

UNIVERSITI TEKNOLOGI MARA

**IMPACT OF REDUCE TIDE FROM
DIFFERENT TIDAL STATION TO
BATHYMETRIC SURVEY USING
MULTIBEAM IN TERENGGANU**

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of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work on thesis was carried out in accordance with the regulation of University Teknologi MARA. It is original and it 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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ABSTRACT

Tide is very important component in bathymetry survey, this is because tide were used in bathymetry data processing to product the actual depth of the survey area. Inaccurate tidal data will end up with inaccurate water depth which is will effect the purpose of the survey. This project aim to study the impact of different reduce tide from different tidal station to a multibeam survey data which is based on the distance of the tidal station. The bathymetry data involved in this project were taken at Bidong Island, Terengganu which is under University Malaysia Terengganu (UMT) in cooperation with THSGeoscience company. This research consisted of tide observation data which is collect by automatic tide gauge at Bidong Island while survey conducted, and two other tide prediction which is generated by using harmonic constant of Chendering and Kuala Dungun tide station. Both selected tide station were chosen differently based on it distance to the survey area. These tide data were load into the same bathymetry separately in order to know the effect. From the result of the research, it is can be see that there was slight surface different between observation tide data to prediction tide data and there is not much different for both prediction data though it has different distance to the survey area. It is hope that this study will create an alert to the importance of tide station selection regarding to it distance from bathymetry survey area.

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CHAPTER 4 RESULT AND ANALYSIS

4.1 INTRODUCTION

This chapter will explain on each of the result and analysis that has been processed and produce. All the result and analysis were produce by using various software such as QINSy, Qimera, Fladermaus, RoutePlanner and Microsoft Excel. The result and analysis will be answer according to research objectives and research questions. The first objective will be explain by exporting the z-value of three different tide into Microsoft excel and generate it graph. The tide are produce by observation and prediction which is obtain from harmonic constant from selected tidal station. Second objective will be answer by al Microsoft excel but process by Qimera and RoutePlanner. The processed bathymetry surface will be exported to RoutePlanner in order to create cross section to the area of interest. The cross section data will be exported to Microsoft Excel in order to generate profile graph for each cross line.

4.2 SOUND VELOCITY PROFILER (SVP) RESULT

The speed of sound can be various depending on the depth of the sea and it salinity. Sound Velocity Profiler is a fundamental tools used in this research to read the sound travel velocity before collecting bathymetry data. Figure 4.1 below show the graph of sound velocity collected before bathymetry survey occur.