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A generic hybrid Human/Exoskeleton Digital Model towards Digital Transformation of Exoskeletons-integrated workplaces

Claudiu-Alin Rusu^{a,b,*}, Carmen Constantinescu^a, Sergiu-Cosmin Marinescu^{a,b}

^aFraunhofer IAO, Nobelstraße 12, Stuttgart 70569, Germany

^bTechnical University of Cluj-Napoca, Strada Memorandumului 28, Cluj-Napoca 400114, Romania

* Claudiu-Alin Rusu Tel.:+49 175 5751155; fax: +49 175 5751155. E-mail address: Claudiu-Alin.Rusu@iao.fraunhofer.de

Abstract

The Exoskeleton represents promising technology aiming to improve physical, cognitive and organizational ergonomics in manufacturing. The foundations of digital transformation of human-centred workplaces with integrated Exoskeletons have been well researched by the group, coping currently with the challenge of optimizing the ergonomics simulation parameters and embedding the Exoskeleton controller in simulation systems. A methodology of capturing in real-time workers' physiological status wearing active and passive Exoskeletons, data interpretation and aggregation towards developing a hybrid human/Exoskeleton Digital Model represents the current work of the group. The performed experiments, developed model and validation in several use cases for assembly and logistics activities are reported.

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