

## THE INNOVATIVE ELEMENTS OF THE CONDUCT OF FOURLOG LOGISTICS TRAINING 2018 AND THEIR APPLICATION IN MILITARY HIGHER EDUCATION

### A FOURLOG 2018 LOGISZTIKAI KIKÉPZÉS VÉGREHAJTÁSÁNAK ÚJSZERŰ ELEMEI ÉS AZOK ALKALMAZÁSA A KATONAI FELSŐOKTATÁS GYAKORLATÁBAN

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#### Abstract

*FOURLOG Logistics Training 2018 was conducted in March 2018 with the participation of four nations. The exercise took place in several military and civilian installations in the areas of three countries: Austria, Hungary and the Czech Republic. As many as 50 appointed members of the teaching staff and the cadet body from the Logistics School of the Austrian Bundesheer, the Department of Logistics of the Faculty of Military Leadership of the Defence University in Brno, the Military Academy in Belgrade and the Military Logistics Institute of the Faculty of Military Sciences and Officer Training of the National University of Public Service in Budapest participated in the exercise.*

**Keywords:** *logistics training, logistic planning work, staff work, logistic estimate, risk analysis, risk management and treatment, logistic effects*

#### Absztrakt

*A FOURLOG 2018 Logisztikai Kiképzés 2018 márciusában került megrendezésre négy ország részvételével. A kiképzési foglalkozásokat három ország, Ausztria, Magyarország és a Cseh Köztársaság civil és katonai objektumaiban hajtottuk végre. A kiképzés végrehajtásában az Osztrák Szövetségi Haderő Logisztikai Iskolájának, a brno-i Védelmi Egyetem Katonai Vezetői Karának, a belgrádi Katonai Akadémiának és a Nemzeti Közszolgálati Egyetem, Hadtudományi és Honvédtisztképző Kar, Katonai Logisztikai Intézetének oktatói és hallgatói vettek részt, mintegy 50 fővel.*

**Kulcsszavak:** *logisztikai kiképzés, logisztikai tervezőmunka, törzsmunka, logisztikai tervezés, kockázat elemzés, kockázat kezelés, logisztikai hatásalapú tevékenységek*

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## **INTRODUCTION**

The FOURLOG Logistics Training has a history of more than one and a half decades. Since its establishment in 2000 its content has been continuously developed in order to meet the new challenges emerging in the field of military logistics.

Compared to previous years in 2018 the conduct of the training contained several new elements in terms of training characteristics and the conduct of the logistic estimate. For this reason, in our article we would like to assess the experience we gained during the practical preparation of the cadets and their conduct of the logistic estimate. We also wish to determine the new directions which can further assist the preparation during the Bachelor's Degree program of the military officer cadets studying in the Institute of Military Logistics for tours of duty abroad and Logistics Staff Work at military organisations.

Planning, organizing and carrying out the preparatory tasks of the training represented significant additional tasks for faculty members due to the fact that cadets from all the three specialisations of the Bachelor's Degree program of the Military Logistics Institute (Military Supply, Military Movement and Transportation and Maintenance) were involved in conducting the professional tasks of the training.

