OPTIMIZATION OF ASSEMBLY STATION AND DEVELOPMENT OF AUTOMATIC STORAGE AND RETRIEVAL SYSTEM OF FLEXIBLE MANUFACTURING SYSTEM (FMS) FOR MECHATRONICS LAB

By

Christopher Evan
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in

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SWISS GERMAN UNIVERSITY
The Prominence Tower
Jalan Jalur Sutera Barat No. 15, Alam Sutera
Tangerang, Banten 15143 - Indonesia

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

Christopher Evan

Student

17 July 2023

Date

Approved by:

Leonard P. Rusli, B.Sc, M.Sc, Ph.D

Thesis Advisor

17 July 2023

Date

Dr. Maulahikmah Galinium, S.Kom., MSc.

Dean

Date

Christopher Evan

ABSTRACT

OPTIMIZATION OF ASSEMBLY STATION AND DEVELOPMENT OF AUTOMATIC STORAGE AND RETRIEVAL SYSTEM OF FLEXIBLE MANUFACTURING SYSTEM (FMS) FOR MECHATRONICS LAB

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Christopher Evan
Leonard P. Rusli, MSc., PhD., Advisor

SWISS GERMAN UNIVERISTY

Swiss German University has MPS FESTO FMS 104 in the physics laboratory. Its purpose is to educate students to get used to automation system in industry. This research aims to restore the functionality of Assembly Station in the FMS and develop an Automated Storage and Retrieval System (ASRS) to be used as a learning material for new students. The purpose of the ASRS is to create an efficient and user-friendly platform that automates the storage and retrieval process of educational resources, enhancing the learning experience. This research utilizes applied research to practically apply theoretical knowledge to the system development.

Keywords: Automatic Storage and Retrieval System, FESTO Flexible Manufacturing System, OMRON PLC, Three-axis Robot, Computer Numerical Control, Arduino, Eeprom Arduino programming.

DEDICATION

I dedicate this work to Swiss German University and their future students who are learning about automation in a mass / flexible production environment.

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