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A new-generation automated warehousing capability

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Abstract

A novel and highly adaptable concept is presented whereby automated warehouses can be built based on a series of simple modules with their inherent feature of scalability and reconfigurability. A potential application example of such a warehousing system is modelled to indicate the level of capability that the concept can provide. Physical infrastructure and operational control events within the system are illustrated in the paper. Simulation results demonstrate that this type of automated warehousing system can simultaneously deliver large numbers of items from storage modules to assigned collection locations with minimal delay. The concept is readily applicable within the wider logistics sector. The system performance can be enhanced by deploying an integrated warehouse control and management mechanism using automatic identification and data capture techniques and wireless communication networks. A framework on application of these emerging technologies in order to achieve the

desired coordinated functionality of automated warehouse operations is proposed in the paper.

Keywords:

warehouses logistics automation supply chains RFIDs wireless networks

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