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Subject: Military Engineering Concept for EU-led Military Operations

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Delegations will find attached the EEAS document with reference EEAS 01027/12.

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EUROPEAN EXTERNAL ACTION SERVICE



**EUROPEAN UNION  
MILITARY STAFF**

**Brussels, 12 June 2012**

**EEAS 01027/12**

**COSDP  
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**NOTE**

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From: European External Action Service

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To: European Union Military Committee

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No. Prev. doc.: 11853/07 dated 13 July 2007

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Subject: Military Engineering Concept for EU-led Military Operations

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Delegations will find attached the Military Engineering Concept for EU-led Military Operations, which was agreed by the EUMC on 11 June 2012.

**MILITARY ENGINEERING CONCEPT**  
**FOR**  
**EU-LED MILITARY OPERATIONS**

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## REFERENCES

- A. Treaty on European Union consolidated version (OJ C 83, dated 30 March 2010)
- B. Headline Goal 2010 (Council Doc 6309/6/04 REV 6, dated 4 Mai 2004)
- C. EU concept for Geospatial Information (Council Doc. 11124/08, dated 25 June 2008)
- D. EUMC Glossary of Acronyms and Definitions (regularly updated; ARES Doc.113251/12, dated 24 January 2012)
- E. EU Concept for Logistic Support for EU-led Military Operations (Council Doc. 8641/11, dated 4 April 2011)
- F. Health and Medical Support Concept for Military EU-led Crisis Management Operations (Council Doc. 10901/07, dated 15 June 2007)
- G. EU Concept for Strategic Movement and Transportation for EU-led Military Operations ( Council Doc. 9798/12, dated 11 May 2012)
- H. EU Concept for RSOI for EU-led military operations ( Council Doc. 9844/12, dated 11 May 2012 )
- I. Host Nation Support (HNS) Concept for EU-led Military Operations, ( Council Doc. 7574/12, dated 06 March 2012)
- J. EU Concept for Military Intelligence Structures in EU Crisis Management and EU-Led Military Operations (Council Doc. 14092/10, dated 27 September 2010)
- K. EU Concept for Civil-Military Co-operation for EU-led Military Operations (Council Doc. 11716/08, dated 11 July 2008)
- L. EU Concept for Military Command and Control (Council Doc. 10688/08, dated 16 June 2008)
- M. EU Headquarters manning guide (Council Doc. 9176/09, dated 27 April 2009)
- N. EU Concept for Military Planning at the Political and Strategic level (Council Doc. 10687/08, dated 16 June 2008)
- O. Council Decision 2011/871/CFSP of 19 December 2011 establishing a mechanism to administer the financing of the common costs of European Union operations having military or defence implications (Athena Mechanism)

## INTRODUCTION

1. The Common Security and Defence Policy (CSDP) is an integral part of the Common Foreign and Security Policy (CFSP) of the European Union (EU). The CSDP provides the EU with an operational capacity composed of both civilian and military assets (depending on the nature of a given mission), which it may use for peace keeping or conflict prevention or strengthening international security in accordance with the principles of the United Nations Charter. These tasks build on those originally known as "Petersberg tasks" and include<sup>1</sup> joint disarmament operations, humanitarian and rescue tasks, military advice and assistance tasks, conflict prevention and peace-keeping tasks, tasks of combat forces in crisis management, including peace-making and post-conflict stabilisation.
2. With the implementation of the Helsinki Headline Goal<sup>2</sup>, the EU demonstrates its ambition to contribute to peace and international security by securing permanently available military capabilities (amongst other crisis management instruments): the Member States (MS), co-operating together voluntarily, are able to deploy rapidly and then sustain forces capable of the full range of CSDP tasks, including the most demanding, in operations up to corps level<sup>3</sup>. These forces are self-sustaining with the necessary command, control and intelligence capabilities, logistics, other combat support services and additionally, as appropriate, air and maritime elements.
3. Interoperability is a key issue for EU-led Military Operations. As a consequence, the development of concepts covering a wide range of functional areas is a significant contribution to the credible implementation of CSDP measures. As Military Engineering is a key supporting military activity, an initial concept was developed in 2007. Its primary purpose was to adjust to the necessities of joint operations and to establish a clear chain of command. Experiences from EU-led Military Operations and "non-executive" Missions, but also new doctrine developments within other International Organisations, have made a review of the 2007 Concept necessary.

