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A new-generation automated warehousing capability

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Pages 565-573 | Received 02 Nov 2009, Accepted 15 Feb 2010, Published online: 21 May 2010

 Cite this article  <https://doi.org/10.1080/09511921003706215>

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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

Acknowledgements

The authors wish to thank Weijun Li, previously at the University of Bath, for his contribution to this project. The authors also gratefully acknowledge the extensive support provided by the industrial partners to this project. The work was partially carried out at the IdMRC, Department of Mechanical Engineering, University of Bath, UK.

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