DEVELOPMENT OF PLC-BASED FUNCTIONS FOR COMMUNICATION BETWEEN REAL-TIME DATABASE AND SMART GRID INVERTER

By

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BACHELOR'S DEGREE
in

MECHANICAL ENGINEERING – MECHATRONICS CONCENTRATION
FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

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August 2017

Revision After The Thesis Defense on [28 July 2017]

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 acknowledgment is made in the thesis

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ABSTRACT

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The smart grid is a developed technology that will replace the traditional power gridwith two-ways flows of information and power transmission as the main benefit of the smart grid. With the massive flows of data, smart grid needs a database system as one of the data management infrastructures. The aim of this thesis is to establish a two-ways communication between the programmable logic controller and the real-time database and visualise all the data in the database. Using the TCP connection and HTTP application between the PLC and the database, the two-ways communication can be implemented to the database system.

Keywords: Smart Grid, Programmable Logic Controller, Data Management, Real-Time Database, TwinCAT, InfluxDB, Chronograf

DEDICATION

I dedicate this work to my one and only God, Jesus Christ, my family, my advisor, my co-advisor, my supervisor,all of my lecturers,and all of my friends.

ACKNOWLEDGEMENTS

First of all, I wish to express my gratitude to Prof. Dr.-Ing. Egon Ortjohann,for the opportunity and knowledge that I got during the process of thesis work, and my co-workers at Power Systems and Power Economics Laboratory in the South Westphalia University of Applied Science for their support and help.

I also would like to thank Dipl.-Ing. Andreas Schmelterfor the insight and experience that helps me to finish the thesis work and alsobe a great help for me since the beginning of the thesis work including the documentation.

I am grateful to Benny Widjaja, M.T., who gave me support and advice concerning the thesis writing and to all of the lecturers of Mechatronics Engineering for the knowledge they have shared during my study at Swiss German University.

I thank all of myfamily to each one of them who always supports and motivates me, especially my both parents who always pray and wish for the best of all my endeavour and my big brother and sister who has been a moral support throughout this process, for their guidance and encouragement.

I thank my friends,Paksi Mega Bumi, Patrick Kahardipraja, and Raymond Hartonowho work with the same advisor and always give me support and advice and be a good example for me to adapt while working in the laboratory.

And last but not least to my Mechatronics Engineering 2013 classmates for the last fouryears, especially my friends Albert Wirawhardana, Andrina Herawati, Brian Wijaya, Fabrilian Handoko, Kristophorus Peter, Muhammad Hanif, Michael Kevin and Hansen Chitrahadi whom I shared the unexpected journey in Germany.

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