Self-organizing network base station energy management system

Do base station sleeping strategies save energy in dense cellular networks?
Due to the rising concerns of energy consumption in wireless networks, base station (BS) sleeping strategies were introduced to save energy in low traffic scenarios. In this paper we analyse a weighted trade-off between energy consumption and user-perceived performance in dense cellular networks.

What is a self-organizing network?
A self-organizing network (SON) is an automated technology which is designed to help the management of mobile networks. SON enables network self-configuration and self-optimization. SON is actually a umbrella concept,covering different techniques which provide different SON solutions. SON is only specified at the concept level.

What is threshold-based base station sleep strategy?
Threshold-based base station sleep strategy is a common base station management method in wireless communication networks,which adjusts the operating state of the base station to save energy and improve resource utilization by dynamically setting appropriate thresholds.

What are the standardized energy-saving metrics for a base station?
(1) Energy-saving reward: after choosing a shallower sleep strategy for a base station, the system may save more energy if a deeper sleep mode can be chosen, and in this paper, the standardized energy-saving metrics are defined as (18) R i e = E S M = 0 E S M = i E S M = 0 E S M = 3

A base station control algorithm based on Multi-Agent Proximity Policy Optimization (MAPPO) is designed. In the constructed 5G UDN model, each base station is considered as ...

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In our previous work [11], a dynamic MDP based base station management scheme is proposed for optimal power savings in self-organized networks, specifically in case of four ...

SON stands for Self-Organizing Network. It''s a network management technology used in telecommunication networks, particularly in cellular networks like 4G LTE and 5G, to ...

Aiming to resolve insufficiency of existing Energy-Saving (ES) methods in heterogeneous network, a novel self-organizing ES mechanism to improve energy efficiency ...

ESM takes advantage of Nokia's centralized self-organizing networks platform (cSON) by combining its energy efficiency features with the in-built capabilities in a base station.

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A novel self-organizing ES mechanism to improve energy efficiency suitable for heterogeneous networks is proposed and results show that more than 18% of regional energy consumption ...

With respect to ES of base stations in radio wireless network, 3GPP standard have introduced a conception of energy conservation management in self-organizing networks (SON) [2][3].

Explore LTE Self-Organizing Networks (SON), a key feature for simplified LTE network installation, optimization, and maintenance. Learn about self-configuration, optimization, and ...

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