

**INTER-CARS SAFETY COMMUNICATION SYSTEM  
BASED ON ANDROID SMARTPHONE**

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A thesis submitted to the Faculty of  
ENGINEERING AND INFORMATION TECHNOLOGY

in partial fulfillment of the requirements  
for the  
BACHELOR'S DEGREE  
in

MECHATRONICS ENGINEERING

SWISS GERMAN UNIVERSITY  


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July 2014

**Revision After the Thesis Defense on 15<sup>th</sup> July 2014**

### 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

### INTER-CARS SAFETY COMMUNICATION SYSTEM BASED ON ANDROID SMARTPHONE

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The purpose of this thesis is to create a communication system between cars to prevent and also to handle an accident. The system implemented in the car notifies the emergency service via text message by sending an emergency request when the car is involved in an accident. The system also gives information to other cars about the condition of the surroundings by giving a warning notification upon some event, such as bumpy road, speed bump and sudden brake. The system use an Android based phone as the main platform. It utilizes the phone's internal sensor for the event detection and Wi-Fi Direct for the inter-cars communication.

The system is connected to a FlyMaple board and Cubieboard to provide the system with precise information. The flymaple gives GPS and track information about the car, while the cubieboard gives visual surrounding information using camera. The data log from Flymaple and images from Cubieboard is received and saved to the phone's internal storage for data logging purpose. The overall system has been tested for its functionality in the lab as well as on the real road condition, and the results confirm its ability to provide information related to road condition between connected cars via WiFi-Direct.

*Keywords: Data Logging, Android, Communication System, Java, WiFi-Direct*



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## DEDICATION

I dedicate this thesis for all the people around the world



## ACKNOWLEDGEMENTS

I wish to thank God first for all the strength and determination He gave me to finish this thesis, without His will I'm sure this thesis will never be finished.

I'd like to express my gratitude to my advisor Ir.Arko, M.Sc., Ph.D. who gave me the idea for this thesis, which I found so interesting and also for his patience in guiding me to accomplish this thesis.

Day by day will be much boring without good friends, special thanks to my partner in this project Fransiscus Richard and Willy Halim, who have helped me in the testing, as well as writing the report. Also for all the friends who normally sits down in Robotics room all day.

I'd also like to say many thanks to my family, who gives me lots of supports and love, encouraging me when I'm down and pushing me forward to do better.

Without all listed above, this thesis will never be completed.

This thesis project is part of funded project under research grant DIKTI HIBAH KOMPETENSI Year 2 led by Ir.Arko, M.Sc., Ph.D.

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