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**STATE AND PROBLEMS OF THE INFORMATION MECHANISM OF
PUBLIC MANAGEMENT OF MONITORING OF THE STATE OF
POTENTIALLY DANGEROUS OBJECTS IN UKRAINE**

The information mechanism of public management of monitoring of condition of potentially dangerous objects is analyzed. It is determined that today there are problems with the functioning of the modern Unified State Civil Protection System, namely: problems with the functioning of the Unified Information Environment for the prompt supply of data to monitor the condition of potentially dangerous objects; incomplete creation of the Government information and analytical system on emergency situations; only partial automation of the processes related to the organization of the dialogue "dispatcher - applicant" in the regulation of the passage of information in the system of emergency assistance to the population on a single telephone number 112.

For Ukraine, the full integration of the subjects of national monitoring into a single system, the development of a single methodology for collecting, accumulating and transmitting monitoring information remains a problem. Therefore, the legislation defines tasks only for the national system of monitoring and control through the collection, processing and transmission of information on the state of the environment, contamination of food, food raw materials, feed, water with radioactive, chemicals, microorganisms and other biological agents.

***Keywords:** public administration, information mechanism of public administration, potentially dangerous object, emergency situation, civil protection*

Formulation of the problem. In 1996, the Program for the Establishment of the Government Information and Analytical System on Emergencies was approved. In particular, the creation of a Crisis Center as part of the Center for Information Resources in the Cabinet of Ministers of Ukraine was envisaged. Although almost twenty years have passed since the adoption of the first Program for the establishment of the Government Information and Analytical System on Emergencies, the process of creating this system is still not complete. The governmental information and analytical system on emergency situations is designed to provide the President of Ukraine, the Verkhovna Rada of Ukraine, the Cabinet of Ministers of Ukraine, the National Security and Defense Council of Ukraine, central executive bodies with expert-analytical, forecasting, reference-statistical, factual, control-reporting and management information using modern information technologies to solve problems related to man-made environmental safety and emergencies.

Analysis of recent research and publications. An analysis of the steps taken in Ukraine to create mechanisms for public management of monitoring of potentially dangerous objects, namely the creation of a situational center of strategic level on emergencies, shows that the tasks formulated in the mid-1990s still remain unresolved. It should be noted that today in the system of national security of Ukraine there is no effective mechanism for public management of monitoring the condition of potentially dangerous objects and the formation of decisions to prevent possible "crisis situations". This issue remains unresolved in both organizational and regulatory aspects.

Thus, it is important to improve the mechanisms of public management of monitoring the condition of potentially dangerous objects, given that the system of monitoring the condition of potentially dangerous objects is currently not perfect and

needs some additions.

Some areas of monitoring the condition of potentially dangerous objects were considered by such researchers as: V. Averyanov, G. Atamanchuk, V. Afanasyev, V. Bakumenko, V. Bigun, V. Burkov, A. Vasiliev, I. Gerasimov, T. Zaslavskaya, T. Ignatova, Y. Israel, S. Kamenitser, V. Kalugin, O. Kirochkin, A. Kogan, Y. Kozlov, Y. Lavrikov, M. Lapin, K. Levchuk, O. Lunev, V. Malinovsky, M. Malyshev, V. Moroz, M. Naumova, G. Popov, A. Prigogine, A. Reshetnikov, R. Rudnitskaya, A. Slinko, V. Fedorov, O. Fedorchak and others.

However, many issues related to determining the content and components of the mechanism of public management of monitoring the condition of potentially dangerous objects remain insufficiently studied. The current situation requires the development and implementation of effective mechanisms of public administration in the field of safety of potentially dangerous objects, aimed at consistently reducing the risk of accidents at potentially dangerous objects, as well as improving approaches and methods of state regulation (and local government) in this area, taking into account modern requirements and conditions. Therefore, the study of the current state of the information mechanism of public management of potentially dangerous objects will reveal existing problems and identify ways to solve them.

Presenting main material. The main functions of the Government Information and Analytical System on Emergencies were envisaged:

- automation of processes of obtaining reliable information on emergencies, operative informing about emergencies that have occurred operatively automated;
- preparation of draft decisions on planning measures to eliminate the consequences and prevent emergencies;
- systematization of data on emergencies and their preconditions, expert assessment of the nature of emergencies and the necessary resources to eliminate their consequences;
- analysis of preconditions, forecast and modeling of emergency situations;

- forecasting the impact of the most dangerous emergencies on the condition of potentially dangerous objects;
- generating emergency reports for management.

The territorial subsystem of the Government information and analytical system on emergency situations is the system of operational and dispatch management. The purpose of the operational and dispatching management system is the maximum automation of dispatching functions, reduction of call processing and dispatch of equipment, which is a decisive factor in the elimination of emergencies, rescuing people.

Currently, the system of operational and control management manages the operation of the service "112" with the forwarding of messages to other emergency services (101, 102, 103, 104) in a temporary mode, receives and processes calls not only on special lines "101", but also on special lines "112" of fixed subscribers of the public telephone network of the city and subscribers of mobile cellular communication of the city and area.

