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Measuring physical and mental strain during manual assembly tasks

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Abstract

Due to a rising number of product variants and an increase in complexity, manual assembly tasks lead to increasing physical and mental strain on employees. In order to maintain their health, an individual strain-oriented employee scheduling is necessary. In the conducted study, the individual physical and mental strain during manual assembly tasks is determined by using smart sensors and questionnaires. This paper presents the structure and process of the study as well as the first results of the applied questionnaires regarding the differences between the two levels of workload and concerning the validity to capture subjective strain. The performance requirements assembly competence and chronic stress were identified as predictors for perceived subjective physical and mental strain, queried by NASA-RTLX and Borg.

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