

Use of Wireless Technologies for the Requirements of Emergency Medical Procedures

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Abstract – The methods of construction and realization of networks are examined for the necessities of telemedicine, in particular for mobile monitoring of health state of patients. The ways of organization of video connection systems with mobile systems using are shown.

Keywords – Urgent medicare, W-CDMA, futbol matches of Euro 2012

I. INTRODUCTION

Telemedicine is the way of medicine, based on the use of modern computer and telecommunication technologies, to provide instant exchange of medical information between specialists with the purpose of upgrading the number and availability of diagnostics for the treatment of patients.

Realization of the special networks and programs of the emergency medical procedures, gives specialists the possibility to grant effective help in the situations of natural and technogenic catastrophes. Within the framework of the program, plans are to create mobile medical centers of various types, using as base cellular and satellite communication networks, thus enabling the medics of the emergency teams to conduct long distance consultations with their peers even in hard to reach places or in conditions of extraordinary situations.

Therefore, the development of wireless networks is a vital and urgent necessity, as it will guarantee the safety of telecommunications between far flung medical consultation centers, which will give the doctors the possibility to analyze the clinical cases with the help of multi-media information, such as data, biosignals, images.

II. URGENT MEDICARE

Urgent medical procedures require that medical personnel, once arrived on place, have the possibility for direct connection with medical experts for an interactive mode of information about the state of the patient. For this purpose, the following is needed:

- 1) to provide equipment that will function under any weather conditions.

- 2) to put into place, within a time span of maximum 15 minutes after arrival, the entire equipment which will enable the connection with the consultation centers for the diagnostic support from medical specialists from the center or the region.

- 3) to provide the emergency team with the telecommunication support from experts in determining the

need of hospitalization, necessity of surgical intervention as well as confirmation that a medical establishment is in full preparedness to receive the patient for immediate surgical procedure.

III. THE NETWORK SYNTHESIS OF W-CDMA FOR THE CITY OF LVIV

The possibility of creating a wireless network for ambulances, equipped with a special technology, demands a certain theoretical calculation and the development of a chart of the network of connections. The main component of the synthesis of such a communication network is a broadband channel for providing the necessary quality of the connection.

The article probes the possibility of the organization of such networks on the territory of Lviv; it also creates a necessity as such in connection with the pending matches of Euro 2012.

In connection with the realization of telecommunications for the emergency services, it is also expedient to consider, for the territory of the city of Lviv, the development of a telenetwork based on the technology of W-CDMA.

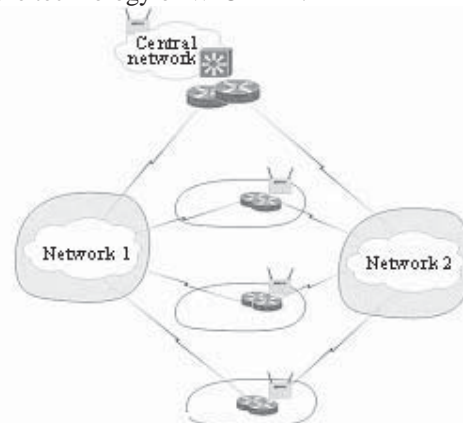


Fig. 1. Structure of network for emergency medicine (Network 1, 2 are local networks of leading consultative centers. The Central network is the informative data base of given patients)

III. CONCLUSION

It is possible to create a telecommunication network for medical emergencies in the city of Lviv, based on the technology of W-CDMA, to be used during the events of soccer matches Euro 2012.

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