## PURPOSE

4. The purpose of this document is to establish a concept for Military Engineering in order to synchronise and optimize engineer support to EU-led Military Operations.

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<sup>1</sup> See Ref A, Art 43(1)

<sup>2</sup> See Ref B

<sup>3</sup> Up to 15 brigades or 50,000-60,000 personnel

## SCOPE

5. The document determines the relevant principles of Military Engineering Support to EU-led Military Operations. It particularly focuses on the core tasks of military engineers at strategic and operational levels of a Joint Operation and draws the implications of the EU specific funding mechanism, the EU Comprehensive Approach and the International Framework.

## KEY DEFINITIONS AND PRINCIPLES

6. **Military Engineering.** Military Engineering (ME) is the Engineer activity<sup>4</sup> undertaken regardless of component or service to shape the physical operating environment.
7. Engineer activity covers a large spectrum of tasks at all levels of command and in any type of military operation and mission provided by land, maritime, air and joint forces. ME supports joint functions, especially<sup>5</sup> command and control, manoeuvre and fires, force protection, sustainability, intelligence and civil-military co-operation.
8. **Chief Engineer.** The Chief Engineer<sup>6</sup> is the senior military engineer advisor to the Commander on all aspects of ME and the head of the ME Branch<sup>7</sup>. Acting on behalf of the Commander, the Chief Engineer has co-ordinating and technical authority over the allocation and employment of engineer assets in order to ensure capabilities and resources are used most effectively.
9. **Principles.** The main principles cover the command and control aspects and should be considered at each level of command when planning and executing the ME support to an operation or a mission.
  - a. **Command and control (C2).** EU Military Commanders have a direct authority over ME capabilities and units assigned in the Statement of Requirements<sup>8</sup>(SOR) and over engineer resources financed or managed commonly. As Engineer assets may be tailored to any Joint Force organizational structure, simplicity and clarity of command relationships are mandatory. Other ME capabilities, as part of a national support

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<sup>4</sup> Geospatial engineering is covered by the EU Concept for Geospatial Information (see Ref C) and does not fall under present concept.

<sup>5</sup> Support to Information Operations is less significant for the Engineers.

<sup>6</sup> "Chief Engineer" is a generic term used throughout the document for the senior military engineer.

<sup>7</sup> Could be department/division depending on HQ's organisation.

<sup>8</sup> Usually, the units are under OPCON except if some caveat are imposed by TCNs (Ref. L).

element, remain under the authority of the Troop Contributing Nation (TCN).

- b. Early and centralised planning. The "Chief Engineer" is responsible for contributing to the planning process at the strategic, operational, and tactical levels. Early ME considerations in any phase of an operation is vital for delivering efficient plans to the Commander.
- c. Centralised Technical Authority. The "Chief Engineer" at strategic or operational levels has a full technical authority over ME capabilities and resources. His primary role is to advise on engineer tasks and priorities and to develop appropriate procedures, particularly for the Infrastructure Engineering Support (regularly in compliance with Host Nations (HNs) rules and regulations, and with EU best practises). For the ME capabilities out of the SOR, Forces should implement their own national standards but with an interoperability approach<sup>9</sup>. In addition the "Chief Engineer" advises the Commander on technical aspects and impacts of ME.
- d. Common efforts. Multinational or common solutions have to be pursued whenever national capabilities are insufficient. At Force level, pooling of Engineer assets allows stronger efforts for the benefit of the Force as a whole. At component level, multinational Engineer capabilities can complement significantly a national approach. Finally, even when Engineer capabilities remain under national control, adequate multinational co-operations are encouraged.
- e. Contracting Support to Operations (CSO). The possibility to outsource<sup>10</sup> engineering capabilities, works and resources to support operations may at times be relevant to complement the ME support. CSO is a vital aspect of the planning process and requires close co-ordination with the Financial Expert to the Commander.
- f. Centralised co-ordination and control vs. De-centralised execution. The centralised co-ordination and control related to the ME by the "Chief Engineer", with a special focus on engineer activities, assets, resources and manpower, are highly suitable to ensure the optimum use of available engineer resources. Nevertheless, the execution should be decentralised to appropriate levels of command.

