The synchronization method adopted by China Power s outdoor LTE base stations

Title: The synchronization method adopted by China Power s outdoor LTE base stations
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Which synchronization source should be selected?
In terms of the network listening synchronization source selection,the best accurate synchronization source to GNSSshould be selected. If the Home base station obtains synchronization without using network listening,the small cell requirement applies. The requirement is 3.475 us but in many scenarios a 3 us sync requirement can be adopted.

Can a base station use a UTRAN synchronisation reference?
The Base Station shall use the same frequency source for both RF frequency Generation and the chip clock . The synchronisation reference extracted from the Iu may be used as UTRAN synchronisation reference. In principle (and in any case during loss of traceability from PRC),lower accuracy is sufficient (e.g. 16 ppb,as per Stratum 2).

How to synchronize downlink frames between base stations?
The downlink frames transmitted by the serving base station and the Neighbour base station shall be synchronized to a level of at least 1/8 cyclic prefix length (which is equal to 1.428 us). 3 us for small cell (< 500m radius). For large cell (> 500 m radius), 1.33 + Tpropagation ms time difference between base stations,

Which synchronisation reference should be used as UTRAN synchronization reference?
The synchronisation reference extracted from the Iumay be used as UTRAN synchronisation reference. In principle (and in any case during loss of traceability from PRC),lower accuracy is sufficient (e.g. 16 ppb,as per Stratum 2). Common SFN (System Frame Number) initialisation time shall be provided for all eNBs.

Multipoint broadcasting requires the base stations to be phase-synchronized. Methods and apparatus are described that provide phase synchronization of base stations with the...

In this survey, we review recent advances in synchronization techniques across Bluetooth Low Energy (BLE), Long-Term Evolution (LTE), and WiFi-based backscatter ...

The GPS-based timing technology supports synchronization with this high speed wireless communication technology. The Furuno GPS frequency ...

The invention discloses a synchronization method and equipment of a low-power base station.

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This study presents an improved carrier-phase-based method for time synchronization, which was demonstrated through both labora-tory and satellite-ground experiments via the China Space

To enhance the reliability of traditional current protection systems in the evolving landscape of future power grids, this paper ...

To enhance the reliability of traditional current protection systems in the evolving landscape of future power grids, this paper proposes a differential protection data ...

Such advanced synchronization networks will allow them to deliver 1us timing accuracy to their base stations. This is sufficient for most of today"s use cases.

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