

Automation of radio controlling systems in Ukraine

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Abstract – in this paper is reviewed the role, significance and trends in automation of systems of radio monitoring.

Key words – radio frequency resource (RFR), radio monitoring, electronic means, “Ukrainian State Center of Radio Frequencies”.

I. INTRODUCTION

Presently, when demand on a radio frequency resource (RFR) in some bandwidth of the general use considerably exceeds his proper presence, control after the use of RFR, that has for an object determination of his real employment and prevention offence in the field of the use of RFR, takes on the special significance.

II. THE TRENDS IN RADIO MONITORING

According to the recommendations of the International Telecommunication Union Radiocommunication Sector (ITU-R) current national system for monitoring the spectrum (radio control) built as widely distributed automation systems, integrated management system using radio spectrum. Automation of monitoring by large-scale introduction of computer technology, modern architecture and remote network management more efficient (faster and more accurate) to perform regular measuring procedures, freeing staff for other more important tasks. In addition, the use of automated distribution system significantly expands the area of coverage of monitoring at the cost of equipment where there is no possibility for accommodation operators. Can receive information from the synchronous space separated radio stations, reduced operating costs.

On the other hand, integration of systems management and monitoring range of the spectrum to make correct decisions in the allocation of bandwidth and assignment of frequencies, as well as supervision of compliance with operators and owners of electronic means procedure and the rules of the designated frequency resource.

Currently, the main trends of the radio monitoring include the following:

- Adaptation of the structure and tasks of radio monitoring to the level of development of communication means;
- Automation of radio monitoring;
- Expansion of the functional and technical capabilities of the radio.

Lately it is much talked about the «deficit of RFR», which «brakes» development of existing and introduction of new technologies and types of connection. While terms of the effectiveness of regulating the use of spectrum would be more correct to speak of: «deficit» of possibilities of the existent system of adjusting of the use of RFR and «deficit» of methods of adjusting of the use of RFR.

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Currently, computerized radio monitoring system operating in many countries. Based on the fact that most explored is the frequency range up to 3 GHz and are concentrated in this range to 92% of the electronic means, which work in the range to 30 GHz, these systems demands requirements: ensuring detection and measurement of parameters radio emission in the frequency range to 3 GHz and provide measurements of target bearing to 1 GHz.

The main direction of further development of radio, on the one hand, there is a structure system able to solve the problem of obtaining complete current and integrated information about the real electromagnetic environment in any region.

Therefore, the development strategy for further development of the radio monitoring should go with keeping 2 main principles:

- The need to radio the results;
- The adequacy of measures taken by the degree of violation of RFR.

The center of “Ukrainian State Center of Radio Frequencies” conducts large-scale works on completion of construction of the automated system of radio monitoring. Presently deployed regional radio subsystem in 19 regions of Ukraine, managed under the automated control system frequency monitoring in Kyiv.

The two most important aspects of the question of automation of radio monitoring is automation system and hardware automation.

The basis for the functioning of the system regulating the use of RFR in general and each of its input in the composition of subsystems is the presence of a single database of electronic means of accounting (accounting chastotopolzovately).

Now extend the functionality of the radio is in the following main areas:

- Provision of radio frequencies above 3 GHz;
- Provision of new radio technologies and communication systems in the frequency range up to 3 GHz;
- Assurance services networks.

This is mainly for wireless access systems, fixed and fixed satellite services are experiencing rapid growth in recent years around the world.

III. CONCLUSION

In conclusion, it should be noted that each country builds its own radio monitoring system based on their needs and capabilities. But the only remaining task for all radio monitoring – providin without obstacle of electronic means of users of frequency and mainstream of development – accordance the technical capacity and technical equipment level of radio communication.

Designed Radio in Ukraine is 218 fixed and 114 mobile radio stations. Stationary radio stations deployed in 89 locations in Ukraine.

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