The world of 3G

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Abstract

This speech was to present the 3G mobile phone and the productions of APTG. In this writing, we will discuss about the mobile phone and CDMA but not mention about the productions. Another discussion is the architecture of mobile phone network and which stimulate the mobile phones evolutes into another mobile phone stage - 3G.

Key word: CDMA,CDMA2000, 3G

1. Introduction

The communication is evolution from wire to wireless according the transmission medium and from analog or digital to hybrid type according the data type. No matter what kinds of classification in the communication, the property of mobile is important of all in the communication. We will divide two parts to describe this speech and focus on the CDMA.

2. The mobile phone

We divide three parts to introduce of mobile phone of 3G: evolution, architecture and CDMA.

2.1 The evolution of mobile phone

In literally the evolution of mobile phone is from 1G to 3G had relative to the evolution of computer. Every generation has corresponding computers to process these need of mobile phones. As mention above, when the power or the architecture has changed, some corresponding changes have produced to stimulate the mobile phone changing. Data type is more depend on the property of machine and transmission method of multiple access technique. It is because of combine the encoding and multiple access technique, the CDMA, we have some large revolution on mobile phone. Now we have to aware of why the advent of 3G. But another stimulate to evolution of mobile is that the volume of customers.

2.2 The architecture of mobile phone network

Brief introduction of the architecture that this speech said we divide to three parts that are core network, base station network, admission and customer system and integrated application platform. The core network is strip of all users, focusing at the aggregated flow. To control and management in easily is main target that why core network existence. Decreasing the complexity of decision when flow is entrance in nodes and increasing capability of control at the same time. Secondly, base stations have it's own network to communication between each other and transfers the data, control signal to admission system or the users mobile phone for keeping always on-line. Another system is combined with admission system is customer system, which is process the relationship of each mobile phones and customers to achieve the customers accommodate their mobile phones for using friendly. Last system is integrated application platform for process different kinds of applications to satisfaction of users. Different kinds of applications are produced from distinct programming platforms or manufactures. According this reason, we have to integrate those together. There have problems in this structure. The outstanding problem is Qos that is due to when combine several networks the delay would be variation and some users would not be satisfied. Another conspicuous problem is it could be not easily communication each other due to the distinct versions of platforms or mobile phone. The interfaces between distinct networks are also a problem.

2.3 What's CDMA

CDMA (code division multiple access) was birth from the military purpose in originally. Two techniques were used, en/decoding and multiple access. The property of CDMA, one is high security, anti-noise signal, volume of transmission rate by the encoding technique, another is transmission method by the access multiple technique. According the IMT-2000 family [1], divide access technique into three parts, TDMA, FDMA and CDMA. The CDMA2000 contains in the CDMA parts, MC-CDMA, and is used in the 3G more efficiently. 2000 is mean system can provide 2000 MHz / Mbps in the CDMA2000. The carriers of CDMA 2000 1X [2] is 1.25MHz published by TIA and can transfer voice and data simultaneous. Another CDMA is W-CDMA which four times wider original CDMA channel used in 2G networks by ETSI. By the way, due to the IMT-2000 the CDMA2000 has harmonic between categories of access mode.

3. Conclusion

Mobile phone of 3G has a trend of hybrid data type beyond heterogeneous networks in safety broadcasting environment communicate between human or machine to process several kinds of application.

4. Reference

[1] Abbas Jamalipour, "The wireless mobile internet architectures, protocols and services", pp. 91 - 98. [2] Ericsson CDMA system, "http://www.ericsson.com/cdmasystems/".