JALLCCG/09/022
02 March 2009

NATO Logistics Support to ISAF

The recommendations included in this report require endorsement by the Strategic Commands and/or its principal customer. To know which recommendations have been endorsed, please contact SHAPE J7 or HQ SACT, LL Core Team or check the NATO Lessons Learned Database.

NATO Logistics Support to ISAF

02 March 2009

FOREWORD FROM THE COMMANDER

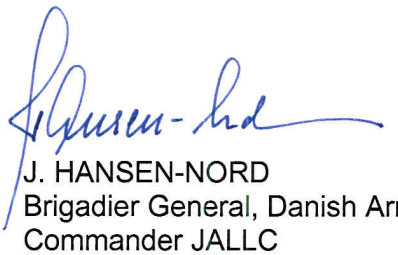
I am pleased to present this JALLC Analysis of Logistics Support to the International Security Force in Afghanistan (ISAF) for your consideration, discussion and further action as appropriate.

This report examines LOGREP, one of the key NATO Logistics Information Systems used in ISAF for asset visibility, and presents factors which are impeding the optimum use of this system. It will also discuss how other reporting procedures successfully bridge the data gap to maintain a useful flow of information.

This report illustrates key NATO logistic support functions in ISAF and recognizes a new role for NATO by designating Lead Agencies in arranging critical Class I & III support to this mission.

It introduces some current practices which are not working as intended and highlights those practices which support current logistic operations and should be considered for use in future NATO missions.

Coordinating drafts of this paper were distributed to major stakeholders for comment in order to preserve accuracy, and ensure reliability of the final report. I hope that you will find it informative and helpful.



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NATO Logistic Support to ISAF

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Study and data obtained from March 2008 to December 2008 at JALLC, with the cooperation of ACT, SHAPE, NCSA, JFC Brunssum, and ISAF.

Executive Summary

MISSION

Allied Command Transformation (ACT), in response to an analysis requirement from Allied Command Operations, tasked the Joint Analysis and Lesson Learned Centre (JALLC) to conduct an analysis of NATO Logistics support to the International Security Assistance Force (ISAF) in Afghanistan. The specific Analysis Objectives for this study are:

AO-1. Examine the extent of use of NATO Logistics Information Systems in ISAF in order to support the evolution of (future) NATO Logistics Information Systems (Logistics IS).

AO-2. Analyze ISAF Theatre level Multinational Logistics Operations and identify best practices in order to recommend NATO wide improvements in logistics support.

Sub AO-2.1. – Map the linkages and procedures of ISAF Theatre level Multinational Logistics Support.

Sub AO-2.2. – Analyze the roles and relationships of organisations involved in the ISAF Theatre level Multinational Logistics Support.

This study examines NATO Logistics Information Systems (IS) in conjunction with the Class I (Food & Water), Class III (Petroleum / Fuel, Oil and Lubricants), and Class V (Ammunition) logistics support to the ISAF mission. In ISAF, the NATO Logistics IS in use is LOGREP (Logistics Reporting System), a subsystem of LOGFAS (Logistic Functional Area Services).

BACKGROUND

Logistic Operations in ISAF involve several multi-national headquarters to support over 50,000 Military Personnel from around 40 Troop Contributing Nations. NATO Principles of Logistics such as cooperation, coordination and data sharing between NATO and non-NATO member nations are essential. However, gaps in the visibility and transparency of national assets in ISAF are a concern which could impact operational decisions affecting the mission.

METHODOLOGY

The JALLC coordinated directly with the primary customer (ACT DACOS LOG), and the major stakeholders (SHAPE, NATO Communication and Information System Services Agency, Joint Force Command Brunssum, HQ ISAF and Regional Commands) to prepare this report. Data collection efforts included research of NATO logistics doctrine, operational reports, and conference reports as well as interviews with Logisticians on ISAF Rotations IX, X and XI in order to determine past and current practices. Questionnaires and other techniques were used to pre-screen candidates for interviews to facilitate data gathering. Coordinating Drafts were circulated to all stakeholders for comment to ensure accuracy and solicit further recommendations.

MAJOR CONCLUSIONS AND RECOMMENDATIONS

Logistic support in ISAF is essentially controlled or arranged by the participating nations. However, many nations use the NATO-led contracts for Class I and III support in ISAF. For these NATO-led efforts, the use of a single contracting agency would provide standard agreements, a centralized effort that would promote efficiency, and would offer economy of scale for NATO and participating Nations. NATO should use a single lead agency or nation for contracting to obtain optimum benefits. *(Doctrinal / Organization issue)*

HQ ISAF serves as the local / theatre manager for Class I & III support, and NATO pays only for the quantity of supply delivered. Major risk in transit is assumed by the contractor. This arrangement offers numerous advantages for NATO and ISAF and provides an example of a best practice. *(Doctrine / Organization)*

Logistics support can be hindered by some friction between NATO and the nations. A predictable source of friction with Logistics Command and Control is the contrast between command responsibility to assure provisions to all elements, and the lack of authority necessary to transfer / move logistic assets between units from other contributing nations. The authority to transfer assets should be coupled with STANAG 2034 to ensure reimbursement to those nations which provide goods or services. As the NATO Commander, COMISAF should be provided with authority to match his responsibility. *(Doctrinal / Organizational Issue)*

NATO reporting processes are intended to provide transparency and visibility of all logistics assets for command and control. Logistics IS should meet this need. However, despite the best efforts of technical experts and NATO staff, overall participation by troop contributing nations in LOGUPDATE reports using LOGREP has not met expectations. LOGREP needs specific training and technical support, and its software is not installed or updated in several Regional Commands and in one Airport of Debarkation (APOD). Only about half of the nations are using LOGREP and therefore sufficient data is not available to provide LOGUPDATE reports of value for any HQ. In contrast, other reporting techniques for logistics in ISAF use standard desktop software (NATO baseline software), and enjoy widespread participation with few of the related training or support problems. NATO should re-evaluate its requirement for LOGREP, and revisit those processes that are reporting logistic resources in ISAF. *(Doctrine / Materiel / Interoperability)*

The CJ4 use of the HQ ISAF Secret Webpage offers transparency and visibility of Class III support. This information is updated daily, and available on demand to ISAF and the entire NATO Chain of Command. This enhances interoperability, improves command and control and has doctrinal implications for reporting critical logistic information. *(Doctrine, Organization, Interoperability)*

Adequate storage facilities are essential to logistics. Several options are available for fuel storage facilities, each with unique advantages and disadvantages. Bolted steel tanks appear to be the best option at this time for durability, and this type of tank offers flexibility for relocation at a later day. NATO should choose the best option for fuel storage according to mission and tactical risk. *(Materiel / Facilities)*

The Class V Ammunition Supply Points (ASP) in RC Capital, RC South and RC North, illustrate multinational approaches to Class V storage. NATO should include multinational ASPs in AJP 4.9 (Chapter 6), and present guidance to implement them. *(Materiel / Facilities)*

Distribution

Action:

External:

COS ACT

COS ACO

COS JFC Brunssum

COS ISAF

Information:

External:

JWC

JFTC

C2COE

ACO J4

ACO J7/TTX

HQ JFC Brunssum J4

HQ ISAF CJ4

JFC Naples

JC Lisbon

NMRs to SHAPE

NLRs to HQ SACT

SACTREPEUR

HQ SACT TC-60

HQ SACT TI-330

HQ SACT TI-3592

HQ SACT TI-3593

SHAPE J7/TTX

Contents

1
Introduction

BACKGROUND

1. The security assistance mission in Afghanistan represents the most difficult operational challenge ever faced by NATO Logisticians and offers valuable lessons for the future. Allied Command Transformation (ACT) tasked the Joint Analysis and Lessons Learned Centre (JALLC) to examine transformation issues in NATO Logistics. This is the JALLC's second study of NATO Logistics within 12 months. The earlier report, "Multinational Logistics in Kosovo Force (KFOR)", was published in December 2007, endorsed by SHAPE[1]. However the NATO mission in Afghanistan is a completely different situation, with its own unique challenges.

2. JALLC coordinated with the ACT Staff to develop specific analysis objectives. To support these discussions, JALLC interviewed the Allied Rapid Reaction Corps (ARRC) Logistic Staff following their rotation on ISAF IX. JALLC also interviewed the Joint Force Command (JFC) Brunssum J4 Staff during 27 – 29 January 2008[2] because JFC Brunssum is responsible for the International Security Assistance Force (ISAF) Operation Plan (OPLAN), and JFC Brunssum J4 is a focal point for NATO logistics in ISAF. From these early interviews with the ARRC and JFC Brunssum, the JALLC identified a common theme: Logistic reporting and asset visibility had been problematic. Logistics Functional Area Services (LOGFAS) data was incomplete because many nations were not using the NATO logistic information systems as required by the JFC OPLAN for ISAF.

3. This preliminary coordination provided the JALLC with an introduction to the unique challenges of ISAF Logistics, and established the dialogue which defined the Analysis Objectives for this project.

4. The JALLC gathered key references and related information before deploying its data collection team to Afghanistan in June 2008.

ANALYSIS REQUIREMENT

5. The original Analysis Requirement was stated as:

> *"ISAF Logistics Operations: Map the linkages and procedures in order to identify, if applicable, where NATO wide improvements could be made taking into account the MC-0526 NATO Response Force (NRF) Logistics Support Concept."* [3]

6. During follow-on discussions with ACT, the requirement to consider MC-0526 and the NRF was dropped. Two Analysis Objectives (AOs) were subsequently developed as the foundation for this study, and were approved by the ACT Deputy Assistant Chief of Staff for Logistics (DACOS-LOG).

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[1] SHAPE HQ, Joint Analysis and Lessons Learned Centre (JALLC) Report on KFOR Multinational Logistics, (Reference A).

[2] JALLC Operations, Subject: Trip Report, (Reference B).

[3] SACT, 2008 JALLC Programme of Work (POW), (Reference C).

ANALYSIS OBJECTIVES

AO-1. Examine the extent of use of NATO Logistics Information Systems in order to support the evolution of (future) NATO Logistics Information Systems (IS).

AO-2. Analyze ISAF Theatre level Multinational Logistics Operations and identify best practices[4] in order to recommend NATO wide improvements in logistics support.

Sub AO-2.1. – Map the linkages and procedures of ISAF Theatre level Multinational Logistics Support.

Sub AO-2.2. – Analyze the roles and relationships of organisations involved in the ISAF Theatre level Multinational Logistics Support.

