

Fourth Generation Wireless Network

[Name of the Writer]

[Name of the Institution]

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### **Introduction**

4G - fourth generation mobile communication are characterized by high data rate and high quality voice communications. Difference between the standard 4 G networks from previous generations of communications lies in two characteristics: speed and quality. These, at the moment, include WiMAX and Wi-Fi, with a theoretical limit of the rate of 1 Gbit / s. As you can see the difference with the networks of past generations is simply amazing.

### **Why and who needs 4G?**

The first customers of next-generation networks will, of course, be enthusiastic testers of new technologies (those that occupy the first place on the day the popular new products are introduced). In addition, the possibility of a new connection will be very helpful to people whose activities are closely linked to the Internet, and to whom it is important to have a constant opportunity to be online. New features in the transmission of huge volumes of data that are available technologies of 4G, now make mobile content providers to think about expanding their businesses. The emergence of 4G will make it much more convenient for mobile TV, video-on-demand (VOD - «video on demand"), "advanced" games, etc to operate on cellular or mobile devices. In addition, with 4G, mobile video conferencing will be possible (video chat) and mobile peer-to-peer-network (Glisic & Lorenzo, 2009).

### **Price question**

The cost of a new service is one of the main criteria of determining its value (or worthlessness) in the eyes of the consumer. European and domestic service providers promise to correct the situation and provide services on 4G network at prices not exceeding the cost of cable internet.

### **Prospects of development of 4 G**

It is ironic, but "ahead of the rest" were not the most technologically advanced countries. This is due to the fact that the operators of developed countries are engaged in full development and market development, or even 3G or 3.5G. But some of those states that have not yet had time to properly deploy a third-generation network, and preferred "to jump through the level" and begin the implementation of 4G.

Development and implementation of new networking standards working group is engaged in Next Generation Mobile Network Cooperation (NGMNC), with the participation of the world's leading GSM-and CDMA-operators. At the moment, the working group members are Sprint Nextel, T-Mobile, Vodafone, KPN, China Mobile, NTT DoCoMo and Orange. Participants of NGMNC predict the beginning of large-scale launch of new generation networks in 2010.

But China did not agree with authoritative forecasts and last year launched the world's first network of 4G. It was launched in Shanghai Changning district. Data transfer rate on the new network is comparable to the speed that can reach the fiber-optic technology - 100 Mbit / s. Cost of this Chinese operator were reported to be in \$ 19.2 million.

In Europe, operators are also preparing to launch the first mobile communication network of the fourth generation. About their participation in the project LTE (Long-Term Evolution) said the major European operators like T-Mobile International, Orange and Vodafone Group, as well as manufacturers of mobile equipment Alcatel-Lucent, Nokia Siemens Networks, Nortel Networks and Ericsson. Test launch of LTE was scheduled to begin in May 2007, and the first commercial operation of the network will be launched in 2009-2010. Experts believe that by this time, they can deploy 4G network, but the coverage of base stations will be more "focal". And given the problems that befell 3G in Europe (due to low popularity of the high cost of services), the effect of the fourth generation of technology to the market of telecommunications services in this region will be visible only by 2020 - the pessimists predict (Glisic, 2006).

### References

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