

ABSTRACT

Underwater acoustics has been studied for decades, but underwater networks with acoustic transmission and protocols designed for this environment are just beginning as a research field. Recently some simulators, based on NS-2 have been developed to study these networks. This study evaluates the feasibility through simulations of generic applications for monitoring and control in underwater acoustic networks. Are proposed and used three basic topologies for underwater acoustic networks: line, frame and hub and two MAC protocols: Broadcast and R-MAC. In our analysis we compare these two protocols in relation to the total energy consumption and total delay in the network. The results show that topologies associated with the MAC protocols meet the needs and peculiarities of most monitoring and control applications that use underwater acoustic networks. The objective of this study did not determine the best topology or the best type of MAC protocol, but rather determine which network configuration best suited to particular application taking into account the characteristics of each.

Keywords: Acoustic transmission; Network and monitoring.