



N-CUBE - High-End GNSS SDR payload - © Syrlinks

## New Product

### Syrlinks, subsidiary of Safran Electronics & Defense, releases N-CUBE, a new generation of GNSS Software Defined Radio payload to address LEO-PNT applications

#### Business News

Rennes, France, 19<sup>th</sup> April 2023,

After having democratized very high-precision in-flight orbit determination (N-SPHERE) and having become the world reference for atomic time and precision frequencies (Galileo and other global programs), Safran presents N-CUBE: the cornerstone of the new generation of space PNT programs in low orbit (LEO PNT).

N-CUBE is a new high-end software-defined radio GNSS payload for Positioning-Navigation-Time (PNT) applications. This payload is particularly suitable for nanosatellites and satellite cubes operating in low orbit (LEO, for Low Earth Orbit). N-CUBE comes as a unique solution that combines a high-performance GNSS receiver, a GNSS signal processor and a RF output stage. The receiver and the processor implement the latest state-of-the-art positioning and synchronization techniques, to reach top class of performances for Real-Time Precise Onboard Orbit Determination (P2OD) and accurate time synchronization. The embedded RF output stage is used to retransmit a GNSS signal from the LEO orbit to the ground and to ensure a LEO-PNT service coverage.

« With the emergence of applications that require a high level of GNSS service performances, coverage and resilience such as autonomous car, Vehicle-to-Vehicle communication, IoT, etc. we are facing to a growing interest to implement efficient LEO-PNT satellite services. With N-CUBE we come at the right time on the market with a unique solution to demonstrate the future capabilities of such service in space.» says Eric Pinson, Director of Space activity at Syrlinks.



N-CUBE inherits from more than 10 years of Syrlinks' experience in the GNSS domain and has been jointly designed with CNES (The French Space Agency). N-CUBE can synchronize from different GNSS systems including GPS, GALILEO and BEIDOU. In terms of positioning, N-CUBE provides accuracy better than 0.3 meters, thanks to a unique algorithm (referenced as «Bolero») developed by CNES.

Its Software-Defined-Radio (SDR) core architecture brings maximum flexibility and enables implementation of specific software-based processing to address a wide range of applications. The retransmit signal can be fully adapted for the application. It could us the GNSS bands or other bands such as S-Band as requested. **The product is versatile and can be configured as needed to meet all LEO-PNT applications.**

«The release of this new product is the result of several years of development with our GNSS experts. It also inherits a first project realized for an operator customer and the flight of the first product is expected by the end of the year. The future looks very promising with already several new LEO-PNT projects identified.» says Fabien Sépot, GNSS product manager at Syrlinks.



The product design belongs to the Syrlinks "New Space III" product category. This Product Assurance subclass perfectly meets the requirements of Nano/CubeSat missions, targeting a typical 2/5-year lifetime at Low Earth Orbit with a maximum Total Ionized radiation Dose of 12 krad.

N-CUBE is highlight on Syrlinks booth #529 during 38<sup>th</sup> Space Symposium in Colorado Springs, CO, USA from April 17<sup>th</sup> to 20<sup>th</sup>, 2023.



## ABOUT SYRLINKS

Syrlinks, is a French company, founded in 2011 near Rennes. The company designs and delivers worldwide RF communication products to address four market segments: Space, Defense, Safety and Time-frequency.

The company which today consists of more than 160 people has successfully delivered more than 1000 Flight models for Space, which represents more than 800 years of on-orbit time with 100% reliability!

The Space business unit has developed four product ranges: TT&C, Telemetry Transmitters, GNSS and SDR Payload. This meets different market segments in terms of satellite integration (Nano/Cubesat, Micro and Mini satellites) and in terms of applications such as Earth Observation, Satcom, GNSS Services, LEO PNT, Spectrum monitoring, etc.

Syrlinks masters the design of reliable product based on COTS (Components-Off-the Shelf) components, enabling cost-reduction for New Space. Its products have been used in many high-profile space missions such as Rosetta, Myriades/Myriades-evolutions, Proba-V, OneWeb Satellites, Pléiades-Neo, Argos Neo, Microscope, etc.

Syrlinks works with prestigious clients and partners such as Airbus, OneWeb, the CNES (the French national agency for space studies), the European Space Agency (ESA), Thales Alenia Space, and Synspecive.

**[Please note that Syrlinks has become a Safran company.](#)**

More infos at [syrlinks.com](https://syrlinks.com)

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