

Development of a complete test bench to automate the validation of GNSS receivers

End-of-studies internship in the Engineering cycle

Syntony GNSS is a human-sized company with an international dimension, based in Toulouse and with the **FrenchTech label**, specializing in **Global** Navigation Satellite Systems (GNSS).

Our ambition: To provide our customers with relevant, innovative, reliable and robust solutions.

World leaders in radio navigation and embedded systems, we are present in fast-growing markets, such as aeronautics, space, road and rail transport, mining and IoT (Internet of Things). We have developed a range of products (simulators, receivers, indoor/outdoor location systems) that meet the growing needs of these industries.

Keysight, Airbus, Airbus Constellation, Hitachi Rail, Thales Alenia Space, Honeywell, Rockwell, MDA, or the Stockholm, New York and Toronto metros... So many partners who trust us and push us to always go further.

With passion, we constantly evolve our solutions to anticipate their needs and perfect our know-how.

At Syntony, we offer a pleasant and stimulating work environment, where the quality of life at work and the availability of our employees promote fulfillment and collaboration. Intellectual stimulation is omnipresent through innovative and varied projects.

We work on a variety of subjects, ranging from aeronautics to space, transport, mining and the environment.

Thus, Syntony vibrates around three fundamental values:

Benevolence:

Together, we cultivate listening, respect and empathy in our interactions, while also valuing the multiculturalism that enriches our exchanges.

We contribute to a positive environment where everyone feels valued and supported. We enrich each other by building strong relationships, both internally and externally.

Excellence:

Together, we strive for excellence in everything we do. Through our commitment, our high standards and our sense of responsibility, we guarantee quality, efficiency and performance. It is through our collective rigour that we meet challenges and provide sustainable solutions.

Adaptability:

Together, we are flexible in the face of the changes around us.

By combining creativity, collaboration and resilience, we find innovative solutions and move forward efficiently. Our agility allows us to evolve in line with our environment.

From students to qualified professionals, help develop future navigation solutions in partnership with our team of experts. Evolve in a caring environment where your ideas take flight and your contributions strengthen the synergy of the company.

Internationally, we meet the challenges of today and tomorrow, supporting our customers throughout the entire process: from the initial vision to development, to delivery and the collection of their satisfaction.

The Context

As part of its products, Syntony has developed various GNSS receivers based on an SDR (Soft Defined Radio) architecture. The objective of this internship is to participate in the design, development and commissioning of a complete test bench intended to automate the validation of GNSS receivers.

The missions cover the entire chain:

- Design and integration of test equipment (rack, RF connections, digital and power interfaces)
- Development of bench control software (equipment control, communication via UART, Ethernet, JTAG, power management and TTL signals)
- Participation in the system validation and production launch of the bench

The internship is part of a complete technical environment, combining electronics, automation and development.

What you'll accomplish with Syntony GNSS

Proposed activities

You will join the Validation and Integration team and your internship assignments will cover the following activities:

- Participate in the installation of equipment in the bay
- Participate in the technical choices of the technologies used and the architecture
- Develop the control and supervision software interfaces (CLI and GUI) of the bench
- Implement communication modules via:
 - UART
 - Ethernet
- Develop and execute bench validation tests
- Write the associated technical documentation (system description, architecture, integration procedures).

The technical skills we are looking for:

- Knowledge of electronics and instrumentation
- Knowledge of C/Python/Bash languages desired
- Raspberry Pi experience appreciated
- Understanding of communication protocols: UART, Ethernet, is a plus
- Notions in test automation
- Knowledge of Linux and configuration management tools (Git)
- Familiarity with the reStructuredText/Sphinx format appreciated.

About you

Currently in an engineering school or Master's degree, with a good foundation in mathematics and/or a specialization in space systems, GNSS, signal processing, electronics, instrumentation, etc., you are looking for a 6-month internship at the end of your studies. An appetite for validation is also sought.

Your technical curiosity, your desire to learn and your team spirit will be the assets necessary for the success of your mission.

Ready to get on board with us? 🚀 ✨

Send us your CV under the reference ENG-652-EN: jobs@syntony.fr.