

LORA AND WUSN BASED SAFETY SYSTEM FOR COAL MINE WORKERS

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Generally, people working in mining areas, face many risk factors. In order to safe guard the people working inside the mine its environmental parameters should be monitored. The hardware consists of electronic circuitry where a microcontroller is the principal processing unit. A graphical user interface is also implemented. A number of qualification tests are carried out. The already existing system uses a single monitoring system, but the proposed system can analyse different parameters like temperature, humidity and gas. Natural calamities like landslides occur due to soil erosion and heavy rainfall. This kind of natural disaster can be monitored using MEMS Sensor and Vibration Sensor. The temperature, humidity, gas sensor measurements have an accuracy of 89.01%, 98.55%, 90.5% and a resolution of 0.12% RH and 0.05 m/s. Since the consequences of mining cannot be avoided, its effect can be predicted to ensure the safety of coal mine workers. The monitored parameters can be communicated from underground to the surface using WUSN and LORA technology.

