

FINABEL COORDINATING COMMITTEE

Quartier Reine Elisabeth
Rue d'Evere

B-1140 BRUSSELS

Tél Col : 02/701.41.04
Tél Maj : 02/701.41.03
Tél Srt : 02/701.68.24
FAX : 02/701.71.78
E-mail : finabel@mil.be

12 February 2013

FinSec Nr 27609

DISPATCH NOTE

DESIGNATION	Promulgation report Finabel Study MAN.2.R
OF	
DOCUMENT	DOCTRINE AND SOLUTIONS FOR FIELD ACCOMMODATIONS UP TO FIXED INSTALLATIONS
REFERENCE	FINSEC Nr 27556 from 12 Nov 2012
OBSERVATION	The above referenced document may be destroyed

Promulgation of report Finabel Study MAN.2.R

Doctrine and Solutions for Field Accommodations up to Fixed Installations



BIBLIOGRAPHICAL PAPER MAN.2.R

1. <u>References</u> : 1. FINABEL study G27 R 2. FINABEL study C 28 R 3. AJP 3.14 F 4. AJP 3.15(A) 5. PFP(NAAG-LCG/7)D 6. T.38.R Future Operational Environment	2. <u>Other references</u> :
3. <u>Promulgation</u> : 12 FEB 13	4. <u>Revision</u> :
5. <u>Number of pages</u> : 28	6. <u>Classification</u> : UNCLASSIFIED
7. <u>Title</u> : Doctrine and Solutions for Field Accommodations up to Fixed Installations	
8. <u>Originator</u> : GERMANY	9. <u>Address</u> :
10. <u>Key words</u> : EU BG, logistics, accommodation,	
11. <u>Summary</u> : The aim of this study is to analyse conditions and minimum standards of mobile and stationary (camp) accommodations the Finabel land forces have to achieve with regard to in-theater accommodation during operations in order to allow sustainability in support of successful mission accomplishment. To achieve this aim, in-theater accommodation parameters will be analysed and general requirements of field accommodation will be defined in order to consider various accommodation categories as function of the related operational parameters. Finally, an example of responsibilities and capabilities will be presented. The objective was to give a common guideline as broad as possible, thus aiming at setting minimum standards required for in-theater accommodation Main effort of the study is the assessment of the accommodation assets needed in the initial phase of a mission. The result of the study will be useful for EU BG or NRF operations and currently on going NATO and EU stabilization operations.	

**Doctrine and Solutions for Field Accommodations up to Fixed Installations
FINABEL STUDY MAN.02.R.**

FINABEL COORDINATING COMMITTEE	1
B-1140 BRUSSELS	1
1. Introduction Note	5
1.1 Intent and Objective of the Study	5
1.2 References	6
2. In-theater Accommodation Parameters	7
3. Principles of In-theater Accommodation	9
3.1 Criterion Operational Duration.....	9
3.2 Mobile Accommodation (Organic and Logistic)	10
3.3 Stationary Camp Accommodation (engineer)	11
3.4 Stationary Camp Accommodation in Field Infrastructure	12
4. General Requirements of Field Accommodation	15
4.1 Mobile Accommodation (Organic to Logistic)	15
4.2 Stationary Accommodation (Engineer and Permanent)	17
5. Field Camp Equipment: Categories	18
6. Conclusions and Recommendation	19
6.1 Overview	19
6.2 Responsibilities and Capabilities.....	20
6.2.1 Phase 1 – Organic.....	20
6.2.2 Phase 2 – Logistic	21
6.2.3 Phase 3 - Engineer.....	21
6.2.4 Phase 4 – Permanent	23
7. Summary	24
ANNEX A – Required Components Field Accommodation Phase 1 (Organic)	25
ANNEX B – Required Components Field Accommodation Phase 2 (Logistic)	26
ANNEX C - Phases 3/4 (Infrastructure Engineering/ Permanent Field Infrastructure).....	28

1. Introduction Note

Against the background of today's operational spectrum covered by European armed forces in allied operations, an increasing number of such operations and limited resources, it is necessary to optimize employment of the available forces. In this context it is particularly important to maintain the personnel and materiel sustainability of forces operating around the world, even over extended periods of time.

