Silicon Mobility

Internship Description

Bootloader development on Automotive chip

(SM-STC008 / 2021)

Internship Description

Company	**SILICON MOBILITY SAS** *(immatriculée 815 085 659 000 28 RCS Grasse)* Siege social : Les Aqueducs – Bât 2 – 535, route des Lucioles – 06560 Valbonne Sophia-Antipolis 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 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 good candidate to join our R&D team working in Sophia-Antipolis on the Côte d'Azur. Please contact us at: **internship2021@silicon-mobility.com**
Offer Number	SM-STC008-2021
Project Title	Bootloader development on Automotive chip
Period	6 months – between February and September 2021
Working hours	35 hours a week at Silicon Mobility office
Income	1000€/month + Tickets Restaurant
Student level	Internship for Master/Engineer Degree
Project Description	Silicon Mobility is actively working on its semiconductor product roadmap. Our product embeds ARM processors and Flexible Logical Units, safety, security and communication features addressing the electric and hybrid vehicles market. Silicon Mobility identifies the needs to have an embedded software solution «Bootloader» linked with a host system. This host system shall manage embedded software integrity and updates. The interface used between embedded software and host shall be a CAN interface. The internship includes several tasks: 1. Requirements analysis In this task, the intern will have to learn the architecture of OLEA FPCUs and their applications. A particular attention will have to be brought to ensure functional safety and software integrity. During this task, it will be necessary to analyse existing solution on current generation of OLEA FPCU and to find the most appropriated design for the embedded software. 2. System specification Based on the previous analysis and in relation with R&D team as well as support customer team, the intern will have to write a detailed specification of the system. This specification shall cover all following aspects: • Intersystem communication CAN infrastructure • Host software design • Embedded software design compliant with ISO 26262 standard • Guide and constraint of use 3. System development During this task, the intern will have to develop, integrate and validate the different components of the bootloader in the embedded system.

Profile	For this internship, we are looking for a candidate with good knowledge on embedded systems and embedded C programming. Good skills in hardware design for embedded system would be appreciated. The good candidate will be autonomous, rigorous with a strong team spirit. English speaking is required.
Skills developed	• General knowledge in microcontrollers' development • Development of embedded software on processor ARM • Requirement analysis and specification writing • Software development on multiplatform (Linux / Windows) • Notions of planning and project management • Quality management skills