According to the Order of the President of Ukraine dated 05.04.2012 № 1-1 / 812 in order to accelerate the implementation of measures for the establishment, implementation and operation of the emergency system on a single telephone number 112 the Ministry of Emergency Situations of Ukraine provided the establishment and operation of regional emergency centers. single telephone number 112 in the cities of Donetsk, Kyiv, Lviv and Kharkiv by June 1, 2012, and the completion of the system of emergency assistance to the single telephone number 112 in all regions of Ukraine by December 27, 2013.

In accordance with the first part of Article 33 [1] and in accordance with the Resolution of the Cabinet of Ministers of Ukraine [2], telecommunications operators establish telephone connections free of charge to call fire, police, ambulance, gas emergency service, emergency service by phone, respectively 101, 102, 103, 104 and 112 [2, Article 118].

Regulations for the passage of information in the system of emergency assistance to the population on a single telephone number 112 is determined by the Resolution of the Cabinet of Ministers of Ukraine [3]. This Regulation defines the mechanism for the passage of information in the system of emergency assistance to the population by a single telephone number 112 (hereinafter the system 112). Telecommunications operators are obliged to provide routing of emergency calls to emergency centers to the single telephone number 112 (hereinafter 112). Thus, the operators of the 112 centers:

- receive and process emergency calls using software and hardware;
- collect information about the emergency situation during the processing of an emergency call;
- classify an emergency situation;
- fill in the electronic emergency card (hereinafter the electronic card).

The following information is indicated in the electronic card:

- 1) date and time of acceptance of an emergency call, number according to the register of emergency calls;
- 2) name of the center 112, position, surname and initials of the operator who receives and processes the emergency call;
- 3) information about the emergency call:
 - the phone number from which the emergency call was made;
 - the address or location of the person making the emergency call;
 - emergency classification;
 - a brief description of the emergency situation;
 - data on previous appeals from the specified phone or from the specified person;
- 4) the name of the operational and dispatching services to which information on the emergency situation is transmitted;
- 5) confirmation of operational and dispatching services on the acceptance of

information about the emergency situation from the center 112 and ensuring response to it:

- name of the operational-dispatching service, position, surname and initials of the dispatcher who received the information about the emergency situation and carries out its processing; date and time of acceptance of the specified information;

- the name of the unit of emergency assistance to the population, which provides response to the emergency situation; date and time of acceptance of information about it from the operational-dispatching service and number of its registration in the subdivision;

- the time of arrival of the relevant teams (brigades, detachments, units) in case of immediate response to the emergency situation or data on another response option (failure to confirm information about the emergency situation, emergency response does not belong to the relevant emergency units, consultation, etc.);

- results of emergency care.

The electronic card automatically enters the audio recording of the emergency call, the electronic card with the location of the emergency situation, as well as the information contained in the databases of telecommunications operators. The electronic card is archived and stored for three years in the database of the 112 system.

It was assumed that the following processes will be automated in the operational control system:

- dialogue "dispatcher - applicant" selection of useful information;
- analysis of incoming information and making the optimal management decision;

- transfer of orders to units of operative-rescue forces, control of execution of orders for liquidation of emergency situations;

- compilation of information on changes in the composition of fire and special equipment in the units of operational and rescue forces and on fires;

- the optimal route of movement of equipment to the place of emergency response;
- search of operational plans of liquidation of fires and other emergencies concerning concrete objects;
- reflection of the operational situation on the electrified plan;
- reflection of the presence of fire equipment in the units of operational and rescue forces relative to the real scale of time;
- reflection on the light plan of the route of movement of fire equipment to the place of fire or other emergency situation in real topography and real time scale;
- control of time of arrival of equipment on a place of liquidation of an emergency situation (fire) and in a part (divisions) of operational and rescue forces;
- forecasting the development of fires and other emergencies for the most important objects;
- acceptance in advance of administrative decisions on liquidation of fires and other emergencies.

However, at present, only part of the processes related to the organization of the "dispatcher-applicant" dialogue and the reflection of the operational situation on the electrified plan are automated.

The basis for the implementation of stable communication with customers at the software level when receiving emergency calls 101 and 112 is free software (free software, also software libre or libre software), free software, users of which have the right to "freedom" to its unlimited installation, launch, free use, study, distribution and modification (improvement), as well as distribution of copies and results of the change.

Such an application is Asterisk. The name of the project comes from the name of the symbol "*". This is an open source project from Digium, originally started by Mark Spencer. Asterisk has all the features of a classic PBX, supports many VoIP protocols and provides voice mail, conferencing, interactive voice menu (IVR), call

center (queuing and distribution to agents using different algorithms), CDR recording and other functions. To create your own functionality, you can use your own Asterisk language and write a module in C, or using AGI, which is a flexible and versatile interface for integration with external data processing systems (the module can be written in any programming language).