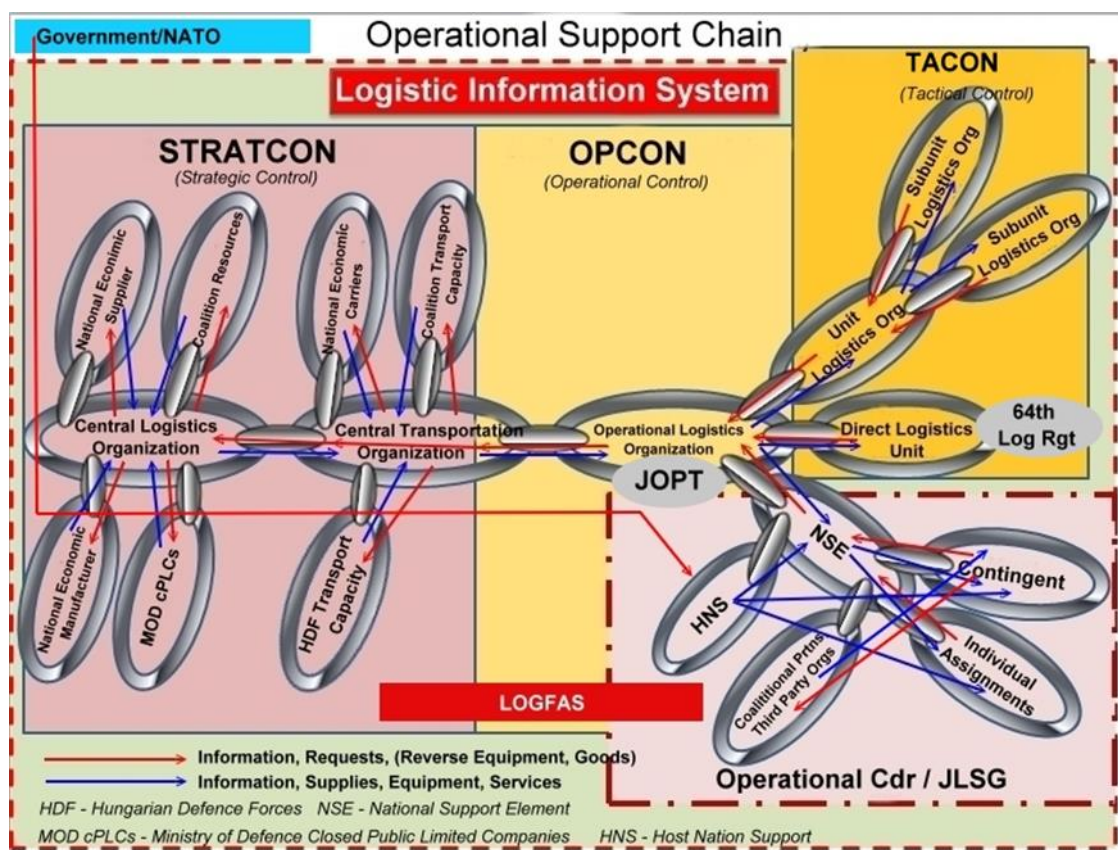
### **THE NEW ELEMENTS OF THE PREPARATION AND THE TASKS OF THE TRAINING AND THE HARMONIZATION OF PREPARATION FOR PROSPECTIVE PROFESSIONAL TASKS BETWEEN THE SPECIALISATIONS OF THE MILITARY LOGISTICS BACHELOR'S DEGREE PROGRAM**

The FOURLOG Logistics Training dates back 14 years. It was first held in 2004 with the participation of four countries and it has been successful ever since. The key to the success of the training is rooted in the fact that the military higher education institutions involved realized in good time that a country's preparation for operational duties must be started in the educational institutions prior to the national preparation happening before the actual operational duty, since doing this training will lead to immediate tangible results when carrying out future duties. The officer candidates taking part in the training become familiarized with the characteristics of multinational staff work, the possible methods of planning, organizing and providing logistic support in an area of operations, and last but not least they acquire the basic terminology necessary to accomplish their tasks smoothly.

At the Logistic Institute of the Faculty of Military Science and Officer Training of the National University of Public Service the Bachelor's Degree program contains tactical level training, the content of which is designed to prepare cadets for logistics sub-unit command and other special logistic tasks. As a result, in this case we are talking about the tactical level of the Operational Support Chain, however, real life situations do not allow for the separation of tactical and operational level work.

During the Bachelor's Degree program the preparation for multinational operations (FOURLOG) includes the following elements:

- accomplishing sub-unit command tasks (on operations understanding and interpreting the task, the placement and deployment of the sub-unit, running the functional support elements, force protection, making and reporting decisions) at tactical level in the area of responsibility of the battalion or brigade;
- participation in conducting the logistic estimate in order to prepare the redeployment of forces, using the necessary program systems, planning and organizing special supply tasks at brigade command level or in the Op Theatre element of operational logistic support;
- understanding the functions and operating principles of each element of the support chain, practising cooperation (See Picture 1).