In-theater accommodation responding to the situation, the mission and the requirements contributes significantly to physical and psychological operational readiness, physical integrity, motivation and sustainability of the forces in theater and thus contributes directly to mission accomplishment.

1.1 Intent and Objective of the Study

The present study is to analyze the conditions and minimum standards the FINABEL land forces have to achieve with regard to in-theater accommodation during operations in order to allow sustainability in support of successful mission accomplishment.

Various accommodation categories will be considered as a function of the related individual operational parameters (especially mission duration).

The objective is to develop an understanding as widely common as possible for the minimum standards required for in-theater accommodation. This is a prerequisite for intensification of common establishment and utilization of in-theater accommodation infrastructure in the future - also in the sense of cost reduction and the "pooling and sharing" approach of the European Union armed forces.

Main effort of the study is the assessment of the accommodation assets needed in the initial phase of a mission.

1.2 References

The present study refers to the following studies dealing with the issue Field Accommodation:

1. FINABEL study G 27 R
2. FINABEL study C 28 R
3. PFP (NAAG-LCG/7)D
4. AJP 3.14 F
5. AJP 3.15(A)
6. T.38.R Future Operational Environment

Particularity this study refers to the document “NATO Guide for Field Accommodation” (PFP(NAAG-LCG/7)D(2008)0001). However this handbook focuses on scales and standards for stationary field accommodation. Due to this the main focus of this study is on the analysis of standards and requirements for Mobile Accommodation.

Aspects of camp protection and security measures are considered to be of minor importance within this study. In particular Finabel study G.27.R focuses on this issue.

2. In-theater Accommodation Parameters

The nations must be capable of ensuring accommodation of the contingents with short preparation time and under all climatic and geographic conditions. This applies principally to the entire operational spectrum and must be permitted using organic forces and assets, even without using comprehensive logistic and infrastructural preparations (e.g. by recourse to contractor support to operations (CSO) and/or Host Nation Support (HNS)). The duration of accommodation services to be provided ranges from short-term missions to long-term accommodation of in-theater contingents that may vary considerably in size.

The units may conduct mobile operations including short-term redeployment or may be employed on a stationary basis over a period of several days or weeks or even months to years. The security situation may change at short notice from calm and stable to neither calm nor stable.

Provision and operation of field infrastructure is – depending on the logistical system of the deploying nation – a specialized logistic or an infrastructure task. Besides provision of accommodation for the contingent itself, it includes also planning, setup and technical/functional operation as well as dismantling/partial dismantling of the camp or in-theater field infrastructure as necessary.

Land forces typically operate in complex and dynamic environments which may be characterized by:

- Versatile terrain structures, vegetation, environmental and climatic conditions,
- Operations in extended urban terrain with critical infrastructure,
- A population living under the influence of various ethnic, religious, political, social and economic movements that often are the cause of a conflict,
- Possibly non-existent or weak and ineffective official regulatory power,
- Non-state violent-prone actors/groupings, e.g. terrorists, criminal gangs, regional warlords,
- A number of international, government and non-government organizations operating independently in the theater,
- Permanent presence of the media,

- Fluent and seamless alternation of operational intensity and
- Rapid technological changes that may have an impact on friendly and opposing forces.

Employment in an environment with unfamiliar types of terrain, vegetation, climatic and weather conditions can be extremely stressful for the soldiers, wearing down their physical and mental strength as well as their health. Weapons and equipment are exposed to severe stress, wear and tear, often difficult to operate, and of partly limited or even no usability. Close terrain, specific or extreme weather phenomena (e.g. heavy sustained rain, thunderstorms, hot, cold, sultry weather, etc.), and the related effects on the terrain (such as terrain trafficability) may require operational adaptations in terms of time, terrain and forces.

