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SEDIMENTATION ANALYSIS OF NAVIGATIONAL APPROACH TO KUALA KEDAH JETTY

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Thesis submitted to the Universiti Teknologi MARA Malaysia
in partial fulfilment for the award of the degree of the
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DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

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ABSTRACT

Sedimentation is the process that allows the different particles which are in the suspended form in water to settle under the gravitational effect and it made up of tiny particles of soil, sand or rock. Sediment deposition reduces aquatic habitats and increases water velocities, both of which have a negative impact on the surrounding ecology water. Problem in navigation channels is seen as a critical issue from both an economic and environmental standpoint, as it is affected by navigation channel geometry, hydrodynamic parameters, and protection structures. This study important because it can prevent ferry and vessel from stranded in wrong course line or position can mislead and probably happen an incident. The research was centered on the three research objectives that need to be achieved, the objectives are to identify the sedimentation area at navigational approach by using unsupervised classification, to show the changes of depth between in nautical chart and bathymetry plan due to sedimentation and to produce map of sedimentation analysis of navigational approach to Kuala Kedah Jetty. Therefore, the focus in this study is to identify the sedimentation happen on the seafloor or foreshore by using unsupervised classification. The raw depth reduced from the reading of tides. The data involves bathymetry data obtained from Marine Department Malaysia, satellite image and hydrographic chart. The results show that the newly collected bathymetric data shows shallower water depths than stated on the nautical chart. There are 30 points were picked which 15 points from 2 meters depth and 15 points from 5 meters depth. Thus, the number of points is 30 and the average changes is 0.924. This indicates that sedimentation has occurred in the region of the navigational approach.

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