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GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) FOR FLY-OVER MONITORING

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Global Navigation Satellite System (GNSS) are recently used in deformation monitoring applications. Deformation monitoring survey is a technique to detect and measure the displacement on movement of high-risk structure such as fly-over, building. Tunnel, bridge etc. nowadays, these techniques become one of the important research fields in engineering survey or geomatics engineering. The main factor why the deformation monitoring survey is very important in human daily life because to ensure the engineering structure in a good condition. The use of GNSS for deformation studies has evolved rapidly especially Real Time Kinematic (RTK). This technique has been considered as a cost-effective tool to monitor safety and performance or engineering structures. This paper highlights the reliability of RTK solutions which are Virtual Reference Station and Conventional RTK and potential with a Static method as a benchmark for fly-over monitoring surveys. Analysis will be conducted with the objective to quantify the temporal displacement of the bridge using RTK solutions and conventional and to measure the accuracy of RTK solutions for fly-over monitoring. This research also highlights the reliability of the RTK solutions in fly-over monitoring.

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