Asterisk is distributed under a dual license, which allows you to create private modules containing the licensed code at the same time as the main code distributed under the GNU General Public License. For example, a module to support the G.729 codec. The application runs on GNU / Linux, FreeBSD and Solaris operating systems and is designed to create computer telephony solutions. The project name comes from the character name *, which in Unix and DOS operating systems indicates the coincidence of any sequence of characters in file names. Asterisk provides enough protocols to support connections between traditional telephony systems and networks including H.323, Session Initiation Protocol (SIP), Media Gateway Control Protocol (MGCP), and Skinny Client Control Protocol (SCCP).

A special Inter-Asterisk eXchange (IAX) VoIP protocol for communication between Asterisk servers has also been developed, which provides voice and data transmission over various heterogeneous networks. Using the IP protocol allows Asterisk to send different data, such as URLs or pictures and photos during the conversation, integrating different types of information.

The structure of Asterisk is completely modular, the command line interface allows to overload separate modules and their configurations without breaking work as a whole and without breaking established connections, and also to unload and load interfaces, files and codecs, to make transparent connections between all supported interfaces, uniting different telephone systems in a single network environment.

Asterisk hardware does not require any special equipment for Voice over IP. Almost all devices from different VoIP equipment manufacturers can be connected without any problems. For the use of digital and analog telephone equipment,

Asterisk supports a wide range of equipment, in which a special place is occupied by PCI Digium cards, which are developed by Asterisk.

Thanks to an open license, Asterisk is actively developed and supported by thousands of people around the world. Over the past two years, Asterisk applications have been actively developed in the United States and Europe. In one form or another, Asterisk has taken a strong place in the IT market (more than 1,000 companies, support centers, online consulting). Many companies use Asterisk in their serial VoIP devices, such as Linksys, Nateks, etc.

As a system of customer relationship management (CRM, CRM-system, abbreviated from English. Customer Relationship Management) is used commercial CRM-system with open source SugarCRM. SugarCRM also provides the vast majority of CRM system functionality. Sugar CRM can be deployed on most * nix systems (Linux, FreeBSD, Solaris and others) as well as Microsoft Windows. The default SugarCRM configuration involves using MySQL or Microsoft SQL Server Compact Edition as a database, but commercial versions may already use Microsoft SQL Server 2008 and Oracle. Apache or MS IIS can be used as an http server for hosting the system on a Windows platform.

Through the use of web technologies, system users can use most common operating systems in the workplace. SugarCRM supports Internet Explorer, Google Chrome, Firefox, Opera, Safari. Due to the ability to develop code directly in PHP, it is possible to fine-tune the system to the needs of the organization. The system package includes a module for visual development (Studio). With its help the unprepared user can create new and make changes in old modules. For SugarCRM due to direct access to the database or the development of user code in PHP can be created an integration scheme of almost any complexity. SugarCRM offers its users ready-made solutions for integration with Microsoft Word, Microsoft Outlook, Microsoft Excel and Lotus Notes.

Another basic feature of the product is the function of creating special web

forms. Built-in web pages of websites allow you to solve the problem of registering contacts, any applications and appeals. Another important feature of the CRM system is the presence of modules for integration with office PBXs, including computer telephony based on Asterisk.

Electronic cartoons with city maps developed by the international cartographic company "2GIS" are used as cartographic information. According to the company as of January 2020, 2GIS reference maps operate in more than 390 cities, and their monthly audience has exceeded 50 million users. The service processes more than 2.2 million search queries daily.

The peculiarity of the program "2GIS" is that its functionality is provided without the need to connect to the Internet. This prevents the 112 operator from being hacked and prevents viruses from penetrating.

It should be noted that, in accordance with the order of the Head of the State Service of Ukraine for Emergencies of Ukraine [4] in the system of the State Service for Emergencies is a priority to use computer programs for free use.

Therefore, as a rule, all parts and departments use in their work a free set of office applications running Microsoft Windows and Linux, designed for widespread use in home, office and enterprise systems. Positioned as an alternative to commercial applications.

The package includes office programs (OpenOffice.org), Internet browser (Firefox), mail program (Thunderbird), SeaMonkey, database management system (MySQL), graphic editor (GIMP), layout program (Scribus), calendar organizer (Sunbird), vector editor (Inkscape), archiver (7-Zip), messaging clients, and the accompanying Java application runtime package, Adobe Reader.

Conclusions. The large-scale humanitarian crisis and the destruction of potentially dangerous and high-risk facilities in the eastern regions of Ukraine as a result of separatist and terrorist gangs in the context of foreign military intervention have highlighted certain shortcomings in the functioning of the Unified State Civil

Defense System.

The Civil Protection Code of Ukraine defines the need for constant monitoring and forecasting of emergencies in order to prevent them. However, the "de jure" national system for monitoring the sources of emergencies and their forecasting in the country has not yet been established. Due to this, the territorial and functional subsystems of the Unified State Civil Protection System do not provide proper daily collection, processing, transmission and analysis of information on the likelihood of emergencies of man-made and natural nature, development of precautionary measures and proposals for their implementation.

In our opinion, the improvement of the information mechanism of public management of monitoring the condition of potentially dangerous objects can be done through the development of software packages based on the functioning of intelligent systems. Particular attention should be paid to expert systems and processing of unstructured data by Sentiment Analysis.

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