SCOPE OF THE STUDY

7. While acknowledging numerous national contributions to ISAF, the JALLC has limited the scope of this study to those aspects of Logistics which are under NATO versus national control. Furthermore, since the JALLC is currently engaged in a Medical Study and SHAPE and Allied Movement Coordination Centre (AMCC) are cooperating on a study of Movement and Transportation (M&T), these areas were not included in this study. The report is mainly focused on Logistics Reports and Returns, Supply and part of M&T. The JALLC focused on logistics support from the Regional Command Level and above for those findings which have implications for NATO Doctrine, Organization, Training, Materiel, Interoperability, Personnel, Leadership, and Facilities (DOTMLPFI).

STRUCTURE OF THE REPORT

8. The chapters of this report are structured to provide a logical flow:

a. Chapter 1 introduces the requirement, purpose and scope of this study.

b. Chapter 2 gives a general background on logistics reports and returns in ISAF and the use of these reports by the NATO chain of command.

c. Chapter 3 focuses on the Logistics Reporting System (LOGREP), the reporting tool component of NATO Logistics IS, required by NATO and examines how to improve its use for ISAF or other missions.

d. Chapter 4 discusses the nature of Logistics in Afghanistan and identifies some Best Practices from this mission which will be helpful in the future, and explores the roles which shape the logistic support in ISAF.

e. Chapter 5 provides the recommendations.

METHODOLOGY USED

9. JALLC worked directly with ACT (DACOS-LOG) to clarify the requirement and establish the analysis objectives to form a detailed plan. JALLC consulted subject matter experts and CJ4 staff members from previous ISAF rotations for a historic perspective. In addition to this, JALLC reviewed NATO Logistic Doctrine, SOPs and other publications relevant to ISAF Operational Logistics. Finally, the JALLC examined ISAF logistic reports from the period March-November 2008.

[4] For purposes of this study, best practices (BP) shall be defined as: an activity that is effective and could be replicated by others in a similar situation.

10. A questionnaire was distributed to key ISAF members in March 2008 as part of JALLC analysis preparation and pre-deployment planning. This questionnaire was sent to 22 elements in HQ ISAF and Regional Commands' (RC) CJ/G/J4 Staff, and had a return of 17 responses, a return of more than 77%.

11. The results from the questionnaire were used to do the analysis and to structure the interviews conducted in HQ ISAF. Read ahead packets of sample interview questions were emailed to facilitate discussions.

12. The JALLC deployed an analysis team to Afghanistan in June 2008 for data collection. This data collection team worked in conjunction with the JALLC permanent representative in HQ ISAF. Data analysis began during the deployment and continued into November 2008.

FACTORS AFFECTING THE ANALYSIS

13. The HQ ISAF CJ4 and staff extended every courtesy to assist the JALLC Team. Unfortunately, several ISAF Staff rotated out of theatre just prior to the JALLC visit, which meant that several of the most experienced staff members were not available for interviews. This was unavoidable. When feasible, telephone interviews were conducted prior to staff rotation / departure of key logistic personnel staff.

2
Logistics Reports and Returns in ISAF

14. This chapter presents findings about the Logistics Reports and Returns in ISAF, and provides background information for a further discussion of the analysis objectives addressed in Chapter 3.

LOGISTICS REPORTING REQUIREMENTS IN ISAF

15. The requirement to report logistic assets is clearly stated in NATO policy, and as mission guidance to the nations participating in ISAF:

a. NATO policy, MC 0319/2 (Reference E) states:

"Nations and NATO authorities have a collective responsibility for ensuring that the NATO Commander has access to the required logistic information." – Paragraph 26

b. The JFC Brunssum OPLAN 30302 (Reference F) states:

"Troop Contributing Nations (TCN) will provide full information on all logistics assets and supplies in the Joint Operating Area, including those within their National Support Elements (NSE) and their forward support elements as part of the national strategic logistics sustainment chain, by using Logistic Reporting (LOGREP) software tool." – Annex R, paragraph 3e

"[TCNs will]- Direct NSEs (their forward support elements) as part of a national strategic logistics sustainment chain to provide reports and returns in accordance with Annex CC, by using Logistic Reporting (LOGREP)." – Annex R, paragraph 6d

c. HQ ISAF Standard Operating Procedure (SOP) 407 for Logistic Reports and Returns (Reference G) identifies responsibility and procedure(s) as follows:

"It is a shared responsibility of all nations, subordinate commands and HQ ISAF to ensure the timely flow of logistic information and provide commanders at all levels logistic situational awareness."

"Friendly logistics intelligence will be developed and maintained via the logistics database found in the NATO LOGFAS, the LOGREP reporting tool … Subordinate units and NSEs are required to submit a Logistics Assessment Report (LOGASSESSREP), Movement Assessment Report (MOVASSESSREP) and Logistic Update (LOGUPDATE) weekly or as directed."

16. The three weekly reports defined in HQ ISAF SOP 407 are listed by name and function as follows:

Table 1 – Dedicated Logistics Reports[5]

ISAF Logistics Report	Logistics Function	Reporting Format
LOGUPDATE	Supply (National Equipment)	LOGFAS
LOGASSESSREP	Supply (Classes I to V)	MS Word
MOVASSESSREP	Movement &Transportation	MS Word

[5] Similar (logistic) data appears in "The OWNSITREP" which is sent by HQ ISAF daily to JFC-Brunssum.

17. Each report serves a different function and information requirement. The LOGUPDATE was created to provide NATO Commanders "*with a dynamic update of changes to core database information on stockpiles of specific equipment and consumable material held by National Forces declared to NATO, as well as specified equipment and material held by Nations in support of such Forces*"[6]. LOGUPDATE reports are generated by using specific NATO software suite called Logistic Functional Area Services (LOGFAS). The element of LOGFAS which generates that report is LOGREP. ISAF LOGUPDATE reports are passed through the ISAF chain of command to JFC Brunssum[7].

18. LOGASSESSREP provides a *"standardized method of informing superior headquarters of the command's logistics status and to provide an assessment of the overall logistics situation for forces"*[8]. It provides a weekly overview of logistics for HQ ISAF, including each RC, Kabul Afghanistan International Airport (KAIA) and Kandahar Airfield (KAF). The report highlights topic areas such as Battle Damage, Lines of Communication / Route Information, Infrastructure, Communications and Interoperability. This report is prepared using commercial off-the-shelf (COTS) software as an *MS Word* document in accordance with HQ ISAF SOP 407and is passed through the ISAF chain of command to JFC Brunssum.

19. MOVASSESSREP is "*a standardized method for informing NATO and theatre commanders of the movements and movement infrastructure situation*"[9]. The MOVASSESSREP in ISAF routinely covers the general situation of lines of communication in each RC, provides an assessment of the Related Movement Infrastructure and key movement plans. The report is also prepared weekly as an *MS Word* document in accordance with the format provided in HQ ISAF SOP 407. The report is passed through the ISAF chain of command to JFC Brunssum.

DIFFERENCES BETWEEN THE REPORTS

20. LOGFAS software must be installed on the computer where LOGREP data is entered in order to prepare the LOGUPDATE report. Although LOGUPDATE can be accessed by any computer in a .txt format, it will be viewable only as raw data unless LOGFAS is installed.

21. The ISAF LOGUPDATE requires trained users and computer systems with LOGFAS software installed. This restricts the number of staff personnel who can create and use this report to share data which is clear, concise and readily understood in each Headquarters.

22. In contrast, both LOGASSESSREP and MOVASSESSREP are prepared using *MS Office*. These reports are templates for data with written assessments of a situation or an identified logistic shortfall. The software significantly increases the number of potential users / staff personnel who can prepare these reports. Software training on an additional, specialized system is not required.

23. LOGASSESSREPs and MOVASSESREPs are usually 3-5 pages long, and in plain language, meaning personnel in all staff sections can easily read it without specialized software skills or interpretation. Key elements from LOGASSESSREPs and

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[6] Bi-SC Directive 80-3, (Reference H), Section 2 paragraph 2.1, page 2.1.

[7] These Reports are located at: http://wise.hq.ms.isaf.nato.int/ISAFHQ/DCOSSUPPOR/CJ4/LogOps – last access 2 February 2009. ISAF Log Reports were distributed on request to JALLC via email.

[8] Bi-SC Directive 80-3, (Reference H), Section 1 paragraph 1.1, page 1.1.

[9] Ibid, Section 8 paragraph 8.1, page 8.1.

MOVASSESSREPs are easily transferred from any RC's data into the weekly CJ4 HQ ISAF Reports. This simplicity and interoperability adds value by enabling the rapid exchange and integration of data between contributing nations, HQ ISAF CJ4, and other NATO staff elements.

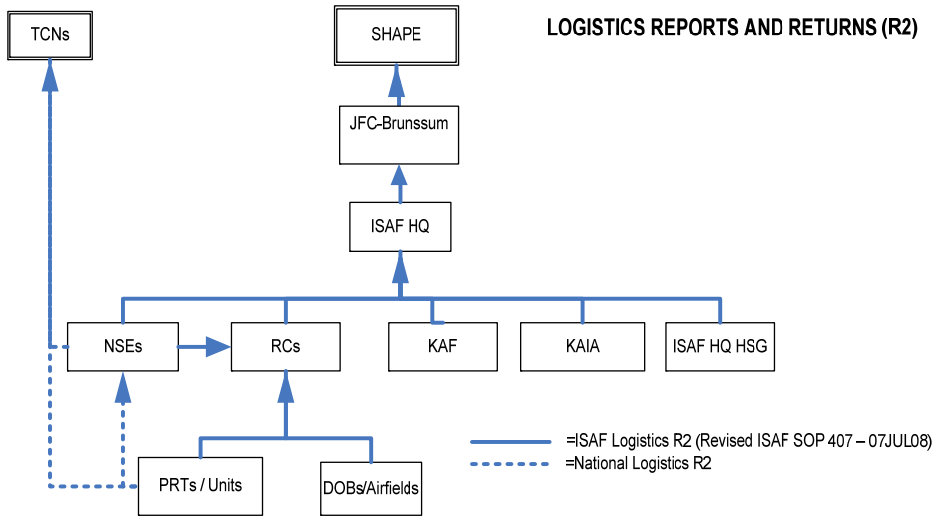

Figure 1 – Flow of ISAF Logistics Reports and Returns

The Reporting process

24. The reporting process begins with the data providers and ends with the information users. NSEs, Provincial Reconstruction Teams (PRTs), Units, Airports of Debarkation (APOD), Deployed Operating Bases (DOBs) and RCs are the primary data sources and providers for all reports. The information users are the functional staff officers throughout the chain of command. The flow of ISAF reports and returns is depicted in Figure 1. The data is reviewed at HQ ISAF by CJ4 and transmitted to the other information users up the NATO chain of command.

25. NSEs, PRTs and subordinate units report directly to their respective RC. "*However, only about half of the TCNs are reporting as requested, using LOGREP and sending LOGUPDATES to HQ ISAF*"[10]. This issue has been visible across the NATO chain of command. In contrast, provision of data for the other reports has not been identified as a problem.

