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DIRECTIONS OF IMPLEMENTATION OF THE EXPERIENCE OF THE DEVELOPED COUNTRIES OF THE WORLD REGARDING THE INFORMATION-ANALYTICAL SUPPORT OF THE FIRE SAFETY SYSTEM IN UKRAINE

Abstract. The article analyzes the directions of implementation of the experience of the developed countries in terms of information-analytical support of the fire safety system in Ukraine. It is substantiated that, today, the effectiveness of emergency response in Ukraine is quite low, due to a number of shortcomings in the work of the public authorities at all levels and imperfect functioning of the civil protection system, in general, in matters of effective implementation of the state policy in the field of civil protection. Stable development of the society is possible under the condition of achieving comprehensive security of the human life and the environment, their protection from the effects of harmful factors of various origins. It is noted that in NATO member-countries much attention is paid to the issues of emergency notification of the citizens in the event of a threat or emergency. In most member-countries of the North Atlantic Alliance there are well-developed emergency alert systems, but there is no single system within the union. In each country, under the supervision of the Civil Protection Committee, which is part of NATO's Central Committee for Emergency Planning, such systems are being developed and improved.

It is noted that in the USA practice using automated emergency warning systems in case of threat or emergency of various origins, information messages are

sent with data on the type of emergency, with warnings and instructions on any mobile device. Such notifications are sent to the relevant regions where there is a potential threat. A feature is the presence of a special signal to receive such a message on the mobile device, so that the citizens do not confuse it with the usual message.

It is substantiated that in most countries of the European Union there is an automated emergency alert system MassAlert, which is used as the main, for example, in the Republic of Lithuania. The Dutch government has launched an automated emergency alert system based on CellBroadcast telecommunications technology. In Japan a test mode of using such a notification technology is under way. Experimental use of the emergency alert network with the telecommunication technology ipBroadcast is carried out in Kazakhstan.

Keywords: information-analytical support mechanism, fire safety, EU countries, emergency notification system, ipBroadcast telecommunication technology.

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НАПРЯМИ ВПРОВАДЖЕННЯ ДОСВІДУ РОЗВИНЕНИХ КРАЇН СВІТУ ЩОДО ІНФОРМАЦІЙНО-АНАЛІТИЧНОГО ЗАБЕЗПЕЧЕННЯ СИСТЕМИ ПОЖЕЖНОЇ БЕЗПЕКИ В УКРАЇНІ

Анотація. У статті здійснений аналіз напрямів впровадження досвіду розвинених країн світу щодо інформаційно-аналітичного забезпечення системи пожежної безпеки в Україні. Обґрунтовано, що, на сьогоднішній день, результативність протидії надзвичайним ситуаціям в Україні досить низька, що зумовлено наявністю ряду недоліків у роботі державно-владних органів усіх рівнів та недосконалістю функціонування системи цивільного захисту, в цілому, у питаннях ефективної реалізації державної політики галузі цивільного захисту. Стабільний розвиток соціуму можливий за умови досягнення всебічної безпеки життя людей та довкілля, їх захисту від впливу шкідливих факторів різного походження.

Зазначено, що у країнах-членах НАТО велику увагу приділено питанням екстреного оповіщення громадян у разі загрози, або виникнення надзвичайних ситуацій. У більшості країн-учасниць Північноатлантичного союзу існують досить розвинені системи екстреного оповіщення, але єдиної системи, в рамках союзу немає. У кожній країні під контролем комітету цивільного захисту, який є складовою центрального комітету НАТО щодо розроблення планових заходів у випадках надзвичайних ситуацій, формуються та вдосконалюються такі системи.

Відмічено, що У практиці США застосування автоматизованих систем екстреного оповіщення населення у разі загрози, чи виникнення надзвичайних ситуацій різного походження, здійснюється відправка інформаційних повідомлень із даними про тип надзвичайної ситуації, із попередженнями та інструкціями на будь-які мобільні пристрої. Розсилка таких повідомлень проходить по відповідних регіонах, де існує потенційна загроза. Особливістю є наявність спеціального сигналу по прийняттю такого повідомлення на мобільний девайс, щоб громадяни не сплутали його зі звичайним повідомленням.

