

# **Testing of Multibeam Echosounder and Topographic Laser Scanner for Data Integration Coastlines and Bathymetry in Shallow Water**

**(Case Study: Marina Beach, Ancol, Jakarta)**

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## **Abstract**

Indonesia is an archipelago that has a long coastline of about 81,000 km. While the majority of the population have activities in coastal areas. A coastal region, generally has the potential of vast natural resources and a major supporter of development. To exploit the potential of this coastal region, of course, the availability of reliable geospatial information should be ensured firstly.

Currently, mapping coastal areas, in general, is still using methods that separate the mapping of the sea and of the coastline. Mapping the sea, in general, utilizes acoustic wave technology, using either singlebeam or multibeam echosounders. For mapping the coastline, on the other hand, terrestrial and remote sensing methods are more frequently. Separation of the survey methods sometimes causes problems, especially when the sea and coast data will be integrated into a map.

Laser scanning technology using electromagnetic waves, recently is a part of new technology, and is widely used for mapping on the ground. The benefits of this technology are faster in data acquisition and also resulting in very detailed, dense and accurate data. Utilizing both Laser Scanner and Multibeam Echosounder in data acquisition, it is expected that coastal topography and under water bathymetry data, can be integrated, and produce accurate coastal areas information.

In this paper, we discuss a test using a laser scanner, in this case Dynascan and a Multibeam echosounder R2Sonic, which were installed on the top of a small boat, and the survey area is around the coast of Marina, Ancol, Jakarta.

*Key words:*

*Multibeam Echosounder, Laser Scanning, Coastal, Coastline*

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