26. A detailed discussion about participation in LOGUPDATEs and the use of LOGREP will follow in Chapter 3.

Data Providers

27. According to the responses to the questionnaire sent to ISAF and interviews conducted in theatre, a high percentage of the primary data providers (Units, NSEs, PRTs, APODs and RCs) are not using the LOGREP tool. According to the CJ4 inputs to the HQ ISAF Lessons Learned Database, of 39 countries involved in ISAF (at the time CJ4 made the submission), only 23 were using LOGREP to provide data to HQ ISAF. Essentially two out of five RCs and one of the two APODs do not use LOGREP. This is corroborated by information

[10] SHAPE, Logistics Reporting in ISAF Operations, (Reference I).

provided by HQ ISAF and JFC Brunssum[11]. The key reasons for the lack of participation in LOGREP are presented in Chapter 3.

Information Users

28. Each headquarters within the chain of command is an information user expected to benefit from logistic information.

a. Using Microsoft Office Software: HQ ISAF uses the LOGASSESSREP and the MOVASSESSREP to manage the in-theatre logistics. Furthermore, these reports as well as the daily situation report (OWNSITREP) are sent by HQ ISAF to JFC-Brunssum.

- Based on these reports, JFC Brunssum analyzes the logistic situation, and then forwards its own reports to SHAPE.
- SHAPE J4 reviews and uses JFC Brunssum's reports as needed.

b. Using LOGFAS/LOGREP Software: HQ ISAF develops the LOGUPDATE from the subordinate units to meet the reporting requirements of JFC Brunssum.

- JFC Brunssum does not use the LOGUPDATE data, but forwards the report to SHAPE J4 without further processing or analysis.
- SHAPE J4 receives the LOGUPDATE report, but at the time this analysis was conducted there was no further use made of this report (according to staff interviews).

CONCLUSIONS

29. LOGUPDATE requires LOGFAS / LOGREP software to prepare the report. A significant proportion of Units and PRTs are not using LOGREP as a reporting tool, and headquarter elements are not using it as data source. *(Paragraph 17, 20 & 21)*

30. LOGASSESSREP and MOVASSESSREP are both prepared using *MS Office*, which is included in the baseline standard software of NATO computers and accessible using any NATO mission computer. No problems were observed for providers to submit data, or by staff officers or decision makers to use the information provided. *(Paragraph 18, 19, 22 & 23)*

31. The SHAPE J4 Staff and J4 Staff at JFC Brunssum use reports created in *MS Office* software to assess ISAF logistics, but are not making any further use of the LOGUPDATE report. *(Paragraph 24)*

32. LOGREP software / LOGUPDATE reports are required in-theatre, yet not being used as intended. Other information sources are providing data as required, and therefore LOGREP data may no longer be as relevant to NATO as once envisioned. *(Paragraph 20 to 28)*

[11] HQ ISAF Chief CJ4 to JFC Brunssum, Logistics Reporting in ISAF Operations, (Reference J).

3
Use of NATO Logistics IS in ISAF

33. This chapter presents JALLC findings about the extent of use of NATO Logistics IS and explores evidence to suggest possible reasons why this is not being used as extensively as requested in policy and doctrine. It addresses the first analysis objective (AO-1). Although the previous chapter has identified that LOGREP's value as a reporting tool is questionable, this chapter is based on the current requirement for reporting to be done using LOGREP.

34. The LOGFAS system is the NATO formal, documented Logistics IS, and it is in use in ISAF. LOGFAS is composed of three primary services or subsystems as described below and depicted by Figure 2:

- **ADAMS** and **EVE**: *ADAMS* (the Allied Deployment and Movement System) is used for planning, evaluating and simulation of movement and transportation operations in support of NATO missions. This program is used with *EVE* (Effective Visibility Execution). *EVE* is a recent add-on to LOGFAS, intended to coordinate the execution of NATO movements for the ISAF mission.
- **LOGREP**: Logistics Reporting provides visibility of all key logistic capabilities supporting NATO missions for commanders, and for planning purposes.
- **ACROSS**: *ACROSS* (the Allied Commands Resources Optimisation Software System) is used to calculate strategic munitions requirements.
- **LOGBASE** is the common database which links all three subsystems.

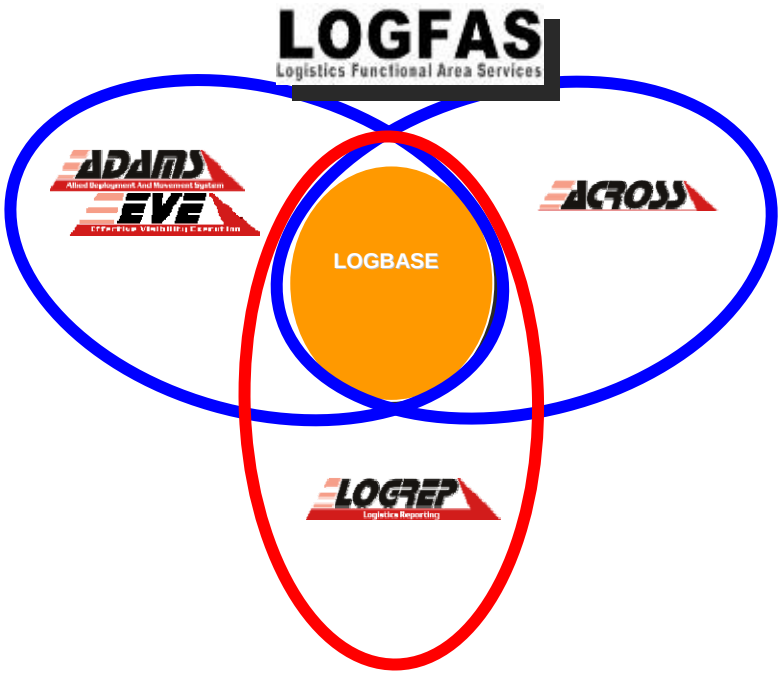

Figure 2 – LOGFAS 5.x Configuration

35. Only two of the LOGFAS subsystems are of interest to HQ ISAF and are therefore of interest in this JALLC study. These subsystems are LOGREP and *EVE*. A study of *EVE* is

being conducted by SHAPE (AMCC) as part of a larger examination of M&T issues. For this reason, JALLC did not examine the use of EVE in ISAF.

36. LOGFAS was updated by new versions released during the second quarters of 2007 (LOGFAS 5.1) and 2008 (LOGFAS 5.2). The most recent, (LOGFAS 5.2) was released in June and SHAPE directed implementation at all sites by 1 September 2008.

37. Figure 3 shows the installation status of LOGFAS in ISAF as reported by the JFC Brunssum representative at the November 2008 LOGREP Working Group Meeting[12].

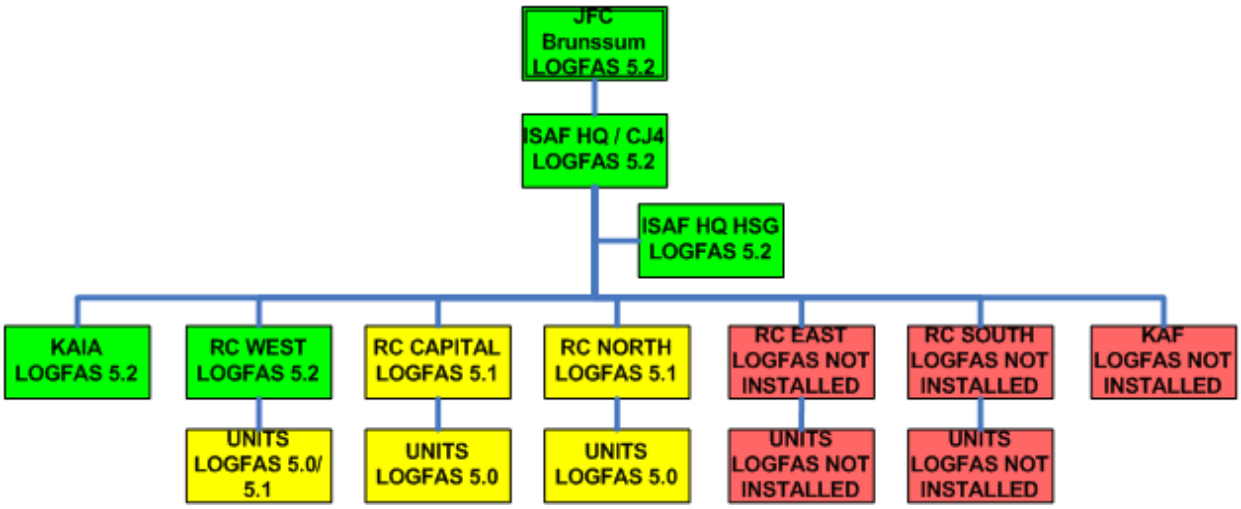

Figure 3 – LOGFAS installation status in ISAF, November 2008

38. As reported by Brunssum, HQ ISAF, one RC, and one APOD have the latest software version (5.2). Two RCs have older versions of the software (5.0 /5.1). Two RCs and one APOD had not installed any version of LOGFAS software. Therefore, the goal to ensure that current LOGFAS software is used at all sites by 1 September was not achieved.

PARTICIPATION IN LOGREP

39. LOGREP issues are not new. National (use or) participation in LOGREP was identified as an issue in the Balkans, *"where information was rarely passed from NSE and Multinational Brigades (MNB) up to KFOR or [Stabilization Force] SFOR Headquarters"*[13]. This finding was included in an April 2003 report to the Senior NATO Logistics Conference (SNLC). A similar finding was made during the NATO Reaction Force (NRF) Exercise STEADFAST JAGUAR in 2006[14], and this issue is still relevant for ISAF[15]. This JALLC analysis revealed several factors which influence the extent of use of NATO Logistics IS / LOGREP in ISAF. Individually or collectively any of these factors could limit national use of

[12] LOGREP Working Group Meeting, Minutes from Work Group Meeting, (Reference K).

[13] SHAPE, Increasing Multinational Logistics and Contractorisation Study, 2030/SHLLX/DHCE/118/03-97274, See Enclosure, Annex E, paragraph 2, 17 April 2003 (Reference L). This finding also appears in Euro-Atlantic Partnership (EAPC) (SNLC) D (2003) 19, Annex 2 AFCent Study page 2-50, 24 September 2003.

[14] JALLC, "Execution of the JLSG Concept" 1710.13/JALLCEX/003.06, 27 October 2006. para 78. (Reference M)

[15] Refer to Reference I.