Обґрунтовано, що у більшості країн Європейського Союзу функціонує автоматизована система екстреного оповіщення громадян MassAlert, яка використовується як основна, наприклад, у Литовській республіці. Державна влада Нідерландів здійснила введення в експлуатацію автоматизованої системи екстреного оповіщення громадян на основі телекомунікаційної технології Cell Broadcast. У Японії здійснюється тестовий режим застосування подібної технології оповіщення. Експериментальне використання мережі екстреного оповіщення з телекомунікаційною технологією ipBroadcast здійснюється в Казахстані

Ключові слова: механізм інформаційно-аналітичного забезпечення, пожежна безпека, країни ЄС, система екстреного оповіщення, телекомунікаційна технологія ipBroadcast.

Formulation of the problem. Foreign and domestic statistics on emergencies show that, today, in order to effectively fight fires, the tasks and functions entrusted to the authorities of any country must be updated. The experience of the European countries in preventing and eliminating the consequences of emergencies of various origins is quite relevant and important for the implementation of fire safety in the domestic system of the public administration.

The study of the processes of development of the public administration in the field of civil protection in the foreign countries shows that considerable attention is

paid to: organizational issues of fire protection, warning and prevention of fires, forecasting possible scenarios for their development, the organization of rapid response in the event of their rapid deployment and measures to eliminate their consequences. Unfortunately, the situation in Ukraine regarding the functioning of the civil protection system is unstable, and the processes of its reform are rather slow, which leads to an increase in the number of emergencies and to an increase in the scale of their consequences. Therefore, an important direction in the state is the comprehensive improvement of the civil protection system and increase the efficiency of the state structures in this area, including in the direction of their information support.

Analysis of researches and publications. The ways to improve the work of specialized bodies of the public administration in case of threat or emergency situations of different origins have been studied by such scientists as: M. Andrienko, I. Zhukova, Ye. Romanenko and others. However, in our opinion, insufficient attention has been paid to the study of the areas of implementation of the experience of the developed countries of the world in terms of information-analytical support of the fire safety system in Ukraine.

The purpose of the article is to analyze the areas of implementation of the experience of the developed countries in the information-analytical support of the fire safety system in Ukraine.

Presentation of the main research material. The reform processes in the context of decentralization of power, including the transfer of relevant functions from the state authorities to organize firefighting activities and prompt response to their occurrence to the local governments, have given impetus to more systematic improvement of the State Emergency Service.

We can state the fact that the legal framework of the civil protection does not fully regulate the tasks and functions of the management system in this area, and, at present, there is no successful information-analytical support for its development [1, p. 50].

To date, the effectiveness of countering emergencies in Ukraine is quite low, due to a number of shortcomings in the work of the public authorities at all levels and imperfect functioning of the civil protection system, in general, in matters of effective implementation of the state policy in the field of civil protection. Stable development of the society is possible under the condition of achieving comprehensive security of the human life and the environment, their protection from the effects of harmful factors of various origins.

In our opinion, one of the important steps in improving the civil protection system can be called the development of information-analytical activities of the

government agencies in this area, in particular, effective emergency notification of the citizens about the possibility or immediate occurrence of emergencies, including forest, or other large-scale fires and regular provision of information on the situation. Effective implementation of the state policy in the field of civil protection, including activities to protect the citizens and the environment through emergency notification and timely information today is an important component of ensuring the security of the population of any country.

The modern world is characterized by a sharp increase in the scale of consequences of natural disasters, catastrophes and accidents, the deterioration of the consequences of their occurrence. Therefore, the issue of concentrating the state forces to prevent emergencies and eliminate their results, to direct all available resources and means to combat them and to optimally organize the interaction of all government agencies in this area [2].

Interesting, in the process of our study, is the experience of the developed countries in the direction of emergency notification of the citizens of the state of the threat or the occurrence of emergencies of various origins for the effective implementation of such practices in Ukraine.

