

# Underwater Sensor Network safety and Measurements

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**Abstract:- This paper inspects closely a many-handedness of slope and command and acting out on the inspection of under-Water Acoustic Sensor Networks (WASN). Which was not mentor by signal sensors\ networks? This inspection provides highest point on various applications such as offshore exploration, oceanographic data collection, disaster prevention, underwater robotics pollution monitoring, and fault detection. And also deals with analysis issues such as limited bandwidth, propagation delay, high cost, dump of sensors due to foul and corrosion. We also focus on effective network management, energy rebirth and protection and privacy in WASN.**

**Keywords:** Under-water Data Collection, Measuring- Temperature Sensor, Under-Water Acoustic Sensor Networks (UWASN)

## 1. Introduction

Most part of the earth's surface is covered by water. In that more than 97 percent of water is covered by oceanic. Based on global research we can easily detect the nodes in the terrestrial sensor network with security. But it's very difficult to detect nodes in oceanic based sensor networks. If suppose it is possible with difficulties to detect nodes from ocean based, then there is no surety of security. The third parties may involve with this and easily retrieve the nodes by transmission which can create certain problem with disasters in the ocean. In this paper, we have undertaken these problems. Sensor networking has a

expand spectrum of applicability, monitor the environments, tracking the pollution, preventing a disasters, collections of oceanographic data.

In an existing system, I have done offensive recognition in the sea's surface. It fully covered a wide area through WSN. It identifies the intrusions, identifies the crafts over ocean with the help of three-axis accelerometer sensors, and also extracts the secret nodes with secret key extraction in MIMO. In this paper, mainly focus on ocean based systems. Here the most highlighted in an effective network management, energy regeneration and security and seclusion in UWASN.

## 2. Literature Survey

Aditya Tandon and Kamal Kant<sup>1</sup> recommended in the topic of a novel positioning technique for 3D underwater sensor network, in that highlighting positioning or local-ization because they have analyzed underwater sensor networks are very far than the terrestrial sensor networks, so planned to positioning in underwater with the help of UUV-guided position system in an UW-ASN. And also uses a new algorithm, i.e., MCM Mining Counter Measure applications.

Some viewrs suggested pertinent able of sensors to sea related disaster management with short-range and low power in Sensors On Sea (SOS): A simple

novel sensor-based best effort system for ocean related disaster management.

Few researchers presented clarity with underwater wireless sensor network. It has deployed monitoring areas in various applications like sea sampling network, submarine election, etc in survey papers on underwater wireless sensors network. Manu Singh and Tanu Singh<sup>9</sup> slanted two dimensional and three dimensional architectures based on various applications via, data collection, underwater robotics, pollution monitoring, prevention of disaster, etc in the topic of prevailing issues and research confront in underwater acoustic sensor net-work. Feng Zhang<sup>8</sup> researched on WSN communication in underwater sensor networks for monitoring the limitation of water, oilfield monitoring, data collections, etc in under-water sensor networks for water quality monitoring.

Mohsin Murad, et.al.<sup>3</sup> explored radio frequencies for transmitting data and information as like terrestrial and airborne wireless sensor network. It requires sea exploration for communication in the topic of a survey on current underwater acoustic sensor network applications.

Xiaojiang Du and Hsiao-Hwa Chen<sup>4</sup> suggested security and privacy in wireless sensor security. It has challenged the sensor nodes in terms of communication, memory and energy supply in the basis of security in wireless sensor networks.

### 3. UWASN application

UWASN application pinnacles various partitioning while keeping the sensor into the ship. Then it will automatically sensing the ship so it is possible to find out the oceanographic data collection, preventing the disaster, pollution monitoring, fault selections, offshore exploration. The sensor nodes will fix into the sea floor and places the sensor nodes. In that way, it communicates the network between multiple AUCs and then it exchanges

information with each other for an effective management.

Vessel communicates into the ocean floor through the sensor nodes when fixing the sensor in to the ship. And that will communicate to the control system. This shows in this architecture (Figure 1).

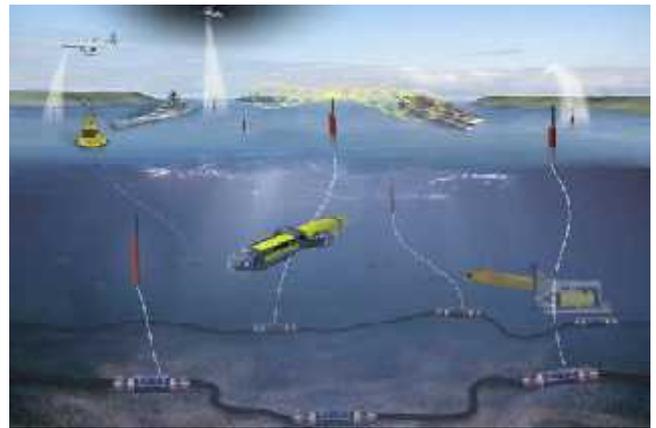
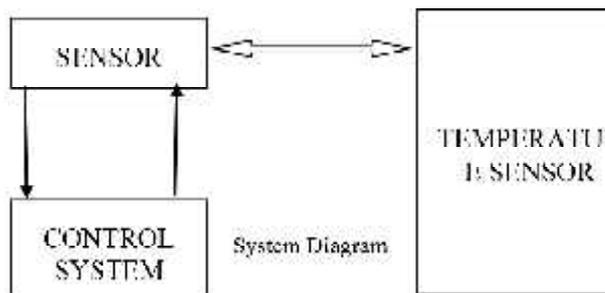


Figure 1. Architecture of Sensor nodes

It can easily identify the vessels by sensing, not only vessels, it detects intruders while sensing through these kind of operations with their applications. And also it avoids the network loss by doing each other communications.

Due to multiple paths, fading and limited bandwidth in UWASN, it collects the transmission signals with different delays. The platform can get an effectual monitoring system that may harmonize with neighbors in the proximity to perform. And it causes safety purpose. Because it passes the information with their neighbors, it causes more security. It spreads and increases the information with its neighbors. By doing this type of process, it increases the battery power, reduce the high-cost. The third parties are not able to obstruct by exchanging communications and also fault can't be happen, it detects the fault by exchanging the wireless sensor communications. By doing this kind of process it maintains an effective management and energy regeneration and performs security and privacy (Figure 2).



**Figure 2. Sensor Nodes for measuring Temperature**

This manner shows that temperature sensor, possible to stumble on out the oceanographic data collection, preventing the disaster, pollution monitoring, fault selections, offshore exploration. Temperature gets collected from ocean and exchanges the information into the sensor node. It passes the communication into their neighbor node and that will passes to the cluster. Each communications maintains by the head of the cluster and the head of the cluster communicate into control system. All the sensor nodes are scheming by control system. It will be more secured and maintains privacy when doing this type of process.

#### 4. Conclusion

In this paper, we have discussed a most recent application of UWASN. For the most part probably, we brought to illumination in endeavor of assorted applications in different areas of acoustic communication. I also maintain the range and bandwidth of UW communication. Also shows regenerating the energy and security and privacy.

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