IMPROVING MECHANICAL PLATFORM AND NAVIGATION SYSTEM OF AN EXISTING MOBILE ROBOT

By

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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, not material which to a substantial extent has been accepted for the award of may other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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Tutuko Prajogo, PhD Date

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Chairman of the Examination Steering Committee Date

ABSTRACT

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Edward Boris Manurung, M.E
Tutuko Prajogo, PhD

This thesis project is intended to improve mechanical platform and navigation system of an existing mobile robot. The improvements are made based on the analysis of previous system. The major weaknesses in mechanical platform and driving system are solved so the robot has a better maneuver ability and working area. The response and effectiveness of the orientation system are doubled by using additional electronic compass sensor. Improvement in navigation system includes a mechanical stability system and separated transmitter-receiver laser target system. The improved navigation system was tested under indoor environment. The test results showed that the robot performed satisfactorily in navigation and position measurement system.

DEDICATION

I dedicate this thesis to God, my family, my advisors, and all of my colleagues at SGU.

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