NATO systems like LOGREP. The factors which can affect the use of NATO Logistics IS include:

- Undetermined value for NATO Command Headquarters
- National Focus on Logistic Support at Unit Level
- Personnel Issues
- System Issues

Undetermined value for NATO Command Headquarters

40. Due to limited participation, LOGREP data provided by the RCs and APODs is incomplete, and the national data reported in LOGREP and its currency often cannot be verified. However, the RCs and APODs do not perceive any operational problem caused by incomplete LOGREPs because all the RCs and APODs fully participate in LOGASSESSREP and MOVASSESSREP reporting. This information flow, together with national supply reporting, alleviates any problems they encounter. As such, LOGREP (LOGUPDATE) is of undetermined value to NATO Command Headquarters, HQ ISAF, JFC Brunssum, and SHAPE.

41. LOGREP has never been in full use in ISAF, so it cannot provide Commander ISAF (COMISAF), in the words of the HQ ISAF Chief CJ4*, "a clear logistic picture*"[16] .

42. A detailed business analysis and evaluation of LOGREP could indicate its true value, suggest improvement, and be used to demonstrate the benefit to the Nations by using it.

National Focus on Logistic Support at Unit Level

43. Data for LOGREP reporting originates at unit level within ISAF and national priorities are a factor in the use of NATO Logistics IS. The majority of logistic support to ISAF Forces is provided through national sources[17]. Therefore, the Units, NSEs, PRTs, and some RCs place a higher priority on data exchanges with their respective national chain of command than on the use of LOGREP. Preparing reports and maintaining current data takes staff time, and since the readiness of national elements or their equipment for the mission is largely a national issue, reporting to NATO is perceived to provide little direct benefit to the units. Reporting national data in multiple formats[18] — via national system(s) as well as LOGREP — is seen as an unnecessary duplication of effort.

44. In order to gain participation from the Nations, it needs to be to their benefit as well as to NATO.

Personnel Issues

45. The personnel issues that influence the use of LOGREP in ISAF are these: Are sufficient personnel available to do the job? Are they trained?

<u>Fill the Crisis Establishment Posts that are related to LOGREP</u>

[16] HQ ISAF CJ4 to JFC Brunssum, Logistics Reporting in ISAF Operations, (Reference J).

[17] NATO support focuses on Class I and III. National logistic support elements generally provide all Class II, IV and V support. This will be addressed again in chapter 4 of this report.

[18] CJ4 LIAP to Lessons Learned Working Group, (Reference N).

46. Could manpower or personnel shortages affect use of LOGREP? This was one of the questions asked by the JALLC questionnaire sent to ISAF. The majority of respondents to the questionnaire felt that their staff section was able to adequately complete Logistics IS reporting tasks with their current manning. However, in order to do so, some sections had to overcome Crisis Establishment (CE) shortages. Two sections that acknowledged an inability to adequately perform their Logistics IS reporting appeared to have no CE shortages. This suggests other factors were responsible for lack of participation with LOGREP.

47. Four respondents stated that CE vacancies associated with LOGREP responsibilities exist at their respective locations. Interviews later revealed that in order to mitigate a shortage of staff, their sections had double-tasked Logistics personnel to accomplish logistics reporting tasks. This was reported to be a satisfactory solution within HQ ISAF, but one RC stated that, despite having double-tasked personnel, LOGREP requirements were given the lowest priority.

48. Two sections within the J4 of one RC reported difficulty in completing their Logistics IS reporting tasks with the current manning, but these sections did not report any CE vacancies. This would imply that either the CE requirement in that RC is insufficient to meet the Logistics IS reporting needs, or that the Logistics IS reporting procedures being used in that RC are significantly more labour intensive than those used in other RCs. Data from observation and interviews theatre-wide indicated that in general, logistic reporting is conducted on national logistic systems, and via reports to HQ ISAF that are provided without the use of LOGREP. This suggests that use of LOGREP may require more time (man-hours) than available, or that the other formats (MOVASSESSREP and LOGASSESSREP) are seen as more effective tools by the RCs to provide data to HQ ISAF.

49. There is no conclusive evidence that CE shortages account for the lack of participation in use of LOGREP. Although CE personnel shortages can reduce the ability of sections to adequately complete their Logistics reports, double-tasking personnel in the CE positions when needed may overcome this problem.

Lack of Training

50. A simple test of LOGREP was conducted by JALLC staff officers familiar with LOGFAS concepts but untrained on the system. After several hours they concluded that the system was not intuitive, and that training was essential to use LOGREP in order to prepare LOGUPDATEs to meet NATO requirements.

51. Key individuals in ISAF responsible for logistics reports were asked the question*, "Have you attended any courses on NATO Logistics IS?".* The majority, 15 out of 17 respondents, stated they had not attended any training on NATO Logistics IS. Of the two individuals that attended training, one person from HQ ISAF attended a LOGREP Course at the NATO Communications and Information Systems School (NCISS) in Latina, Italy. The other individual, from an RC, attended a LOGREP Course conducted at HQ ISAF. This indicates a general lack of training in the use of LOGREP for staff in ISAF.

52. According to the interviews and the questionnaires, the reasons given by respondents for not attending NATO Logistics IS courses were mixed. These included a lack of emphasis by the nations and a lack of ability for the nation(s), or the individuals to apply for those courses.

53. Some individuals reported that they had not attended NATO Logistics IS Courses because they were not aware of the Courses available. However, of those that were aware

of the NATO Logistics IS Courses, some were not able to attend as the NATO Course dates did not fit the individual or National needs.

54. Most Nations do not routinely use NATO Logistics IS internally in their armed forces, and may perceive little value in NATO Logistics IS training. According to interviews, NATO Logistics IS is considered to be a system useful only for NATO exercises or missions.

55. To ensure training opportunities, HQ ISAF runs a LOGREP Course two to three times per year in ISAF. This in-theatre training initiative allows more individuals to complete LOGREP training than was previously possible. However, JALLC interviews conducted in-theatre revealed that not all individuals were able to attend this LOGREP training because dates do not correspond to the personnel staff rotations. Furthermore, some Units, PRTs, NSEs, Air Fields, and RCs reported that they were not aware that this opportunity existed. In contrast, the SHAPE J4 staff indicated that the attendees at LOGREP Working Group (WG) meetings are informed of all available training dates on the LOGNET and NCISS course schedule for each year. Nations that participate in the WG have the best information on LOGREP, including training.

56. The LOGREP Course provided in-theatre has helped HQ ISAF improve accessibility to LOGREP training for logistics officers without prior training. However, many of the same reasons given for not attending pre-deployment training also hinder personnel from attending training in theatre.

Lack of English Skills

57. Language skill was initially considered as a possible reason for the lack of participation in LOGREP. Upon further investigation through questionnaires and interviews, it was determined that English language skill was not a significant factor.

58. The respondents who stated their level of English knowledge was “basic” came from HQ ISAF and from two RCs: Each of these ISAF elements use LOGREP. However, the non-participants (in LOGREP) reported “strong” English language skill. These findings lead JALLC to conclude that a lack of English skills is not a contributing reason for lack of participation in LOGREP in ISAF.

System Issues

Lack of interoperability[19] between the NATO and National Logistics Information Systems

59. The JALLC considered the possibility that interoperability between the National systems and NATO Logistics IS could be a factor in the extent of use of LOGREP.

60. In a JALLC meeting at SHAPE, LOGREP subject matter experts confirmed that LOGREP was not designed to be interoperable with any national system. Furthermore, it is not feasible for NATO to design a system to be interoperable with those of all potential troop-contributing nations to NATO. However, it is possible that TCNs could develop their logistic information system software to exchange / input data into NATO LOGREP.[20]

[19] For the purpose of this paragraph the term “interoperability” is used to describe the capability to exchange data between systems via a common set of exchange formats.

[20] JALLC is aware that there are efforts underway in some nations to make their national systems interoperable with LOGREP.

61. The most feasible approach to interoperability would be for the individual National Logistic Systems to include an export function which would provide national logistic data to LOGREP.

Complexity of NATO Logistics IS

62. Another hypothesis considered by JALLC was that NATO Logistics IS systems were very complex to support, to sustain and/or to maintain. From the data JALLC collected, complexity attributed to three areas of difficulty:

a. Installation Problems with NATO Logistics IS / LOGREP

b. User Friendliness / Ease of Use

c. NATO Logistics IS Helpdesk Support

Installation Problems with NATO Logistics IS

63. Two RCs and one APOD have not installed LOGFAS (shown earlier in Figure 3) despite the fact that LOGFAS is essential to use LOGREP to create LOGUPDATEs.

64. During in-theatre data collection, one of these RCs reported it had been impossible to install LOGFAS (and all of its tools) onto their workstations. Additional support with installation is needed, and this is a factor why that RC does not use LOGFAS or its components. (See Figure 3)

65. The same RC reported its belief that even if LOGFAS were installed, it would be difficult to transfer national data to the NATO system due to data volume and national security issues. The other RC and APOD that had not installed LOGFAS did not report any installation problems.

User friendliness of NATO Logistics IS / Ease of use

66. Of those that responded to the questionnaire regarding the user-friendliness, half felt that the NATO Logistics IS is user-friendly.

67. In the follow-up interviews, the majority stated that NATO Logistics IS became user-friendly only after extensive practice. This could account for the variety of views on user-friendliness expressed by the questionnaire responses. It was suggested by some interviewees that the time it takes to become familiar with NATO Logistics IS could be reduced if the NATO Logistics IS software included a self-study module.

NATO Logistics IS Helpdesk Support

68. The majority of those interviewed were aware that there is a general purpose Helpdesk available in-theatre to resolve general workstation, hardware or network issues. For a LOGFAS specific problem, users are referred to the ISAF CJ4 Communication and Information Systems (CIS) Point of Contact (POC) for support. This effort constitutes the first level of helpdesk support. However, there were concerns expressed that if redirection from the general helpdesk was necessary, this was often inconvenient or resulted in time consuming delays.

69. There is no second level of helpdesk support structure in place. A second level is necessary to provide help on dealing with specific LOGFAS software problems.

70. Users often contact the chain of command (HQ ISAF CJ4 and/or JFC Brunssum J4) or the NATO CIS Services Agency (NCSA) LOGREP Project Manager. Each of these offices is manned by one individual with other duties to perform. There is no 24 hour support

capability. A second level of helpdesk support available 24 hours could solve some system issues and increase the use of NATO Logistics IS in ISAF.

71. The JALLC team also observed that the NATO Logistics IS subject matter experts (SME) were not well advertised or identified to ISAF Logistics IS users. Contemporary approaches such as user groups could expand information sharing options.

