THE DEVELOPMENT OF A FLEXIBLE ROBOTIC MANUFACTURING CELL

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Rezumat. *Această lucrare își propune să prezinte o soluție constructivă de implementare a unui grup de roboți industriali în cadrul unei celule de fabricație flexibile, cu destinație educațională. În demersul de reconstituire a celulei, din lipsa documentației necesare, s-au realizat procese de identificare ale principiilor de funcționare a elementelor constituente. Prin exploatarea celulei de fabricație, se urmărește reconfigurarea acesteia în scopul optimizării performanțelor în raport cu avansul și noile direcții ale industriei manufacturiere. Scopul final este înțelegerea și îmbunătățirea unei celule CIM, dar și redactarea unor resurse educaționale ce vor fi folosite în cercetările ulterioare.*

Abstract. *The aim of the paper is to present a constructive solution to implement a group of industrial robots in a flexible manufacturing cell for educational purposes. In the process of refurbishing the cell, due to the lack of necessary documentation procedures were carried out to identify the operating principles of the constituent elements. By exploiting the manufacturing cell, the aim is to reconfigure it in order to optimize its performance in relation to the new directions of the manufacturing industry. The goal is to understand and improve a CIM cell and to write educational resources to be used in further research.*

Keywords: CIM, Reverse Engineering, Manufacturing

1. Introduction

CIM (Computer Integrated Manufacturing) is a system that utilizes computers and software to integrate various manufacturing processes. CIM aims to streamline and automate the entire manufacturing process, from product design and planning to production, inventory management and quality control. By automating tasks and providing real-time data, CIM enables better control and optimization of flexible robotic manufacturing cell processes.

A flexible robotic manufacturing cell represents a versatile production system that incorporates robots, automation technologies and integration with other systems.

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