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<sup>9</sup> See Ref D. Interoperability is the ability of Member State HQs and forces to operate effectively together. Different EU initiatives contribute to the interoperability such as training, common equipments, procedures, concepts. At tactical and technical levels and whenever applicable, NATO standards could be used.

<sup>10</sup> Works or resources provided by Contractors or Public Providers (e.g. TCN's Sustain Agency).



- g. Relevance of information gathering. Credible and reliable information is vital for the planning process. At strategic level, engineers must be part of the Military Strategic Information Gathering Team (MSIGT) in order to be able to contribute adequately to the planning process at the strategic level. The same applies to the operational level where the deployment of engineers in the Operational Liaison and Reconnaissance Team (OLRT) is essential for gathering relevant data and information, fine-tuning the planning process and for initiating local tasks related to the preparation of the mission.

## SUPPORT AND CONTRIBUTION TO JOINT FUNCTIONS<sup>11</sup>

10. **Support to Command and Control.** At all levels of command, an appropriate well-structured and robust ME expertise, composed of the "Chief Engineer" and his Engineer staff, is essential for supporting the C2. The following are the principle tasks:
- a. Advisory role. The "Chief Engineer" is the principal advisor to the Commander and, pending the HQ structure, also to the Chief of Staff and his deputies. In his capacity as the "Chief Engineer", he advises on the whole range of ME matters<sup>12</sup>.
  - b. Contributions to HQ activities. In-house ME expertise contributes directly with the wide range of military and non-military disciplines: planning activities, monitoring of engineer subordinate levels, synchronisation of engineer support, contribution to others HQs activities.
  - c. Subject Matter Experts (SMEs). HQ C2 procedures require the installation of boards and working groups. The ME staff contributes to their work through SMEs<sup>13</sup>.
  - d. Liaisons. The "Chief Engineer" and his staff establish appropriate liaisons according the key principles with a special focus on Technical Co-ordination, Co-operation, CSO and Control. They liaise adequately, both "horizontally and vertically", with all relevant HQ branches, military and non-military institutions, and/or individuals.
11. **Support to Manoeuvre and Fires.** The ME support to Manoeuvre and Fires is a direct support to the current or imminent operations. Pending type of Military Operation and the Crisis Management response framework, this support encompasses the following engineer tasks:

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<sup>11</sup> See Overview in Annex

<sup>12</sup> It includes considerations affecting the targeting process, especially when infrastructure demolitions are foreseen.

<sup>13</sup> E.g. : Infrastructure Engineering, Engineer Information, Survivability, EOD, Environmental Protection.

- a. Mobility. Freedom of movement is essential for any kind of joint operation. Military engineers seek to ensure the freedom of movement in the Area of Operations (AOO) by performing the following elementary tasks: wet and dry gaps crossing, counter-mine operations and counter-obstacle operations. The Force will regularly fall back on HN facilities and services to the highest extent possible.
  - b. Counter-Mobility. Counter-Mobility intends to limit the adversary's freedom of movement. Associated relevant elementary tasks for engineers may encompass the emplacement of barriers or obstacles of any kind. The use of landmines is restricted by national legislation and international Treaties.
  - c. Support to air operations<sup>14</sup>. Air operations require functional and operational aircraft platforms. Associated relevant elementary tasks for engineers include creation, maintenance and damage repair of temporary and permanent airstrip and runways, dedicated for fixed and rotary wings assets.
  - d. Support to maritime operations<sup>14</sup>. Maritime operations require functional and operational temporary and permanent maritime platforms. Associated relevant elementary tasks for engineers include creation, maintenance and damage repair of ports facilities.
12. **Support to Force Protection (FP)**<sup>15</sup>. FP merges the measures and means to minimize the vulnerability of personnel, facilities, materiel, operations and activities from threats and hazards in order to preserve freedom of action and operational effectiveness thereby contributing to mission success. Engineers have unique equipment and specially trained personnel which allows them to contribute significantly and technically to FP. ME support to FP covers the following tasks:
- a. Survivability. Survivability is the direct support through passive measures covering all aspects of physical protection<sup>16</sup> of camps, bases, operational and sustain facilities with a direct benefit for personnel, weapons, and materiel against the effects of adversary weapon, unexploded ordnance (UXO), improvised explosive device (IED) and explosive remnant of war (ERW). It may also include deception measures.
  - b. Participation in Explosive Ordnance<sup>17</sup> Disposal Operations. EOD operations require the ability to conduct reconnaissance and search actions, to guaranty a safe access to any

