Zrínyi Miklós National Defence University
Kossuth Lajos Military Science Faculty
PhD School of Military Sciences

1st. Lieutenant Tibor FARKAS:

Organization of the communication and information system supporting command and control in the light of crisis response operations of the Hungarian Defence Forces

Summary of PhD thesis

Introduction of the author

Scientific supervisor:

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Associate Professor

Budapest, 2010.

Definition of the scientific problem

In order to ensure the success of international operations, the ongoing process of restructuring in the Hungarian Defence Forces (HDF) is practicing major influence on the quantity and quality of the communication and information equipments, on the organizing and planning processes, and on the staff as well. The new capabilities, challenges and management needs that we must be met, are identifying the new directives of modernizations. As a result, new principles and procedures should be based on the modern organization and planning process of the communication and information systems (CIS).

Only small parts in the international operations currently used CIS technical equipments is suitable for the modern support of command and control (C2), because they are outdated and inadequate to ensure the new capabilities. The unique solutions, which are used by the military leadership in international operations, don't ensure the establishment of such kind of complex CIS which support in full spectrum the crisis response operations.

To achieve this, it's necessary to examine all the skills, process and organizational factors, which provides for the Hungarian Army to develop the new methods of CIS which is in match with the new warfare precepts.

Research objectives

1. To analyze and examine the principles and system activities of NATO's crisis response operations;
2. to determine the general operational challenges, capabilities that are define the HDF's development trends, particularly the CIS;
3. to formulate the communication and information support of the crisis response operations;
4. to present and to analyze the communication and information support of the HDF's multinational operations;
5. to determine the capabilities, requirements, and different factors that are affecting the organization of modern CIS in multinational crisis response operations;
6. to propose a possible conceptual process of CIS planning.

Research methods

1. I've drove a literature examination and literary research on the area of literature being attached to the topic;

2. I've studied the different laws, decisions and measures related to the HDF's crisis response operations;

3. I've prepared consultations with professionals who operated in multinational operations;

4. I've examined the organizational principles considering my experiences in international professional exercises;

5. I've analysed and I've drew conclusions from the abilities and organizational procedures of the present CIS;

6. I've determined a possible organizational principle based on the strength of the organized knowledge, on the part of inferences, and on the capabilities and factors which affect the CIS.

The structure of dissertation

In the first chapter I analysed the basic principles of the multinational crisis response operations, and I examined the general operational capabilities and requirements of the participant forces in NATO CROs in the mirror of Summit Meetings. Based on the particular ones I examined the national developments insuring the capabilities and the tasks of the HDF. According to the results I defined CIS as a supporting system of the crisis response operations.

In the second chapter I described those CROs, in which the Hungarian Defence Forces is (was) participating. I studied political and legal backgrounds, the force composition and its tasks. I examined the structure of the communication and information support, the applied devices, connections. According to the principle of information connections I did the analysis of CIS.

Based on the first two chapters, *in the third chapter* I defined the professional requirements and influencing factors which are practising effects on the process of organizing info-communication systems. Based on the summarised inferences, I presented a mechanism for the organizing a complex CIS that support the multinational operations.

The final part implies the important recommendations, the considerations and the deductible conclusions, scientific results.

Conclusions

1. Based on the international and domestic experiences I stated, that it is necessary to create small-sized forces with multi-functional capabilities (with the supplement of civil abilities), equipped with modern military technical devices, which are fit to the complex operational requirements and to command needs. These forces are able to liquidate the international conflicts and to the domestic applications equally, and according to the ongoing requirements it could be developed with relatively small costs.

2. Based on the general operational capabilities and claims I confirmed that the definition of CIS used by the HDF doesn't imply those complex characteristics (because of the equipments and theirs capabilities) that the info-communication systems of the CRO include.

3. By analyzing of the examined and introduced communication and information support of the HDF's multinational operations I drew the conclusion, that the planning and organizational methods of CIS include a complex process, which has to consider the factors of the cooperating nations, of the specialized tasks and of the mission area.

4. In the interest of the support of the commanding leadership, it is necessary to provide to process and to transmit the optimal information which are expanding on all areas and on all subtasks. In the interest of this I emphasized all the requirements, capabilities and other factors which appear through the multinational operations.

5. Based on the results, I defined and established such kind of structure, which could be the basement for organizing a complex CIS, that adequate for the NATO requirements and able to support the multinational cooperation. The planning system has to be defined on the operational claims, on the system requirements and on the opportunity of the technical realisation. This triple factor appears in all cases according to the continuous control and the basic principle of feedback in the workflow.

6. From my experiences the present field communication system does not form an unified system, and it is not fit for the modern operational challenges. That's why I suggest to use (buy) modern and complex field CIS which could support equally the command of traditional and the crisis operations.

Scientific results

1. By analyzing and evaluating of the PhD thesis related documents (laws, norms, doctrines) I've determined the CIS abilities and requirements regarding to crisis response operations and I defined novel terms of it.

2. Compared the experiences of international roles and the strategic-tactical abilities I defined the requirements of the crisis response operations supporting CIS. I defined those factors as well, which are influencing the organization and planning methodologies of CIS.

3. I defined the unified and complex supporting demand CIS elements of traditional and crisis response operations related command and control.

Recommendations for Practical Usage

In my opinion, the results of the PhD thesis could be used in the organization of CIS elements in crisis response operations. These can be integrated into the educational system – both for BSc and MSc level and further professional training – of the Bolyai János Military Technical Faculty of the Zrínyi Miklós National Defence University.

