

FRAMEWORK FOR AN ADAPTIVE DECISION SUPPORT SYSTEM FOR INDUSTRIAL SHOP-FLOOR OPERATORS

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ABSTRACT

Today's shop-floor operators' working tasks often stretches over a broad spectra of jobs; from ordinary production assignments to handling errors and performing maintenance. Demands for enhanced skills and knowledge are constantly raised to limit the consequences of tool breakage, machine down time and other stochastic events negatively affecting the production.

To be able to meet these increasing demands a framework for a distributed and adaptive decision support system is proposed. It will help the shop-floor operator to distinguish between decision options and minimize time to consider appropriate actions to maximize productivity both during normal production and when facing unexpected or unscheduled events.

"In what ways is it possible to support operators in making decisions for optimal productivity?" was the opening question from the industry partner when beginning this research. Targeting this question a novel framework for an adaptive decision support system (DSS) enabled by event-driven function blocks, based on decision logics is proposed. Its ability to adapt to the actual conditions on the shop-floor is compared to a currently used voice message system in a test case.