Appropriate actions are therefore required to ensure adequate recovery, supply and even Morale, Welfare and Recreation (MWR) of the employed forces as secure as possible. This applies also to the employed vehicles, material and equipment undergoing technical maintenance and, when necessary repair in an appropriate and suitable working area. Thus, all field infrastructure measures must aim at providing a significant contribution towards ensuring sustainability of the employed forces.

3. Principles of In-theater Accommodation

3.1 Criterion Operational Duration

The duration of an operation decides on the measures and methods of construction required to provide accommodation to the employed forces.

With regard to the definition of accommodation requirements, member states have their own criteria and priorities which refer to space requirement, comfort level and security measures. Therefore, the following allocation of operational durations should serve as a basis and rough guide for definition:

Operational Duration	Phase
Up to 8 days	I: Mobile accommodation (organic to the units)
Up to 30 days	II: Mobile accommodation (logistic support function)
From 30 days to 12 months	III: Stationary camp accommodation (Infrastructure engineer , Container modules/tents)
More than 1 year	IV: Field infrastructure (permanent)

All four types of accommodation can be used simultaneously at different locations or in combination at one location. Nevertheless, stationary camp accommodation generally follows mobile in-theater accommodation. Setting up stationary camp accommodation requires preparation and can take several weeks depending on the situation.

3.2 Mobile Accommodation (Organic and Logistic)

Mobile accommodation is defined as the short-term in-theater accommodation of specific units and headquarters.

As a rule it is ensured by **organic** (military) forces and assets in military platoon's, coy's

or

by **logistic** support on own battalion level with support elements of the own battalion. It does not draw on support from other service providers, outside the battalion.

Mobile accommodation is mainly required in the event that stationary accommodation is inappropriate or impossible during or after combat action or mobile operations or is due to wide area deployment of the units and headquarters.

Mobile accommodation is primarily provided using tents and available capabilities of combat vehicles.

Some characteristics of mobile accommodation are:

- Frequent redeployment,
- Decentralized accommodation,
- Acceptance of limited provision of services in the functional areas.

The respective unit/headquarters has to set up, operate, dismantle and in the context of tactical deployment bring and operate mobile accommodation without any military or civilian support.



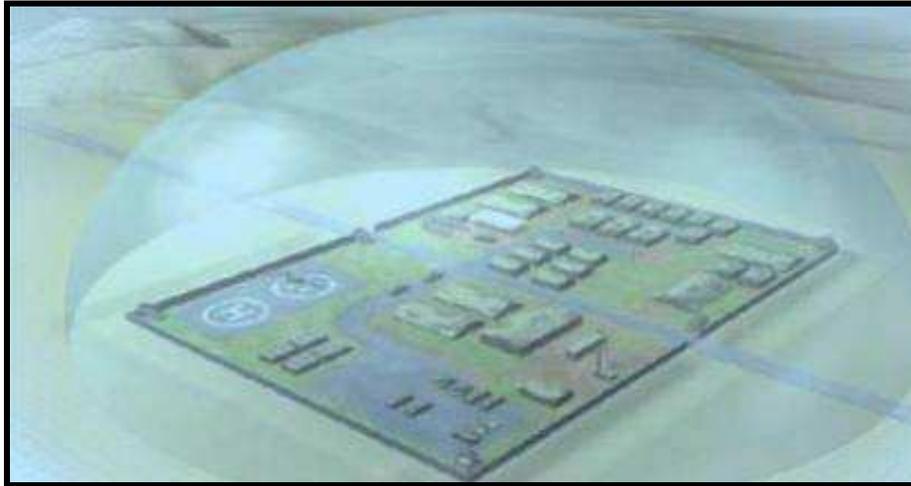
3.3 Stationary Camp Accommodation (engineer)

Stationary camp accommodation is defined as the largely centralized other than temporary in-theater camp accommodation aligned to the area management of the contingents to be accommodated. It principally applies to stationary operations and uses facilities provided by the host nation or rented facilities, including setup and operation of a camp/field infrastructure. Stationary camp accommodation is provided if admitted or required with regard to the mission, the security situation and the duration of deployment of the employed forces. It is to be sought as early as possible to keep the stress level low for the soldiers and consequently contributes significantly to the sustainability of the force.

