Analysis and Verification of Multidisciplinary Systems

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Current practice
Complex systems developed within industry are engineered by various disciplines. Each discipline practices and masters its own set of formalisms, techniques and tools. Combining designs of different disciplines is difficult and often results in unforeseen or undesirable behaviour, differences in interpretation and inconsistencies between the monodisciplinary designs.

Industrial vision
To increase the quality of the development process and the resulting system, the Dutch partners within the ITEA2 TWINS project have created a vision in which they want to cooperate with one another in “Service and Software Creation” and “System Engineering”. With the help of “multidisciplinary models”, they want to develop techniques for modelling, simulation and verification of electrotechnical, mechanical and software components. This should lead to a more successful integration between components, while they are developed independently.

Research objectives
This vision opens opportunities for investigating and exploring interoperability between analysis and verification of mono-disciplinary designs, virtual simulation of systems driven by formal behavioural specifications, and model reconstruction from data of multidisciplinary systems.

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