

COMPUTER SUPPORT IN THE CONCEPTUAL PHASE OF THE DESIGN PROCESS

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Abstract. The current situation of product development in the industry is characterized by a widespread use of 2D and 3D CAD systems for geometric modeling in the concrete phases of the design process. Various computer tools as Finite Element programs, Multi Body simulation, calculations and the technology of Rapid Prototyping support the designer to optimize his design. In the early phases of the design process the computer support is limited. Manual methods are dominating for developing concepts, function structures and solution principles. One way to improve the efficiency of the process is to overcome the difference in methodological modes of operations between the early and final states of the design process. Therefore many activities in Engineering Design are focused on developing design tools for the conceptual phase of product development. One objective is to establish a continuous computer-aided product design. This paper analyses this situation, determines the requirements for developing convenient design tools for the conceptual phase and presents proposals for such tools as well as examples of applications.

Keywords. Design, Virtual Prototyping, Conceptual Phase.