

RAPID GPS OBSERVATION FOR SMALL AREA MAPPING

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## II

### Abstract

Period of observation is one of many factors that affect the accuracy attainable by GPS technique. The objectives of this project is to evaluate the feasibility of using the technique of GPS kinematic for topographical mapping of small area and short periods of 15 minutes, 10 minutes and 5 minutes static observation for short traverse line.

Two project namely as GPS Static Survey (Project I) and GPS Kinematic Survey (Project II) were conducted at two different sites located in Shah Alam at Section 10 and Setapak at Wangsa Maju by using single frequency receiver (Trimble 4000 SE). Results of both conventional and GPS survey technique are compared and analysed to determine the extent of the use of GPS for local applications in cadastral survey and topographical Survey.

Based on the selected vicinity, comparable results with those obtained using conventional survey technique found that, both GPS technique could achieved a maximum accuracy at centimetre level (except for height) over short baselines of less than 300 m when good satellite visibility is available. The height achieved will be practicable even though it gives a difference up to 10 cm or more.

## IV

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## CHAPTER ONE

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### INTRODUCTION

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#### 1.0 General

The current increased in demand for the usage of topographic map in various engineering projects have lead to reassessment of method employed and the precision of instruments used. Most people will choose a method which is easy to use, flexible, relatively low cost and will give accurate results.

During the past few years, the conventional method such as theodolite and EDM have been used by the Department of Surveying and Mapping and other several surveying companies for surveying and mapping activities. Their potential to provide 3-dimension coordinates have been recognized and their advantages and limitations have been pointed out.

The use of GPS survey as an alternative technique for topographical mapping will often involve a trade between accuracy, survey time and cost. Besides that, their capability to provide precise output over short distances within a short time is still on the trial basis and has not been utilized in Malaysia.