In NATO member-countries much attention is paid to emergency notification of the citizens in the event of a threat or emergency. In most member-countries of the North Atlantic Alliance there are well-developed emergency alert systems, but there is no single system within the union. In each country, under the supervision of the Civil Protection Committee, which is part of the NATO's Central Committee for Emergency Planning, such systems are being developed and improved. The staff of such civil protection committees includes a group of specialists who are engaged in the development of methodological recommendations and general provisions for maintaining in constant and combat readiness such emergency alert systems of the respective countries.

Today, in most European countries networks of sirens are used, that were installed in the early 20th century in Africa where the situation is much worse. By 2020 the United Nations will set up an emergency alert system there. [3] The main features of emergency alert systems in the world are systematized in Table 1.

Table 1.

Emergency alert systems of the countries of the world

Country of the world	Emergency notification system for citizens
<i>USA</i>	<ul style="list-style-type: none"> - free wireless automated emergency warning system on the occurrence of emergencies (Wireless Emergency Alerts, WEA); - emergency alert system (Emergency Alert System, EAS); - network of radio stations NOAA Weather Radio All Hazards .
<i>Great Britain</i>	In addition to the use of sirens for emergency notification of threats or emergencies, there is also a mobile alert using the CellBroadcast service, which can be connected without providing personal data and without a special subscription to this service.
<i>Canada</i>	Alert Ready – it is a nationwide system for emergency notification of threats or emergencies, which disseminates information through media companies, AMBER-messages and more. The notification begins with a signal, followed by a message with the disclosure of the basic necessary data on the potential threat. In the future, it is planned to be able to receive special subscriptions to receive notifications directly to your smartphone using The Weather Network system. Some commercial organizations send out special public safety notices by subscription.
<i>Denmark</i>	Sirens for emergency warning of threats or emergencies are installed on the roofs of the houses and buildings, most of the population receives information about the danger through them. Also, it is practiced the use of mobile sirens, that are on police cars. Such sirens can work without electricity, as they have an autonomous power supply, and electronic sirens have a connection to the Internet and are controlled from the police stations. Through The Danish Broadcasting Corporation (DR), citizens receive information about the danger through a radio alert. Television media companies also provide the necessary information about the threat or occurrence of emergencies of different origins and instructions on how to behave when they occur. Once a year the operation of such an emergency alert system is checked using sound effects. Every night such a check goes silent.
<i>Australia</i>	Emergency Alert – state telephone system for emergency notification of the threat or occurrence of emergencies of various origins. It is used for prompt notification of the citizens and the activities of emergency services. Such a system deals with the transfer of information data in the form of messages about the threat of emergencies to landlines and mobile phones in those areas where such situations have occurred, or its possible occurrence. The emergency service, which is territorially attached to a certain area, determines the boundaries of the area to be notified, chooses the methods of notification (telephone, television, radio, website or other) according to the specifics of the emergency. The voice message is sent to a landline in an area where there is a risk of an emergency. If there is no answer to the call, the system makes another call. Mobile phones are notified by SMS-notification: on devices where the mobile is registered, and in areas where according to the latest data there was the mobile.

<i>Japan</i>	J-Alert – nationwide system of emergency notification of the citizens, which works via satellite. This allows the country's authorities to broadcast warnings in a timely manner, through local television media companies, radio and loudspeakers. Such a system is considered to be one of the fastest in the world, so the warning of officials takes 1 second, and it takes 4 to 20 seconds to notify the residents of the region.
<i>Poland</i>	With the help of television media companies, websites and mobile applications the population receives messages about the threat or occurrence of emergencies in the regions of the country. TV channels have information about cataclysms and accidents. Mobile applications, that are designed for all operating systems, send danger notifications, recommendations and instructions for action in case of emergencies (floods and floodings, fires, epidemics of various origins, extreme weather conditions, terrorism, natural disasters) and evacuation measures in case of such situations. The emergency notification system also works in the direction of sending SMS-messages to mobile phones, which come automatically. There are also other systems of emergency notification of the population by means of SMS-messages. In order to obtain information from such systems, you must provide your phone number in a confidential database. The prevention of threats or emergencies of various origins is carried out by means of sound signals of sirens and, at the same time, the notification of the citizens on TV channels and in radio broadcasting is realized.

