Configuration of weak current communication base station under the mine

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What are underground mine communications infrastruc-Ture guidelines?
This Underground Mine Communications Infrastruc-ture Guidelines series is intended to provide a high-level view of the processes needed by mine personnel to meet planning and design requirements when creating or replacing underground mine communications infrastruc-ture.

How do underground coal mines communicate?
The majority of underground coal mines (UCMs) rely on wired-based communication systemfor communication as well as data transmission. Wireless systems find few usages due to many challenges associated with the underground structural features and dynamic nature of mine environment.

Can a channel model be used for wireless communication in underground mines?
A model accuracy of 78.31% is achieved across the curvature measurement scenario. Hence,the proposed channel model can be acceptedfor wireless communication system design and deployment planning in underground mines to provide a reliable two-way wireless communication and coverage.

How to establish communication in an underground mine?
In order to establish communication in an underground mine,it is necessary to utilize equipment that is robust,fire-resistant,and lightweight in nature. UCMs also require various monitoring systems for monitoring UCM environment and roof stability continuously to avoid accidents.

Abstract Wireless communication inside the mine is much challenging as com-pared to the communication above the surface. The signal gets highly attenuated due to numerous ...

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This study investigates the communication capability in underground coal mines by optimizing the wireless link to develop a stable network for an underground hazardous environment.

Configuration of weak current communication base station under the mine

A novel compact 5G multiple-input-multiple-output (MIMO) base station (5G-BS) is introduced for enhancing communications in underground mine environments. The structure includes ...

Underground mines are extensive labyrinths and generally consist of a large network of long and narrow tunnels arranged at various depth levels below the ground surface. The length and ...

Communications systems are similar to other mine services (i.e., ventilation, water, compressed air) in the sense that they are essential; however, it can be challenging for traditional ...

The best approach to underground communications systems is to use low frequency electromagnetic waves that can deeply penetrate into the earth. These low frequency waves will ...

In this review, an in-depth analysis on underground communication system for UCMs is provided. The existing research works in this field are categorized based on the technology used, ...

The utility model discloses a communication base station under a mine, which belongs to the telecommunication field, and has the advantages that the communication, the data transmission ...

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