Picture 1 Operational Support Chain of HDF [1]

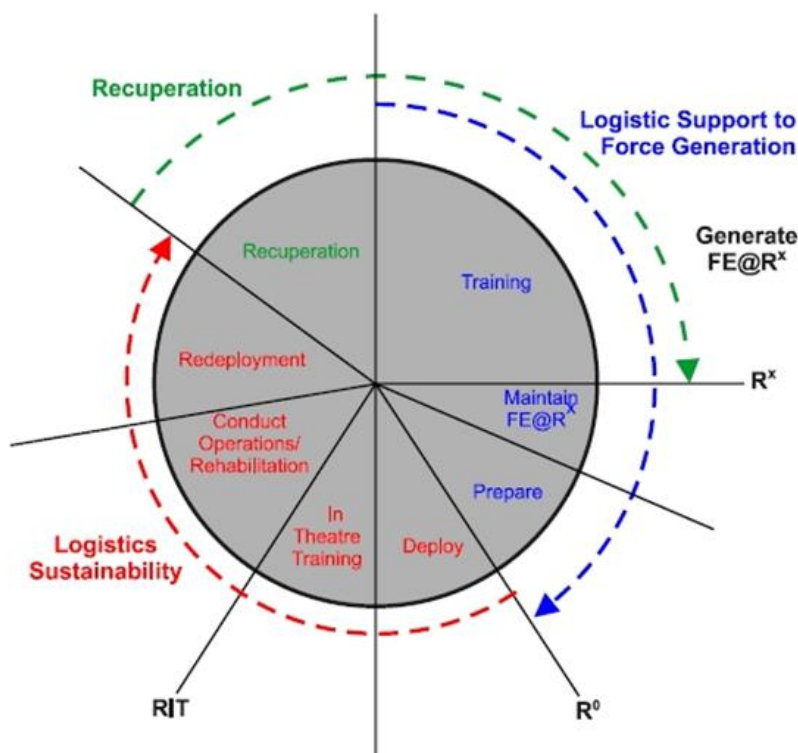
The logical structure of the subjects did not basically change as a result of the curricular reform in 2011, however, the names of the subjects became more concrete. In the fourth semester the military officer cadets learn the fundamentals of logistic support (Log Sp), followed by the battalion level course ending with an exam in the fifth semester. After familiarization with the employment and logistics support of the infantry battalion, over one semester topics related to crisis management and Battle of Infantry Battalion in Defence are dealt with through a Battalion Level Full Scale Tactical Task. Within this framework officer cadets participate in several one-day long field practices, during which they learn the tasks of both sub-unit commanders and logistics officers.

In the seventh semester of officer training cadets are taught the employment of and the fundamentals of the operational logistics support of the infantry brigade. The acquisition of brigade level knowledge is necessary because, in reality, beginning officers usually spend very little time in sub-unit command appointments. It is quite common that there being vacant appointments and deployment tasks, as logistics officers they are required to lead the Log Branch at brigade level. In order for someone to be able to organize logistics support at this level in operational employment conditions, basic knowledge related to the employment of the given formation is indispensable. For this reason, despite the “standardization” requirement that on every Bachelor’s Degree course the cadets should be trained for sub-unit command tasks, in the new Military Logistics Bachelor’s Degree course we kept the tried and tested model of dual sub-unit commander and logistics officer training, which fully meets the requirements of the logistics chiefs of the Hungarian Defence Forces. Following the brigade level course, the eighth semester focuses on practical training, the curriculum of which includes the practical tasks of the logistic support of brigade operations as well as acquisition of certain modules of the LOGFAS program in the framework of the preparation for the FOURLOG Logistics Training.

The aims, content and practical tasks of the FOURLOG Logistics Training totally ensure that the above-mentioned requirements are met and that after the training the BSc graduates possess the required theoretical and practical knowledge to continue their training on the Master's Degree course.

The training covers a rather wide range of theoretical knowledge, which continuously changes and includes the logistics reconnaissance of the Area of Responsibility of the brigade/battalion, certain elements of brigade-level staff work and conducting the Logistic Estimate and the practical planning and execution of the logistics support tasks based on the Military Event List. The complexity of the tasks to be carried out lies in the fact that in some cases the cadets have to complete the tasks as brigade logistics officers, in others as battalion logistics officers in varying Operational Time, which requires the ability to use in practice all the theoretical knowledge they have acquired during the whole of the Bachelor's Degree course. [2]

Based on the above, in the first phase of the training we focused on the logistics support tasks to be done during the Time of Force Generation.



Picture 2 Logistic Support to the Operational Planning Cycle [3]

During the execution of the task in accordance with the Task Org, the cadets specializing in supply created the Force Profile in the LOGFAS LDM<sup>1</sup> (See Picture 4), based on the valid Norms for Stockpile Planning they calculated the required stocks of materiel in NATO CI I, III and V, and then, in accordance with the Level of Stock Holdings, allocated them to the sub-units. Following this, the cadets specializing in military movement and transportation learnt the methodology of creating Detailed Deployment Plans necessary for Operational Deployment.