Characteristics of Stationary Accommodation are for example:

- Adequate deployment time of the units/headquarters at a location,
- Protection appropriate to the security situation,
- No nearby combat operations that would render stationary accommodation inexpedient,
- Planning, setup, operation and possibly dismantling require specific technical and functional personnel.

To ensure stationary **camp accommodation** specific forces (camp construction and operating personnel) and assets will generally be provided. Stationary camp accommodation is of particular importance at the beginning of an operation when operative and time parameters often do not permit the use of non-military forces and assets. As the operation progresses, the military forces can be supplemented by other military personnel, local staff and/or contractor personnel as well as allied forces personnel, depending on the situation. Stationary camp accommodation should generally use modular military camp equipment (tents, containers, mobile multi-purpose halls incl. required furniture, etc.). This does not exclude the use of existing infrastructure or minor construction of new infrastructure.



3.4 Stationary Camp Accommodation in Field Infrastructure

Stationary camp accommodation in field infrastructure principally requires the provision of the capabilities identified in Chapter 5. To this end, the respective users specify their requirements. To ensure accommodation in field infrastructure, specific non-military personnel and assets from troop-contributing nations generally have to be available. This type of accommodation is provided only if admitted or required by the mission, the security situation and the duration of deployment of the employed forces (projected deployment duration longer than 12 months).

Subject to the situation, non-military personnel may be supplemented by military staff, local staff and/or contractor personnel. The provision of field infrastructure is ensured by maintenance of existing facilities and installations as well as fixed and/or flexible new constructions. Accommodation in field infrastructure does not exclude use of military camp equipment. This may require augmentation of personnel by military staff. Potential stationary in-theater accommodation can be made available referring to civilian services or accepting solutions from allied/partner nations.

For implementation of user tasks, the related infrastructure facilities (e.g. construction sections) have to be established with the contingent.

Field infrastructure requirements are the responsibility of logistic forces or infrastructure support detachment. They comprise construction (planning and set-up), operation and dismantling/partial dismantling or exploitation of the structural works as well as in-theater site management. Subject to the military parameters (mission, security) and in consideration of time requirements and efficiency analysis, the requirements are met by solid constructions applying local construction methods and/or use of prefabricated parts or deployable and re-

usable modules. To implement the construction projects specialized logistic and engineer capacities are needed, sometimes supported by civilian companies or – as available – the construction offices from the host nations. Subject to the local market situation local companies should be contracted to the maximum extent possible. Contractors and armed forces specialists required for the construction of field infrastructure have to be provided in accordance with the operative requirements and trained on planning and control of in-theater construction projects.

Operation of field infrastructure and real estate management is also generally the responsibility of the infrastructure support detachment. Local staff has to be recruited from the local labor market as permitted in accordance with military interests. Subject to the military parameters (mission, security) and taking economy into account, operation of field infrastructure or individual services may be contracted out by the infrastructure support detachment to contractors.

However, the infrastructure support detachment being part of the forces must be able to accomplish all operation and management tasks in accordance with operative requirements. The respective personnel required for the infrastructure support detachment is to be provided and has to undergo advanced training. These tasks will be accomplished by in-theater organizational elements whose staffing and physical assets will be tailored to the mission.

Finally, it has to be mentioned, that not all missions will reach this phase even if they have a duration of more than one year. It is a political decision to declare in an early stadium that a mission will be longer than one year.

