Characterizing triggers of reactive cycles within design processes based on process observation

Abstract:
The high degree of uncertainty and complexity of Simultaneous Engineering processes lead to the persistent occurrence of unforeseen situations constituting the deviation (Δ) of product or process properties (IS-state) from an initially established or assumed value (TO-BE-state). The consequence of the identification of these Δs often is the necessity of the (partial) repetition of activities or phases, being defined as reactive cycles in this research context. The understanding of reactive cycles and especially the described Δs as one central class of their triggers are aimed at through the real-time observation of a mechatronic development project with regard to occurring problems during process execution. The classification of those triggers and the acquisition of quantitative correlations with further aspects of the analyzed cycles constitute an important contribution with regard to the long-term goal of a holistic cycle management.

Stichworte:
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