

UNIVERSITI TEKNOLOGI MARA

**OLD PORT LOCATION MAPPING IN KAMPUNG
DATUK HARUN, PULAI BALING KEDAH**

MOHAMAD ALIF AIMAN BIN MOHAMAD ROSLI

Disertation submitted in partial fulfillment
of the requirements for the degree of
Science Surveying and Geomatics
(AP220)

Faculty of Architecture, Planning and Surveying

August 2020

AUTHOR'S DECLARATION

I declare that the work in this report was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged a referenced work. This report 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 Undergraduate, Universiti Teknologi MARA, regulating the conduct of my study.

Name of Student : Mohamad Alif Aiman Bin
Mohamad Rosli
Student I.D. No. : 2017601638
Programme : Bachelor of Science in Geomatics
Faculty : Architecture, Planning & Surveying
Thesis Title : Old Port Location Mapping In Kampung
Datok Harun, Pulau Baling Kedah

Signature of



Student Date : 7 August 2020

ABSTRACT

Unmanned aerial vehicle (UAV) photogrammetry has shown a very rapid development in many fields, especially in archaeological excavation areas and architectural complexes, where it offers a detailed generation of three-dimensional (3D) data including the possibility of updating over time. It also proves to be a very flexible tool applicable to many types of complex areas with a variety of different features. The use of aerial acquisition provides highly effective results, adding to both rapid capture and lower costs. In fact, today in the field of archaeological research, great efforts are invested in the generation of very large-scale models and orthophoto, and the technology seems to promise further future developments. The aim of the study was to determine the location of an old port near Kampung Datok Harun (Baling region) using aerial photogrammetry data and to display them on modern maps. This study begins with looking the history of Baling area and the study on the surface of the earth in the area using Unmanned Aerial Vehicle (UAV) in providing good data with the available data from Jabatan Ukur Dan Pemetaan Malaysia (JUPEM) which uses conventional photogrammetry method. To accomplish the objective, this software; Agisoft are used to process aerial photographs in the selected area. This study can help the heritage preservation of historical site in Baling, Kedah.

TABLE OF CONTENTS

CONFIRMATION BY PANELS OF EXAMINERS	i
AUTHOR’S DECLARATION	ii
SUPERVISOR’S DECLARATION.....	iii
ABSTRACT	iv
ACKNOWLEDGEMENT.....	iv
CHAPTER ONE.....	9
INTRODUCTION.....	9
1.0 Introduction	9
1.1 Research Background.....	9
1.2 Problem Statement.....	11
1.3 Aim and Objectives	12
1.4 Research Questions	12
1.5 Scope and limitations	13
CHAPTER TWO.....	14
LITERATURE REVIEW	14
2.0 Introduction	14
2.2 Topographic Map	14
2.3 Photogrammetry Introduction.....	15
2.4 Photogrammetry Branch.....	16
2.4.1 Earth Photogrammetry.....	16
2.4.2 Close-Range Photogrammetry	16
3.4.1 Aerial Photogrammetry	17

2.5 Unmanned Aerial Vehicle (UAV).....	17
2.5.1 Advantages of UAV	18
CHAPTER THREE	19
METHODOLOGY	19
3.1 Introduction	19
3.2 Second Phase	21
3.2.1 Study Area	21
3.2.2 Preparation of Materials and Equipment	22
3.2.3 Certified plan from Department of Survey and Mapping (JUPEM).....	24
3.2.4 Acquisitions of Data	27
3.2.5 Interview.....	28
3.3 Third Phase.....	30
3.4 Fourth Phase	31
3.5 Fifth Phase	31
3.6 Summary	31
CHAPTER FOUR	32
RESULT AND ANALYSIS	32
4.1 Introduction	32
4.2 The final result and study	32
4.3 Digital Elevation Model (DEM) for the Old Port Area.....	33
4.2 Orthophoto digital UAV	34
4.4 Certified Plan and Old Port Area on Orthophoto	35
4.5 Cross Section and Long Section.....	38
4.6 Summary	42
CHAPTER FIVE.....	43