

## **Report on the measures undertaken during 2017 in order to implement UN General Assembly Resolution 72/28 “Role of science and technology in the context of international security and disarmament”**

The Ministry of Defense (MoD) and the Armed Forces of Montenegro (MNEAF) use certain scientific achievements and primarily information and communication technologies which have a purpose and role in the field of improvement of both national and international security, and to a lesser extent to the processes of disarmament and arms control policies. Scientific achievements and technologies used are developed in other countries and implemented within joint projects or security systems. The most important ones are the educational and simulation center within the NATO scientific project GEPSUS, the NATO-protected information and communication network, the OSCE communication network, the ICT Core and the independent main information-communication network, the CIS MIMS (Communication and Information System of the Maritime Information Management System) technologies for data exchange on maritime traffic in the V-RMTC and T-RMN, ASDE program, cooperation of the countries of the Adriatic-Ionian region in the use of alternative fuels.

The current status and implementation of mentioned technologies, scientific projects or achievements is as follows:

### **1. GEPSUS**

The Education & Simulation Center was opened in 2014 at the Golubovci military airport under the NATO Scientific Research Project GEPSUS (Geographical Information Processing for Environmental Pollution-Related Security within Urban Scale Environments) is a project for environmental protection which is designed to simulate incidents that arise in a situation of an uncontrolled emissions of airborne pollutants that may pose catastrophic consequences. The project is funded under the NATO Science for Peace and Security (SPS) Programme.

The result of GEPSUS are new technological solutions and products and new or improved existing mathematical and computer models for the simulation of dispersion of toxic gases in real atmospheric and spatial conditions have been developed. The Simulation Center has the ability to monitor and process information in case of air pollution detection in the territory of Podgorica, the capital of Montenegro, and a laboratory for the development of hardware and software in this field is also in operation. Having such a center significantly contributes to the development and better communication of scientific-professional and educational resources at the local, regional and global level.

### **2. NATO Protected Information & Communication Network**

In the course of 2017, a NATO-protected information and communication network was established in Montenegro. This network was established in the MoD, the Navy and the Air Force of the MNEAF. This is how a secure transmission and exchange of various kinds of information (speech, data, e-mail, chat, etc.) is provided between NATO and the aforementioned institutions in Montenegro, in particular the information and communication support of the MNEAF in NATO and other international missions and operations.

### **3. OSCE Communication Network**

In 2007, Montenegro established the *End User Station, EUS ME* of the OSCE Communication Network, functioning since 1991 with the aim to connect the member states and the OSCE Secretariat through the central server. The purpose of the OSCE Communication Network is to complete diplomatic channels in providing information related to the provisions of the following international agreements:

- *Vienna Document 2011 (VD 11)*;
- *Conventional Armed Forces in Europe (CFE)*;
- *Open Skies (OS)*;
- *The Agreement on Sub-Regional Arms Control (DAYTON – Article IV)*.

#### **4. ICT Core and an independent main information and communication network**

In 2017, the “**ICT Core**” was established in the MoD and MNEAF, in which all critical information and communication (IC) services MoD and MNEAF were implemented. Within the ICT Core, an independent main information and communication network (GIKMr) has been established providing all users from the MoD and MNEAF secure connection to the ICT Core and the use of IC services.

GIKMr is based on the principle of WAN, MAN and LAN.

- WAN (Wide Area Network) is a digital radio – relay (microwave) network of high capacity, which is used to connect all prospective MoD and MNEAF locations to the ICT CORE. WAN is configured on a "ring" principle, which increases system redundancy and resistance to interruptions.
- MAN (Metropolitan Area Network) is an optical cable network, which is implemented in the prospective barracks and locations of the MoD and MNEAF, and which provides MAN connection to WAN.
- LAN (Local Area Network) is a local cable network, which is implemented in the prospective MoD and MNEAF facilities, and which provides LAN connection to MAN.

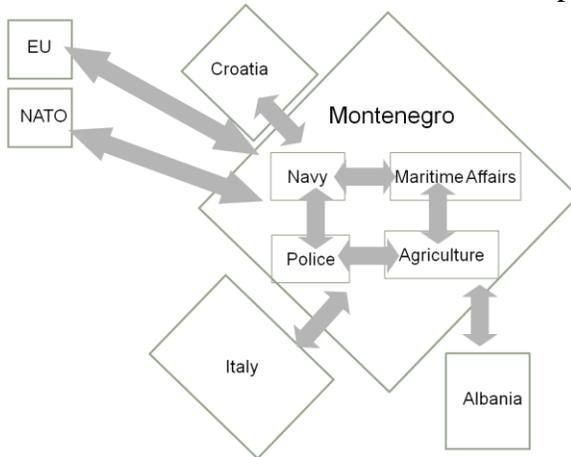
A closed IC network of the MoD and MNEAF (Intranet) is operating through the GIKMr, which provides reliable transmission and exchange of information between the users in the MoD and MNEAF. Also, the Electronic Document Management System (eDMS) of the MoD and MNEAF is operating and an electronic mail (e-mail) of the MoD and MNEAF is in function.

