

## A COMPREHENSIVE STUDY OF UNDERWATER SENSOR ACOUSTIC NETWORK

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**ABSTRACT**-This review provides a detailed overview of underwater acoustic sensor network research. Ocean exploration applications like ocean monitoring, pollution detecting, ocean resource management, underwater device maintenance, etc. are becoming more and more dependent on UASNs. We evaluate the UASN routing protocol designs disclosed in recent years in order to illustrate the current level of development of UASN routing protocols. The underwater phone, created for the US Navy following World War II, was among the earliest underwater communication technologies. UWSNs Underwater wireless sensor networks have used electromagnetic, optical, & acoustic waves with success.

**KEYWORDS**-Underwater Wireless Sensor Networks, Underwater Acoustic Sensor Network, Routing Protocol, Cross-Layer Design.

### INTRODUCTION

The field of study at the turn of the 20th century, wireless sensor networks at the turn of the new technology. It first solely addresses terrestrial applications, but we already know that the Earth is a water planet since the oceans, which cover a substantial portion of the planet's surface, have captured the interest of humans. For scientific, commercial, & military purposes alike, there has been a vested interest in monitoring aquatic habitats for many years. For many applications, including the monitoring of offshore oil fields, the detection of pollution, & gathering of oceanographic data, highly accurate, real-time, & continuous monitoring systems are crucial. In light of all these crucial uses, UWSN must be constructed.

Traditional methods for underwater monitoring have a number of shortcomings, including the inability to support interactive communications between the various ends and the fact that, in most cases, the recorded data can only be obtained after the mission, which can take several months, resulting in the loss of all the data collected. The idea of ad-hoc sensor networks for the ocean is also very appealing since it makes it simple to increase the range of existing acoustic modems & provides distributed communications with a speedier deployment.

Under the many significant constraints, a scalable UWSN offers a viable approach for quickly identifying & monitoring the aquatic environments for various applications. On the one hand, these environments are unsuitable for human habitation because of the unpredictable underwater activities, high water pressure, and enormous stretches of water, which are the main drivers of unmanned exploration. Localized exploration is also superior than remote sensing because it produces more accurate results; remote sensing technologies might not be able to find the right information about the events taking place in the erratic undersea environment.