Characteristics of Stationary Accommodation (Camps/Fixed Field Infrastructure):

In the event of in-theater accommodation in camps, camp construction and camp support forces or manpower and assets from the infrastructure support detachment usually have to establish the following functional areas that must also be tailored to the projected mission duration:

- Shelters,
- Guard, security,
- Troop billeting,

- Basic information/communication services,
- Messing,
- Sanitation,
- Surface areas for user specific components and services,
(e.g. medical care),
- Areas for provisioning and provision of equipment and all kinds of supplies
(materiel, ammunition, POL, food, clothing, PX articles, etc.),
- Technical support/maintenance area,
- Trafficable areas (incl. helicopter landing site),
- Laundry,
- Stationing areas,
- Headquarters/administration,
- Training facilities (e.g. Firing Range, CRC Training Area),
- Chaplain service,
- MWR and counseling.



4. General Requirements of Field Accommodation

4.1 Mobile Accommodation (Organic to Logistic)

The minimum standard of the "mobile accommodation" basic capability should comprise the following elements:

- Accommodation (incl. heating and electric power),
- Hygiene/ sanitation,
- Messing,
- Multi-purpose installations.

The following general requirements apply to all basic capability modules. Deviations thereof will be addressed in the description of the module-specific requirements.

- The assets must be state-of-the-art and simultaneously easy to operate and maintain.
- Suitability for sustained operations of up to six months and repeated set-up/dismantling and operation have to be ensured.
- All project-related modules should be operable independent of existing infrastructure and principally allow safe operation around the world.
- The modules should be configurable in accordance with the situation (e.g. subject to season or size of the supported force).
- They must be suitable for setup and operation without any engineering efforts (surface area preparation of construction site).
- Setting up and dismantling of the modules as well as their operation must be permitted after a simple user briefing.
- Setting up and dismantling, transloading and transport must be permitted without the use of means of transshipment.
- Suitability for utilization under the conditions of climatic categories A1 thru A3, B1 thru B3 and C0 in accordance with STANAG 4370 is indispensable. Suitability for utilization under climatic zone C1 conditions is to be sought only if the technical implementation is without any risk.

- Storage and transportability of the modules is to be ensured under the conditions of climatic categories A1 thru A3, B1 thru B3 and C0 thru C2, and climatic categories M1 thru M3 in the event of sea transport.
- Tarpaulin floors are required for the tents.
- All modules must be adequately protected from severe dust and sand formation.
- Protection up to a height of 0.3m against ingress of rain and splashing water is required.
- All modules must be transportable on military transportation vehicles or movable using inherent means (e.g. wheels).
- The modules including their component parts have to be optimized as to weight and volume so that transport capacity and weight are reduced to a minimum.
- Protection from pest and parasite infestation is required.
- The modules must allow for easy cleaning and sanitization using the cleaning and disinfectant agents available in the armed forces.
- The modules must be resistant to cleaning and disinfectant agents.
- Suitability for prophylactic treatment of animal diseases has to be ensured.
- Operation of all fuel consuming components must be based on the "Single Fuel Concept". Associated products to be used have to meet the requirements listed in STANAG 1414.

4.2 Stationary Accommodation (Engineer and Permanent)

To ensure **camp accommodation** generally specific forces (camp construction and operating personnel) and assets have to be provided. The elements listed below and basic requirements should initially be a basic consideration in the planning and setting up of camps by military forces.

- Overnight stays in containers (if possible),
 - Containers with wet rooms, toilets and laundry facilities,
 - Containers with cooking facilities and tents with messing facilities,
 - Protection of the camp using tactical assets (guards, patrols, etc.),
 - Initial infrastructure measures (observation posts, GABIONEN bastions, etc.),
 - Containers for C2, communication and information systems (CIS),
 - Containers for medical support,
 - Water supply: complete (separate) water treatment system,
 - Power supply: complete (separate) power supply, wiring using ducts,
 - Provision of logistic and technical facilities (supply/maintenance facilities, vehicle washing installation, POL station, etc.),
 - Preferably in tents and containers to provide protection from the weather
- Initial development of mobility: Road improvement (gravel, trackway slabs).

