

Silicon Mobility

Internship Description

Cybersecurity use cases development
on automotive chip
(SM-STC002 / 2021)

Internship Description

Company	<p>SILICON MOBILITY SAS (<i>immatriculée 815 085 659 000 28 RCS Grasse</i>)</p> <p><u>Siege social</u> : Les Aqueducs – Bât 2 – 535, route des Lucioles – 06560 Valbonne Sophia-Antipolis</p> <p>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.</p> <p>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.</p> <p>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: internship2021@silicon-mobility.com</p>
	<p>Offer Number</p> <p>SM-STC002-2021</p>
<p>Project Title</p> <p>Cybersecurity use cases development on automotive chip</p>	
<p>Period</p> <p>6 months– between February and September 2021</p>	
<p>Working hours</p> <p>35 hours a week at silicon Mobility office</p>	
<p>Income</p> <p>1000€/month + Tickets Restaurant</p>	
<p>Student level</p> <p>Internship for Master/Engineer Degree</p>	
<p>Project Description</p>	<p>Silicon Mobility is actively working on its semiconductor product roadmap. Our products include cybersecurity module which is a dedicated sub-system including HW crypto accelerators to protect against SW and HW attack.</p> <p>The internship consists in analyzing, defining and developing use cases highlighting the usage and benefits of this function.</p> <p>The project contains 3 phases:</p> <p><u>Introduction</u></p> <ul style="list-style-type: none"> • Analyze the OLEA® FPCU and understand the cybersecurity module general system features • Study the boot ROM of the cybersecurity module • Study the firmware of the cybersecurity module • Study the cybersecurity module chain of trust (Users and rights management) <p><u>Use cases specification</u></p> <ul style="list-style-type: none"> • Define cybersecurity module chain of trust use cases • Define firmware storage management use cases • Firmware backup use cases • Implementation of all the service requests at application processor level • All use cases will be described in detail in a document <p><u>Development</u></p> <ul style="list-style-type: none"> • Adapt the cybersecurity module firmware to manage the different sections including NVM constrains • Code the cybersecurity module use cases in embedded C • Execute and debug the cybersecurity module use cases in an RTL simulation environment and/or on the FPCU

<p>Profile</p>	<p>For this training we are looking for a candidate with good knowledge on embedded systems and embedded C programming. Knowledge on encryption and security principles are a plus.</p> <p>RTL simulation will be also an advantage.</p> <p>Good skills in Hardware design for embedded system would be appreciated.</p> <p>The good candidate will be autonomous, rigorous with a strong team spirit.</p> <p>English speaking is required.</p>
<p>Skills developed</p>	<ul style="list-style-type: none"> • Embedded C coding • Security and encryption • Real time software constraints • RTL simulation and FPGA debug