USE OF LOGFAS TOOLS IN LOGISTICS PLANNING IN NATO

Miroslav PECINA
Department of Logistics, University of Defence, Brno, Czech Republic
miroslav.pecina@unob.cz

Roman DUFEK
Multinational Logistics Cooperation Centre, Brno, Czech Republic
dfroman@seznam.cz

ABSTRACT

In order to reflect the changes in the current security environment, NATO is adapting its processes and procedures to be more responsive, effective and efficient. This includes implementation of the new NATO Defence Planning process and resulting implications into the operational planning process. The changes are also significantly affecting logistics planning and development of logistics capabilities. Logistics support for NATO operations must be designed the way to reduce the level of duplication of national resources, simplify and streamline logistics flows and to provide NATO Commander with visibility, sufficient authority and flexibility to meet operational requirements. The NATO Commander, to be able to adequately exercise his authority to coordinate and prioritize logistical support, need a visibility of available resources, requirements and processes as the general prerequisite for management of continuous logistic support of operating forces. The article is introducing NATO logistics information systems supporting NATO logistics defence planning as well as operational planning and managing required visibility and information sharing.

KEYWORDS: logistics, defence planning, operational planning, information support

1. Introduction

NATO is using two main types of planning processes. First process covers planning related to a particular mission, and this process is called the operational planning. The second process is dealing with the development of sufficient capability in order to fulfil NATO level of ambitions (LOA), which consist of simultaneous conduction of two major operations (Major Joint Operations – MJO) and six smaller operations (Smaller Joint Operations – SJO). This long-term defense planning process is called NATO Defence Planning Process (NDPP) (LC Secretariat, International Staff, Logistics Capabilities Section, Defence Policy and Planning Division, 2012, pp. 69-77).

Logistics planning in is an integral part of both, the NATO defense planning process as well as the operational planning process.

The reality is that forces from many different nations can be deployed to locations with hostile environment, where will be limited or no host nation support provided and units will operate at long distances for extended period of time. This puts a great emphasis on logistics support and the interoperability of deployed forces. Requirements for logistics support are key parts of main documents, such as NATO Priority Shortfalls Areas or European Union Military Committee Requirement Catalogue.

Logistics capability for NATO operations must be designed in order to reduce the level of duplication of national resources, simplify and streamline logistics flows and to provide NATO Commander with visibility, sufficient authority and flexibility to meet operational requirements. This requires timely, relevant and accurate logistics information that will enable a greater influence on the realization of logistical support. They need to receive such information in the shortest possible time and be regularly informed about changes.

The NATO Commander, to be able to adequately exercise his authority to coordinate and prioritize logistical support, need a visibility of available resources, requirements and processes as the general prerequisite for management of continuous logistic support of operating forces(Sekce logistiky GŠ, 2004).

2. NATO Defence Planning Process

The NATO new defense planning process was for the first time introduced in the year 2009 in order to provide a framework for an integration and harmonization of national and NATO defense planning activities, aiming to achieve stated goals and objectives in the most effective and efficient way.

During the NATO Summit in Lisbon in 2010, Heads of State and Government approved the Alliance's new strategic concept, which emphasized NATO approach to addressing security risks in the 21st century. In the following NATO Political Guidance, there were introduced goals for the required capabilities of NATO for the next ten and more years.

The existing planning processes have been so far properly coordinated and harmonized through all functional areas and the development of capabilities was not sufficiently supported. The holistic approach was missing. Nations requested to integrate and harmonize planning of capabilities development to the extent possible. This led to a fundamental change in the existing NATO defense planning process and resulted in development of the new NATO Defence Planning Process – NDPP.

NDPP is a new four-year planning process and represents five follow on steps to define NATO capabilities needed to fulfill the ambitions of NATO, determine fair share for individual nations, identify possible gaps and also enable incorporation of a multinational or collective solutions of shortfalls. A similar process is also introduced for partner nations, identifying capabilities that are considered crucial by Allies.