In the process of further development, the condition of the camp will be further improved. Measures to be considered are:

- Security of the camp fence: Gravel Bastions (GABIONEN), observation posts, initial setup of technical surveillance means (camera, sensors),
- Improvement of access security: GABIONEN wall, vehicle checkpoint, personnel gate,
- Preferably accommodation in protected containers (initially using sandbags on a temporary basis, later GABIONEN, armored container),

- Installations: armored key facilities (command post, communications/operation/medical/messing, facilities),
- Increasing mobility by roads improvement.

5. Field Camp Equipment: Categories

Equipment for in-theater accommodation is based on the responsiveness requirements to the forces and contingents in need of accommodation. In this context, the characteristics of special forces and specialized forces operations have to be taken into account. Equipment functionality will be commensurate with operational requirements. Operational requirements entail categorization of the equipment required for ensuring in-theater accommodation:

- Modular air-transportable camp components,
- Rapidly deployable camp components and
- Camps for sustained operations (e.g. stability operations)

These three types of camp components differ accordingly in transportability, setup time and comfort level. Security of all three camp types focuses on active protection. From the very beginning of reconnaissance, facility planning should consider the geographic conditions and the related threat, taking all security-related issues into account. Armor plating will only be provided for selected modules in some containers. As a consequence, reinforcement will generally be ensured taking other measures, such as physical protection (e.g. sand bags/GABIONEN/walls) and installation of sensor systems.

As a rule, the camp components must be designed to allow setup and operation in accordance with the usually required improvement of soil conditions. The time requirement for material transport to the camps is based on the user operational requirements and is additionally subject to the distance from theater as well as availability of suitable transportation means.

This offers distinct possibilities for mutual support of material transport by allied nations, in the framework of HNS or CSO. Those procedures have already been applied for some time on current missions.

For establishment and setup of camps, armored vehicles and machinery (engineer construction equipment) have to be provided as required by the situation. This is mainly true when conducting moves with the engineer construction equipment itself outside existing camps.

6. Conclusions and Recommendation

The following chapter gives a detailed overview over the four phases of field camp support and illustrates which units can be responsible at which level and which capabilities of field camp support are needed to support and protect units thus helping to ensure their sustainability. The described equipment is accommodation equipment, not personal equipment (for example: sleeping bags or single tents).

6.1 Overview

PHASE	LEVEL	EQUIPMENT	CONSTRUCTION TIME	CAPABILITIES
			RETENTION	
1 ORGANIC	PLT / COY no BnLog	MOBILE (basic facilities)	Up to 1 hr	<ul style="list-style-type: none"> - Food element - Element hygiene and sanitary - Element accommodation
			1-8 days	
2 LOGISTIC	COY / Bn BnLog	MOBILE (additional facilities)	Up to 24 hrs	<ul style="list-style-type: none"> - Element multifunctional - Element catering preparation - Element additional hygiene and sanitary
			Up to 30 days	
3 ENGINEER	Field Camp Support Unit	FIXED (field camp)	14 days (basic) to 4 months	<ul style="list-style-type: none"> - Storage Areas - Central Areas - Functional area - accommodation
			Up to 1 year	

4 PERMANENT	Infrastructure support detachment	FIXED (infrastructure)	Up to 1 year	- Storage Areas - Central Areas - Functional area accommodation
			> 1 year	

6.2 Responsibilities and Capabilities

6.2.1 Phase 1 – Organic

Accommodation

- Air conditioning and heating system,
- Accommodation for 4 soldiers and more,
- Protection against insects,
- Storage for personal equipment and weapons,
- Capable to be built up by 2 persons in 20 minutes,
- Lighting system,
- Power supply.

Hygiene and Sanitary

- Basic sanitary support for 4 soldiers,
- Makeshift hand washing and personal hygiene,
- Weather protection,
- Dry toilet,
- Capable to be built up by 2 persons in 20 minutes,
- Wet wipes and disinfectants as initial,
- Lighting system.

