AUTOMATED GUIDED VEHICLE (AGV) DESIGN, DEVELOPMENT & PROTOTYPING FOR MATERIAL HANDLING EQUIPMENT WITH SYSTEM ENGINEERING APPROACH

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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.

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ABSTRACT

AUTOMATED GUIDED VEHICLE (AGV)
DESIGN, DEVELOPMENT & PROTOTYPING
FOR MATERIAL HANDLING EQUIPMENT
WITH SYSTEM ENGINEERING APPROACH

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There is no methodology that fit every possible situation and acceptable globally said by one of the Systems engineering guru named Kossiakoff. This thesis tries to develop a methodology that suitable for developing Automated Guided Vehicle (AGV) as it System of Interest (SoI) in the university environment. The methodology takes reference from the famous Vee-Modell System Development, NASA System Design Processes Relationship and Model-Based System Engineering Approach. The Methodology name is RELI System Design Methodology (RELI) which has tagline "The System Design you created is Reconfigurable, The Methodology you followed is Linear". Inside there are explanation of defining operational concept (OpsCon) using use case diagram, capture & modify existing system design solution with composite association and generalization relationship of block definition diagram and creating Functional Architecture with SysML internal block diagram. System engineering truly help the realization process of AGV however it should be carried out with the ability to scope and freeze the possible work to be done in the context of overall goal & limitation.

Keywords: System Engineering, RELI System Design Methodology, Vee-Model, Kossiakoff, Model-Based System Engineering, NASA System Design Processes Relationship, SysML.

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DEDICATION

I dedicate this thesis to my Mum, Dad, Brother, Advisor, Fellow Students and You

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Last but not least, I would like to give appreciation to you who already give the effort to open up my works and read until the bottom of acknowledgement section or even until the last page of this thesis work.

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