

Are green cellular base stations sustainable?

This study presents an overview of sustainable and green cellular base stations (BSs), which account for most of the energy consumed in cellular networks. We review the architecture of the BS and the power consumption model, and then summarize the trends in green cellular network research over the past decade.

What is a green base station solution?

The green base station solution involves base station system architecture, base station form, power saving technologies, and application of green technologies. Using SDR-based architecture and distributed base stations is a different approach to traditional multiband multimode network construction.

What should a base station do in a wireless communications network?

In a wireless communications network, the base station should maintain high-quality coverage. It should also have the potential for upgrade or evolution. As network traffic increases, power consumption increases proportionally to the number of base stations. However, reducing the number of base stations may degrade network quality.

Why are base stations important in cellular communication?

Base stations are important in the cellular communication as it facilitate seamless communication between mobile devices and the network communication. The demand for efficient data transmission are increased as we are advancing towards new technologies such as 5G and other data intensive applications.

What is a green cellular network?

Most studies on green cellular networks have adopted ideal models. As its name implies, the green communication initiative aims to make cellular networks "greener" by reducing their power consumption using the aforementioned approaches.

What is a GSM mobile station?

The Mobile Station is the GSM mobile phone equipment, housing the DSP, RF chip, and SIM (Subscriber Identity Module). The SIM is all that's needed to access the GSM network services. The SIM contains all subscriber-related information, the network to which the subscriber is subscribed, and encryption-related information.

This paper studies the green communication technology from the perspective of energy saving and emission reduction on the mobile communication network side and the perspective of the ...

Green transformation of network architecture: China Mobile is actively advancing CRAN deployment and streamlining base station upgrades. By simplifying the network, equipment ...

The aim of this study is to identify the green mobile telecommunication base station design practices as adopted by leading cases, four cases were analyzed; Ericsson, ZTE, ...

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