CONCLUSIONS

72. NATO Logistics IS are not being used to the extent, or potential as envisioned by NATO. There is no single factor which affects the use of the NATO Logistics IS, but a variety of contributing factors that limit participation and impedes the full use of the LOGFAS. *(Paragraph 39)*

73. The value of LOGREP to each level of command in NATO is undetermined because the accuracy, completeness and currency of national data provided cannot easily be verified, and because there is limited participation using this reporting tool. *(Paragraph 40 & 41)*

74. A detailed business analysis and evaluation of LOGREP could indicate its true value, suggest improvement, and be used to demonstrate the benefit to the Nations by using it. *(Paragraph 42)*

75. National focus is a factor in the use of NATO Logistics IS because a majority of logistic support comes from national sources. Therefore, the Units, NSEs and PRTs place a higher priority on information exchanges with their own National support channels rather than on NATO Logistic Channels. LOGREP is therefore often considered an unnecessary duplication of effort. *(Paragraph 43 & 44)*

76. Conclusions with respect to personnel issues are as follows;

a. There is no conclusive evidence that CE shortages account for the lack of participation in use of LOGREP. Although CE personnel shortages can reduce the ability of sections to adequately complete their Logistics reports, double-tasking personnel in the CE positions may overcome this problem when needed. *(Paragraph 45 to 49)*

b. The LOGREP system is not intuitive and training is essential in order to meet NATO reporting requirements. *(Paragraph 50)*

c. There is a lack of training on the use of LOGREP at all levels in ISAF, despite continued efforts to offer training courses. *(Paragraph 51 to 54 & 56)*

d. Nations that participate in the LOGREP WG have the best information and opportunity to input recommendations to LOGREP, including training. *(Paragraph 55)*

e. English language skill is not a significant factor influencing national participation in use of LOGREP in ISAF. *(Paragraph 57 & 58)*

77. Conclusions with respect to NATO Logistics IS Systems Issues include;

a. NATO Logistics IS and National Logistics IS are not designed to be interoperable. The most feasible approach to interoperability would be for TCN's to develop national logistic systems to exchange / input data into LOGREP. *(Paragraph 59 to 61)*

b. Of the RCs / APOD that did not install LOGREP software, only one RC reported installation problems. Since the others did not report installation problems, LOGREP is not a priority issue for them. *(Figure 3 and Paragraphs 62 to 65)*

c. The addition of a self training module in the software package would reduce the familiarization time for the LOGREP user. *(Paragraph 67)*

d. Direct access to a NATO Logistics IS Helpdesk is the preferred solution by users. Establishing a link on the ISAF webpage to LOGNET (as an information platform) may identify SMEs and other support available. *(Paragraph 68 to 71)*

4

Organization & Procedures of ISAF Logistics

78. This chapter addresses Analysis Objective 2 and its Sub AOs 2.1 and 2.2 and provides an overview of the logistic operations that support ISAF.

NATIONAL LOGISTIC ARRANGEMENTS IN ISAF

79. The following figure depicts logistic support arrangements in ISAF for supply and movement & transportation.

	HQ ISAF	RC Capital	RC North	RC West	RC South	RC East	KAIA	KAF
Class I	NATO	National					NATO	
Class II	National							
Class III	National / NATO[21]					National	NATO	
Class IV	National							
Class V	National							
M&T	National / NATO [22]							

Figure 4 – Logistic Support in ISAF

80. While national support arrangements dominate logistics in ISAF, there are noteworthy exceptions. National elements in HQ ISAF, KAF, and KAIA use NATO contracts for Class I and III support. Similarly, NATO provides strategic fuel contracts for over 50% of Class III support to ISAF. This demonstrates collective responsibility for logistic support at work between NATO and nations in accordance with NATO Policy (MCM 0319/2 – Reference E).

81. From JALLC's observations, NATO assumed a new role by serving as a Lead Nation / Agency to provide Class III support in ISAF.

EXPECTATIONS FOR NATO LOGISTIC PERFORMANCE / SUPPLY

82. JFC Brunssum's OPLAN 30302 (Reference F) provided clear guidance to all nations regarding logistic operations in ISAF when it established days of supply (DOS) as the benchmark measure to quantify ISAF logistic requirements. ISAF SOP 404 (Reference N) states that the *"DOS metric serves two purposes: (1) It provides a useful planning figure for all logisticians, and (2) it is a contractual device or measure to ensure suppliers have a target level for supplies to maintain at specified locations*"[23].

[21] Most strategic fuel is delivered by NATO Basic Ordering Agreement (BOA) to national Bulk Fuel Installations (BFI) for onward distribution to nations.

[22] Most M&T is nationally provided, however some M&T is provided by NATO with NATO assets and/or with some contract support.

[23] HQ ISAF SOP 404, "Definitions: Days of Supply", Paragraph 3, Page 2, (Reference O).

83. The DOS metric is common in the Basic Ordering Agreements (BOA) and contracts established by NATO and used in many national agreements to manage supply stock levels. An example of this guidance appears below in Table 2.

Table 2 – (Declassified) Example of DOS Planning Figures

	DOS Planning Figures	
Supply Class	**APOD / DOB[24]**	**FSB[25]**
Class I (Food / Water) =	20 DOS	20 DOS
Class III (Fuel) =	30 DOS	30 DOS
Class V (Ammo) =	3-10 DOS	3-10 DOS

84. When the mission and/or situation changes, logisticians adjust the quantities that make up a DOS to reflect emerging mission requirements. The HQ ISAF CJ4 staff use the weekly logistics reports in order to monitor provisions for mission support.

85. A subjective evaluation of logistics is part of the weekly LOGASSESSREP (See Table 3). Areas other than "green" are explained via comments contained within the body of the report. The term *NSTR* (nothing significant to report) is used for ISAF HQ Support Group (HSG) because those supplies are reported by national support elements through RC channels. This *traffic light* approach effectively highlights problem areas for decision makers, and illustrates a best practice in management.

Table 3 – (Declassified) section from a LOGASSESSREP[26]

	Overall	Class I Fresh Food	Class I Bottled water	Class II	Class III F 34	Class III F54	Class IV	Class V
RC Capital	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN
RC North	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN
RC North	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN
RC South	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN
RC East	YELLOW	GREEN	YELLOW	GREEN	YELLOW	GREEN	GREEN	YELLOW
KAF	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN
KAIA	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN
ISAF HSG	GREEN	GREEN	GREEN	NSTR	NSTR	NSTR	NSTR	NSTR
Overall ISAF	GREEN	GREEN	GREEN	GREEN	YELLOW	GREEN	GREEN	GREEN

[24] Deployed Operating Base

[25] Forward Support Base

[26] See http://wise.hq.ms.isaf.nato.int/ISAFHQ/DCOSSUPPOR/CJ4/LogOps -last access 2 February 2009 for copies of LOGASSESSREP

CLASS I – FOOD SERVICE / BOTTLED WATER

86. Class I Food Service / Bottled Water support is most frequently provided by contractors to NATO forces in Afghanistan. Pre-packaged food items (field rations) are generally provided by the TCN or through mutual support agreements.

87. Supreme Food Service AG (SFS) is the contract provider for Class I to HQ ISAF, KAIA and KAF[27]. HQ ISAF and KAIA are covered by one contract created by JFC Brunssum. NATO Maintenance and Supply Agency (NAMSA) created a separate contract for KAF as illustrated by the process map in Figure 5.

88. Figure 5 illustrates the NATO arrangements, and indicates several contracts and arrangements exist with the individual RCs to provide Class I support. For this study, JALLC limited the focus to the NATO contracts for Class I. These contracts were established by JFC Brunssum and NAMSA; both hold contracts with the same provider. The number of national and NATO contracts appear to reflect national menus and other national requirements. However, these may not be the most cost effective approach for NATO or for the nations.

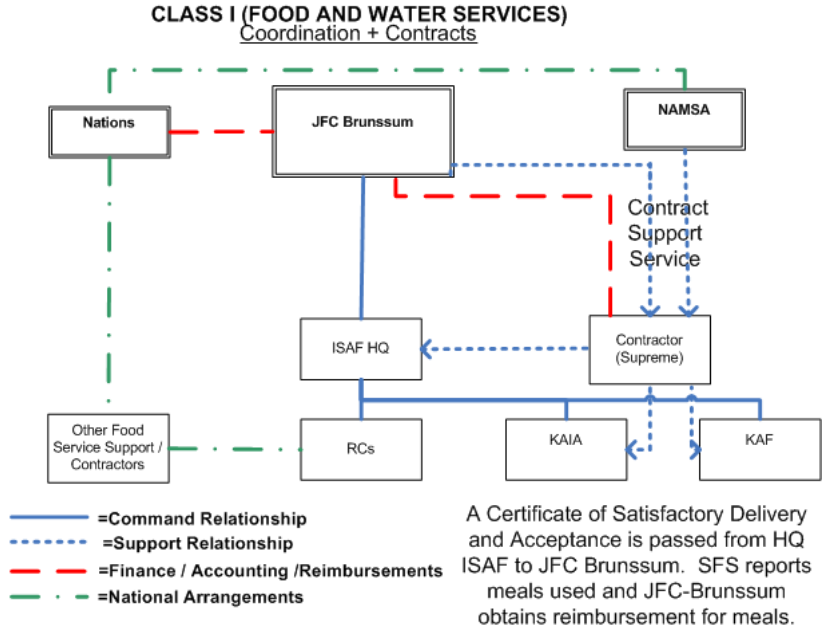

Figure 5. Class I – Food and Water

89. A single contracting agency or nation may provide increased efficiency, and may provide some benefit via economy of scale for NATO and for the Nations.

90. Contractors can provide NATO with direct insight into best business practices and emerging technologies. The June 2008 International Defence Logistic Conference in Brussels[28], provided many companies an opportunity discuss their role in support of NATO missions. In one of the presentations SFS described their operation and infrastructure supporting ISAF, which includes a $30 million dollar refrigerated warehouse in Kabul, and a complete fleet of Supreme Foodservice trucks for perishable and non-perishable foods.

[27] HQ ISAF SOP 403, Class I (Food Supply & Catering), paragraph 2 & 4, page (2), (Reference P).

[28] Mr. Peter Esser, Case Study Afghanistan to the International Defence Logistics Conference, (Reference Q).

While this serves as a model for organizational infrastructure, the sophisticated Supreme tracking system provides asset visibility which offers a glimpse at a best practice in managing logistics. This system was developed in partnership with Microsoft Dynamics (a subsidiary of the software company). SFS's tracking system monitors shipments, maintains inventory control, and provides real time accountability via a “dashboard” of information for managers and decision makers.

91. This is just one example of a commercial best practice which could serve as a model for asset visibility / asset tracking for NATO. There are other examples in industry. The challenge for NATO will be to fully implement an Asset Visibility Tracking System based on existing Standardization Agreements (STANAGs) which can integrate data from commercial contractors or national asset tracking systems. An examination of contractor tracking methods and experience can provide NATO with best practices for emerging technology.

