

Title: Base station communication recovery time

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Do communication base stations perform post-earthquake functionality using Bayesian network?

A method to evaluate the post-earthquake functionality of communication base stations using Bayesian network is developed. The dependence between the equipment and its hosting building structure, and the impact of power outages are considered. The method is validated using seismic damage data from the Ludian Earthquake.

Why do base stations need a transformation process?

Therefore, this transformation process provides a more accurate assessment of the post-earthquake functional status of base stations and serves as an important basis for subsequent operation and maintenance decisions.

3.2.1. Construction of Fault Tree Model

What happens to communication networks after a disaster?

In the chaotic aftermath of a disaster, communication networks are often challenged by increased usage and/or damage to their base stations. This situation often results in network congestion and subsequent failures of communication systems when reliable communication is most needed.

What is an indoor base station?

An indoor base station comprises a communication room accommodating various communication equipment and a communication tower responsible for transmitting and receiving information. The communication room is equipped with wireless communication devices, transmission equipment, power supply equipment, air conditioning, and cable routing racks.

A method to evaluate the post-earthquake functionality of communication base stations using Bayesian network is developed.

The effects of physical damage, power disruption, and recovery dynamics on the outage probability over time are incorporated into a dual-objective optimization model.

The findings offer insights into the potential of using drone base stations in post-disaster scenarios, thereby empowering disaster management agencies with enhanced ...

One of the primary tasks for effective disaster relief after a catastrophic earthquake is robust communication. In this paper, we propose a simple logistic method based on two-parameter ...

As typhoons batter coastal regions and wildfires intensify globally, power base stations disaster recovery emerges as the linchpin of modern telecommunications. Did you know a single hour ...

We develop a prototype of a proposed mobile base station and test its operation in an outdoor environment. The experimental results ...

In this paper, we propose a simple logistic method based on two-parameter sets of geology and building structure for the failure prediction of the base stations in post-earthquake.

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As typhoons batter coastal cities and wildfires engulf telecom infrastructure, one urgent question emerges: How can communication base station disaster recovery mechanisms keep pace with ...

To address this issue, we introduce a novel distributed 3-D deployment approach for UAV-based base stations (UAV-BSs) called 3-D deployment for effective communication ...

We develop a prototype of a proposed mobile base station and test its operation in an outdoor environment. The experimental results provide a sufficient data rate to make an ...

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