<sup>1</sup> Logistics Functional Area Systems LOGFAS Data Management Module

## TASKORG

Unit	Owner	Recce Pty	Adv Pty	Main Body	Op Onhand	Key Capability/Role
HQ Coy/BDe HQ	AUT-CZE-HUN-SRB	3	10	31	44	C2
Recce Coy	SRB	1	2	67	70	Recce Sp to Op
Eng Coy	HUN			132	132	Eng Sp to Op
Sig Coy	AUT			108	108	Sig Sp to Op
NBC Pln	CZE			36	36	NBS Sp to Op
1 Inf Bn	AUT	7		479	486	Pk, FP, HA
2 Inf Bn	CZE	8		621	629	Pk, FP, HA
3 Inf Bn	HUN	8	100	380	488	Pk, FP, HA
4 Inf Bn	SRB	8	100	378	486	Pk, FP, HA
Log Bn	AUT-CZE-HUN-SRB	4	40	197	241	1st line Log Sp to Op
SAM Bty	HUN			53	53	Protect Air Space
Med Coy	AUT-CZE-HUN-SRB	2	20	67	89	Med Sp to Op
<b>Totals:</b>		<b>41</b>	<b>272</b>	<b>2549</b>	<b>2862</b>	

Picture 3 TASKORG created for the Operation [2; p. 43.]

The screenshot shows the LDM - [Force Profile and Holdings] application. The main window is divided into several panes. On the left, there's a 'Plan' pane with a dropdown menu and a 'Select a Profile' dropdown. Below that is a tree view showing the organizational structure, including 'HUN001 - Engineer Company' and 'HUN017 - Infantry Battalion'. The central pane displays a table of force elements with columns for Act. Onhand, NIC, RIC, Name, English Name, and LIMS (484.92). Below this table are filters for Nation (HUN: Hungary), Service, and Genre. The bottom pane shows a detailed view of force profiles and holdings, with columns for NIC, RIC, NATO Stock Nr, Name, English Name, Service, Nation, and Type. The bottom right corner of the window shows 'NATO UNCLASSIFIED' and some system information.

Picture 4 Force Profiles and Holdings of HUN Force Elements (Venekai József, Pap Andrea, 2018.)

Staff Work, in particular the practical use of certain simplified elements of Tactical Level Operational Planning and Logistic Estimate, has been included in the training. At the moment the Bachelor's Degree course does not include these areas, however, since the curriculum prepares our cadets for brigade level logistics officer positions, we think it is important.

During the conduct of the training the cadets must be familiar with the planning procedures the results of which are determinant for the provision of logistic support to the operation. „The logistic estimate is an integral part of operational planning, it is a complex of assessment, analysis, decision preparation and decision-making processes which are aimed at determining the logistic requirements of military operations, meeting those requirements and the efficient and effective use of logistics organisations.” [4] In accordance with this, on the first day of the training the cadets were given a one-hour long lecture to familiarize them through practical examples with the steps of tactical level planning of the operation and Logistic Estimate emphasizing that it is significantly different from the methods of Battle Planning. [5]

The lecture focussed on the following planning results:

