

**UNIVERSITI TEKNOLOGI MARA**

**DETERMINATION OF THE ZERO  
BASELINE FOR CADASTRAL  
SURVEYING PRACTICES IN  
MARINE CADASTRE**

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## ABSTRACT

The administration of land is predominantly a state matter. Hence, a State government authority has inclusive right on their land, which includes the territorial water, defined as being that boundary measured 3 nautical miles from Low Water Mark (LWM) or Lowest Astronomical Tide (LAT) and in Cadastral Survey being referred as Zero Baseline. In Malaysia, Cadastral Practice currently exercise over land parcels in the State is made through eKadaster environment. Any issues or solutions pertaining to land have been consistently referred to the National Land Code 1965 (NLC1965). The current scenario in Malaysia, such as the state of Malacca has seen a rapid development near the sea-shore area. As a result, more land reclamation works are required along the coastal zone or land alienated over the marine area. This trigger JUPEM to work out on the possibility of the issuance of marine title. In fact, the idea of marine title was brought up by a foreign author/researcher way back in 1999 then later been put forward again in 2004 by local researcher. So for a Cadastral Survey in a marine environment, it is rather important to identify the Zero Baseline, which serves as the Datum or Benchmark for carrying out Cadastral Survey towards the issuance of a Land-based or Marine-based Title. In this thesis, legislative and administrative matters and materials related to land alienated in a marine environment were studied and highlighted. It was essential as that determined a clear justification on how should the author/writer moved on to adopt and determine the right baseline for starting the fieldwork and lab work in deriving the potential Zero Baseline for the sampled area. A technique to generate accurate baseline from bathymetric survey using GIS analysis is the part of this study. Results from generated baselines were verified on the ground based upon current cadastre survey procedure and practice, which are related to KPUP Circulars. The accuracy for this study was fulfill the cadastre purpose as shown in Chi Square Report reached Lower Bound limitation in the Chi Square Test at 5% level. The actual value from the Lower Bound and Upper Bound results are 0.893 and 1.107 respectively. Therefore, this research should be a catalyst in realizing the Marine Cadastre concept in Peninsular Malaysia.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 BACKGROUND

Malaysia is a developing country comprising of fourteen (14) states including the Federal Territory, of which is Federation of the Kuala Lumpur, Putrajaya and Labuan. The other remaining states are Perak, Selangor, Pahang, Kelantan, Johor, Kedah, Melaka, Negeri Sembilan, Pulau Pinang, Perlis, Terengganu, Sarawak and Sabah. The size of these states varies from one state to another, with the state of Pahang being the largest in the Peninsular Malaysia while Sarawak, the largest in the formerly known North Borneo as well as the largest state in the whole Malaysia. With respect to the developed states, on the western side of the Peninsular Malaysia, they includes Pulau Pinang, Perak, Selangor and Melaka. These states are located along the Straits of Melaka, sharing an international boundary with Indonesia, predominantly the Island of Sumatera. Historically, the Straits of Melaka was among the busiest and most visited routes for vessels doing their trades during the early times. Traders plying their trades would stop at Melaka since it was the earliest state to be developed during that time. The location of Melaka city as a port of entry for any vessel to stop and transit has made it important for survey and mapping of the surrounding area to be demarcated and continuously updated.

Demarcation of the boundary of land are usually made through cadastral survey and the boundary can be straight lines and/or irregular following the natural behaviour or form of the surface spatial feature either physically visible or non-visible such as the deepest region of the straits, rivers or territorial waters. The outcome from this survey is documented records showing the ownership proprietary of land for any particular person, whom has the legal right on the land.

The administration of land is predominantly a state matter whereby State government authority has inclusive right on their land including the territorial water which is measured 3 nautical miles from baselines (L.W.M). The registration of this inclusive right to the land, which is visibly shown and made available through a Land Title, whether it is on land or in the sea, which later becomes a reclaimed land.