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<sup>14</sup> Support to air and maritime operations are closely linked as well with the logistic support.

<sup>15</sup> An EU Force Protection concept is under development, description given is not an official definition.

<sup>16</sup> E.g. : security fencing, lighting, obstacles, guard posts, watchtowers, bunkers, vehicle barriers, ammunition depot, protective positions.

<sup>17</sup> Any kind of Explosive Ordnance

unexploded ordnance, to provide diagnostics, to insure appropriate protection and containment measures and finally to dispose the unexploded ordnance. Military engineers participate directly in some or most part of the tasks depending on MS's national views on affiliation of EOD to ME.

- c. Contribution to Countering-Improvised Explosive Device<sup>18</sup> Operations. Countering-Improvised Explosive Device (C-IED) is provided by the collective efforts at all levels to defeat the IED system by attacking the networks, defeating the device and preparing the Force in order to reduce or eliminate the effects of all forms of IED used against friendly forces and non-combatants. Military engineers play a role in the fight against IEDs at all levels of command. They may contribute to, or be responsible for, critical terrain information management, adversary tactics, techniques and procedures and their analysis, military search, best shaping of the terrain, improvised explosive device disposal (IEDD), road clearance, advice on friendly forces tactics, techniques and procedures, and on protection measures, contribution to awareness and incident management, and lessons learned process.
  - d. Support to Military Search. Military Search operations aim at locating people, information, and material resources employed by the adversary in order to interdict his ability to conduct operations against friendly forces and friendly populations. Military engineers participate to deliberate, pre-planned Military Search operations, with or without upstream intelligence, and when specific explosive or environmental hazards are likely.
  - e. Support to Chemical, Biological, Radiological and Nuclear Defence<sup>19</sup>. The aim of Chemical, Biological, Radiological and Nuclear (CBRN) Defence is to help to prevent the CBRN incidents, protect the Force from the effects of CBRN incidents, and to take recovery actions, so that forces are able to accomplish the mission and maintain freedom of action in a CBRN environment. Engineers can support CBRN Defence by providing resources such as EOD capabilities, the construction and maintenance of expedient facilities for decontamination sites and Collective Protection.
13. **Support to Sustainability<sup>20</sup>**. Logistic Support and Medical & Health Support contribute to the ability of a Force to maintain the necessary level of combat power. In addition, Environmental Protection (EP) impacts on the Force is of an increasing interest<sup>21</sup>. ME support

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<sup>18</sup> An EU C-IED concept is under development, description given is not an official definition.

<sup>19</sup> An EU CBRN concept is under development, description given is not an official definition.

<sup>20</sup> See Logistic Support and Log related concepts (Ref E to I)

<sup>21</sup> EP is becoming increasingly important since it minimizes adverse environmental impact, ensures the safety and health of personnel and reduces post-mission environmental clean-up.

to Sustainability covers the following tasks:

