Mitigating Negative Impacts of Monitoring high levels of Automation: the MINIMA Project

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***Abstract*—**In this poster, we present the preliminary study conducted in the framework of the research project Mitigating Negative Impacts of Monitoring high levels of Automation (MINIMA). The main objectives of MINIMA are i) to develop vigilance and attention neuro-physiological indexes, and ii) to implement them in a system that can adapt its behavior and guide the operator's attention in order to mitigate negative impacts of the foreseen increasing automation on Air Traffic Controller (ATCo) performance in future Air Traffic Control (ATC) scenarios. The first step of research activities consists of better comprehension of Out-Of-The-Loop (OOTL) phenomena and of current methods to measure and compensate such effects. The innovation proposed by MINIMA stands in the exploitation of recent progress in non-intrusive physiological measures devices, such as eye-tracking or ElectroEncephaloGraphy (EEG), combined to gather a unique measure of the level of attention and vigilance of an ATCo. In order to set up a framework for the concept development phase a preliminary study has been conducted on a target attention and basic guidance concept. Our results have shown the validity of the attention guidance concept from a subjective point of view, and have demonstrated to be an adequate starting point for further evaluation through neuro-physiological measurements.

This abstract results from the invitation (after submission deadline) to present the content of SID paper 14 (same title) as a poster.