DPP provides a working framework in which national and NATO activities can be mutualy harmonized in order to achieve agreed objectives in the most effective way. This process consists of the following five steps (NATO HQ, 2009):

1. Establishment of a political guidance;
2. Determination of requirements;
3. Apportionment of requirements and setting of targets;
4. Facilitation of Implementation;
5. Review of results.

3. Logistics in Defence Planning

Logistics is one of the main areas of defense planning. Logistics Committee, which is the main and highest body of NATO logistics, sets out the key strategic goals for logistics and determines particular tasks in order to achieve them in the document NATO Logistics Vision and Objectives.

This document is the overarching guidance for logistics planning. It includes logistical aspects in the higher level documents (especially NATO Political Guidance) within the NATO defense planning process. Additionally, this document is a fundamental mechanism for management of solutions for logistical shortfalls in current operations, and it provides a guidance for logistics transformation and for provision of logistic capabilities through better harmonization and coordination of otherwise independent efforts.

There are four strategic goals in the area of logistics:

1. Improved deployability
2. Enhanced sustainability
3. Provision of more capable and interoperable logistic forces
4. Optimised logistics command and control

Logistics planning in NATO is a part of the NATO force planning process within the NATO defense planning process. Its purpose is to identify military and civilian capabilities required to deploy, maintain and withdraw of Alliance forces, which would be able to manage and fulfill the level of ambition of NATO. This task is managed by the NATO Strategic Commands in cooperation with individual nations.

Strategic Commands must provide timely and accurate determination of the requirements for logistic forces and capabilities to the NDPP in order to convince nations to develop or procure these capabilities and to assign them and deploy to NATO operations. Authorities, responsibilities and fundings for the multinational logistics agreements are then developed in the process of operational planning.

Strategic Commands established the Logistics Planning Advisory Committee (LPAC) as a logistics forum for providing expert advice on all aspects of logistics in relation to the provision of capable and interoperable logistics forces for the current and future operations. They are dealing with issues arising from the requirements of NATO and nations related to the collective responsibility for logistics and from the strategic goals of NATO logistics. LPAC main effort is dedicated to the logistic part of the NATO defense planning process as well as to the process of forces generation. Recommendations should promote the development of multinational logistic cooperation, to improve the overview and visibility of the logistical requirements and transparency of the implementation process.

4. Information Support of Logistic Defence Planning

To support NATO defense planning process a number of nations is using the Allied Commands Resource Optimisation Software System (ACROSS), which is part of LOGFAS (Logistics Functional Area Service) systems.

ACROSS is an information subsystem for supporting decision making process in planning of stockpiles of the battle decisive ammunition. It consists of a common database (LOGBASE) and four models to calculate expenditure of ammunition:

1. ADMEM – Air Defence Munitions Expenditure Model;
2. AGMEM – Air-to-Ground Munitions Expenditure Model;
3. LEMEM – (Land Forces Equipment and Munitions Expenditure Model;
4. MARMEM – Maritime Munitions Expenditure Model.

Individual models are using linear programming to calculate the optimal mix of ammunition to cause maximum damage of defined targets objectives with the minimum required level of the cost of procured munitions.

The common database consists of several interrelated forms, into which are the data recorded. The database is nominally hierarchical and every modul requires specific data. The results are then presented in both tabular and graphical

form. Solutions can be exported if necessary, to other applications for further analysis (NATO CI Agency ACROSS, 2014).

5. Operational Planning in NATO

With regards to the current security environment, it is expected that future operations will be more complex, will take place in different environments and the armed forces will have to adapt to rapidly-changing developments in the operations, starting from the operations of high-intensity, lethal method of warfare, to the stabilization and peacekeeping operations. Military activities in future operating area can be carried out simultaneously in different locations over the entire spectrum of military operations.

For the preparation and conduct of military operations it is necessary to prepare operational plans at all levels of the NATO command structure. The specific level of command at which the plans are for a particular operation processed depends on the operational task.