Food

- Device to warm up combat rations or individual food,
- Cooling capability for mission food or individual food,
- Energy via future energy system,
- Compact, lightweight, hygienically safe,
- Disposable tableware for 10 days.

6.2.2 Phase 2 – Logistic

Capabilities:

Demand according to requests of branches of the armed forces
(level of comfort depending on strength of groups and retention at place)

- Element additional hygiene / sanitary (shower and washing facilities, toilet, laundry),
- Element additional catering preparation (food preparation, clean up, food storage, disposal)
- Element multifunction (tent, table, chairs, command post).

6.2.3 Phase 3 - Engineer

Capabilities:

Functional area accommodation:

- Minimum 6,75 sqm per person,
- Air condition and heating system in built up accommodation,
- Security measures(e.g. Shelters),
- Communication elements (incl. Welfare).

Central Facilities:

- Sanitary facilities (1x shower/ 1x toilet per 15 persons),
- Laundry (2,5 kg per person and day),
- Field camp/staff and coy areas,
- Working spaces (e.g. Maintenance, Transloading Areas),
- Command posts,
- MWR facilities (incl. postal services),
- Power supply,
- Garbage disposal.

Storage areas for all NATO Classes of Supply:

- Ammunition storage capacities,
- Storage capacities for fuel and POL,

- Storage capacities for other dangerous goods,
- Storage capacities for food,
- Water storage and distribution system,
- Capability to remove blackwater.

6.2.4 Phase 4 – Permanent

Capabilities:

Functional area accommodation:

- Air condition and heating system,
- Minimum 6,75 sqm per person,
- Shelters,
- Security measures,
- Communication elements.

Central areas:

- Sanitary facilities (1x shower/ 1x toilet per 15 persons),
- Laundry (2,5 kg per person and day),
- Field camp/staff and coy areas,
- Working spaces.

Storage areas:

- Ammunition storage capacities,
- Storage capacities for fuel and POL,
- Storage capacities for other dangerous goods,
- Storage capacities for food,
- Capability to run a water supply system for 70 - 120 ltr water per person and day,
- Storage capacities for water,
- Capability to remove sewerage,
- Power supply,
- Garbage disposal.

Differences (example) to phase 3:

- Higher developed infrastructure and working spaces,
- More (or better equipped) MWR facilities,
- Higher amount of civil workers,
- More HNS,
- Fixed buildings instead of containers (not deployable).

7. Summary

In-theater accommodation gets – against the background of today’s operational spectrum by European armed forces in allied operations – an increasing importance to protect soldiers against environmental and opposing influences in order to keep them sustainable and operational ready.

The multinational background of on-going operations, especially on NATO and EU level, forces European land forces to develop a common approach to meet the requirements of in-theater accommodation parameters.

This study has been developed as a “Food-for-thought-paper” to analyse conditions and minimum standards of mobile and stationary (camp) accommodations the FINABEL land forces have to achieve in order to allow sustainability in support of successful mission accomplishment. By analysing in-theater accommodation parameters and defining general requirements of field accommodation, various accommodation categories are considered with the aim of giving an example of responsibilities and capabilities referring to different challenges of in-theater accommodation.

The objective was to give a common guideline as broad as possible, thus aiming at setting minimum standards required for in-theater accommodation

The main goal was the assessment of the accommodation assets needed in the initial phase of a mission. By showing the mentioned categories, responsibilities and capabilities to the related requirements, this study will be useful for EU BG or NRF operations and currently on-going NATO and EU stabilization operations.

