When to check for deviations in the design process - an approach to determine a systematic checkpoint schedule

Abstract:
Changes in engineering design are a necessary and inevitable part of the design process, be it to improve products or to cope with occurring problems. Changes, however, are often connected with high effort which furthermore grows exponentially the later in the design process those changes occur. Therefore strategies for identifying the need for changes in the early phases of the product development have been established. These activities themselves imply high effort, though, and are many times not efficient due to unavailable or inaccurate data in the early stages. This leads to the conclusion that an optimal point of time can be determined within the design process in terms of the ratio of cost for changes vs. effort for change identification. In this paper an approach is presented, that supports the determination of optimal checkpoints to detect deviations from the planned development progress. Relevant aspects that have to be taken into account to determine the optimal time were deduced as a theoretical foundation.

Stichworte: engineering change management; design process
Herausgeber: Lindemann, U.; Venkataraman, S.; Kim, Y. S.; Lee, S. W.

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