4Nm/h	GNSS accuracy
Coasting	60 min RNP0.3	

The BlackNaute™ EGTI supports open architectures with customer-programmable software to integrate specific sensors. The BlackNaute EGTI follows guidelines set by the DO-297/ARINC653 regarding Integrated Modular Avionics.