#### **5. NAVY CIS MIMS of the MNEAF, V-RMTC and T-RMN**

As regards the sea surveillance, the MNEAF Navy uses a new, modern, command and information system MIMS to ensure the sovereignty of Montenegro at sea, which was acquired through a strategic partnership with the USA and operational since 2013. The system is built on a modular principle and automatically collects data from stationary naval sensors (radar and Automatic Identification System - AIS), global data exchange network on facilities at sea i.e. Maritime Safety & Security Information System (MSSIS) and Lloyd data bases, and then correlates, processes and visualizes them, and further distributes data in real time. The system provides all the necessary functions of modern naval command and information systems necessary for assistance in decision-making and commanding. The system creates and manages a recognized maritime picture (RMP) for the needs of the defense system, for inter-authority work and coordination and for the exchange of data with neighbors and partners.

The data exchange is carried out at the regional level, within the framework of the ADRION Initiative, based on the agreement on Virtual-Regional Maritime Traffic Center (V-RMTC) within

the information-communication system and Trans Regional Maritime Network, T-RMN). AIS base stations at coastal radar observation stations enable the transmission of maritime traffic data to the NATO Naval Command Center in Naples and to the global information system for the monitoring of maritime traffic MSSIS.



V-RMTC is a special maritime sea surveillance system developed by the Italian Navy 2004 in order to increase the safety and control of maritime traffic in the Adriatic. The purpose of this center is to exchange information on maritime traffic of ships in the Mediterranean and Black Sea area, with a capacity exceeding 300 GRT, between navies, V-RMTC member states and this center. Navies of the member states exchange information, without obligations imposed by international

law, in accordance with their regulations and with the aim of safeguarding their own security. All navies of the countries in the Mediterranean, the Black Sea and the wider community of the Mediterranean participate in the V-RMTC.

During 2009, taking into account that navies of India, Singapore and Brazil succeeded in developing their own regional maritime transport centers, and considering their compatibility with the V-RMTC, even wider network was established outside the Mediterranean and Black Sea regions, called the Trans-Regional Maritime Network (T-RMN). Montenegro joined the V-RMTC and T-RMN on 7 October 2009.

## 6. ASDE

The Air Situation Data Exchange (ASDE) and/or an air traffic data exchange programme was implemented in the Air Operational Center as part of the preparation for developing minimum operational standards for NATO Integrated Air and Missile Defense System (NATINAMDS). The system provides links for data exchange with NATO countries in the region and NATO command structure centers.

## 7. Cooperation of the countries of the Adriatic-Ionian region in the use of alternative fuels

In September 2017, six countries from the Adriatic-Ionian region (Albania, Croatia, Greece, Italy, Montenegro and Slovenia) signed the Statement of Cooperation in the area of future cooperation in the exploration and use of alternative fuels as the basic means of propulsion on warships. This cooperation is being realized within ADRION initiative i.e. regional security initiatives and cooperation of naval forces of the six countries mentioned above.

Planning of the mentioned Navy cooperation under the ADRION Initiative is designed to recognize potentially significant benefits in the use of alternative fuels, rather than bio-diesel or chemical compounds of methyl alcohols (Fatty Acid Methyl Esters) as less suitable for use on warships due to:

- a. better contribution to reducing the effects of climate change,
- b. improving national security in supplying energy in relation to fuel imports,

- c. reducing national energy costs, and
- d. increasing security in energy supply and influencing the price of the same.

By signing the Statement of Cooperation, the Navy of the ADRION Initiative will be obliged to research data sharing, development and implementation of technologies and the use of alternative fuels ("green diesel" or a mixture of fuels containing a percentage of synthetic bio-diesel) on warships derived from renewable energy sources. Cooperation will be accomplished through expert consultations, research projects, experimental fuel use, testing, evaluation and certification of use, as well as through continuous dialogue and exchange of information in this scientific field with the aim of future development and modernization of warships.

Since MNEAF does not possess chemical, biological, nuclear weapons or conventional weapons whose application can cause enormous or indiscriminate casualties or harmful effects, there is no need for development, scientific research or the procurement of technologies used in this field. General scientific achievements or technologies are used in the field of disarmament and related technological processes, as well as in the field of safeguarding, storage, destruction and arms control and military equipment, whose application is laid down in internal instructions (Guidance on Warehouse Operations and the Instructions for Disposal of Lethal Means).