

An ultrasonic-based localization system for underground mines

2017 IEEE 15th International Conference on Industrial Informatics (INDIN), 24-26 July 2017, Emden, Germany

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Abstract:

Localization is important for a wide range of industries and applications. In underground mining, for instance, it is helpful to know the miners' locations, particularly in emergency situations. One way this can be achieved is by using ultrasonic based localization. This paper presents the design and implementation of a wireless sensor network which can be deployed in underground mines to perform time-difference-of arrival based localization. It is shown that the implemented ultrasound receivers are resistant to noisy conditions that may arise in harsh underground environments.