Silicon Mobility

Internship Description

Electric Motor Control and DC-DC Converter Control Software Porting on OLEA U FPCU Chip
(SM-STC010 / 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 010-2024
Subject – Offer title	Electric Motor control and DC-DC Converter control software porting on OLEA U FPCU chip
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 Master (BAC+5 or equivalent)
Content/ mission	As part of the FAE team, the intern will contribute to the development of a proof of concept of a 2-in-1 control (traction inverter + DC-DC converter) using Silicon Mobility's OLEA®U FPCU. The main objective will be to use control algorithms already available at Silicon Mobility and participate in their porting and integration on an OLEA U-based control platform using MiL and HiL development and validation The OLEA® solution includes the OLEA® FPCU System-on-Chip dedicated to automotive applications, OLEA® COMPOSER software design flow, OLEA® APP INVERTER control application and OLEA® APP DC-DC control application. During the internship period, several tasks will be addressed: - Collect market requirements - Define features list, control architecture, KPI. - Get familiar with the inverter and DC-DC control algorithms, the architecture of OLEA® FPCU, and the development tools. Particular attention will be paid to the interface and resources to be used by the control application and the relevant safety concepts. - Develop, configure, and calibrate control software using Silicon Mobility model-based development flow and existing software building blocks - Develop and test a complete demonstrator using the available hardware board - Run performance tests - Write an application note
Profile required	Engineer in power electronics, embedded software or control systems
Expected Skills/knowledge	Embedded software development in C code Control algorithm development in MATLAB Simulink Power electronic system Inverter and motor control application CAN communication Electric Vehicles architecture
Remuneration	€1400/month + Tickets Restaurant + Public transport