SkyNaute inertial navigation system: beyond the targeted performance!

SkyNaute, Safran Electronics & Defense's navigation system for aircraft, drones and helicopters, has been in flight test campaign since the beginning of the year. And the performances observed exceed expectations!

Inertial Navigation Systems (INS) are the ultimate navigation instrument. Totally autonomous - particularly with respect to GNSS* signals - and discreet, they detect, thanks to gyroscopes and accelerometers, the movements of their carrier - rotations and accelerations - and provide its exact position.

With SkyNaute, Safran Electronics & Defense offers a range of inertial navigation systems dedicated to aircraft, from commercial aircraft to regional aircraft via drones, helicopters...

Flight tests and performance demonstration

Since the beginning of this year, the SkyNaute program has been at a crucial stage: flight tests on various types of aircraft and helicopters. The flight profiles selected represent the various missions that aircraft can perform: long-haul flights but also short- and medium-haul flights, business aviation, Search And Rescue, observation...

Flight test set-up guarantees the observed measurements. Next to the SkyNaute, a GPS and a high-performance INS in service measure position, trajectory... These data are then compared to check the performance of Safran Electronics & Defense's new INS.

And these performances are exceeding expectations! SkyNaute has significant margins compared to market standards for the targeted applications.

Ready for integration

For aircraft manufacturers, the avionics qualification program incorporating SkyNaute will be a "formality" thanks to these flight tests. The initial performances are now known and a program of endurance and aging tests will verify the stability of these values over time.

Today, as part of partnerships with aircraft manufacturers, the flight test campaign continues in order to test SkyNaute in a wide variety of operational situations and platforms.

HRG inside!

In addition to its outstanding performance, SkyNaute shows exceptional features: a SWAP (Size, Weight And Power) and a cost of ownership of -30% to -50% compared to competing INS with similar performance.

Performance, reliability, compactness... SkyNaute owes all these characteristics in particular to its most recent inertial sensor, the HRG. This hemispherical resonator gyroscope has proven itself in demanding and various applications: Hammer, BlueNaute™, Geonyx™, Argonyx™, Black-Onyx™, SpaceNaute™... This gyro, which is the size of a well-known small coffee capsule, has cumulated 5 million hours of operational use...

In other words, with HRG, novelty rhymes with maturity!
Don’t miss it at the Paris Air Show!

SkyNaute has an additional advantage over INS based on optical gyros – Fiber Opting Gyro and Ring Laser Gyro - : technological difference. For aircraft manufacturers wishing to ensure better integrity of their navigation thanks to the dissimilarity of the inertial technologies used in their architecture, SkyNaute offers a perfect compromise.

Have a look at SkyNaute on the Safran booth (Hall 2A). Its small size could surprise you!

*Global Navigation Satellite System