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PEOPLE'S REPUBLIC OF CHINA**

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**Technical standard for mobile communication base station
engineering**

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1 General

1.0.1 This standard is formulated in order to unify the engineering technical requirements of communication base stations in public cellular mobile communication networks, and achieve technical specifications, safety and reliability.

1.0.2 This standard applies to the engineering planning, design, construction, acceptance and maintenance of communication base stations in public cellular mobile communication networks.

1.0.3 Project construction should implement the national basic construction guidelines and economic policies, and implement the relevant national regulations on energy conservation, materials, water use, land use and environmental protection.

1.0.4 The project construction shall meet the requirements for co-construction and sharing of public cellular mobile communication base station infrastructure.

1.0.5 Project construction should select materials and equipment that have issued qualified inspection reports and meet the relevant national technical requirements.

1.0.6 Project construction in areas with seismic fortification intensity of 7 degrees and above shall meet the requirements for anti-seismic fortification, and the main telecommunications equipment shall comply with the relevant provisions of the current

industry standard "Testing Specifications for Seismic Performance of Telecommunications Equipment" YD5083.

1.0.7 The construction of public cellular mobile communication base stations shall not only comply with the provisions of this standard, but also comply with the relevant current national standards.

2.1.1 communication business operator

Units that comply with the "Regulations on Telecommunications of the People's Republic of China" and have obtained a telecommunication business license.

2.1.2 mobile communication infrastructure

Including mobile communication base station infrastructure and wireless indoor coverage system infrastructure. Mobile communication base station infrastructure mainly includes base station equipment room, power supply system, lightning protection grounding system, outdoor support, etc. Wireless indoor coverage system infrastructure mainly includes source equipment Computer room, remote equipment room, power system, grounding system and wiring bridge, etc.

2.1.3 mobile communication base station

An important part of the mobile communication network refers to the radio transceiver station that transmits information between the mobile core network and the mobile terminal. Typically, a mobile communication base station is composed of radio signal transmitting and receiving equipment, power supply equipment, transmission equipment, air conditioning equipment, antennas, and connecting cables.

2.1.4 indoor wireless coverage system

The wireless indoor coverage system is a solution for improving the indoor signal environment of buildings. The wireless indoor coverage system evenly distributes the signals of mobile communication base stations in various areas of the building, thus ensuring good signal coverage in indoor areas. Typically, a wireless indoor coverage system includes signal source equipment, remote equipment, terminal equipment, power supply equipment, transmission equipment, antennas, and connecting cables.

2.1.5 base station room

The room used to install mobile communication base station radio signal transmitting and receiving equipment, power supply equipment, transmission equipment, air conditioning equipment, etc.

2.1.6 signal source equipment room

The room used to install the signal source equipment, power supply equipment, transmission equipment, POI (multi-system integration platform) and other equipment required by the wireless indoor coverage system.

2.1.7 remote equipment room between remote equipment

The room used to install the remote communication equipment required by the wireless indoor coverage system.

2.1.8 Outdoor support of base station antenna

Outdoor supports for base station antennas refer to the structural components that install mobile communication base station antenna supports on the roof of the main structure of the building, the technical layer of the building (including external walls, external wall windows and openings), and outdoor public areas within the red line of the building. Including roof self-supporting tower, rising frame, roof holding pole, roof beautification radome, exterior wall beautification radome, exterior wall holding pole and other roof communication tower masts.

2.1.9 distributed base station distributed base station

The distributed base station refers to the separation of the indoor baseband processing unit (BBU) and the remote radio unit (RRU) of the mobile communication base station. Among them, the baseband, main control, transmission, clock and other functions of the base station are integrated in the baseband processing unit (BBU); the transceiver and power amplifier of the base station are integrated in the remote radio frequency unit (RRU) and installed at the antenna end. The radio frequency unit and the baseband Units are connected by optical fibers to complete network coverage.

Part of the physical layer processing functions of the indoor baseband processing unit (BBU) of the mobile communication base station, the remote radio unit (RRU), and the passive antenna are integrated into an active antenna unit (AAU).

In the subsequent network evolution, the indoor baseband processing unit (BBU) of the mobile communication base station can be reconfigured into two functional entities, the central unit (CU) and the distributed unit (DU). The central unit (CU) mainly includes non-real-time wireless high-level protocol stack functions, and also supports the deployment of some core network functions and edge application services. The distribution unit (DU) mainly handles physical layer functions and real-time data links. layer function.

2.1.10 bureau station

The computer room or site where network access equipment is placed.

2.1.11 public cellular mobile communication public cellular mobile communication

The cellular wireless networking method is used to connect the terminal and network equipment through a wireless channel, so that public user terminals can communicate while moving.

2.1.12 Global navigation satellite system

A system composed of multiple communication satellites covering the whole world, the system can collect the latitude, longitude and altitude information of any place at any time, so as to realize various functions such as positioning and timing.

2.2 Abbreviations

BBU (Building Baseband Unit) indoor baseband unit RRU (Remote Radio Unit) remote radio unit AAU (Active Antenna Unit) active antenna unit CU (Centralized Unit) central unit DU (Distributed Unit) distribution unit SPD (Surge Protection Device) surge protector POI (Point of Interface) multi-system integration platform

3 Mobile communication base station planning

3.0.1 Base station planning should be determined according to the economic development status of the region and the development plan of the communication industry, in accordance with the requirements of urban and rural planning, overall land use planning, and special planning of communication infrastructure, combined with factors such as network topology and performance requirements.

3.0.2 The site selection of the base station shall comply with the relevant provisions of the current industry standard "Code for Design of Communication Construction Engineering" YD5003.

3.0.3 Base station planning should make rational use of social resources such as the existing government and enterprises, and realize the co-construction and sharing of resources according to the needs of multiple telecom service operators to build base stations at the same site.

3.0.4 The site of the base station shall comply with the current national standard "Electromagnetic Environment Control Limits" GB 8702 on electromagnetic radiation environmental protection and protection regulations.

3.0.5 The site of the base station should avoid being located in the lightning strike area. When it is unavoidable, corresponding lightning protection measures should be taken.