- a. Infrastructure Engineering Support. Infrastructure Engineering Support (IES) covers the construction, restoration, acquisition, repair, maintenance and disposal of those infrastructure facilities required to mount, deploy, accommodate, sustain and redeploy the Force. It includes the construction, restoration and maintenance of camps and bases, air and sea platforms<sup>22</sup>, land lines of communication, CIS platforms, medical roles and evacuation facilities, power and water plants. In addition to military engineer capabilities, CSO<sup>23</sup> complements significantly the panel of solutions for implementing the Infrastructure Engineering Support.
- b. General Engineer Support<sup>24</sup>. General Engineer support covers the provision of engineer advice, technical expertise, resources, labour and works mainly linked with the installation/construction, running and maintenance of deployable infrastructures, water production and purification system, power supply solutions (production and distribution), and horizontal surfaces<sup>25</sup>. It includes as well tasks in support of deployment operations and operational movements<sup>26</sup>.
- c. Management of Class IV Supply<sup>27</sup>. Engineer operations regularly require a considerable amount of equipment, stores and special supplies. The management of fortification and construction materials, including outsourced engineering heavy equipments, is the responsibility of the Engineers.
- d. Support to Environmental Protection<sup>28</sup>. EP is integration and application of environmental considerations to prevent or mitigate environmental impacts resulting from military activities. This environment encompasses water, air, ground, flora, fauna, natural and cultural resources. ME Support to EP focus mainly on the development of "environment friendly" infrastructures, waste and sewage plants, sustainable water and power installations and of remediation solutions for mitigating the impact of military activities on environment.

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<sup>22</sup> Air and sea platforms usually enable both operational and sustainment activities.

<sup>23</sup> IES is in charge of planning, designing and monitoring the works assigned to civilian companies and the works developed by any provider through arrangements.

<sup>24</sup> IES and General Engineer Support are complementary. IES is of main concern at the operational level ( key infrastructures, common budget), whereas the General Engineer Support is tactical level driven.

<sup>25</sup> Could be related as well with support to air operations.

<sup>26</sup> See Ref H. RSOM is running usually until the Full Operational Capability is declared.

<sup>27</sup> Class IV Supplies are usually understood as Engineer Material and Resources.

<sup>28</sup> An Environmental Protection concept is under development, description given is not an official definition. Depending on HQ organisation, Military engineers could be involved in the planning and practice of EP measures.

14. ME Support to Sustainability globally falls under the logistic principles of collective responsibility. The Chief Engineer is in charge of the "common"<sup>29</sup> engineer support to sustainability and the related capabilities and resources.
15. When IES is embedded within a comprehensive framework for Logistics and Sustainment, it should be considered as a joint logistic function - Infrastructure Engineering Support to Logistic (IESL)<sup>30</sup>. In such a situation, the coherency of the C2 requires a well identified IESL staff with a Chief of Infrastructure Support.
16. **Contribution to the Intelligence process**<sup>31</sup>. The joint Intelligence process facilitates the understanding, analysis and assessment as well as the planning, execution and support of all operations. The Engineer Information (ENG INFO) process contributes to the Intelligence process with a special focus on the Intelligence preparation of the Area of Operation and the identification of Intelligence requirements. In addition, the process directly contributes to the knowledge development process. ME contribution to the Intelligence process is visible through the following tasks:
  - a. Engineer Information collection. It covers the planning and organisation of ENG INFO collection effort. Amongst others, key infrastructures, facilities, lines of communication, terrain, potential ERW hazards, natural resources, raw materials and engineer related contractors are of primary interest.
  - b. Engineer Information exploitation. It encompasses the collation, evaluation, analysis, integration, interpretation and dissemination of ENG INFO. It allows to integrate into the planning process the effects of the operational environment on adversary and friendly capabilities and potential courses of action .
  - c. Engineer Information memory. Maintenance of the Headquarters (HQ)' ENG INFO library and database.
17. **Contribution to Civil-Military Co-operation (CIMIC)**<sup>32</sup>. CIMIC enables the military to reach the desired end state by coordinating, synchronising and de-conflicting military activities with civilian actors<sup>33</sup>, thus linking military operations with political objectives.

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<sup>29</sup> Common by nature: common used infrastructures, the resources financed on common costs and the dedicated engineer units under OPCON. Common by decision: on a voluntary base from TCNs, multinational dedicated units, resources financed together.

<sup>30</sup> Consequence is that many Member States' regulations consider their "National Infrastructure Support" as part of Logistic Support functions.

<sup>31</sup> See Ref J

<sup>32</sup> See Ref K

<sup>33</sup> Co-ordination with EU Crisis Management instruments is outside the CIMIC perimeter.

