

Location: Sophia-Antipolis, France
Employment type: End of Engineering Studies Internship
Contract type: internship

Ref: SM-STC006

OPTIMIZATION OF DC-DC CONVERTER CONTROL ALGORITHMS

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.

The Company is opening an "6 to 9 months Internship" position in its main Research and Development center ideally located in the Sophia-Antipolis Technology Park on the French Riviera.

You are a brilliant and passionate by Signal Processing, Closed-loop Control Algorithm Design, power electronic? You want to support the development of disruptive products accelerating the car's powertrain electrification? At Silicon Mobility, we like to light up our employee's potential. Are you up for the challenge? **Contact** us: send your resume and cover letter to Internship2021@silicon-mobility.com

ROLE & MISSIONS

As part of the Product team, you will be in charge of optimizing a high-voltage bidirectional full bridge DC-DC control system from a simulation study until the implementation on real target.

Primary responsibilities of the position include:

- Analysis of the existing solution to identify the criteria of improvements.
- Prototyping, under Matlab Simulink, of the defined algorithm optimizations.
- Model In the Loop (MiL) validation of the algorithm optimizations
- Development of the embedded software thank to an automated code generation framework from MATLAB Simulink the updated control algorithms
- Hardware In the Loop (HiL) validation of the new DC-DC control implementation on a semiconductor target.
- Work as member of the product team on the requirement specifications of the DC-DC control algorithms.
- Creation of documentations (application notes and test reports) and associated presentation materials
- Document the content (English) and the related documentation toolchain
- Understanding and testing of Silicon Mobility products and toolchains

The position requires pro-active involvement with all departments of the Company.

REQUIRED SKILLS AND EXPERIENCE

EDUCATION:

- Student of Bachelor/Master in Engineering/Science (Electrical or Automotive

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TECHNICAL SKILLS & EXPERIENCE:

- Signal Processing, Closed-loop Control Algorithms
- Model based design using Matlab Simulink
- Power electronics
- Control command
- C programming skills, with the focus on embedded programming
- Software development cycle and techniques
- Electrical powertrain (e.g. battery, energy conversion systems, inverter)
- Content definition using XML templates and its interpretation using XSL stylesheets
- MS Office
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LANGUAGE SKILLS:

- Fluent in English
- German speaking is a plus

BEHAVIORAL SKILLS:

- Good presentation and communication skills
- Time management
- Pro-active work attitude
- Independent and team working
- Constant quality improvement

REMUNERATION:

- Gross monthly salary of EUR 1.000
- Lunch tickets

