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ABSTRACT

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"Bridging Gaps with Creativity for Future Sustainability"

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EMERGENCY ALERTING SYSTEM (EAS)

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Abstract

A review of communication in confined space today shows that new technique was required to reduce fatalities and overcome the traditional method in aviation and many other industries. This dissertation has investigated and described the concept of Emergency Alerting System (EAS) within the confined space sectors. The project was carried out to design a warning device that transmits and receives emergency signals within confined space workers. On top of that, it is to build an alerting device that warns the entrant effectively in the event of emergency and also to demonstrate the operation of emergency device. Thus, this product should not be used in flammable environment such as aircraft fuel tank which may ignite spark. Flammable gaseous should be expelled and purged off from the environment to reduce the tendency of explosion and hazardous atmosphere or surroundings. The Emergency Alerting System (EAS) uses a Bluetooth communication within the Bluetooth Electronics App held by the Watcher and Microcontroller while 10m of glow in the dark cable is connected between the Microcontroller and the Entrant's Harness. Arduino Uno and Arduino Nano were developed to run and operate the system for Microcontroller and Entrant. The supplementary features comprehends that it is safe to use in dark confined areas as it couples up with a glow in the dark cable. The feature has reduced the slipping and tripping of the maintenance technician during work. This happened when the workers wanted to rush out during an emergency when he was in fear of dark and death. In conjunction to that, EAS is a sensible and also a fool proof device as there is a pulse sensor attached to the entrant's harness which will be monitored by the watcher continuously according to the intervals that have been fixed. The output of the product is to warn the entrant and get him out of the confined space within the time interval, without any major injuries. Consequently, this product is developed by taking the safety measures of the workers into account. This innovation is never been done before in the aviation or any other field. It is a demand that there should be a proper and convenient way of communication between the entrant and the watcher in a confined space maintenance. Future research is recommended to develop and upgrade the product from time to time and to improve the parameters.

INNOVATION