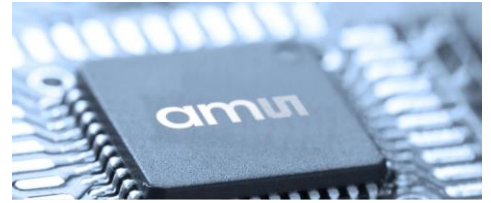# Master's thesis

In cooperation with ams ag

Setup a Flow for the Co-Design and Analysis of Analog/Mixed-Signal Chip/Package/Board Systems

Current Status and Motivation:

Chip, Package and Board Design are currently decoupled at ams. The different design groups have their own tools for designing and verifying their level of design. The tools are often not compatible and data conversion must be done to exchange data. Cross effects between the different domains are hard to resolve with such an approach. As systems at ams are getting more complex, there is a need to have one method to verify the whole Chip/Package/Board combination in one system.

Cadence is offering a tool for Chip/Package/Board Co-Design and analysis, this tool is called Virtuoso RF Solution. The purpose of this thesis is to evaluate the software, setup a flow at ams and prove the concept on a real life example.

Research Topic(s):

- Investigate and document the different cross domain effects
- Define a flow for taking all these effects into account
- Prove the concept on a real life example like an illuminator (Board with VSCEL, Driver and Logic)
- Make suggestion for future developments in this area

Approach / Methodology:

- Document the current status at ams
- Literature and internet recherché on state of the art methods and software for Chip/Package/Board co-design
- Evaluate the Cadence Virtuoso RF Solution flow
- Implement the flow at ams and benchmark against other available tools
- Setup a training for the new flow
- Give a presentation at the Cadence User Group Conference

Organisational Matters:

Start of work: 1.2.2020

Workplace: IFE/TU Graz / ams ag in Premstätten

Paid thesis:

The type of contract for a master thesis is a "Freier Dienstnehmer" / "freelance employment" for a duration of 6 months. During this time frame you will receive a monthly payment of EUR 1.000, - gross. Additional there is the possibility to receive a performance bonus of EUR 3.000, - gross for the successful completion of the Master Thesis.

Contact person / Supervisor:

IFE: Must be defined BEFORE start of master thesis!
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