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## Base station and UE communication process

How does a base station work?

Figure 3.5: Base station establishes one or more tunnels between each UE and the Mobile Core's User Plane. Fourth, the base station forwards both control and user plane packets between the Mobile Core and the UE. These packets are tunnelled over SCTP/IP and GTP/UDP/IP, respectively.

What is a UE & how does it work?

Carries user data from the UE to the base station, enabling UEs to transmit their data to the network. Carries control information that is used to manage the transmission on the physical channels, such as resource allocation, power control commands, and scheduling information.

How does distributed execution affect base station control?

In the distributed execution phase, each actor network makes decisions independently based only on its own network and observations, and although each actor executes independently, the whole system is able to obtain a better base station control strategy because their strategies are based on the results of global optimization. Fig. 2.

How does a UE node transmit a BSR?

The UE node transmits a BSR with a predefined periodicity as an out-of-band packet. You can use the connectUE object function of the nrGNB object to set the periodicity of the BSR report. Scheduling grant -- Upon receiving the BSR from the UE node, the base station provides grants (an out-of-band packet) to the UE node for the UL transmission.

Understand the LTE RRC state diagram, including IDLE and Connected modes, for efficient UE communication and battery management.

The communication of multi-band capability from UE to eNodeB/gNodeB is a fundamental process that supports the efficient operation of mobile networks. Through ...

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 ...

With the introduction of 5G technology, wireless communication is expected to enter a new age marked by unparalleled speed, low latency, and connection for numerous ...

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Figure 3.3: Base Station detects (and connects to) active UEs. Second, each base station establishes "3GPP Control Plane" connectivity between the UE and the corresponding ...

Introduction In the context of 5G (fifth generation) cellular networks, physical channels are communication channels that operate at the physical layer of the network ...

The invention provides a communication method, a base station and UE. The method comprises that a first base station determines measurement configuration information which indicates the ...

Communication Between gNB and UE Nodes Packet communication is central to the 5G new radio (NR) interface. This topic presents the communication flow between the 5G base station ...

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