WHITE-BOX AND BLACK-BOX SOFTWARE TESTING OF CONNECTIONLESS NETWORK PROTOCOL (CLNP) FUNCTIONS IN AERONAUTICAL TELECOMMUNICATION NETWORK (ATN)

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 many other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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Chairman of the Examination Steering Committee Date

ABSTRACT

WHITE-BOX AND BLACK-BOX SOFTWARE TESTING OF CLNP FUNCTIONS IN ATN

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This thesis is aimed to conduct white-box and black-box software testing and provide software metrics for the CLNP code. The white-box testing methodologies will provide flowcharts, control flow graph, cyclomatic complexity, basis paths, and connection matrix. Moreover, black-box testing has also been conducted. However, since the CLNP code is currently under the optimization phase and the priority is currently pointed towards the implementation of AF_ATN raw socket for the ATN TP4/CLNP Networking Suite, the only feasible methodology to be conducted is white-box. To conclude, we have successfully determined and conducted white-box and black-box software testing for CLNP functions.

DEDICATION

This thesis is dedicated to

my parents
who bestow me never-ending support,

my brother
who has become one of the reason for me to lead a successful life, and

my love
who inspires me to live my life to the fullest.

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