Title (en)

METHOD FOR OBSERVATION OF A PERSON IN AN INDUSTRIAL ENVIRONMENT

Title (de)

VERFAHREN ZUR BEOBACHTUNG EINER PERSON IN EINEM INDUSTRIELLEN UMFELD

Title (fr)

PROCEDE POUR OBSERVER UNE PERSONNE DANS UN ENVIRONNEMENT INDUSTRIEL

Publication

EP 2046537 A2 20090415 (DE)

Application

EP 07723978 A 20070404

Priority

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- DE 102006048166 A 20061010

Abstract (en)

[origin: WO2008014831A2] Manufacturing processes profit from close collaboration between man and machine to a major extent. While people behave flexibly and adaptably they have a tendency to make errors, however, when carrying out repetitive work processes, while machines operate quickly and exactly, but in this case are static and not very flexible. In order to allow better danger protection in the context of a safe man-machine interaction, monitored spatial areas are assigned a position-dependent and time-dependent variable hazard degree as a function of the current position and the current movement state of a machine or of a machine element, and of the person being observed. For this purpose, a multiple camera system is used to record image data about the person in order to obtain information that is as detailed as possible about the position and orientation of a person, in particular also with respect to that person's body parts in an industrial environment. This image data is then examined for the image of a person so that, once a person has been detected in the image data, this person hypothesis is matched to an articulate, virtual 3D model of the human body. This virtual body model is then continuously matched to the movement behaviour of the person detected in the image data. A hazard potential is determined from the knowledge of the position and the movement behaviour of the virtual body model in space. The hazard potential determined in this way is subjected to a threshold-value comparison process in order to intervene in the movement control for the machine or the machine parts if this threshold value is exceeded.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

See references of WO 2008014831A2

Citation (examination)

- THEODORIDIS, SERGIOS; KOUTROUMBAS, KONSTANTINOS: "Pattern Recognition", 1999, ACADEMIC PRESS, San Diego, USA, ISBN: 978-0-12-686140-2, article "Chapter 11: Clustering: Basic Concepts", pages: 351 - 382, 276850
- THEODORIDIS, SERGIOS; KOUTROUMBAS, KONSTANTINOS: "Pattern Recognition", 1999, ACADEMIC PRESS, San Diego, ISBN: 978-0-12-686140-2, article "Chapter 13: Clustering Algorithms II: Hierarchical Algorithms", pages: 403 - 440, 276850

Designated contracting state (EPC)

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