Although the level of detail will vary, the operational planning will address the following:

1. Courses of action to successfully meet strategic and operational objectives;
2. The required capabilities of the Armed Forces for conducting of operations;
3. Deployment of the Armed Forces in Joint Operations Area (Joint Operational Area – JOA);
4. Logistic support;
5. The management and use of operational information;
6. Arrangements for command and control (C2);
7. Cooperation with civil authorities;
8. Force Protection.

6. Logistics Planning in the Operational Planning Process

Logistics planning is an integral part of the operational planning process and it is essential to be conducted in parallel. The aims of logistics operational planning process are as follows:

- define the concept of logistic support, including organization and logistics structure;
- identify requirements, deficiencies and necessary arrangements to support forces during the performed tasks (operations);
- define the requirements for the host nation support and/or contractors support in the area of operations;
- specify the requirements and the necessary arrangements for the movement of forces, including preparation for redeployment of personnel, equipment and materials from the area of operations.

The process of logistics operational planning has two levels:

- At the strategic level is effort of logistics planning aiming to defining strategic objectives for logistic support;
- At the operational level, the effort is mainly focused on planning of the allocation of logistics forces, equipment and stocks.

The the logistics planning has a significant role particularly in the following stages of operational planning:

- Assessment of the situation – evaluation of the forces capabilities and means of logistics support, including logistics constraints and limitations that may affect the fulfillment of tasks;
- Development of operational concept - promote the concept of logistic support, transport, etc.;
- Statement of requirements – the incorporation of requirements for logistical support and transportation;
- Force Planning – planning the development of logistics units, arrangements and agreements for the provision of multinational logistic support;
- Issuing a request for activation of forces – involvement in logistics planning conferences in order to coordinate the logistic concept of operations;

• Execution of the operational plan – implementation of the logistical aspects of the operational plan.

The important part of logistic planning within the process of operational planning is planning of specific logistics tasks, for example planning of movement and transportation, host nation support, construction of infrastructure, contractors support, multinational cooperation arrangements, etc. Appropriate NATO Headquarters are responsible for organizing logistics planning conferences, where all key stakeholders collaborate on all aspects of logistics support.

The result of logistic planning conferences is determination of the logistics command and control structure, optimisation of logistics support, harmonization of logistic plans at all levels of command and control and developed solutions to the identified deficiencies and problems.

7. Information Support for the Logistics Operational Planning

Automated support for the operational planning process in logistics in NATO is provided by LOGFAS (Logistics Functional Area Services), encompassing the NATO tools for planning, analyses, execution and reporting. It includes the following modules:

• GEOMAN (Geographical Data Management Module);

• LDM (LOGFAS Data Management Module);

• SPM (Sustainment Planning Module);

• ADAMS (Allied Deployment and Movements System);

• CORSOM (Coalition Reception, Staging and Onward Movement).

For verification and simulation of the planned logistics support is used following module:

• SDM (Supply Distribution Module).

Finally, after beginning of the multinational operations, within the operational control of logistic support is used following module:

• EVE (Effective Visual Execution).

GEOMAN (Geographical Data Management Module)

GEOMAN is a software application that provides a „map - imaging" geographic and other related services.

The aims of GEOMAN are:

• To provide comprehensive imaging functions for planning and operational management of relocation and transportation;

• To be a central access point for managing geographic information within the group LOGFAS tools.

Applications GEOMAN can be used for:

• Setting and display maps;

• Setting and display map layers;

• Setting locations (e.g.: ports, airports, RSOM locations, etc.).

• Definition of the infrastructure (e.g.: ramps, bridges, airfields etc.).

• Creation of road, railway and other networks.

GEOMAN is a standalone application, but it can also be used as a component in other applications. GEOMAN major part of the functionality is directly available in the subsystems ADAMS, CORSOM, EVE and SDM (NATO CI Agency, 2014).

LDM (LOGFAS Data Management Module)

LDM is the basic module of LOGFAS for management of data of non-geographic character. It enables establishment and management of following entities and plans (NATO CI Agency, 2014):

• Items

• Units and Forces

• Force Organization and Holdings

- Force Resupply Profile
- Plan of operation
- Statement of Requirements
- National Disposition List

SPM (Sustainment Planning Module)

SPM is primarily intended for operational planning of logistics support of units in a multinational operation. In general, it is possible to use this module for the following types of calculations (NATO CI Agency SPM, 2014):

- Planning for long-term stocks;
- Planning of the logistics support of units in operation;
- Sustainability analysis of logistics resources in operation.