92. NATO may benefit from the integration of contractor asset tracking data into NATO logistic situation report templates which use COTS software (i.e. use of *MS Office-Word / Excel*). Additional insight may be forthcoming into contracted logistics initiatives from the future JALLC study on “Outsourcing Logistics in NATO” which is an ACO analysis requirement for 2009.

CLASS III – FUEL

Operations

93. Class III is supplied by NATO and nations to ISAF, using national contracts and NATO BOAs and NATO has a key role in this support. An illustration of JFC Brunssum’s role as a Lead Nation / Agency in providing Class III support is depicted in Figure 6.

94. HQ ISAF serves as the local / theatre manager of the contract while the reimbursement arrangements and payments are handled by JFC Brunssum. NATO pays only for the quantity of fuel delivered. Major risk in transit is assumed by the contractor, which can be considered a best business practice for this mission.

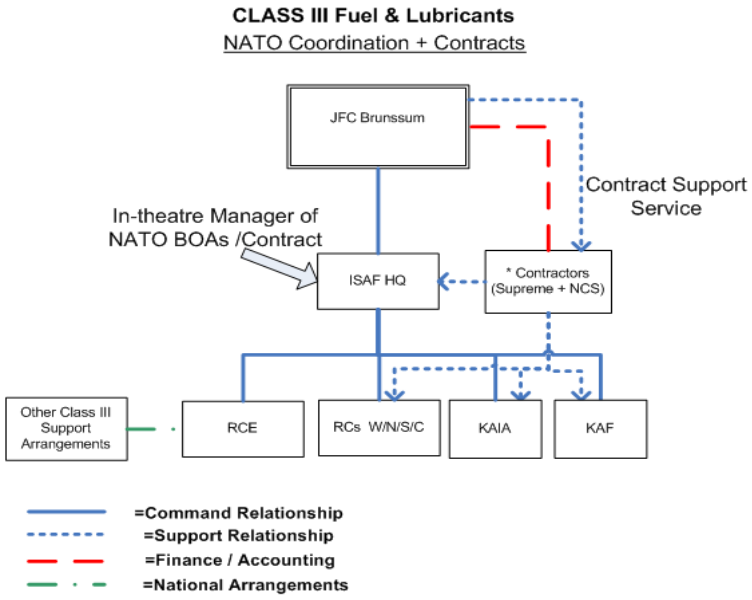

Figure 6. Class III Fuel / Petroleum, Oil and Lubricants Support

95. There is a clear emphasis on Class III support. HQ ISAF CJ4 monitors Class III status daily[29] to ensure fuel will be available to meet mission requirements. Class III Fuel Supply data is posted on the HQ ISAF Secret Web Information Service Environment (WISE) page (as accessed 25 October 2008). Fuel data is also reported in daily and weekly logistic reports mentioned in chapter 2. Class III has the most visibility and emphasis in ISAF.

96. Table 3 is an excerpt of a fuel report on the ISAF Webpage which has been modified for security purposes, but illustrates the detailed information data available. This initiative appears to effectively and efficiently allow NATO to monitor Class III sites, providing asset visibility between the established reporting periods — a best practice applied by HQ ISAF.

Table 5 – Fuel Status Report from HQ ISAF WISE page (Modified into an unclassified format)

ISAF Fuel status in litres			Fri	Sat
			DD-MM-YY	DD-MM-YY
Sample from One APOD	F – 34	Total Stock Reported	1,372,000	1,317,000
		Stock Tested to B2	1,372,000	1,317,000
		Quantity In loaded	83,000	0
		Quantity Issued	46,300	64,600
		Trend		
		Status	Green	Green
		Maximum capacity	2,068,000	2,068,000
		1 DOS figure	50,000	50,000
		Stock percentage	66%	64%
		Total DOS Held	27.44	26.34
		Total DOS Tested	27.44	26.34
	F – 54	Total Stock Reported	418,000	473,000
		Quantity In loaded	0	73,400
		Quantity Issued	11,000	15,400
		Trend		
		Status	Green	Green
		Maximum capacity	480,000	480,000
		1 DOS figure	15,000	15,000
		Stock percentage	87%	99%
		Total DOS Held	27.87	31.53

97. The ISAF mission is dynamic. To keep pace, HQ ISAF revised the Class III SOP three times within approximately six months[30]. In addition, HQ ISAF released a comprehensive Fuel Plan[31] to all RCs and TCNs in April 2008. HQ ISAF CJ4 demonstrated a best practice by continuously refining Class III procedures and simultaneously documenting these changes in their SOPs. These documents will educate new staff, and minimize the disruptive

[29] See the ISAF Webpage for ISAF CJ4 fuel reports/daily situation reports. http://wise.hq.ms.isaf.nato.int/ISAFHQ/DCOSSUPPOR/CJ4/LogOps – last access 2 February 2009.

[30] HQ ISAF SOP 404 for Class III (Fuels and Lubricants) 15 October 2007 was re-written and re-released to ISAF on 20 February 2008, and a new release dated 1 May 2008 is being distributed. (Reference O).

[31] HQ ISAF, CJ4 Log Ops, ISAF Fuel Plan, (Reference R).

effects of frequent changes of personnel. Furthermore, JFC Brunssum updated this program with the release of a coordinated and comprehensive Fuel Supply Plan to HQ ISAF, all RCs and TCNs during July 2008[32] to reflect the changing logistic situation.

98. CJ4's initiative to make critical logistic data available via the classified mission webpage provides timely data and expands asset visibility and reporting.

Capacity & Storage

99. By adopting the concept of a Single Fuel Policy, NATO intended to improve support operations. The sole use of F34 would ease transport and storage issues. However, many nations participating in NATO led operations still have not adopted the Single Fuel Policy or multi-fuel equipment, and these still use equipment requiring F54 (or other fuels).

100. The host nation capacity for Class III storage infrastructure is limited and lacks security. To mitigate transport delays that create fuel shortfalls in ISAF, efforts are underway to improve and increase fuel storage capacity.

101. There are several options available for fuel storage. These include fuel bladders, bolt-together steel tanks, permanent welded tanks, or underground storage. The best option or best practice for fuel storage will vary according to the situation. Table 6 illustrates this point when factors such as flexibility are contrasted with other concerns.

Table 6. Multi-factorial Analysis of Fuel Storage Options
++ = most desirable / - - = least favourable

	Flexibility	Durability	Security
Fuel Bladders	++	-	- -
Bolted Steel Tanks	+	+	+
Welded Steel Tanks	-	+	+
Underground Tanks	--	++	++

102. From interviews, flexibility and security are among the dominant concerns for storage. Given this information, bolted steel tanks appear to be the best option, but this decision must be reviewed as the mission evolves. As APOD facilities change with the mission, flexibility of the resident Bulk Fuel Installation is important.

103. NATO forces normally augment Class III storage capability with fuel bladders, which are typically designed for more moderate climates and were not intended to be permanent facilities. In the interim, maintenance inspections, protection from the sun, and a bladder replacement program will avoid preventable storage mishaps.

CLASS V – AMMUNITION

104. Whilst NATO has standard calibres of ammunition, sharing ammunition is a rare occurrence which typically requires approval of both the TCN user and the TCN provider's national chains of command. Class V (ammunition) is a national supply responsibility, and TCNs not only provide ammunition but generally maintain their own Class V Ammunition

[32] JFC Brunssum's ISAF Fuel Supply Plan (Reference S)

Supply Points (ASPs). Class V storage sites found in RC Capital, RC North and RC South are exceptions.

105. The ASPs shared by TCNs in RC Capital, RC North, and RC South represent good practice by implementing NATO doctrine for multinational support. This reduces the overall logistics footprint and optimizes resources for administration and security by reducing the number of troops required to guard multiple sites, and improves the capability to secure the storage points. These sites could serve as models for future NATO operations.

106. NATO Logistics Principles envision multinational / mutual support mechanisms as a vehicle to achieving greater economy of scale, to increase reserve capacity and to improve overall support. Class V storage facilities would be a logical opportunity for multinational cooperation where security, and administrative issues can be resolved.

107. NATO doctrine envisions multinational / mutual support mechanisms as a vehicle to achieve greater economy of scale, to increase reserve capacity and to improve overall support. ISAF should capture lessons identified at these multinational storage facilities.

SUPPLY SUPPORT ENABLER: MOVEMENT AND TRANSPORTATION

108. Due to poor infrastructure and a lack of host nation support options, logistic support in ISAF is critically dependent on strategic airlift, tactical airlift and ground lines of communication (LOC). As stated previously, SHAPE AMCC is conducting a detailed review of Movement and Transportation issues. For this reason this report will limit its discussion to ground LOCs and Main Supply Routes (MSR) in ISAF.

109. Logistic planners rely primarily on ground transport during spring, summer and fall to build up logistics stocks, and transition to air transport options when conditions make road conditions unreliable, or when time is critical.

110. Supply routes are often high payoff, soft targets for terrorist and/or common criminal activities. Although successful in supporting the ISAF mission, one contractor suffered over 143 employee fatalities in less than 12 months in ISAF due primarily to insurgents[33]. The ever-increasing risk of violence has led Supreme Foodservice and other contractors to request military escorts and additional security.

111. JALLC observed from ISAF's OWNSITREPs, that Class I and III re-supply efforts continue to support the ISAF Mission in spite of the threat of violent attacks. This is attributed to additional security support provided to accompany contract logistic convoys along main supply routes.

112. The JALLC learned that border crossing inspections of vehicles carrying supplies to NATO caused delays of several days or longer. This was one of the most common reasons for delays along the MSRs. This delay concentrated ISAF supplies at predictable locations and increased the risk of violent attack. ISAF is conducting regular meetings with Afghanistan officials and using liaison officers (LNO) at key points to expedite traffic flow of ISAF supplies.

113. In order to mitigate some of the problems with ground transportation, in theatre air transport has been considered, but given tactical requirements in theatre, there is a general lack of in-theatre airlift capacity. In order to mitigate this shortfall in airlift, contracts for rotary

[33] Mr. Peter Esser, Case Study Afghanistan to the International Defence Logistics Conference, (Reference P).

wing support have been implemented in some RCs. There are disadvantages to contract airlift support. For example, currently contractors cannot carry passengers and some cargo, provide medevac, or operate in certain (high risk) areas. These requirements are typically satisfied by military air assets. Expansion of airlift contracts, where feasible, to include the ability to fly personnel on non-combat missions and conduct non-battle medevac flight could further reduce the burden on the limited military air assets available. Additional military assets would provide the greatest flexibility for the Commander.

