Silicon Mobility
An Intel Company

Internship Description

Optimization of Advanced Inverter Control Algorithms *(SM-STC004 / 2025)*

What we offer

Company	**SILICON MOBILITY SAS, an Intel Company** The Automotive industry is living a revolution. Electrification, autonomous driving, diverse mobility, connectivity are trends that are drastically changing the industry's rules. Among all decisive topics revolutionizing cars in the next future, Silicon Mobility is committed to support the rapid advent of electric and hybrid cars. Silicon Mobility, an Intel company, is a technology leader for cleaner, safer and smarter mobility. The company designs, develops and sells flexible, real-time, safe and open semiconductor solutions named FPCU (Field Programmable Control Unit) for the automotive industry used to increase energy efficiency and reduce pollutant emissions while keeping passengers safe. The Company *is* looking for a motivated candidate to join our R&D team based in Sophia-Antipolis on the Riviera. If you are interested, please send us directly your application and CV on the Intel Website careers or send them to recruitment@silicon-mobility.com .
Offer ref.	SM-STC004-2025
Subject – Offer title	Optimization of Advanced Inverter Control Algorithms
Duration	5-6 months– between February/March/April and September 2025
Work hours	35 hours per week
Workplace	Silicon Mobility office
Education	Last year of Master (BAC+5 or equivalent)
Content/ mission	The Silicon Mobility solution is based on OLEA® FPCU (Field Programmable Control Unit that embeds a CPU core, programmable logic, memories, and peripherals) System-on-Chip dedicated to automotive applications. During this internship, the intern will join the R&D system team. The intern will participate in the optimization of advanced e-motor control algorithms. This internship aims to analysing, defining, developing, and testing these algorithms. During the internship period, several tasks will be addressed: 1. Learning phase and research The intern will get familiar with the inverter control algorithms and the development tools including the AGILE development flow. The intern will perform research work on advanced e-motor control algorithms and will start to evaluate solutions under Matlab/Simulink. 2. Specification and implementation During this phase, the intern will participate in the selection of the most appropriate solution to be implemented. The solution will be fully specified and implemented using Silicon Mobility development flow. This development shall comply with the ISO 26262 development guidelines 3. Verification and Documentation During this task, the intern will have to verify and characterize the efficiency of the advanced control algorithms in different configuration using our Model in the Loop and

	Hardware in the Loop test environments. A user guide will be then written to help users to configure these algorithms.
Profile required	For this internship, we are looking for a candidate with good knowledge of power electronics, motor control algorithms, and embedded systems. Good skills in electrotechnics, inverter topologies, Matlab Simulink, and DSPACE HIL Bench. The candidate shall be autonomous, rigorous with a strong team spirit. English speaking is required.
Expected Skills/knowledge	• Matlab/Simulink • Power electronics transistors • Functional Safety • Advanced algorithm control for power inverter • Critical real-time embedded software on ARM processor • General knowledge of microcontroller development • Requirement analysis and specification writing • Quality management skills
Remuneration	1400€/month + Lunch tickets + Public transport