Example of technologies are under research so that they are able to be integrated...

War, Intelligence

Abstract – Assembly line technology has been inexistence in factories and has been the most widely used technologies in the factories. This is an important technology in engineering. There are developments that are designed to have better procedures and enhancement of the whole process. This paper will focus on new ways in which the assembly line will be improved. One of the ways is to have the system change automatically to new changes that have been introduced to the system. The paper will focus on a new technology where machines in the assembly will have their thinking mechanisms.

Index terms –

- INTRODUCTION

Assembly lines have been in existence for a long time. The assembly line engineering technology has helped ease the process of producing in a massive scale. With the development new gadgets that are widely accepted in the market, there is a need to have optimization in the assembly line engineering. There are technologies that are being developed to improve the production process and the technology that is being used in the assembly line technologies. These

- BACKGROUND

For a long time, the assembly line system has been done in a manual manner. The machines have been working in line without any form of communication or coordination. There has been no intelligence integrated to the assembly line system. There has been the need to ensure that the assembly language improvement is ongoing. This is the reason why there

have been developments to improve the assembly line technology (Manoria, Sandip Mishra, and Maheshwar 28).

- SOLUTIONS

One of the technologies that are being developed is that of having assembly lines that will automatically detect that a new machine has been added to the system. The current assembly line system does not allow changes to be integrated. This makes assembly lines hard to adjust to changes. When there are changes that have been integrated to the system, it will require that manual process be followed in making these changes effective. This will call for people to manually change the system so that it recognizes the changes that have been integrated to the system (Chica, Cordon, and Damas 81). Another technology that is being developed is the one which will allow machines that are used in the assembly line to have their own way of thinking. This is integrating expert systems to the assembly line machines. This will allow machines to undertake their own thinking. In the past, machines in the assembly line use instructions that have been programmed to their firmware so that they will follow them. With the development of expert knowledge model, machines will be able to have their own thinking.

One technology that is being developed is that of having expert technology integrated in each machine. This will enable the machines have their thinking so that intelligence will be integrated to the machine. This will enable the assembly line meet the needs of consumers and customers of industrial making. In this new technology, machines in the assembly line will adjust according to the whole instructions that have been integrated. They

will no longer follow the instructions from outside. The instructions will be set by the machine because they have the intelligence to set these instructions (Ngai, E. W. T., et al 72).

Work Cited

Chica, Manuel, Oscar Cordon, and Sergio Damas. " An advanced multiobjective genetic algorithm design for the time and space assembly line balancing problem." Computers & Industrial Engineering 61. 1 (2011): 103-117.

Manoria, Ashish, Sandip Kumar Mishra, and Sachin Maheshwar. " Expert System based on RPW Technique to Evaluating Multi Product Assembly Line Balancing Solution." International Journal of Computer Applications 40 (2012).

Ngai, E. W. T., et al. " Decision support and intelligent systems in the textile and apparel supply chain: An academic review of research articles." Expert Systems with Applications 41. 1 (2014): 81-91.

Vinodh, S., and S. R. Balaji. " Fuzzy logic based leanness assessment and its decision support system." International Journal of Production Research 49. 13 (2011): 4027-4041.

Yagmahan, Betul. " Mixed-model assembly line balancing using a multi-objective ant colony optimization approach." Expert Systems with Applications38. 10 (2011): 12453-12461.