Institut für Elektronik

Master’s thesis

In Cooperation with Fronius International GmbH

Investigations into possibility of simulation support for certification-relevant EMC laboratory tests in development environment

Context and motivation

Modern development of electrical/electronic products demands comprehensive consideration of EMC aspects from a cost perspective, starting from the early development stage. However, developments are typically nonlinear, and their progress is difficult to calculate, whereas EMC laboratory tests are time- and cost-intensive and always require lead time for planning. These conflicting facts make simulation of EMC test environments attractive and the subject of this study.

Research topic(s)

What are general possibilities for simulation of EMC tests and what are their benefits?
Which certification-relevant EMC tests "should" be simulated within the company?
What is the relationship between effort and benefit of simulated EMC tests in the development phase?
What is the relationship between effort and benefit of simulated EMC tests in the certification phase?

Approach/methodology/tasks

Familiarization with the topic and review of the current state of research within the company and technology.
Identification of certification-relevant EMC tests that should and will be conducted within the company – which of these can be supported by simulation tools?
Estimation of the effort required to establish an EMC simulation test environment in the form of a pros and cons list and prioritization.
Prototypical creation of one of the identified reasonable EMC simulation test environments and comparison with laboratory tests results.
Summary of findings and conclusion with outlook.

Organizational matters

- Start: immediate
- Workplace: Fronius International GmbH; Location 4600 Thalheim/Wels

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