ANNEX A – Required Components Field Accommodation Phase 1 (Organic)

<u>Component</u>	<u>Facility</u>	<u>Recommendation</u>
<u>Protection</u>	Outer perimeter	- Battle positions for vehicles / OPs
	Inner perimeter	- Foot patrol
	Hardened structures	- Sandbagswalls
<u>Accommodation</u>	Living	<ul style="list-style-type: none"> - Air conditioning and heating system, - Accommodation for 4 soldiers and more, - Protection against insects, - Storage for personal equipment and weapon, - Capable to be built up by 2 persons in 20 minutes, - Lighting system, - Power supply.
<u>Hygiene and Sanitary</u>	Basic sanitary support for 4 soldiers	<ul style="list-style-type: none"> - Makeshift hand washing and personal hygiene, - Weather protection, - Dry toilet, - Capable to be build up by 2 persons in 20 minutes, - Wet wipes and disinfectants as initial, - Lighting system.
	Disposal	- Transportable environmental safe on/in own vehicle
<u>Food</u>	Preparing	<ul style="list-style-type: none"> - Device to warm up mission food or individual food, - Disposable tableware, - Compact, lightweight, hygienically safe.
<u>water</u>	Storage for 7 days	<ul style="list-style-type: none"> - Availability of 10 ltr per soldier/day, - Personal water purification device, - Transportable on/in own vehicle.
<u>Power supply</u>	Electric	<ul style="list-style-type: none"> - Transportable on/in own vehicle, - Energy via future energy system iot reduce use of batteries and engines.

ANNEX B – Required Components Field Accommodation Phase 2 (Logistic)

Component	Facility	Recommendation
<u>Protection</u>	Outer perimeter	Battle positions for vehicles / OPs
	Inner perimeter	Foot patrol
	Hardened structures	Sandbagswalls
<u>Accommodation</u>	Living	<ul style="list-style-type: none"> - Air conditioning and heating system, - Accommodation for all soldiers of the unit, - Protection against insects, - Storage for personal equipment and weapon, - Lighting system, - Power supply,
	MWR	<ul style="list-style-type: none"> - Multifunction (tent, table, chairs)
	Working	<ul style="list-style-type: none"> - Command post tents, - Vehicle mounted shelters, - Medical tent/container (Role 1/2), - Helicopter landing site.
	Logistic	<ul style="list-style-type: none"> - Maintenance area, - Storage areas (all CLASSES), - Distribution areas, - Parking areas (convoy area).
<u>Hygiene and sanitary</u>	Latrines	<ul style="list-style-type: none"> - hygiene / sanitary (shower and washing facilities, WC), - one for 25.
	Showers	<ul style="list-style-type: none"> - one for 25
	Washing facilities	<ul style="list-style-type: none"> - one for 10 soldiers
<u>Food</u>	Preparing	<ul style="list-style-type: none"> - Field kitchen element, - Transportable on/in own vehicle, - Compact, lightweight, hygienically safe.
	Storage	<ul style="list-style-type: none"> - Disposable tableware for 10 days

<u>Water</u>	<p>Drink and food (preparing)</p> <p>Medical</p> <p>Hygiene and sanitary</p> <p>Laundry</p>	<p>per soldier/day:</p> <ul style="list-style-type: none"> - Bottled water 10 ltr - Bulk water 20 ltr (potable water) - Bottled water 5 ltr - Bulk water 30 ltr - Bulk water 5 ltr <p><u>Possibility:</u> Water purification system</p>
<u>Power supply</u>	Power supply for individual and logistic needs in facilities	<ul style="list-style-type: none"> - Vehicle mounted Generators - Renewable energy
<u>Waste management</u>	<p>Waste water and black water disposal element</p> <p>Solid waste disposal</p> <p>Dangerous goods and hazardous disposal</p>	<ul style="list-style-type: none"> - Storage capacities for 60 ltr per soldier per day - 0.5 m³ per soldier and day - Storage and transport capacities according to international standards
<u>Laundry</u>	<p>Washing capacity</p> <p>Drying capacity</p>	<ul style="list-style-type: none"> - 5 kg per soldier/week, - 1 mobile device per 100 soldiers. - 5 kg per soldiers/week, - 1 mobile device for 100 soldiers.

ANNEX C - Phases 3/4 (Infrastructure Engineering/ Permanent Field Infrastructure)

Closer details for this parts in the “NATO Guide for Field Accommodation“
PFP(NAAG-LCG/7)D(2008)0001.

