

Analysis of Network Connectivity for Ship-To-Ship Maritime Communication Using IEEE 802.11 on Maritime Environment of Tanjung Perak, Indonesia

Authors : Ahmad Fauzi Makarim, Okkie Puspitorini, Hani'ah Mahmudah, Nur Adi Siswandari, Ari Wijayanti

Abstract : As a maritime country, Indonesia needs a solution in maritime connectivity which can assist the maritime communication system which including communication from harbor to the ship or ship to ship. The needs of many application services for maritime communication, whether for safety reasons until voyage service to help the process of voyage activity needs connection with a high bandwidth. To support the government efforts in handling that kind of problem, a research is conducted in maritime communication issue by applying the new developed technology in Indonesia, namely IEEE 802.11. In this research, 3 outdoor WiFi devices are used in which have a frequency of 5.8 GHz. Maritime of Tanjung Perak harbor in Surabaya until Karang Jamuang Island are used as the location of the research with defining permission of ship node spreading by Navigation District Class 1. That maritime area formed by state 1 and state 2 areas which are the narrow area with average wave height of 0.7 meter based on the data from BMKG Surabaya. After that, wave height used as one of the parameters which are used in analyzing characteristic of signal propagation at sea surface, so it can be determined on the coverage area of transmitter system. In this research has been used three samples of outdoor wifi, there is the coverage of device A can be determined about 2256 meter, device B 4000 meter, and device C 1174 meter. Then to analyze of network connectivity for the ship to ship is used AODV routing algorithm system based on the value of the power transmit was smallest of all nodes within the transmitter coverage.

Keywords : maritime of Indonesia, maritime communications, outdoor wifi, coverage, AODV

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