DEVELOPMENT OF COMMUNICATION ENDPOINT FOR BUSINESS TO MANUFACTURING MARKUP LANGUAGE (B2MML) DATA EXCHANGE

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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 neither 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.

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ABSTRACT

DEVELOPMENT OF COMMUNICATION ENDPOINT FOR BUSINESS TO MANUFACTURING MARKUP LANGUAGE (B2MML) DATA EXCHANGE

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The cluttered nature of software environment in the manufacturing industry has made data exchange and interoperability a problem which cost time and money to the enterprise. Common language and data model, such as ISO 15926 and B2MML has emerged to solve the issue. This thesis aims to develop a communication endpoint which use B2MML for data exchange between ERP in business layer and MES in manufacturing layer of ISA 95, by adopting ISO 15926 as a data exchange framework. The resulting web application is called B2MML Interface. B2MML Interface development involves literature review, reverse engineering of IRING, software architecture modelling, construction of modules, and application testing. B2MML Interface features include a B2MML data library, creating DDL – B2MML mapping file, exporting data from database into an XML file, and importing data parsed from XML to a database. B2MML Interface demonstrates that different data model with different purpose, such as DDL and B2MML, can be mapped to each other directly from their physical containers, SQL and XSD files. An application documentation has also been prepared to aid the development of future data exchange application. This thesis hopes to accelerate the adoption of B2MML in manufacturing industries.

Keywords: *B2MML, Data Exchange, ISO 15926, Interoperability, ISA 95, ERP, MES, Data Model, Mapping, XML, XSD, DDL, Java Web Application*

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DEDICATION

I dedicate this work to my family, teachers and friends.

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