Incorporation of Electrophysiology in Task Analysis Processes

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Introduction

The industrial working operations are continuously evolving into a more human adapted design. Nevertheless cognitive factors like mental fatigue and stress most of the times are not directly detected even if they influence the performance of operational tasks and can cause errors; Electrophysiology can be used in Task Analysis (TA) processes recording and evaluating the cognitive status of the decision makers during the delicate phases of maintenance. The current study is an attempt of incorporating human factors into maintenance and it is part of a bigger project driven by University of Kragujevac dedicated to quantification of human factors through Neuroergonomics.

Key points

Flow chart:
Changing tool and calibration of a cutting tool in a medium-size manufacturing company.

Electroencephalography (EEG) is a tool used to assess brain electrical activity for experiments related to cognitive tasks. Only very recently high-quality EEG devices became mobile, making it possible to measure brain activity in the unrestricted environment outside of laboratory settings.

Electrodermal activity (EDA) relates skin electric phenomena to the sweat amount which is coordinated by the sympathetic nervous system. The novelty of our project is testing EDA to operators in real working conditions. For our test we created a new, fully mobile device.

Possible outcome

This can be helpful on preventing human errors during maintenance due to stressful factors, fatigue and cognition.

References