Systematic Design of Automated Driving Functions Considering Functional Safety Aspects

Abstract:
Structuring the early design phase of automotive systems is an important part of efficient and successful development processes. Reference models have to define stages to organize the collaboration of different engineering domains, whereas individual tasks often strongly influence each other. Early functional safety considerations, as required by ISO 26262, have significant impact on the structure of the development process. This contribution presents a procedure model which is based on a tried and proven design model for driver assistance systems. Multiple adaptions of the prior model are established, especially to reflect the functional safety life cycle. An additional layer is displayed adjoining the reference process to include supporting methods of modeling and model analysis. The proposed reference process strongly aligns with the flexible procedure model of VDI 2206, allowing for easier implementation in current automotive development processes.
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