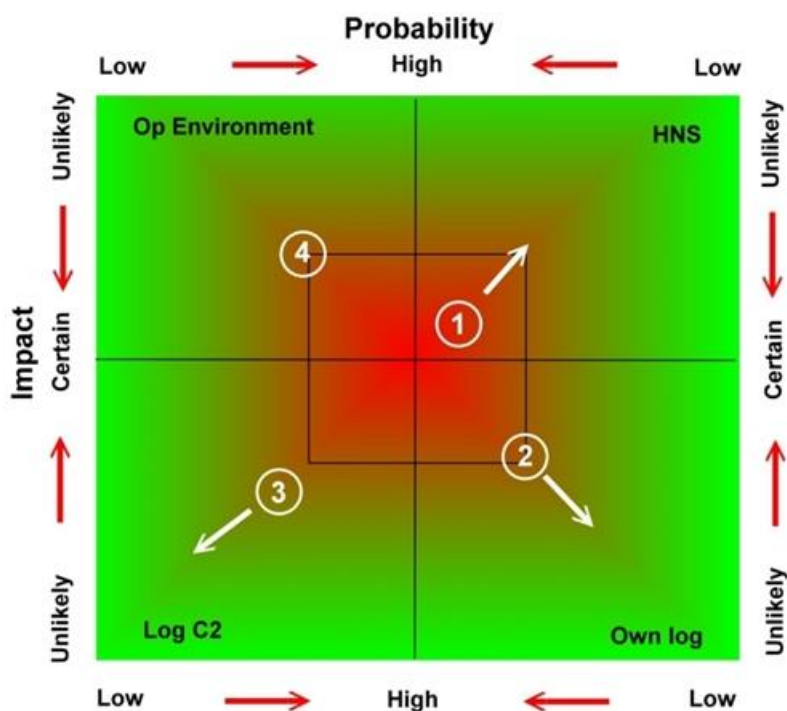
- Situational Awareness;
- Tactical Assessment (Mission Analysis) including Centre of Gravity Analysis (CoG);
- Simplified Mission Analysis Summary;
- Object and Factor Analysis (Log 4D2 Analysis);
- Log Effects Schematics;
- Own Log related risks.

After the lecture the cadets participating in the training carried out the assigned tasks of the planning on their own, based on the data available to them (Operational Scenario, MIS<sup>3</sup>, Bde CO's Order, Country Book, Map of the Operation). Their results were then compared with the results arrived at by the exercise leader and the mistakes arising from lack of experience were analysed. The cadets' situation was further complicated by the fact that in order to complete certain sub-tasks, such as risk analysis and risk management, it is necessary to be familiar with the special methodology of their completion. Although this method has already been used in business for a long time, during the training the cadets had to be familiarized with its military application.

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<sup>2</sup> Destination, Distance, Demand, Duration

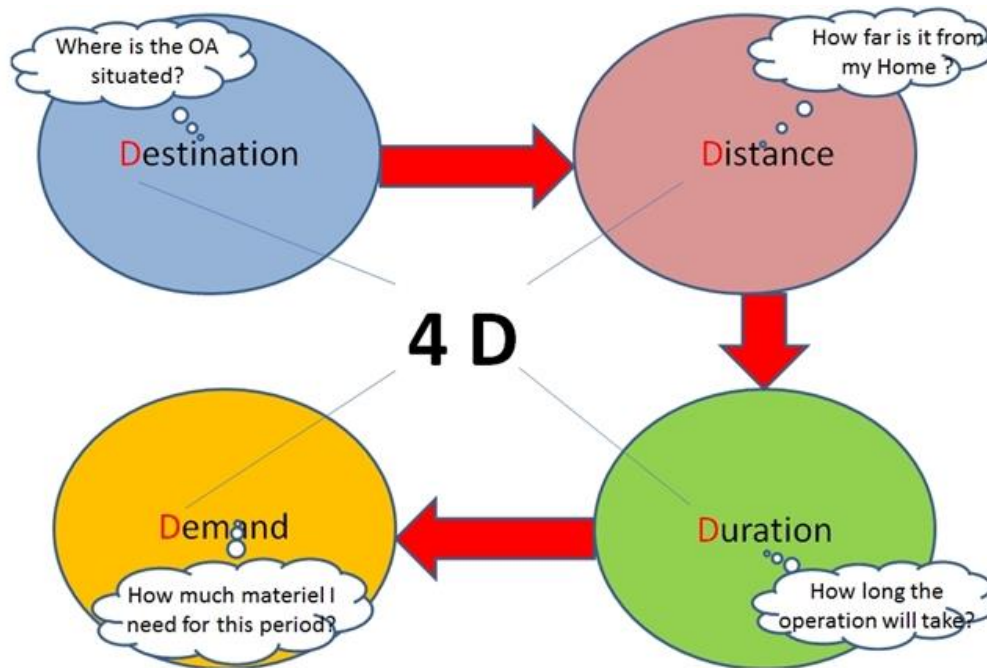
<sup>3</sup> Minimum Information Set (Planning Input)



Nº	Risks Identified and Classified	Probability/Impact
1.	Lack of HNS and Contracting in the period of D – D+30	Weakening
2.	Gaps in Supplies	Weakening
2.	Week Log C2 Functionality in the period of D – D+10	Weakening
4.	Defects in operation of the key Log Infra	Permanent

**Picture 5** Probability-Impact Graph (Risk Heat Matrix), Logistic Estimate, Logistic Training FOURLOG (Venekei József, Pap Andrea, 2018.)

