

ANYWAVES

SPACE, UNMUTED

JOB OFFER

EMBEDDED SOFTWARE AND FIRMWARE ARCHITECT (M / F)

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About Anywaves

Anywaves is an international space technology company specialising in antennas, RF electronics, embedded software, avionics and integrated payload subsystems for satellite missions. Building on more than 25 years of engineering heritage, we bring together complementary expertise from our teams in Toulouse, France, Hautcharage, Luxembourg, and Austin, Texas. From design and project management to testing, industrialisation and production, we develop high-performance technologies for commercial and institutional customers worldwide. Our solutions support satellite communication, navigation, Earth observation and other demanding space applications, from individual products to complete RF payload subsystems.

With more than 120 employees representing a wide range of nationalities and technical backgrounds, Anywaves combines the agility and close collaboration of an entrepreneurial company with the capabilities of a growing international group. Joining Anywaves means contributing directly to ambitious space programmes, solving complex technical challenges and helping shape the next generation of satellite technology.

About the position

We are looking for an Embedded Software & Firmware Architect to lead the technical architecture of embedded software and FPGA firmware for advanced space electronics systems. Working closely with multidisciplinary engineering teams, you will ensure the seamless integration of software, firmware, testing, and hardware solutions.

As a Senior Engineer, you will guide projects from concept to in-orbit acceptance, defining the architecture that enables reliable interaction between software, firmware, and hardware across multiple space programs while driving technical innovation and platform evolution.

Key responsibilities

- Define the overall software/firmware architecture: module structure, layering, interfaces, and hardware/software partitioning (what runs in embedded software vs. FPGA logic).
- Select and justify key technical choices: RTOS, programming languages, communication protocols, memory architecture, and hardware abstraction strategy.
- Define the interface boundaries between embedded software, FPGA firmware, and underlying hardware (electronics, RF, telecommunications subsystems)
- Own non-functional requirements: reliability, real-time performance, fault tolerance, radiation tolerance (SEU mitigation strategies), testability, and maintainability
- Establish and maintain coding standards, design patterns, and architecture documentation practices for the software/firmware team
- Lead or contribute heavily to architecture-level design reviews (feeding into PDR/CDR/AR), distinct from code-level reviews
- Make or advise on key technical trade-offs (e.g., hardware vs. software implementation of a given function, FPGA vs. microcontroller allocation)
- Mentor software and firmware engineers on architectural decisions and best practices
- Support integration and debugging efforts when architecture-level issues arise.
- Ensure compliance with relevant space software/firmware standards (e.g., ECSS-E-ST-40, ECSS-Q-ST-80)
- Contribute to the preparation of tenders by proposing suitable technical solutions.

Preferred skills

- Proficiency in FPGA design tools (VHDL, Verilog) and microcontrollers (ARM, PIC, etc.).
- Experience in embedded subsystem architecture and performance optimization.
- Knowledge of development environments and simulation tools (ModelSim, Vivado, Keil).
- Understanding of space standards and operational constraints in a space environment.
- Experience with high-speed/onboard communication protocols (SpaceWire, CAN, MIL-STD-1553, SPI, I2C)

Profile required

- **Communication Skills:** Excellent written and oral communication skills to effectively convey technical information.
- **Analytical and Problem-Solving Skills:** Strong analytical skills and a proven ability to solve complex problems.
- **Language Skills:** Fluent in English; proficiency in French or German is a significant asset.
- **Educational Background:** Master's degree or Engineering degree (Bac+5) specialising in embedded computing, electronics or embedded systems.
- **Experience:** Successful experience (7+ years) in the design and validation of embedded software for space applications.
- **Autonomy:** Ability to strike the right balance between working fully autonomously and seeking expertise / support for problem-solving.
- The successful candidate must hold or be eligible to obtain a SECRET security clearance in accordance with national regulations and applicable EU, ESA, and NATO requirements.

We invite you to submit your CV and cover letter, showcasing your motivation for the position and positive impacts to the company to jobs@anywaves.lu . Expose and demonstrate how your skills align with the job requirements to make a meaningful impact.

In accordance with the General Data Protection Regulation (GDPR), your personal data will be processed solely for recruitment purposes. For any questions regarding the processing of your data or to exercise your rights, please contact dpo@anywaves.lu

Start: As soon as possible

Contract type: Permanent

Location: Hautcharage, Luxembourg