THEATRE SUPPORT – NATIONAL ROLES AND NATO RELATIONSHIPS

114. NATO doctrine establishes general roles and relationships for Logistics[34], and JFC Brunssum OPLAN 30302[35] established the specific logistic concept plan for ISAF. OPLAN 30302 provided guidance for functional areas such as Movement, Contracts, Host Nation, Engineer, and Financial support. The OPLAN guidance is further supplemented by HQ ISAF SOPs for all military units participating in ISAF.

115. National guidance from the contributing nations often takes precedence over NATO guidance. Such national guidance may take the form of national caveats, national laws, or direct orders from a nation's chain of command. When national guidance is interpreted to contradict NATO guidance friction may occur.

116. As the intermediate HQ between HQ ISAF and the participating forces, the RC HQ is the focal point where any friction between NATO and National guidance will surface. The RC HQ plays an important role in resolving any issues to resource the mission and support the chain of command. This is illustrated in Figure 7.

117. A predictable source of friction with Command and Control appears in the contrast between command responsibility to assure provisions to all elements, and the lack of authority necessary to transfer / move logistic assets between units from different contributing nations. Commanders at all levels are mindful of most friction points and employ various measures to work around these to resolve logistic issues.

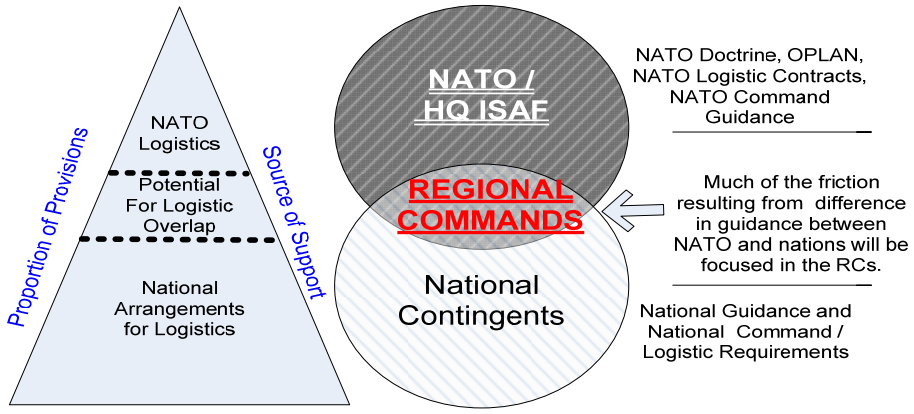

Figure 7. Friction Points and Competing Guidance

[34] MC 0319-2 Collective Responsibility, paragraph 9, page 1-5, (Reference E).

[35] JFC Brunssum, OPLAN 30302, Revision 3, Para 4, p23, (Reference F).

118. Although transfer of equipment between nations is unlikely, other resources can be easily coordinated between nations when reimbursed under STANAG 2034. Evidence of this is found in the arrangements made by NATO and the TCNs which assure provision of Class I and Class III support across ISAF. For example, soldiers that travel from one base or RC into another can usually be fed, or have their vehicle refuelled due to the STANAG process for reimbursement and the national BOA arrangements.

119. There is competing guidance between NATO and nations regarding logistics. These may be minimized by providing COMISAF with authority to match responsibility, and by using the STANAG 2034 to provide reimbursement whenever supplies are transferred between nations.

CONCLUSIONS

120. NATO assumed a new role by serving as a Lead Nation / Agency to provide Class I and III support in ISAF. *(Paragraph 79 to 81)*

121. The proliferation or number of national and NATO contracts may not be the most cost effective approach in theatre. The use of a single contracting agency may provide increased efficiency, and may provide some benefit via economy of scale for NATO and for the Nations. *(Paragraph 86 to 90)*

122. NATO may benefit from the integration of contractor asset tracking data fed into NATO logistic situation reports through common NATO commercial software. Additional insight into contracted logistics initiatives may be forthcoming from the future JALLC study on "Outsourcing Logistics in NATO" which is an ACO analysis requirement for 2009. *(Paragraph 90 to 92)*

123. Class III is primarily supplied by NATO to ISAF. JFC Brunssum acts as a Lead Nation / Agency in providing Class III. HQ ISAF serves as the local / theatre manager and NATO pays only for the quantity of fuel delivered. Major risk in transit is assumed by the contractor. This is considered to be a best business practice for this mission in the current security environment. *(Paragraph 93 & 94)*

124. The HQ ISAF CJ4's initiative to make critical logistic data available via the web provides timely data. Web pages are being used to expand asset visibility and reporting. *(Paragraph 95 to 98)*

125. For Class III requirements, bolted steel tanks offer durability and flexibility. This is currently considered a better option for fuel storage than fuel bladders, but this decision must be reviewed as the mission evolves. The best option or best practice for fuel storage will vary according to the operational situation. *(Paragraph 99 to 103)*

126. The ASPs in RC Capital, RC North, and RC South, represent good practice by implementing NATO doctrine for multinational support, reducing the overall logistics footprint and the numbers of troops guarding the site, thus increasing the capability to secure the storage points. These sites could serve as models for future NATO operations. *(Paragraph 104 to 107)*

127. Terrorists and/or common criminals have found supply routes to be soft targets. Security is essential to support and sustain contract services and logistic support ground convoy movements. Border crossing inspections of vehicles carrying supplies to ISAF are one of the most common reasons for delays along routes. This delay concentrates ISAF supplies at predictable locations, increasing the risk of attack. *(Paragraph 108 to 112)*

128. In order to mitigate some of the problems with ground transportation, in-theatre air transport should be considered. Expansion of airlift contracts, where feasible, to include the ability to fly personnel on non-combat missions and conduct non-battle medevac flight could further reduce the burden on the limited military air assets available. Additional military assets would provide the greatest flexibility for the commander. *(Paragraph 113)*

129. There is competing guidance between NATO and nations regarding logistics. These may be minimized by providing COMISAF with authority to match responsibility, and by using the STANAG 2034 to provide reimbursement whenever supplies are transferred between nations. *(Paragraph 114 to 119)*

5
Recommendations

130. This chapter presents JALLC recommendations based on the conclusions made in the previous chapters. These are presented in order of their appearance in each chapter. The paragraph headings (in bold font) identify the related AOs. After each numbered paragraph the italicized text identifies the DOTMLPFI category that applies.

LOGISTICS REPORTS AND RETURNS IN ISAF (CHAPTER 2 – AO 1.0 & AO 2.0)

131. ACT / ACO should re-assess the value of LOGREP / LOGUPDATE as a reporting tool. *(Leadership)*

132. NATO should continue to use COTS software (e.g. *MS Office Word / Excel*) included in the NATO baseline software which is interoperable with national COTS for data templates and reporting purposes. *(Materiel & Organization)*

NATO LOGISTICS IS (CHAPTER 3 – AO 1.0)

133. ACT should request a detailed business analysis and evaluation to reassess the utility of LOGREP. *(Leadership, Doctrine & Organization)*

134. ACO should continue to encourage the Nations to fill CE Posts. As needed, HQ ISAF and the RCs should continue to double task personnel where shortages exist to enhance logistic reports and data. *(Personnel)*

135. ACO should encourage the Nations to take NATO Logistics IS into consideration during development of National Logistics IS. *(Interoperability)*

136. ACO should continue to encourage Nations to participate in the LOGREP Working Group and to attend LOGREP training opportunities. *(Leadership & Training)*

137. ISAF should continue to provide LOGREP training course(s) in HQ ISAF. *(Training)*

138. Support should be provided to elements that report technical problems with the installation of the LOGREP software. Any installation problems should be reported through NATO to the appropriate POCs at NCSA and NC3A, and the LOGREP Working Group. *(Organization)*

139. NC3A should provide a self-training module in the software package during further developments of NATO Logistics IS. *(Training)*

140. ISAF should establish a link on the ISAF webpage to LOGNET. *(Organization)*

ORGANIZATION & PROCEDURES OF ISAF LOGISTICS (CHAPTER 4 – AO 2.0)

141. ACO should designate a Lead Agency for contracting whenever contract support is feasible, or considered as the most desirable option. *(Doctrine & Organization)*

142. ACT should examine contractor asset tracking methods used in ISAF for situational awareness. *(Materiel & Interoperability)*

143. NATO should consider using web pages to display critical logistic information as a best practice. *(Organization)*

144. NATO should continue to promote the Single Fuel Policy concept and improve fuel storage. *(Doctrine)*

145. NATO should include the concept of multinational ASPs in AJP 4.9 (Reference R); meanwhile ISAF should encourage RCs to implement multinational storage sites for Class V. *(Doctrine & Facilities)*

146. ISAF should continue its efforts with Afghan authorities to reduce border delays and use LNOs at key crossing points. *(Leadership)*

147. ACO guidance on air lift contracts should include the ability to fly personnel on non-combat missions and conduct non-combat medical airlift. *(Leadership)*

148. ACO should encourage the Nations to provide more air assets to ISAF. *(Leadership, Organization & Materiel)*

149. COMISAF should be provided with authority to match responsibility, and nations should be reimbursed in accordance with STANAG 2034 when appropriate. *(Doctrine)*

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Annex A
Glossary of Acronyms

ACT	Allied Command Transformation
AJP	Allied Joint Publication
AMCC	Allied Movement Coordination Centre
AO	Analysis Objective
APOD	Airport of Debarkation
ARRC	Allied Rapid Reaction Corps
ASP	Ammunition Supply Points
Bi-SC	Of the Strategic Commands
BOA	Basic Ordering Agreements
CE	Crisis Establishment
CIS	Communication and Information System
COMISAF	Commander of ISAF
COTS	Commercial of the Shelf
CSE	Core Staff Element
DACOS-LOG	Deputy Assistant Chief of Staff for Logistics
DOB	Deployable Operating Bases
DOB	Deployed Operating Base
DOS	Days of Supply
DOTMLPF-I	Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities and Interoperability
FSB	Forward Support Base
HSG	Headquarters Support Group
IS	Information System
ISAF	International Security Assistance Force
JALLC	Joint Analysis and Lessons Learned Centre
JFC	Joint Force Command
JLSG	Joint Logistic Support Group
KAF	Kandahar Air Field
KAIA	Kabul International Airport
KFOR	Kosovo Force
LNO	Liaison Officer
LOC	Lines of Communications

LOGASSESSREP	Logistic Assessment Report
LOGFAS	Logistic Functional Area Services
Logistics IS	Logistic Information System
LOGREP	Logistic Reporting System
LOGUPDATE	Logistic Update (Report) using LOGREP
LST	Logistic Support Team
M&T	Movements and Transportation
MOVASSESSREP	Movement Assessment Report
MSR	Main Supply Route
NAMSA	NATO Maintenance and Supply Agency
NC3A	NATO Consultation, Command and Control Agency
NCISS	NATO CIS School
NCSA	NATO CIS Services Agency
NRF	NATO Response Force
OPLAN	Operation Plan
OWNSITREP	Own Unit's Situation Report
POC	Point of Contact
POW	Program of Work
PRT	Provincial Reconstruction Team
PSB	Provincial Support Bases
R2	Reports and Returns
RC	Regional Command
RCR	Regional Controlled Route
SACT	Supreme Allied Commander Transformation
SFOR	Stabilization Force
SME	Subject Matter Expert
SNLC	Senior NATO Logistics Conference
SOP	Standard Operating Procedure
STANAG	Standardization Agreement
TCN	Troop Contributing Nation
UNSCR	United Nations Security Council Resolution
WG	Working Group
WISE	Web Information Service Environment

Annex B
Lessons Learned Database Entries

The following *Lessons* identified will be entered into the NATO LLDb. While these are the lessons JALLC considers to meet the requirements for LLDb entry in accordance with the Bi-SC Lessons Learned Directive, they are not the only important findings of this report. Therefore, readers are encouraged to read the main body of this report in it's entirety to ensure all findings are fully taken into consideration. If readers of this report believe it brings to light other Lessons, they are encouraged to incorporate them into their own internal Lessons Learned process or add them to the NATO LLDb.

