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# Mobile communication green base station transmission frequency

How can mobile network architecture contribute to green networking?

The representation of the mobile network architecture along with the expanded view of the 5G base station has been depicted in Fig. 5. Improving hardware components can contribute toward green networking. It entails reducing BS's energy consumption by using energy-efficient hardware.

Why are green wireless communications important?

Green wireless communications have been an important area of study targeting the trade-off between increased mobile communications and energy consumption. The use of such technology is motivated by the prospect of higher data rates and improved performance over the existing networks[2,3].

How can cellular network operators shift towards green practices?

The green communication initiative focuses primarily on improving EE, reducing costs such as CAPEX and OPEX, and eliminating extra BSs' emissions to ensure their future evolution. Therefore, the cellular network operators use the following main approaches to try to shift toward green practices as shown in Fig. 4.

Can Greentouch reduce energy consumption in communications networks?

GreenTouch. (2013). GreenTouch green meter research study: Reducing the net energy consumption in communications networks by up to 90% by (2020). A GreenTouch White Paper, no. Version, 1.

A green communication scheme using an orthogonal wavefront (WF) multiplexing scheme spatially combined with orthogonal frequency-division multiplexing (OFDM) ...

The world's first realization of wireless base stations with lower power consumption based on positioning information by using communication radio waves Contributing to carbon-neutrality for high ...

In parallel with the amazing increase in mobile data traffic, an advanced cellular technologies progress, more than one component carrier (CC) can now be jointly utilized in a base station (BS) ...

The energy demand of the base station site consists of the energy required to power the base station equipment, the transmission equipment (that transports ...

A significant number of 5G base stations (gNBs) and their backup energy storage systems (BESSs) are redundantly configured, possessing surplus capacity during non-peak ...

The solutions include reconfiguring flow paths, minimizing transmission time, and adjusting signal range of base stations using software-defined networking (SDN) techniques. ...

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For green radio communication networks, it is essential to develop techniques to achieve significant improvements in the overall efficiency for base stations, which is measured ...

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