## IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 4, May 2024

## IoT Based Monitoring and Maintenance of Highway Bridges using WSN

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**Abstract:** This paper presents a WSN-based IOT-based bridge monitoring system. The automated real-time bridge health monitoring system has been made possible by sophisticated modifications to sensor technology; this system will aid in disaster management. The technology used in this development is a wireless sensor network (WSN). This system uses a variety of sensors to continually monitor the state of the bridge. These sensors include an accelerometer to identify jerks in the bridge, a vibration sensor to identify vibrations occurring on the bridge, a flex sensor to identify bends in the bridge, and a water level sensor to identify the water level. To determine the weight on the bridge, use the load sensor. The barrier is detected by an IR sensor. Only the buzzer will activate when these are high. Additionally, a microcontroller processes the data from many sensors and transmits it to a server and management system so that real-time bridge condition monitoring via a mobile device using the GSM model is possible.

Keywords: Microcontroller (PIC18F4520), Bend sensor, Accelerometer, water level sensors, vibration sensors, GSM, LCD

DOI: 10.48175/IJARSCT-18354

