Underwater Data Monitoring Using WSN on Web Server

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ABSTRACT

Old method used for deciding a water quality is taking sample of water to the laboratory and after testing, quality is decided but this is time consuming way of deciding the water quality. In today's world different kind of sensors are available for measuring a parameter which can be used to decide quality of water. This paper described the implementation of wireless sensor node on water for water quality monitoring. pH and Turbidity are the recommended parameter to be measured for deciding a quality of water. Here we present an application of wireless network: The wireless transmission follow the standard IEEE 802.15.4 protocol and implement the routing protocol based on ZigBee standard. This is a qualitative and quantitative approach for a water quality monitoring. Main future of this application is that it is easy and effective way for doing real time water quality monitoring and it is extensible to any type of monitoring system just by interfacing an appropriate sensor.

Keywords : ARM, PIC, Internet (Wi-Fi Module), ZigBee module, pH sensor, Turbidity sensor.

I. INTRODUCTION

Now a day's drinking water is the most precious and valuable for all human beings, drinking water faces new challenges in real time operation. Clean drinking water is a critical resource, important for the health and well being of all humans. This challenges occurred because of limited water resources growing population, etc. Hence there is need of better methodologies for monitoring the water quality. Thus in this paper we describe the design of wireless sensor network(WSN), that helps to monitor the quality of water with the help of information sensed by sensors immersed in water. Using different sensors, this system can collect various parameters from water, such as pH and Turbidity. The sensor nodes are located in different sites where we need to monitor water quality. The base station contains a wireless receiver and a PC, where users can receive data from sensor nodes and analyze it.

LITERATURE SURVEY

✓ Automatic monitoring & Reporting of water quality by using WSN Technology and different routing methods.

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The Design of Wireless sensor network based on zigbee and arm7.

The system provides the online auto monitoring of water temperature, turbidity, water level, and salinity value environment of an artificial lake by using Zigbee modules. This system provides the reading automatically. The monitoring system thus promises broad applicability prospects

✓ Efficient Design and Deployment of Aqua Monitoring Systems Using WSNs and Correlation Analysis

S. Babu Chandanapalli, E. Sreenivasa Reddy,

In this they adopt wireless sensor networks to monitor aqua forms. This system consists of two modules; they are transmitter and receiver station. Making use of various ideal instruments like sensors and wireless sensor networks will produce better results.

II. METHODS AND MATERIAL

Wireless sensor network consist of sensor nodes. Every sensor node consist of microcontroller, sensors and

transreceiver for communication. In this system ,we measure pH and Turbidity parameters of water.

1.pH Sensor :

pH is the calculation of potential of hydrogen ions in the sample.

2.Turbidity Sensor :

Turbidity is related to water clarity.

A microcontroller is used to acquire and process received sensor data from WSN sensor nodes. The WSN based on zigbee transreceiver can be implement for the purpose of lower cost , low power consumption and high performance. Through the zigbee the sensor data is stored in the Arm processor. Using wifi model , this data send to the server pc and values is shown on webpage.

Tab.1. Technical specifications of communication protocol

Parameters	ZigBee	Bluetooth	Wi-Fi
Range	30m-1.6Km	30-3000ft	100-150 ft
Power consumption	0.2mA(one node)	1 Watts	10.80 Watts
Frequency	2.4G	2.4G	2.4G

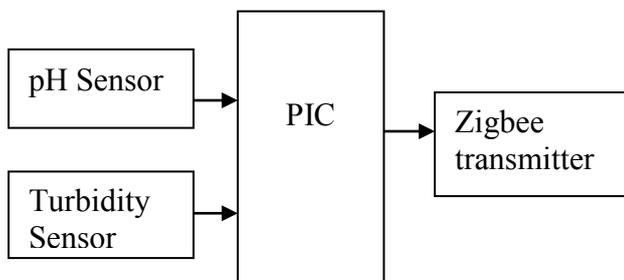**Proposed Block Diagram:**
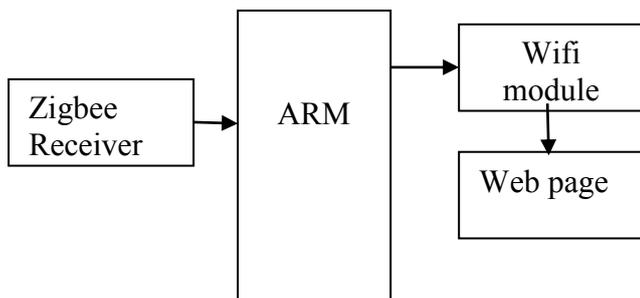

Figure 1. Transmitter section
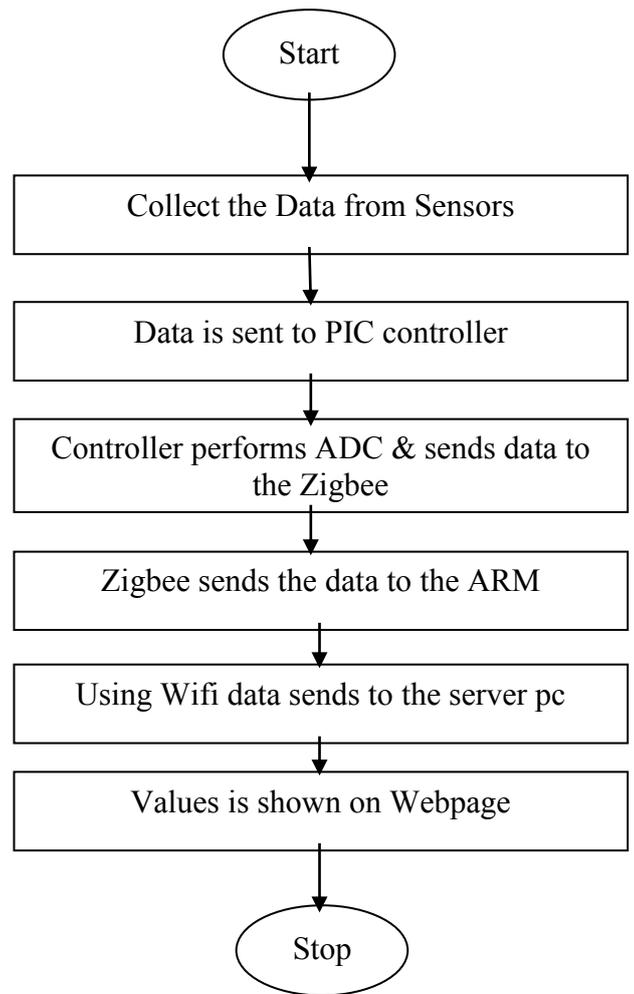

Figure 2. Receiver section

Figure 3. Flow chart of proposed system

III. CONCLUSION

This paper addresses about developing an efficient WSN based on water quality monitoring system, Which examines "Water quality", an important as far as, irrigation, domestic purposes, industries etc are connected. pH & Turbidity of water can be easily detected. By using web server we can develop the automatic monitoring of water quality using ARM.

IV. REFERENCES

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