BUHLE POWER

3G communication signal power generation base station energy storage ESS power

Overview

Should a 3GPP interface be energy-efficient?

“Keeping in mind” the energy-efficiency aspect when designing (all interfaces of) the 3GPP standard, e.g. not to mandate to send regular location updates for a user equipment known to be static, as a vending machine. The first point, energy saving recommendations, is rather related to energy savings (“turn off the light when you leave”).

Why do we need a 5G base station?

The limited penetration capability of millimeter waves necessitates the deployment of significantly more 5G base stations (the next generation Node B, gNB) than their 4G counterparts to ensure network coverage . Notably, the power consumption of a gNB is very high, up to 3–4 times of the power consumption of a 4G base stations (BSs).

What is the access mechanism between EMCs and BSS?

To describe the access mechanism between the EMCs and the BSs, we introduce an N b s × N m g connection matrix A, where N m g is the EMCs number and N b s is the number of power towers which is also the number of candidate locations for base stations. It is not necessary for all power towers to be selected as communication power sharing towers.

Are 5G network operators motivated to cooperate with the power system?

On the one hand, 5G network operators are highly motivated to cooperate with the power system in energy matters, given that the numerous gNBs with their high energy consumption result in significant electricity bills that can be troublesome for the operators , .

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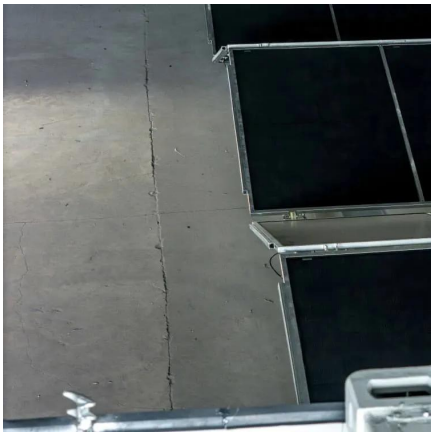

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