Today, in many countries of the world, the entire system of emergency notification of the citizens is being updated, the introduction of innovative technologies in the field of information-telecommunication services and the gradual replacement of analog systems with digital more modern systems.

In our opinion, the Ukrainian emergency alert system requires a comprehensive modernization of the national automated alert system for threats or emergencies of various origins, which requires the use of successful global experience and some integration of this area into the international organizations.

There are several options for implementing emergency alert systems for such activities using a variety of technologies in the field of information-telecommunications services. Most member-states of the European Union consider the most effective automated emergency alert system MassAlert. With the help of this system it is possible to notify the citizens on mobile devices, such as: smartphones, computers, tablets, laptops. To do this, it is used the existing government and commercial fixed and mobile networks.

The mechanism of action of the automated system of emergency notification of the citizens of the country and the organization of evacuation measures MassAlert is based on use of such telecommunication technologies as:

- CellBroadcast. Provides notifications in fixed and mobile communication networks, complements the existing automatic notification systems, has a large scale in the application via mobile networks and, most importantly, does not create

congestion in such networks. SMS-messages about threats or emergencies are sent instantly and, within a few seconds, instructions are given to the public on what to do next.

This technology is a standardized system developed under the GSM standard and extended to the relevant standard 3GPP TS 23.041. It creates text messages for the transmission of information data in one direction (as opposed to SMS-messages) for the subscribers.

- GSM/UMTS technology notifies all the users who have activated the reception of such messages on their device. This technology works on all mobile networks and is supported by most mobile device models. Information messages are sent to the mobile phones of the citizens and employees of the relevant emergency services - it is possible to send different data to different groups of subscribers. Thus, CellBroadcast technology is a modern emergency alert system that provides modern solutions for organizing evacuation measures in the event of a threat or emergency of various origins.

- ipBroadcast - provides the function of emergency notification of the citizens in data transmission networks. This technology uses existing data networks (2G, 3G, 4G, WiFi, etc.) and fixed line. This technology is used on the Internet and provides information about emergencies with instructions on mobile devices and computers for emergency notification of the citizens in the regions specified by the operator. ipBroadcast complements and enhances CellBroadcast technology, which sometimes replaces it. In it citizens receive information data via smartphones, tablets, computers as text messages and it is possible to create special groups for prompt notification in the State Emergency Service [4].

We believe that the use of CellBroadcast technology in Ukraine will provide prompt notification of the citizens on fixed and mobile communication networks as a supplement to the existing emergency alert systems.

We consider it necessary to offer a comprehensive improvement of the automated emergency notification system. In our opinion, this requires an appropriate legal framework that will officially allow the use of the above modern notification technologies in the telecommunications networks [5]. To increase the efficiency of the entire emergency alert system, it is necessary to carry out thorough reforms in the activities of the State Emergency Service.

Conclusions. Given the above, we can say that today, in the functioning of the public administration in the field of civil protection, the priority is to apply the successful experience of the European countries and the USA. Reforms in this area in the developed countries are aimed at the functional expansion of the tasks of all the public administration bodies in the event of a threat or emergency of various origins,

the reorientation of available forces and means in peacetime and wartime, including in cases of terrorism.

We can also state the fact that the civil protection and its corresponding system of information-analytical support in the developed countries of the world is a key element of a safe life of the society. Therefore, the legislation of such countries is aimed at ensuring the rights of the citizens to participate in measures to protect the population from threats or emergencies.

In Ukraine it is also possible to highlight the achievements in the field of firefighting to prevent fires, protection of special facilities.

We also consider it important to provide data on the level of fire protection in high-rise buildings, the availability of automated fire protection systems, automated smoke removal systems, which are necessary for safe and rapid evacuation of the people in case of fire, installation of automated fire alarms, emergency warning systems.

Ordinary citizens will be interested in information about the types of fire extinguishers and recommendations for their correct choice when buying an apartment, car or house.

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