In the course of the 4D analysis the cadets considered the qualitative and quantitative factors influencing the requirement they determined (See Picture 6). For the purpose of determining the requirement, the exercise leader provided the Prospective Chronology of the Op, with the help of which the necessary materiel resources to deliver the sustainability of the operation can be roughly predicted.



Destination	Distance
<ul style="list-style-type: none"> <li>- Staging Areas</li> <li>- FMB</li> <li>- Climate, Geography</li> <li>- In Theatre Infra</li> <li>- HNS</li> <li>- Risks (Threats)</li> </ul>	<ul style="list-style-type: none"> <li>- CSC (Convoy Support Centre) Requirement</li> <li>- Loop Times</li> <li>- Possible Sup and Transport Routes</li> <li>- Log Sp (Sketch 1st, 2nd and 3rd Line Log Sp)</li> </ul>
Demand	Duration
<ul style="list-style-type: none"> <li>- DOS Holdings (by levels)</li> <li>- Additional Requirements</li> <li>- Supporting Units (1st; 2nd; 3rd line)</li> <li>- Qualitative and Quantitative Factors</li> </ul>	<ul style="list-style-type: none"> <li>- Sp Periods according to the phases of the operation</li> </ul>

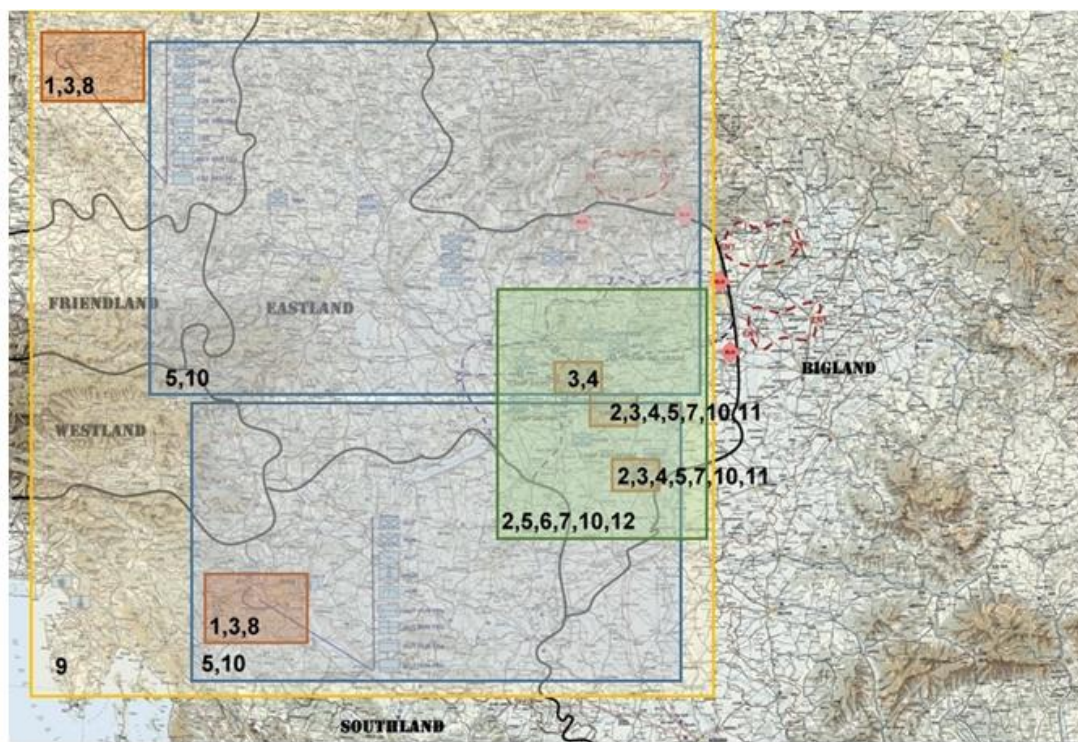
Picture 6 Simplified 4D Annalysis, Logistic Training FOURLOG [2; p. 6.]