ADAMS (Allied Deployment and Movements System)

Aim of ADAMS is to reduce deployment planning time and provide means to exchange national data and deployment plans. It is used for planning, evaluation and simulation of movement and trtansportation in support of multinational operations. Data include the list of personnel, equipment, supplies, modes of transportation, lines of communication and movement schedule. The output is a Detailed Deployment Plan (DDP), which consist of general information what, where, when and how forces and assets are moving. The Allied Movement Coordination Centre is collecting national DDPs, deconflicts them and develops the multinational DDP (NATO CI Agency ADAMS, 2014).

CORSOM (Coalition Reception, Staging and Onward Movement)

CORSOM is a module designed for planning, monitoring and deconflicting of RSOM (Reception, Staging and Onward Movement) activities during the deployment of forces. It enables (NATO CI Agency, 2014):

- detailed planning and coordination of ground movements and military transports from unloading locations to final destinations of units;
- monitoring of the traffic, convoys and trains administration and management, planning, analyses, situation awareness, choice of alternative routes, sharing of information, and much more.

EVE (Effective Visual Execution)

EVE is a tool designed to provide visibility of movement and it supports review, prioritisation and deconfliction of the force flow to the theatre. It is tool for execution of plans developed in ADAMS and CORSOM (NATO CI Agency, 2014).

8. Conclusion

Appropriate network information environment and the necessary tools are essential prerequisite in order to improve logistics efficiency in the current operating environment, which is characterized by frequent changes and by the need for ccomplex support of multinational forces in a hostile environment with minimal available local resources.

At present, NATO experts are working on preparation and developing of the new logistics information environment, LOG FS (Logistics Functional Services), which will replace the existing LOGFAS. It is essential that the LOG FS LOG will provide the functionality needed for the command and control all logistics components, including the provision of logistic information into a Common Operational Picture. By fulfilling this functionality the LOG FS will achieve the full operational capability.

From the LOG FS it is expected to maximize the use of existing resources and capabilities (for example tools of LOGFAS) and to provide additional functions including satisfaction of requirements that are not currently supported. It should improve the overall integration, provide

interoperable solutions while using new technologies and to improve the life cycle of economies of resources, particularly by eliminating duplication and by centralizing common functions.

This new LOG FS environment will be created on the basis of LOGBIDS (Logistics Intelligence and Support Services), as a part of an agreed Capability Package.

In parallel, NATO is conducting a comprehensive review of the Alliance Capability Packages and projects to determine their validity in the current security environment and their relevance to the new NATO defense planning process. This will enable a gradual allocation of resources and to provide a pragmatic approach to their implementation.

REFERENCES

LC Secretariat, International Staff, Logistics Capabilities Section, Defence Policy and Planning Division. (2012). Operations Logistic Planning. *NATO Logistics Handbook.* Brussels, Belgium: NATO HQ, pp. 69-77.

NATO CI Agency ACROSS. (2014). Allied Commands Resource Optimisation Software System. *Project documentation LOGFAS*. The Hague, Netherlands.

NATO CI Agency ADAMS. (2014). LOGFAS Allied Deployment and Movements System Basic Users Course. *Project documentation LOGFAS*. The Hague, Netherlands.

NATO CI Agency. (2014). LOGFAS Fundamentals Course. *Project documentation LOGFAS*. The Hague, Netherlands.

NATO CI Agency SPM. (2014). LOGFAS Sustainment Planning Module User Course. *Project documentation LOGFAS*. The Hague, Netherlands.

NATO HQ. (2009). PO(2009)0042. *Outline Model for a NATO Defence Planning Process*. Brussels, Belgium.

Sekce logistiky GŠ. (2004). Zásady a postupy pro logistiku NATO. *MC 319/2*. Praha, Czech Republic.