DATE:16th October 2023

PROJECT ID:Proj_223338_Team_3

PROJECT NAME: NOISE POLLUTION MONITORING

PHASE-3

I)AI&DS:

MEASUREMENTS:

AI-powered sensors and microphones can detect sound waves, differentiate between different types of sounds, and detect patterns and anomalies in sound data that are difficult for humans to recognise. This means that the data collected by AI-powered sensors and microphones are much more precise and reliable.

TECHNOLOGY:

This means that the data collected by AI-powered sensors and microphones are much more precise and reliable. With AI, real-time monitoring is possible, allowing for immediate action to be taken in the case of excessive noise levels

Artificial sources: These noises are created due to manmade activities, such as construction work, transportation, industries, household noise, musical instruments. These sounds range from 30 to 140 dB and are extremely harmful.

DEVICES:

Simply measures decibel levels over time. The sensor does not have a camera or recording function of any kind. It measures noise level only, and, when that noise exceeds the threshold allowed by the host and/or local ordinances for a sustained period of time, it triggers a notification.

II)DAS:

ACTIVITIES:

Existing fiber optic networks along the asset are utilized and turned into a distributed acoustic sensor, capturing real-time data and helping operators take right actions. Classification algorithms are used to detect and locate events such as leaks, cable faults, intrusion activities, or other abnormal sounds

MONITORING:

Distributed acoustic sensing is an emerging technology with enormous prospects in a myriad of scientific and technological areas, capable of detecting any perturbation that affects the optical path along the length of an optical fiber (typically of tens of km, limited by attenuation and nonlinearity of fibers), such as …

APPLICATIONS :

Acoustic waves are currently being used in a wide range of sensor fields including physical sensing, chemical sensing and biosensing. Their implementation requires specific knowledge of materials, acoustic wave properties, device design and the sensing mechanisms involved for a wide range of applications.

III)IOT:

INTRODUCTION:

Industrial noise is the environmental component that has raised the most questions about how it affects workers' productivity and health. Processes that cause impact, vibration or reciprocation movements, friction, and turbulence in air or gas streams are the main sources of noise in industry.

Noise emission regulations only have a slight influence on how loud a machine emits noise. The maximum allowable noise levels crossing industrial and construction site boundaries, as well as acceptable daytime and night-time noise levels in residential, commercial, and industrial sectors, are all stated in these regulations. The maximum volume that can be heard at a worker's ears.

REVIEW OF LITERATURE:

In this paper the author presented the sound pollution monitoring system, Choosing the number and locations of stations while considering the goals, costs, and available resources is fundamental to designing the network for monitoring air and sound quality. An expert system should be created to fix the precise quantity and distribution of monitoring locations for a sensor in order to aid an industrialist. The energy-efficient continuous air and sound pollution monitoring sensor network must have some direction.

IV)CAD:

Workers must not be exposed above 85 decibels (as an average) over eight hours at work. Machines like blenders, lawnmowers and leaf blowers are around 85 decibels. This rule changes depending on decibels and time exposed.

PRODUCTS INVOLVES:

Acoustic barriers, acoustic enclosures, acoustic foams, ceiling baffles, acoustic canopies, varitone sound absorption systems, eco barriers, soundproof doors and windows, and many more are there to control industrial noise pollution. All these products are specific in their function and space and work accordingly.

During noise monitoring periods, meteorological conditions (including wind speed and direction) must be monitored simultaneously with background noise measurements. Wind speed and sound pressure levels can then be plot to determine the relationship between background noise and wind speed.