

To Design an Architectural Model for On-Shore Oil Monitoring Using Wireless Sensor Network System

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Abstract : In recent times, oil exploration and monitoring in on-shore areas have gained much importance considering the fact that in India the oil import is 62 percent of the total imports. Thus, architectural model like wireless sensor network to monitor on-shore deep sea oil well is being developed to get better estimate of the oil prospects. The problem we are facing nowadays that we have very few restricted areas of oil left today. Countries like India don't have much large areas and resources for oil and this problem with most of the countries that's why it has become a major problem when we are talking about oil exploration in on-shore areas also the increase of oil prices has further ignited the problem. For this the use of wireless network system having relative simplicity, smallness in size and affordable cost of wireless sensor nodes permit heavy deployment in on-shore places for monitoring oil wells. Deployment of wireless sensor network in large areas will surely reduce the cost it will be very much cost effective. The objective of this system is to send real time information of oil monitoring to the regulatory and welfare authorities so that suitable action could be taken. This system architecture is composed of sensor network, processing/transmission unit and a server. This wireless sensor network system could remotely monitor the real time data of oil exploration and monitoring condition in the identified areas. For wireless sensor networks, the systems are wireless, have scarce power, are real-time, utilize sensors and actuators as interfaces, have dynamically changing sets of resources, aggregate behaviour is important and location is critical. In this system a communication is done between the server and remotely placed sensors. The server gives the real time oil exploration and monitoring conditions to the welfare authorities.

Keywords : sensor, wireless sensor network, oil, sensor, on-shore level

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