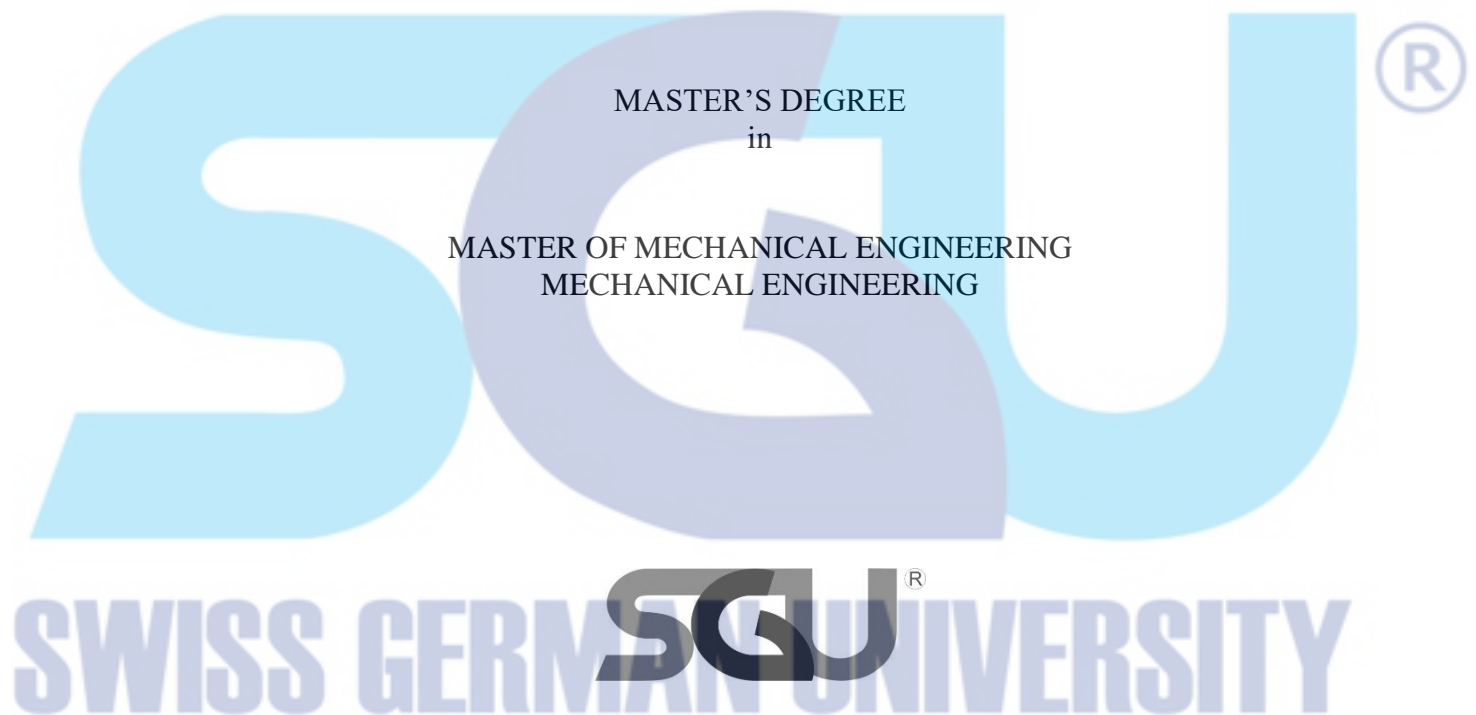


**PERIODIC MAINTENANCE MONITORING SYSTEM USING IOT  
FOR KOMATSU BULLDOZER**

By

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SWISS GERMAN UNIVERSITY  
The Prominence Tower  
Jalan Jalur Sutera Barat No. 15, Alam Sutera  
Tangerang, Banten 15143 - Indonesia

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Revision After Thesis Defense on July 13, 2021

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Mochamad Hamdan Aziz

## 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**

**PERIODIC MAINTENANCE MONITORING SYSTEM USING IOT  
FOR KOMATSU BULLDOZER**

By

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Each heavy equipment requires regular maintenance to maintain the lifetime of the component to reach recommended machine life by the manufacturer. By carrying out routine regular maintenance, we can prevent premature damage for every single part of the heavy equipment which is called Preventive Maintenance.

By design periodic maintenance monitoring and notification system using working hour data, engine oil analysis and send it through IoT, users and distributors will be able to get early warning and carry out the periodic maintenance as soon as possible, so that it will reduce the potential for delays in the implementation of periodic service and preventing damage of component.

Digital hour meter is created as a reference to monitor working hours and periodic service schedule notifications. Oil Property Sensor FPS2800 is also used to monitor oil quality. Both data are sent wirelessly using LoRa and received by the receiving device using NodeMCU. The Blynk app was used in this study as a viewer for data sent in real time through android devices.

*Keywords: Periodic Maintenance Monitoring, Internet Of Things, Oil Property Sensor, LoRa, Blynk App.*



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## DEDICATION

This study is wholeheartedly dedicated to my beloved wife, children and my mother who have been our source of inspiration and gave me strength when I thought of giving up.

And I dedicated also to PT United Tractors Tbk. and UT School Member



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## ACKNOWLEDGEMENTS

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And especially I would like to thank Allah Swt, for all the gifts that have been given to me.



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