

ESTABLISHMENT OF A WIRELESS NETWORK FOR INDUSTRIAL ENTERPRISES

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Annotation:

The use of wireless networks in industrial enterprises and its advantages are highlighted. Ways to use a wireless network for a few. This network provides practical solutions to existing problems in the management of industrial enterprises. They provide insights into the differences between wireless networks and the requirements imposed on them.

Keyword: Sanoat korxonasi, Cellular Digital Packet Data, CDPD, DSL, Wi-MAX, Wi-Fi, QoS, GSM, W-CDMA.

A modern industrial enterprise is a framework of interactive processes and networks, workshops, administrative buildings and often remote areas. The main thing is to manage and control multiple parameters. Automation is necessary for operational management of production processes. And reliable infrastructure is required for management systems to work. An industrial enterprise collects data from the mechanisms with special sensors. In addition, all of this information must be sent to the management of the plant for processing, analysis and decision making. As with any industrial enterprise, cable lines can be damaged or downpicked due to adverse conditions, and in some cases it is not possible to lay them at all. Wireless technologies are immune to these shortcomings and can be used to solve problems of establishing communication channels, and to solve other problems at the same time.

Wireless data transfer is currently experiencing some sort of boom. Against the backdrop of the active development of supermarket networks, large medical centers, industrial unions, the organization of various temporary installations in which some enterprises do not have network cable infrastructure - the use of networks, wireless data transfer at industrial exhibitions and seminars. remains the most relevant. Wireless networks in Uzbekistan are often the only means of establishing existing corporate networks or ensuring access to the Internet. A much larger area of wireless data transfer can be divided into three small areas: cellular communications, data transfer within buildings and between buildings. This classification reflects the basic types of tasks that are highly conditional but handled through wireless communications. Technically, the solutions used in these areas are significantly different

Mobile data transfer systems are very common in the West and primarily include cellular networks with packaged switching (Cellular Digital Packet Data, CDPD) and electronic switching. All of them provide very low speed data transfer (usually no higher than 19.2 kbps) and are mainly intended for individual users

In Uzbekistan, on the contrary, wireless data transfer technologies are mainly used outside buildings. And basically, they are needed to organize relatively long distance information exchange. This is primarily explained by the lack of extensive cable infrastructure; secondly, low population density and lack of any infrastructure at all

In a number of major cities in Uzbekistan, magnetic networks with wireless connections are already in place. Firstly, they expand their vast information resources and Internet access capabilities, and secondly, they enable corporate networks to be organized just like using cable networks. In cities where there are no urban highways (and many so far), the organization can create its own wireless network by connecting two remote local networks with a radio bridge.

One of the promising destinations is the Wi-MAX wireless standard, which allows you to install a wireless network in the city. It is a new generation wireless communication technology that requires a good range, good speed and better service capabilities. Wi-MAX allows high-speed access to the Internet, much more comprehensive than Wi-Fi networks. It allows the technology to be used as a "major channels" that go on in a traditional way

DSL and leased lines as well as local networks. The name of the standards based on these technologies is similar (the standards are developed by IEEE, both start with "802.") and both technologies use wireless connections and are used for Internet connections (data exchange channel). Nevertheless, these technologies are aimed entirely at solving other problems. Implementation of wireless data transfer technology is shown in Figure 1.



Figure 1. Organize a wireless network.

Wi-MAX is a long-range system that covers miles and typically uses a licensed frequency spectrum to provide internet connectivity from point to point from ISP to end user. Various family standards provide different types of access from mobile (similar to data transfer from mobile phones) to stationary (alternative to a wire connection connected to the location of the user's wireless device). Comparative tables of wireless communication standards are presented in special publications.

Wi-Fi is a short-range system that typically operates at dozens of meters and uses unlicensed frequency ranges to provide network access. Wi-Fi is typically used by users to access their local networks, which

may or may not be connected to the Internet. Wi-MAX is more like an unmovable wireless phone if it can be compared to a mobile

Wi-MAX and Wi-Fi have a completely different Service Quality (QoS) mechanism. Wi-MAX uses a mechanism based on communicating between the base station and the user device. Each connection is based on a special planning algorithm that can guarantee the QoS option for each connection. Wi-Fi, in turn, uses a QoS mechanism similar to that used on Ethernet, where packages are accepted. different prioritization. This approach does not guarantee the same QoS for each connection. W-CDMA (UMTS) standards supported by 2-2.5 generations of GPRS and EDGE standards, as well as "big three" GSM operators, have become widespread in the country. Sky-Link in Uzbekistan has also distributed a CDMA450 standard that is not similar in the world.

The need to introduce wireless data transfer technologies is primarily determined by the mobility of users: how far and how often they move in the process of performing their tasks.

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