

Document details

[Back to results](#) | 1 of 1

[Export](#)
[Download](#)
[Print](#)
[E-mail](#)
[Save to PDF](#)
[Add to List](#)
[More...](#)
[Full Text](#)

5th International Symposium on Computational and Business Intelligence, ISCBI 2017
 28 September 2017, Article number 8053557, Pages 121-124
 5th International Symposium on Computational and Business Intelligence, ISCBI 2017; Dubai; United Arab Emirates; 11 August 2017 through 14 August 2017; Category numberCFP1714W-PR1; Code 130986

Simulation of real time tracking system using RFID technology to enhance quality activities in flexible manufacturing system

(Conference Paper)

Hazza, M.H.F.A. Adesta, E.Y.T., Taha, A.H.

Manufacturing and Materials Engineering Department, Faculty of Engineering, International Islamic University Malaysia, Kuala Lumpur, Selangor, Malaysia

Abstract

[View references \(6\)](#)

Flexible Manufacturing System (FMS) attracts industries to adopt it for its high productivity and flexibility. Recent improvement of FMS focuses on real-time tracking to ease planning, control and inspection to final product. One of the potential tools to be used in tracking, monitoring and controlling the final products is the Radio Frequency Identification (RFID) technology. Implementing RFID will lead to lower cost and high efficiency. This paper simulated a real-time tracking system using RFID technology to enhance and track the quality and inspection activities in FMS using Colored Petri Net (CPN) method. The proposed system suggests using RFID tags on base that carries the parts to be processed in the manufacturing system rather than putting the tag in the parts themselves. RFID Read/writes capability have been assumed in the model. Therefore, updating the data during the process will be adapted, such as reference number and updated status of part in further stages in the system. This gives a chance to use the base with tag again after accomplishing all required operations in the production system for other parts. Thus, this method helps to reduce the required cost for manufacturing. The simulation of the system using CPN tool shows that parts can be tracked successfully and provides more enhancements for production. © 2017 IEEE.

Author keywords

colored Petri net, flexible manufacturing system, quality management system, RFID

Indexed keywords

Engineering controlled terms: [Information analysis](#) [Manufacture](#) [Petri nets](#) [Quality management](#) [Radio frequency identification \(RFID\)](#) [Tracking \(position\)](#)

Compendex keywords: [Colored Petri Nets](#) [High productivity](#) [Inspection activities](#) [Monitoring and controlling](#) [Quality management systems](#) [Radio frequency identification technology](#) [Real time tracking](#) [Real-time tracking systems](#)

Engineering main heading: [Flexible manufacturing systems](#)

ISBN: 978-153861771-7
 Source Type: Conference Proceeding
 Original language: English

DOI: 10.1109/ISCBI.2017.8053557
 Document Type: Conference Paper
 Sponsors:
 Publisher: Institute of Electrical and Electronics Engineers Inc.

Metrics

0 Citations in Scopus
 0 Field-Weighted Citation Impact

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#) [Set citation feed >](#)

Related documents

Modelling and Analysing Deadlock in Flexible Manufacturing System Using Untimed Petri Net

Hazza, M.H.F.A., Taha, A.H., Adesta, E.Y.T. (2016) *Proceedings - 2015 4th International Conference on Advanced Computer Science Applications and Technologies, ACSAT 2015*

Technical equipment allowing flexibility in serving customers as a prerequisite for strengthening customer relationships in the B2B market

Technical equipment allowing flexibility in serving customers as a prerequisite for strengthening customer relationships in the B2B market

Lostakova, H., Branska, L., Pecinova, Z. (2014) *METAL 2014 - 23rd International Conference on Metallurgy and Materials, Conference Proceedings*

A flexible lean automation concept for robotized manufacturing industry

Danielsson, F., Svensson, B., Gustavsson, S. (2010) *11th Middle Eastern Simulation Multiconference, MESM 2010 - 1st GAMEON-ARABIA Conference, GAMEON-ARABIA 2010*

[View all related documents based on references](#)

[Find more related documents in Scopus based on](#)