Support to the Military Force, Civil-Military liaisons, Support to Civil Environment are underpinning the CIMIC activities which are planned and conducted on strategic level broad guidance, and operationalised at the operational and tactical levels. ME contribution to CIMIC is visible through the following tasks:

- a. Relationship facilitator. Relationship with Non Governmental Organisations (NGOs)<sup>34</sup>, Infrastructures and Works authorities, local economy actors<sup>35</sup> and local population<sup>36</sup>.
- b. SMEs support. Support to works related to development and aid projects in support of local Civil Authorities and support to engineer related activities of NGOs or Civilian International Organisations (IOs).
- c. Complement resources and capabilities. Engineer resources and Infrastructure Engineering Support expertise<sup>37</sup> are committed directly to support CIMIC activities if required.

## COMMAND AND CONTROL STRUCTURES, TASKS AND RESPONSIBILITIES

18. **General.** At each level of command, a senior engineer officer shall be appointed to serve as the principal ME advisor to the Commander. EU Commanders rely on a common HQ Manning Guide<sup>38</sup> for C2 structures. Staffing of ME branches of EU HQs is developed accordingly. However, depending on the nature of a particular operation, the relevant Commander is entitled to adapt the engineer branch and its subordination according the requirements identified.
19. **Military Strategic Level - Operation Headquarters (OHQ).**
  - a. Senior Chief Engineer. The Senior Chief Engineer is the principle advisor of the Operation Commander (OpCdr) on the ME as a whole, guarantying the internal C2 coherency with other functions, and supporting the strategic level planning and the force requirement and generation process.
  - b. OHQ - Military Engineering staff. The ME staff's contribution is essential for the

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<sup>34</sup> E.g.: demining activities

<sup>35</sup> Infrastructure Works have a urge impact on the local resources, on local economy and by consequence on population.

<sup>36</sup> Interactions with local Authorities and land Lords are vital when considering Infrastructure Works with local labour on public or private premises.

<sup>37</sup> e.g. Engineering expertise for developing a water adduction network for a Farming Program.

<sup>38</sup> See Ref M. It provides guidelines for the HQ activation and augmentation process, including an ORBAT for the manning.

Operational Planning Process with a special focus on the development of the Concept of Operation (CONOPS), the Provisional Statement of Requirement (PSOR) for forces and the directives for the Engineer Information process. His role is major regarding the strategic and key Infrastructures, the development of outsourced solutions and allocated strategic resources and funds.

20. **Operational Level - Force Headquarters (FHQ).**

- a. Force Chief Engineer. The Force Chief Engineer is the principle advisor of the Force Commander (FCdr) on all ME aspects with coordinating and technical authority over the Force ME capabilities and resources.
- b. FHQ - Military Engineering staff. The ME staff's contribution is essential for the Operational Planning Process (OPP) with a special focus on the development of the Operation Plan (OPLAN), for the support to the campaign synchronisation and the joint effects management, for the planning and control of tasks assigned to the components, the management of the Engineer Information process, and coordination with actors and partners in the AOR.
- c. The Force Chief Engineer and his staff<sup>39</sup>, are placed under the C2 of the Deputy Chief of Staff for Support. As the contribution to operations can be significant, the Force Chief Engineer insures a privileged interaction as well with the Deputy Chief of Staff for Operations. Pending type and spectrum of Operation, this subordination can be adapted<sup>40</sup>.

21. **Single HQ configuration.** In some circumstances<sup>41</sup>, a merged HQ for both strategic and operational levels can be established for planning and running a military mission. In such a situation, the ME staff can be reduced to the minimum. Nevertheless, tasks related to ME Support to Sustainability<sup>42</sup> remain critical and ME staff requires a key position within the HQ.

22. **Tactical Level - Component Command Headquarters (CCHQs).**

- a. Component Chief Engineer. At Component Command level, the Chief Engineer<sup>43</sup> is the

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<sup>39</sup> See Ref O. ACOS CJENGR is the nomenclature and codification for the Force Chief Engineer position, CJENGR is the Engineer Branch.

<sup>40</sup> Under the C2 of the Deputy Chief of Staff for Operations with a privileged interaction with the Deputy Chief of Staff for Support.

<sup>41</sup> Relevant example is the EU Training Mission Somalia illustrates this C2 option.

<sup>42</sup> E.g.: Infrastructure Engineering Support.

