ELECTRONIC WARFARE

2017

Col Zsolt HAIG Ph.D. – Col László VÁNYA Ph.D.

Erasmus+

This publication has been financed from Erasmus+ Programme, Strategic Partnership „Creating international semester regarding military education needs for future officers in Europe”

Table of Contents

Introduction

The objective of the e-book Electronic Warfare of the Erasmus+ Strategic Partnership Program is to provide an overview of the fundaments of electronic warfare regarded as one of the pillars of Command and Control Warfare (C2W) and of Information Operations (InfoOps).

In order to understand the role of Electronic Warfare within the operations, electromagnetic environment needs to be studied, in which particular activities are conducted, its relations to further environment of warfare, and to the ground, naval, air, space, and last but not least the information dimension.

In order to overview the electromagnetic environment and to understand its most significant characteristics the physical spectrum needs to be understood, individual ranges of the physical spectrum need description, and the features of propagation of waves in the given spectrum ranges have to be summarized.

The overview of various military and civil applications of electromagnetic energies comprises an important part of the teaching material, including the brief introduction of the threats towards to such applications and the procedures of attacking them.

This teaching material presents the operational environment of electronic warfare, its role in information operations and cyber warfare, its relations to computer-network operations (CNOs), the definition of electronic warfare, its activities and measures. The interrelations among electronic warfare support measures, electronic counter measures and electronic protective measures are discussed in separate subsections.

A separate chapter is devoted to the issues of the measures of operational applications of electronic warfare, particularly to the specific features of their use in land operations and in air operations.

In the end of the teaching material some major issues of electronic warfare command and control are discussed along with the major tasks of the staff responsible for coordinating electronic warfare activities. The introduction of the planning process of electronic warfare, that of the contents of its important elements, and the control principles of electronic warfare comprise an important part of this chapter.

Disclaimer on dissemination of the International Semester content

The entire set of materials necessary to run international semester by any EU and NATO member country military institution responsible for education of junior officers, will be stored on the servers of the Military University of Land Forces, Wroclaw, Poland.

Due to the content of the developed e-books and e-learning material, it will be only available for the institutions in the EU responsible for officers' education. Developed e-books material consist of specialized instructions and knowledge not intended for disclosure to open public. Although it is not considered classified material, the courses of the International Semester are strictly dedicated to the specific audience planned to become military leaders of the armed forces of the EU and NATO member countries. Due to the nature of their specialized training, the Program of International Semester addresses some of sensitive parts of their entire military training and officership education. Therefore, disclosure of the entire content to the unspecified individuals or entities might affect the effectiveness of law enforcement and/or military forces of the EU and NATO member states.

All International Semester course/module descriptions are already published and available on MULF's website **https://www.awl.edu.pl/sp-outcomes/program-of-international-semestr** and EMILYO website **www.emilyo.eu**

All interested institutions are to contact the General Tadeusz Kościuszko Military University of Land Forces (MULF) to receive login and password to the hosting server.

After the clearance procedures, MULF generates the login and password to access the package with the content of the developed International Semester materials.

All institutions responsible for education of junior officers, and interested in using the whole or part of the developed international semester program, including supporting materials, i.e. e-books, e-learning content, and more, are welcome to contact MULF anna.zamiar-ziolkowska@awl.edu.pl or marcin.bielewicz@awl.edu.pl by sending the request form.