The next task of the cadet syndicates was to create the Logistic Effects Schematic, the graphical mapping of the CONLOG<sup>4</sup>, based on the course of action they were given. The Log Effects Schematic graphically describes all the CSS<sup>5</sup> activities that logistically ensure the achievement of the mission and the required end state. While creating the schematic the cadets relied on the table they had been given and which contained the detailed definitions of CSS specific activities.

<sup>4</sup> Concept of Logistics

<sup>5</sup> Combat Service Support





Nº	CSS Tasks/Effects to Deliver	Purpose
1.	<b>Embarkation</b>	Load personnel and/or vehicles and their associated stores and equipment of the Bde FEs onto aircraft, rail or road transport.
2.	<b>Receipt</b>	Take delivery of a consignment or BDe FEs, including personnel, equipment and materiel.
3.	<b>Inloading</b>	Forward movement of equipment and materiel of the BDe FEs.
4.	<b>Disembarkation</b>	Unload personnel and/or vehicles and their associated stores and equipment of the BDe FEs from aircraft, rail or road transport.
5.	<b>Transport</b>	Move equipment, personnel or materiel of the BDe FEs from one location to another.
6.	<b>Repair</b>	Restore operational functions to an equipment or damaged parts by adjustment, manufacture or the replacement of defective components.
7.	<b>Re-Supply</b>	Provide your supported FEs with or obtain a fresh supply to maintain required levels.
8.	<b>Staging</b>	Process, in a specified area, where your BDe FEs which are in transit from one locality to another.
9.	<b>Sustain</b>	Maintain the necessary levels of combat power of your BDe FEs for the duration required to achieve objectives. (Campaign Objectives)
10.	<b>Backloading</b>	Rearward movement of the BDe FEs' equipment, casualties and materiel
11.	<b>Support</b>	Aid, complement or sustain another force, individual, or group(s).
12.	<b>Crossloading</b>	Move a consignment from one transport asset to another of the same mode.

Picture 7 Log Effects Schematics, Logistic Training FOURLOG (Venekei József, Pap Andrea, 2018.)

In the Hungarian phase of the training the tasks designed on the basis of the MEL/MIL, and aimed at organizing the logistics support tasks of the battalion/brigade were complemented with the special tasks of the various specialisations encompassing the whole training cycle.

## **LESSONS THE INSTRUCTORS LEARNED FROM FOURLOG LOGISTICS TRAINING 2018**

The preparation of the cadets for the training took place consistently, gradually and smoothly owing to the fact that the material of the preparation was integrated into the “Logistics Support of Peace Support Operations” subject and as a result no extra lessons had to be taught. This subject is included in the “Teaching and Examination Schedule” of both the Military Supply and the Military Movement and Transportation specializations. The situation is different in the case of the Maintenance specialization because the training is not included in the teaching schedule at all so the participation of the cadets of this specialization was not ensured. Since the training involves several areas where special professional and language knowledge is required, these cadets had a significant handicap during the conduct of the training when they had to complete professional tasks. The inadequacies of preparedness were obvious during the Hungarian phase of the training. In our opinion this problem can only be solved if there is a consensus within the Military Logistics Institute.

Compared to the previous years, the practical training of the cadets during the Austrian phase declined. It means that while previously during the preparation for a peace support operation the cadets carried out the training tasks in practice, now the training sessions held by the Austrian party are purely demonstrative and include several elements which are irrelevant for the cadets specializing in various areas of military logistics (e.g. the use EOD robots) or their importance from the point of view of the training task is negligible.

