UNIVERSITI TEKNOLOGI MARA

INTEGRATING NETWORK CENTRIC WARFARE IN NAVAL COMMAND AND CONTROL SYSTEM

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Thesis submitted in fulfilment
of the requirements for the degree of
Master of Science in Information Technology

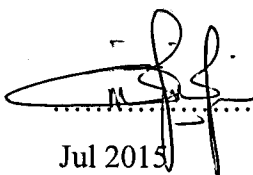**Faculty of Computer and Mathematical Sciences**

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AUTHOR'S DECLARATION

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ABSTRACT

Computers and other digital devices have become ubiquitous in our lives. Over the past 20 years, computer software has become integral and common place for operational and management task throughout agricultural and natural resource disciplines. But nowadays, almost all aspects of our lives include the Royal Malaysian Navy Department (RMN) are in part or wholly impacted by computers and the software that runs on them. The concepts of operations and approaches to Command and Control (NC2) System in RMN Department are able to provide significantly increased capabilities to deal with Information and Communication Technology (ICT) challenges. However, there are limitations in NC2 System, where the system does not connect to army's and airforce's systems. Distinct planning, execution, use of non streamlined data, and no sensor in the use of this system have caused ineffectiveness of the systems. The idea of exploiting the revolution in Information Technology (IT) and to incorporate it into military applications had been proposed by Vice Admiral Cebrowski of the US Navy (USN) in 1998. The concept of what is now termed as Network Centric Warfare (NCW) encompasses the creation of a 'virtual network', whereby war-fighting elements are being integrated or networked. The mission is to allow them to share information and so gain common battlespace knowledge which in turn significantly enhances their combat effectiveness. This research investigates user satisfaction in the use of NC2 System and recommend a network structure, situational awareness and information sharing framework by using Network Centric Warfare concept. The result will then influence and give a big impact to the Commanders to make a decision in the battlefield. Mixed method research was used in this research, i which an interview session involving the user and the operator of NC2 System was conducted to determine the pros and cons of this system. A Conceptual Framework for NC2 System adapting NCW Concepts is recommended by the research, implementing improvements in networking, data sharing and speed of command. This conceptual framework will benefit RMN in strategizing a new war-fighting process and enhance the effectiveness of its decision making.

ACKNOWLEDGEMENT

TABLE OF CONTENTS