Silicon Mobility

Internship Description

Development of a multi-core application in an automatic code generation flow
(SM-STC 001 / 2024)

What we offer

Company	**SILICON MOBILITY SAS** *(registration number 815 085 659 000 RCS Grasse)* Head office : Les Aqueducs – Bât 2 – 535, route des Lucioles – 06560 Valbonne Sophia-Antipolis The Automotive industry is living a revolution. Electrification, autonomous driving, diverse mobility, and connectivity are trends that are changing the industry's rules. Among all decisive topics revolutionizing cars in the next future, Silicon Mobility is committed to supporting the rapid advent of electric and hybrid cars. Silicon Mobility is a technology leader for cleaner, safer, and smarter mobility. The company designs, develops and sells flexible, real-time, safe, and open semiconductor solutions for the automotive industry used to increase energy efficiency and reduce pollutant emissions while keeping passengers safe. We are looking for a motivated candidate to join our company in Sophia-Antipolis on the French Riviera. Please contact us: **internship2024@silicon-mobility.com**
Offer ref.	SM-STC 001-2024
Subject – Offer title	Development of a multi-core application in an automatic code generation flow
Duration	5-6 months– between February/March/April and September 2024
Work hours	35 hours per week, job location at Silicon Mobility office
Education	Last year of Masters (BAC+5 or equivalent)
Content/ mission	The candidate will be part of the R&D Team. The Silicon Mobility solution is based on a System-On-Chip called OLEA® FPCU (Field Programmable Control Unit) that embeds CPU cores, programmable logic, memories, and peripherals. OLEA FPCU supports model-based design using Matlab® as a design framework. The candidate is responsible for: • developing Simulink models for multi-core applications, • defining and applying a verification method to ensure that developed Simulink Models are equivalent to the embedded version in the FPCU. This project will be divided into 3 main phases: Ramp-up: • Learning phase on the FPCU. • Use Framework for a simple example as a training. • Use Multi-core OS for simple example as a training. Model specification and development: • Analyse existing application specifications. • Specify the multi-core application. • Develop a model (using Matlab® Simulink). • Adapt the automatic code generation flow to support Multi-core OS. Tests specification and Verification: • Specify the test and verification method. • Develop the test and apply it on RTL simulation and then on the FPCU development board. • Report issue(s) to the development team
Profile required	For this internship, we are looking for a candidate with: • knowledge of Hardware design for embedded system • C/C++, Java, Verilog or VHDL language • knowledge of Matlab Simulink (would be appreciated) • good English level • autonomy, rigor, strong team spirit, strong problem-solving skills

	• Quality approach
Expected Skills/knowledge	• Application software development • Multi-core OS application development • Matlab/Simulink/Coder tools and several toolboxes. • MATLAB® language • General knowledge in microcontroller development • Requirement analysis and specification writing • Methodology and Quality management skills
Remuneration	€1400/month + Tickets Restaurant + Public transport