The described and determined organizational principles could offer a very good basement for further research of the related topics and for other special fields (info security, informatics, technical tools, abilities offered by networks) analyzes and PhD works.

1st. Lt. Tibor FARKAS's publications

Scientific papers

(1.) Tibor Farkas: The planned communications system of the Hungarian Home Defence Forces
In.: AARMS Volume 4, Issue 3, Miklós Zrínyi National Defence University, Budapest 2005; p. 475-480.

(2.) Farkas Tibor hadnagy: A honvédség tervezett kommunikációs hálózata
In.: Kard és Toll 2006/1; ZMNE Budapest 2006; p.: 53-57.

(3.) Sándor Miklós – Farkas Tibor: A honvédség állandó hírhálózatának fejlesztési kérdései
In.: Kard és Toll 2006/2; ZMNE Budapest 2006; p.: 158-165.

(4.) Sándor Miklós – Farkas Tibor: A Bluetooth és a vezeték nélküli személyi hálózatok

In.: Kard és Toll 2007/1; ZMNE Budapest 2007; p.: 93-106.

(5.) Farkas Tibor - Sándor Miklós: Bepillantás a vezeték nélküli hálózatok világába

In.: Kard és Toll 2007/1; ZMNE Budapest 2007; p.: 106-117.

(6.) Farkas Tibor: Válságkezelés, válságreagáló műveletek

In.: Hadtudományi Szemle 2008/1, ZMNE Kossuth Lajos Hadtudományi Kar Tudományos On-line Kiadványa; p. 1-7.

(7.) Farkas Tibor – Sándor Miklós: A válságreagáló műveletek híradásszervezésének néhány alapvető kérdése

In.: Honvédségi Szemle; 63. évf. 4. szám (2009. július); p.: 23-25.

(8.) Németh József – Farkas Tibor: Irak: egy évvel a kivonulás előtt - pénzügyi kérdések

In.:http://www.biztonsagpolitika.hu/index.php?nav=narch&start=35 (2009.09.07)

Scientific conference publications

(9.) Farkas Tibor: A Blackberry rendszer

In.: „Kommunikáció 2007" nemzetközi tudományos-szakmai konferencia lektorált anyaga, ZMNE, Budapest 2007; p. 120-125.

(10.) Tibor Farkas: Informatic Network Management in the Hungarian Defence Forces

In.: „Kommunikáció 2007" nemzetközi tudományos-szakmai konferencia lektorált anyaga, ZMNE, Budapest 2007; p. 160-165.

(11.) Farkas Tibor – Pándi Erik: Az IT szakterület megközelítése, behatárolása

In.: „Kommunikáció 2008" nemzetközi tudományos-szakmai konferencia lektorált anyaga, ZMNE, Budapest 2008; p. 226-233.

(12.) Prisznyák Szabolcs – Pándi Erik – Farkas Tibor: Az információtechnológiai rendszer veszélyeztetettségi kérdései a rendvédelem területén

In.: „Kommunikáció 2009" nemzetközi tudományos-szakmai konferencia lektorált anyaga, ZMNE, Budapest 2009; p. 127-136.

(13.) Farkas Tibor – Németh József Lajos: A „héják" és a „galambok" mint a közvélemény és kommunikáció befolyásolói

In.: „Kommunikáció 2009" nemzetközi tudományos-szakmai konferencia lektorált anyaga, ZMNE, Budapest 2009; p. 207-214.

University curriculum

(14.) Sándor Miklós – Farkas Tibor: A lövészdandár híradása; egyetemi jegyzet 952/574; ZMNE Budapest, 2008

(15.) Sándor Miklós – Farkas Tibor: A híradókatonák és híradó alegységek kiképzésének szakmódszertana; elektronikus egyetemi jegyzet; ZMNE Budapest, 2008

(16.) Sándor Miklós – Farkas Tibor – Jobbágy Szabolcs: Híradásszervezés; egyetemi jegyzet; ZMNE Budapest, 2009

Curriculum vitae

Personal data

Name:	Tibor FARKAS
Birth place, date:	Eger, 2. July 1981.
Marital status:	married
Place of work:	Zrínyi Miklós National Defence University
	Bolyai János Military Technical Faculty
	Signal Department
Rank:	1st. Lieutenant
Status:	assistant professor

Studies

2004 - 2007 Zrínyi Miklós National Defence University,
Kossuth Lajos Military Science Faculty
PhD School of Military Sciences; Budapest

1999 - 2004 Zrínyi Miklós National Defence University,
Faculty of Management and Organization, Military Technical Manager degree course, Military Communication System Organizer specialization; Budapest

1995 - 1999 Lenkey János Military High School; Eger

Language skills

Military english advanced level (C1), combined (C)
Military French elementary level (B1), combined (C)

Career:

2007-	Zrínyi Miklós National Defence University, Bolyai János Military Technical Faculty, Signal Department (assistant lecturer, assistant professor)
2006-2007	HDF Support Brigade, Signal and Informatic Maincenter, National Network Management Maincenter (informatic officer)
2005-2006	HDF Signal and Informatic Command, National Network Management Maincenter (informatic officer)
2004-2005	HDF 43. Command Support Battalion, Signal company, 2. Signal Center Platoon (platoon commander)

Membership

Scientific Association for Info-communications Hungary

Honours

2009	Bronze Service Honour Degree
2005	Memorial Plaque (Zrínyi Miklós National Defence University)
2004	Memorial Ring (Zrínyi Miklós National Defence University)

Budapest, 15 July 2010.

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