Lesson 1
Lack of Participation in LOGREP / LOGUPDATE

NATO LLDb Observation #866

Observation

Not all Troop Contributing Nations (TCN), Regional Commands (RC), or Air Points of Departure (APOD) in ISAF participate in LOGREP / LOGUPDATE. Furthermore, the data which is provided is often incomplete. This decreases the utility of this software and the value of this system to NATO.

LOGREP/LOGUPDATE do not achieve their purpose as envisioned by NATO doctrine.

Discussion

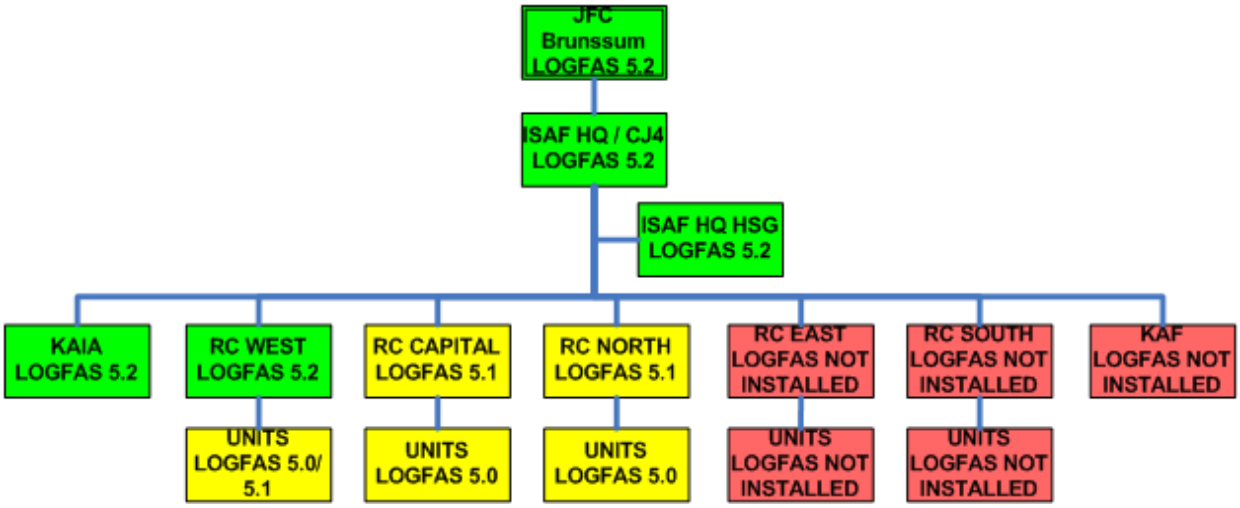
Doctrine: Use of LOGREP/LOGUPDATE is required by Bi-SC Directive 80-3, *Logistics Reports*, Volume 5, 01 January 2000 and JFC-Brunssum OPLAN 30302, Revision 3, 07 January 2008.

In Dec 2007 and Jan 2008 correspondence from HQ ISAF and SHAPE identified problems obtaining LOGREP/ LOGUPDATE reports from nations participating in ISAF. Similar findings were identified during the NRF Exercise STEADFAST JAGUAR 2006, (as described in a JALLC Report “Execution of the JLSG Concept, 1710.13/JALLCEX/003.06, 27 October 2006”) and also during a SHAPE Study which described LOGREP use in KFOR / SFOR (“2030/SHLLR/DHCE/117/03-97274, 28 Feb 2003”).

Entries in the NATO Lesson Learned Database (#380, 573, and 865) each indicate problems associated with the NATO Logistic software system.

In Nov 2008 JFC-Brunssum reported to the LOGREP Working Group that:

- Two of five Regional Commands do not submit LOGREP / LOGUPDATES.
- One of two major APODs does not submit LOGREP / LOGUPDATES data.
- Most national elements in RCs failed to upgrade the LOGREP software on their computers. Two RC HQs had not updated their LOGREP software, and two RCs and one APOD did not have LOGREP software on their machines.



LOGFAS installation status in ISAF, November 2008.

- As observed at several NATO HQ J4 staff sections, LOGREP / LOGUPDATE reports are not used or analyzed, but other reports from ISAF in plain text are being utilized and shared.
- Although there are several factors (Personnel, Training, and Materiel issues) which can contribute to a lack of national participation. Of note, LOGREP / LOGUPDATE were not designed to be interoperable with National LOG Systems.

Conclusions

NATO Policy and Doctrine states that LOGREP / LOGUPDATE participation is required by TCNs in NATO led operations.

National participation is one method to measure support for NATO programs, and historically, national participation with LOGREP has been inadequate, in SFOR, KFOR, in NRF exercises and ISAF.

Lack of participation and incomplete LOGREP / LOGUPDATE data limits the validity and utility of these reports and cannot meet NATO's doctrinal expectations as once envisioned.

There is a disconnect between the policy and doctrine requiring LOGREP and its use. A business analysis could address this disconnect in order to improve the link between NATO Doctrine and operational practice.

Recommendation

ACT should request a detailed business analysis and evaluation to reassess the utility of LOGREP.

Lesson 2
Logistics arrangements in ISAF

NATO LLDb Observation #867

Observation

A centralized approach to Class I (Food and Water) and Class III (Petroleum, Oil and Lubricants) support in ISAF provides economy of scale and increases asset visibility. Logistics support in ISAF is dominated by national support / national arrangements.

Discussion

Nations can select available NATO support arrangements or make their own. The following table depicts logistics support arrangements for supply in ISAF.

	HQ ISAF	RC - C	RC-N	RC-W	RC-S	RC-E	KAIA	KAF
Class I	**NATO**	**National**					**NATO**	
Class II	**National**							
Class III	**National / NATO***					**National**	**NATO**	
Class IV	**National**							
Class V	**National**							

Logistics Support in ISAF

* Most strategic fuel is delivered by NATO Basic Ordering Agreement (BOA) to national Bulk Fuel Installations for onward distribution to nations.

Whilst national support arrangements dominate Supply in ISAF, the exceptions are Class I and Class III.

National elements in HQ ISAF, Kandahar Airfield (KAF), and Kabul International Airport (KAIA) use NATO contracts for Class I and III support. Similarly, NATO ensures Class III support to the majority of ISAF. This demonstrates collective responsibility for logistics support at work between NATO and nations in accordance with NATO Policy (MCM 319-2).

Class I support is most frequently provided by contractors to NATO forces in Afghanistan. Field rations are generally provided by the TCN or national agreements. HQ ISAF and KAIA are covered by one contract created by JFC-Brunssum. NAMSA created a separate contract for KAF.

Class III is supplied by contracts arranged by NATO for ISAF created by JFC-Brunssum. NATO pays only for the quantity of fuel delivered. Major risk in transit is assumed by the contractor.

The number of national and NATO contracts may not be the most cost effective approach in-theatre. A single contracting Agency or Nation can provide:

- Economy of scale for NATO and for the Nations.
- Increased asset visibility for NATO Commanders.

Conclusions

National support arrangements dominate Supply in ISAF, but Class I and III are exceptions.

NATO arrangements for Class I support to HQ ISAF, KAF and KAIA, and NATO functioning as the Lead Agency for Class III provides economy of scale and asset visibility.

Recommendations

NATO (ACO) should promote the use of a Lead Agency approach when feasible.

NATO should encourage the nations to participate in NATO led Class I and Class III arrangements.

Lesson 3
Multinational sharing of a Class V storage site

NATO LLDb Observation #868

Observation

Multinational logistics support is a tool which can enhance efficiency and effectiveness, NATO's goal as described in MC319/2, *NATO Principles and Policies for Logistics.* One example of this approach is multinational Class V (Ammunition) storage. Multinational storage sites can be found in RC-Capital, RC-North and RC-South in ISAF.

Discussion

Class V (Ammunition) is a national supply responsibility, and Troop Contributing Nations (TCNs) generally maintain their own Class V Ammunition Supply Point (ASP). However, multinational Class V storage sites are found in RC-Capital, RC-North and RC-South.

The ASPs shared by TCNs in RC Capital, RC North, and RC South represent good practice by implementing NATO doctrine for multinational support. This reduces the overall logistics footprint and optimizes resources for administration and security by reducing the number of troops required to guard multiple sites, and improves the capability to secure the storage points. These sites could serve as models for future NATO operations

NATO Logistics Principles envision multinational / mutual support mechanisms as a vehicle to achieve greater economy of scale, to increase reserve capacity and to improve overall support. Class V storage facilities would be a logical opportunity for multinational cooperation where security, and administrative issues can be resolved.

Despite NATO standard calibres of ammunition, sharing ammunition is a rare occurrence that typically requires approval by (national) users as well as the (national) providers.

Shared ASPs can reduce the overall NATO logistics footprint, and optimize resources for administration and security.

Conclusion

NATO doctrine envisions multinational / mutual support mechanisms as a vehicle to achieve greater economy of scale, to increase reserve capacity and to improve overall support. The ASPs in RC-Capital, RC-North, and RC-South, represent good practice by implementing NATO doctrine for multinational support, reducing the overall logistics footprint, the amount of troops to guarding the site and increasing the capability to secure the storage points. These sites could serve as models for future NATO operations.

Recommendations

NATO (ACO) should promote Multinational Class V storage facilities to reduce the overall logistics footprint where security and risk management factors make this feasible.

HQ ISAF should seek lessons identified during the operations of these Multinational ASPs to encourage development of good practices.

Annex C
Resources