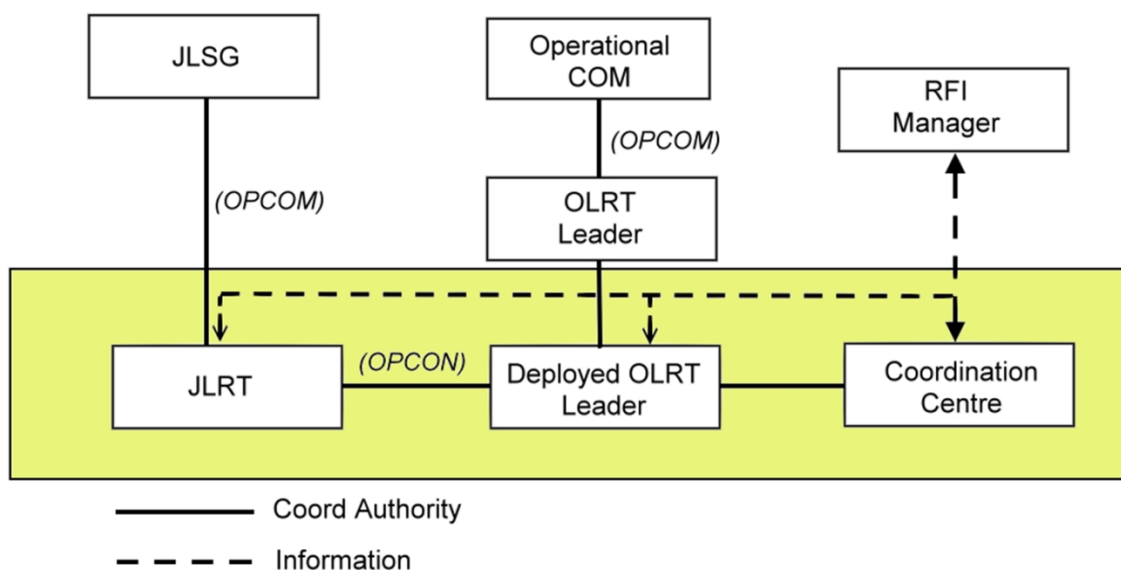
The situation is similar during the Czech phase of the training, where the participants are required to recce the deployment area of the functional elements of the logistics company of an infantry battalion, which can also hardly be fitted to the training task. For this reason we made recommendations for the complete revision of the practical tasks, which our foreign partners accepted and this is what will be the topic of the next exercise preparatory meeting. This year, because of the national holiday on 15 March and the subsequent long weekend, the logistic reconnaissance of the area of operations could not be carried out. We managed to solve this problem by including a theoretical preparatory session, where through lectures given by the exercise leader, the cadets became familiar with the possible composition and OA activities of the reconnaissance teams (OLRT<sup>6</sup>, JLRT<sup>7</sup>, BPRG<sup>8</sup>) working in accordance with the reconnaissance matrix of the commander of the operation (See Picture 8). Following this, the Chief of Staff (COS) of the multinational brigade gave a detailed evaluation of the AOR of the brigade and the Key Log Infra in it.

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<sup>6</sup> Operational Liaison and Reconnaissance Team

<sup>7</sup> Joint Logistic Reconnaissance Team

<sup>8</sup> Brigade Preparational and Reconnaissance Group



**Picture 8** Connection, Authority and C2 of the Reconnaissance Groups acting in the JOA<sup>9</sup> [6]

In the area of foreign language skills we have seen significant positive changes. In terms of general language skills, the cadets have been excellently prepared. However, for objective reasons the cadets' special military language knowledge is not up to the level which is required to understand the special military material involved in the training. We do not think it is an inadequacy for the simple reason that the preparation for the NATO STANAG 6001 language exam is focussed on topical military-political and security policy issues on the one hand, and on the other hand, looking at it objectively, it is impossible for the foreign language institute of the university to embrace teaching special military language and terminology since the foreign language teachers neither have the necessary military background nor the special military professional knowledge. General military knowledge can, by no means, be regarded as military technical language. For example, in order for a logistics cadet to be able to carry out their professional tasks smoothly in a foreign language environment, they need to be familiar with the terminology of economics, general logistics, the given logistics functional area and the NATO terminology of the given area. The situation is further complicated by the fact that the terminology varies from level to level (tactical, operational, strategic). The same is true of the terminology of the other branches and services. Military technical language can only be acquired properly if the graduate spends years in a foreign language environment in appointments at different levels. An invaluable benefit of international training exercises is that the cadets have the opportunity to learn the basic military technical language corresponding to the level of training, upon which they can build their knowledge during their career.

## CONCLUSION

From the point of view of instruction, the importance of the FOURLOG Logistics Training lies in the fact that all the cadets of the Institute of Military Logistics of the university take part in it, and thus in the new specialization the operational preparation in all logistics areas happens at the same level, which is made possible by the operational preparation-related

<sup>9</sup> Joint Operational Area

subjects and exercises in the curriculum being based on a consistent concept and a uniform structure.

The content and tasks of the training are continuously shaped and expanded following the new trends and procedures in logistics, which greatly contribute to the high-level professional knowledge of and the acknowledgement of the work done by the officers who have graduated from our institute.

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