ANALYSIS OF THREE IOT BASED WIRELESS SENSORNS FOR ENVIRONMENTAL MONITORING

A Project report submitted in partial fulfilment of the requirements for the award of degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

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AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

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CERTIFICATE

This is to certify that the project entitled "**ANALYSIS OF THREE IOT-BASEDWIRELESS SENSORS FOR ENVIRONMENTAL MONITORING**" in partial fulfilment for the of degree of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING, at AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,MAKAVARAPALEM, VISAKHAPATNAM is an bonafied work carried out by D.SYAM (15815A0405), N.MADHU (14815A0434), V.RAVIKUMAR (14811A0472), TWINKLEUPADHYAY (14811A0470)under the guidance and supervision during 2017-2018.

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PROJECT GUIDE

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ABSTRACT

The recent changes in climate have increased the importance of environmental monitoring, making it a topical and highly active research area. This field is based on remote sensing and on wireless sensor networks for gathering data about the environment. Recent advancements, such as the vision of the Internet of Things (IoT), the cloud computing model, and cyber-physical systems, provide support for the transmission and management of huge amounts of data regarding the trends observed in environmental parameters. In this context, the current work presents three different IoT-based wireless sensors for environmental and ambient monitoring: one employing User Datagram Protocol (UDP)-based Wi-Fi communication, one communicating through Wi-Fi and Hypertext Transfer Protocol (HTTP), and a third one using Bluetooth Smart. All of the presented systems provide the possibility of recording data at remote locations and of visualizing them from every device with an Internet connection, enabling the monitoring of geographically large areas. The development details of these systems are described, along with the major differences and similarities between them. The feasibility of the three developed systems for implementing monitoring applications, taking into account their energy autonomy, ease of use, solution complexity, and Internet connectivity facility, was analysed, and revealed that they make good candidates for IoT-bases solutions