Coal Mining Safety Monitoring Using Wsn

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Abstract : The main purpose was to provide an implementable design scenario for underground coal mines using wireless sensor networks (WSNs). The main reason being that given the intricacies in the physical structure of a coal mine, only low power WSN nodes can produce accurate surveillance and accident detection data. The work mainly concentrated on designing and simulating various alternate scenarios for a typical mine and comparing them based on the obtained results to arrive at a final design. In the Era of embedded technology, the Zigbee protocols are used in more and more applications. Because of the rapid development of sensors, microcontrollers, and network technology, a reliable technological condition has been provided for our automatic real-time monitoring of coal mine. The underground system collects temperature, humidity and methane values of coal mine through sensor nodes in the mine; it also collects the number of personnel inside the mine with the help of an IR sensor, and then transmits the data to information processing terminal based on ARM.

Keywords : ARM, embedded board, wireless sensor network (Zigbee)
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