## World Academy of Science, Engineering and Technology International Journal of Information and Communication Engineering Vol:10, No:01, 2016

## Multi-Sender MAC Protocol Based on Temporal Reuse in Underwater Acoustic Networks

Authors: Dongwon Lee, Sunmyeng Kim

**Abstract :** Underwater acoustic networks (UANs) have become a very active research area in recent years. Compared with wireless networks, UANs are characterized by the limited bandwidth, long propagation delay and high channel dynamic in acoustic modems, which pose challenges to the design of medium access control (MAC) protocol. The characteristics severely affect network performance. In this paper, we study a MS-MAC (Multi-Sender MAC) protocol in order to improve network performance. The proposed protocol exploits temporal reuse by learning the propagation delays to neighboring nodes. A source node locally calculates the transmission schedules of its neighboring nodes and itself based on the propagation delays to avoid collisions. Performance evaluation is conducted using simulation, and confirms that the proposed protocol significantly outperforms the previous protocol in terms of throughput.

Keywords: acoustic channel, MAC, temporal reuse, UAN

**Conference Title:** ICCCN 2016: International Conference on Communications and Computer Networks

**Conference Location :** Singapore, Singapore **Conference Dates :** January 07-08, 2016