<sup>43</sup> Land Chief Engineer, Air Chief Engineer and Maritime Chief Engineer.

advisor of the Component Commander on the ME aspects, capabilities and resources allocated to the component.

- b. CCHQ- Military Engineering staff. A ME staff at CCHQ level is required especially when two or more ME capabilities are assigned to the Component.
- c. Chief Engineer's position within the Component HQ and ME staff structure depend on Co-ordination and C2 imperatives, but they must be coherent with the Component ME efforts to provide.

23. **Generic Military Engineering Branch.** A Joint ME Branch may be tailored to mission necessities but shall be composed of all relevant staff elements which are deemed necessary to meet minimum C2 and functional requirements. The structure of the branch should allow the engineer staff to be represented in the various boards, working groups and cells as determined in the relevant HQ procedures.

a. Minimum requirements.

- i. Primary advisor and branch chief role - ("Chief Engineer")
- ii. Planning activities - (PLANS section)
- iii. Conduct of operations - (OPS section)
- iv. Supporting functions - (INFRA<sup>44</sup> cell, ENG INFO cell)

b. Additional requirements.

- v. Liaisons - (ENG LO<sup>45</sup> cell).
- vi. Other Subject Matter Expertise cells<sup>46</sup>, when required but not structurally represented elsewhere in the HQ.

c. Generic view. The following chart displays the generic C2 structure.

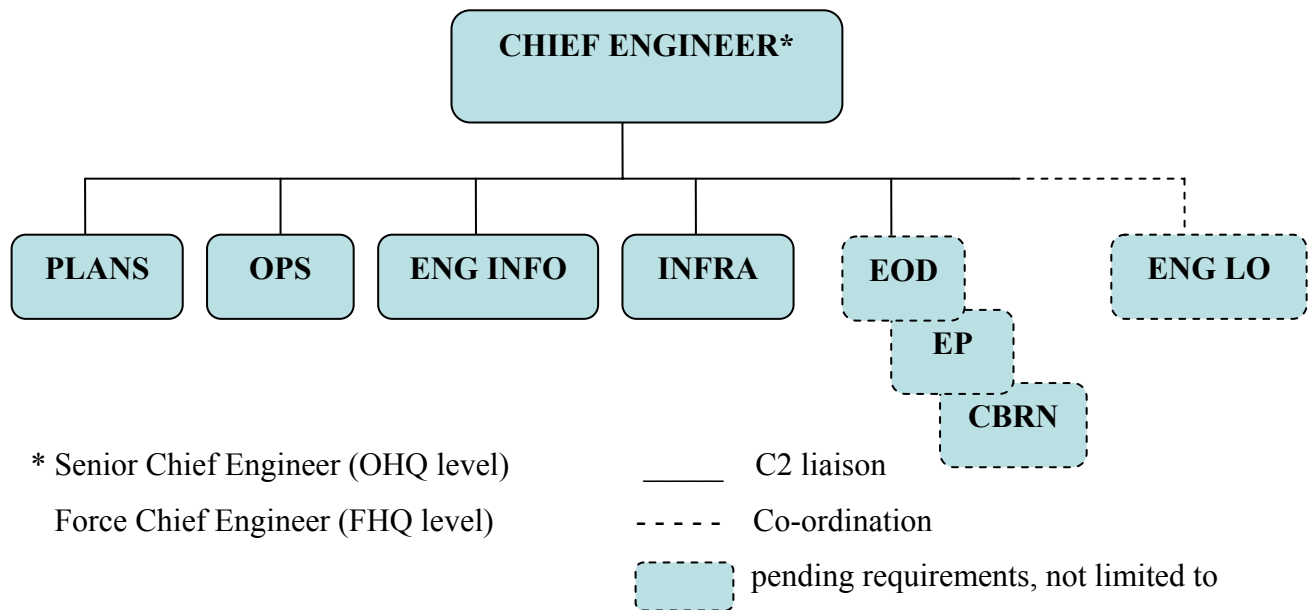
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<sup>44</sup> An Infrastructure cell in charge of tasks mainly related to support to sustainability; the cell could include a Survivability Expertise for coherency with physical protection works.

