Customer focused requirement engineering and system design for plug-in hybrid electric vehicles (PHEV)

Abstract:
This paper focuses on the quality of requirements dependent on the level of system abstraction. Chosen example is the design of a Plug-In Hybrid power train. The requirements to specify the scaling of the high voltage storage (HVS) for Plug-In Hybrid vehicles (PHEV) is the focus of this paper. The shown approach discusses important quality characteristics of requirements to answer the needed information and system quality and to identify the required information for the system scaling. Therefore, the system level PHEV is abstracted in an appropriate way to merge it with the available customer data set. The abstraction and a concluding description of the requirement space based on the "Münchener Produktkonkretisierungsmodell" is presented. Furthermore, the recorded data are prepared to derive the required information for the system scaling. The approach offers a methodology to integrate a customer behavior in the early stage of product design. Goal is to rise in this case the energy efficiency of the system to offer the customer a power train with reduced fuel consumption.