

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

MUHAMMAD FAHMI BIN MOHD JALANI  
2021832782



SCHOOL OF STUDY IN SURVEYING SCIENCE AND GEOMATIC  
COLLEGE OF BUILT ENVIRONMENT  
UNIVERSITI TEKNOLOGI MARA MALAYSIA

AUGUST 2023

**UNIVERSITI TEKNOLOGI MARA**

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

**MUHAMMAD FAHMI BIN MOHD JALANI**

Thesis submitted in fulfillment  
of the requirements for the degree of  
**BACHELOR OF SURVEYING SCIENCE AND  
GEOMATICS (HONS)**

**COLLEGE OF BUILT ENVIRONMENT  
CENTRE OF STUDIES FOR SURVEYING  
SCIENCE AND GEOMATIC**

**AUGUST 2023**

## 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.

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Name of Student : Muhammad Fahmi Bin Mohd Jalani

Student I.D. No. : 2021832782

Programme : Bachelor of Surveying and Geomatics College of  
Built Environment

Faculty : Centre of Studies and Geomatics College of Built  
Environment

Thesis Title : Global Navigation Satellite System (GNSS) for Fly-  
Over Monitoring

Signature of Student : .....

Date : August 2023

## 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 of 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.

## TABLE OF CONTENT

<b>AUTHOR’S DECLARATION</b> .....	<b>iii</b>
<b>SUPERVISOR’S DECLARATION</b> .....	<b>iv</b>
<b>ABSTRACT</b> .....	<b>v</b>
<b>ACKNOWLEDEMENT</b> .....	<b>vi</b>
<b>LIST OF TABLES</b> .....	<b>x</b>
<b>LIST OF FIGURES</b> .....	<b>xi</b>
<b>LIST OF ABBREVIATION</b> .....	<b>xiii</b>
<b>CHAPTER 1</b> .....	<b>14</b>
<b>1.1 Background of study</b> .....	<b>14</b>
<b>1.2 Research Questions</b> .....	<b>17</b>
<b>1.3 Aim and Objectives</b> .....	<b>17</b>
<b>1.3.1 Aim</b> .....	<b>17</b>
<b>1.3.2 Objectives</b> .....	<b>17</b>
<b>1.4 Problem Statements</b> .....	<b>18</b>
<b>1.5 Study Area</b> .....	<b>20</b>
<b>1.6 Scope of Study</b> .....	<b>21</b>
<b>1.7 Expected Outcome</b> .....	<b>21</b>
<b>1.8 General Methodology</b> .....	<b>22</b>
<b>CHAPTER 2</b> .....	<b>23</b>
<b>LITERATURE REVIEW</b> .....	<b>23</b>
<b>2.1 Introduction</b> .....	<b>23</b>
<b>2.2 Global Navigation Satellite System (GNSS)</b> .....	<b>24</b>
<b>2.2.1 Satellite Geomaterly</b> .....	<b>25</b>
<b>2.2.2 Dilution of precision</b> .....	<b>25</b>
<b>2.2.3 Global Positioning System (GPS)</b> .....	<b>27</b>
<b>2.3 Reference System</b> .....	<b>28</b>
<b>2.3.1 Coordinate System</b> .....	<b>28</b>
<b>2.4 Time Reference Frame</b> .....	<b>30</b>
<b>2.5 Survey Technique</b> .....	<b>31</b>
<b>2.5.1 Global Navigation Satellite System (GNSS)</b> .....	<b>31</b>
<b>2.5.2 Conventional RTK-GPS Method</b> .....	<b>31</b>
<b>2.5.3 RTK-VRS GPS Method</b> .....	<b>32</b>