<sup>45</sup> An Engineer Liaison cell grouping for example engineer liaisons to Joint Operational Planning Group, Joint Logistics Support Group, C-IED C2 *ad hoc* Structure, an other IO, and including engineer liaison from a Member States for a specific role, or from an other IO.

<sup>46</sup> E.g. : EOD, EP, CBRN Coordination.





- d. Embedding SME cells within PLANS and OPS sections should be considered as well but a coherent approach and an appropriate Branch co-ordination is compulsory.
- e. Tactical level. For a successful Operation, it is recommended that the Tactical Level has a ME staff according to the upper framework, translating strategic directions and guidance into optimum support at the considered level.

## CONTRIBUTION TO PLANNING AND CONDUCT OF OPERATION

### 24. Planning from strategic to tactical levels.

- a. EU Military Staff. Military planning at the Political and Strategic Level<sup>47</sup> is developed within the framework of the EUMS and through the advanced planning, including SME inputs to the development of the Crisis Management Concept (CMC) and the Military Strategic Options (MSOs). An in-house ME Expert:
  - (1) is embedded in the EUMS Planning Team assigned;
  - (2) participates to the Fact Finding and Information Gathering Missions;

<sup>47</sup> See Ref N.

- (3) contributes engineering advice to all aspects of logistics sustainment and advanced planning.
- b. OHQ. At the Military Strategic Level, the main activities and responsibilities of the Senior Chief Engineer and his ME staff cover support to the OPP<sup>48</sup>, the establishment of strategic liaisons and partnerships, the financial process and the preparation of conditions required for the deployment of the EU Force. Main tasks assigned are:
- (1) participate in the OPP and contribute to the development of the CONOPS, including support to the Intelligence process;
  - (2) contribute to the Force planning by shaping the ME capabilities required within the PSOR for forces;
  - (3) provide engineer advice to the development of the Rules of Engagement (ROE);
  - (4) plan and coordinate the ME support;
  - (5) provide recommendations to and assess the engineer plans and assignment of engineer assets of subordinate commanders;
  - (6) participate to the MSIGT and identify means and capabilities to generate, mount, sustain and recover forces;
  - (7) support the logistic planning, including participation to the Logistic Conferences, with a special focus on IES;
  - (8) participate in budget preparation<sup>49</sup> in particular with regard to IES expenditure;
  - (9) contribute to FP, C-IED, CBRN Defence and EP matters and participate in relevant engineer-related boards;
  - (10) develop ME plans and define minimum infrastructure standards (for EU funded projects);
  - (11) set priorities for the whole range of ME tasks and take appropriate measures to optimize engineer operability;
  - (12) support the preparation of arrangements with HN and IOs when ME is concerned;
  - (13) establish liaisons at strategic level with other Military Engineer actors (TCNs,

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<sup>48</sup> Pending OpCdr's decision, the Planning Process can be conducted under the Co-operative and Collaborative mode or the Parallel mode.

<sup>49</sup> See Chapter on Financial Considerations (ATHENA mechanism).

HN, IOs) and Engineer counter parts;

(14) support the preparation of the deployment phase with a specific effort on key entry Infrastructures;

(15) assess infrastructure requirements of the Joint Force and contribute to their development.

c. Synchronisation between OHQ and FHQ. The OHQ Engineer planning activities might also be performed at the FHQ level. A close cooperation between OHQ and FHQ Engineer staffs is thus mandatory.

d. FHQ. At the Military Operational Level, the main activities and responsibilities of the Force Chief Engineer and his ME staff cover support to the OPP, the establishment of theatre liaisons and partnerships, the preparation of conditions required for the reception of the Force. Main tasks assigned are:

(1) develop the ME annex to the OPLAN, including the priorities for engineer tasks and support the fine-tuning of ME capabilities required;

(2) assist operational planners and other Joint Branches involved in the development of the OPLAN and the associated ROE;

(3) participate to the OLRT, evaluate the impact of geography and existing infrastructures in the AOR;

(5) plan and optimize class IV supplies and real estate management;

(6) plan and support the preparation or emergency repair of the essential infrastructures required for the reception and staging of the Force;

(7) establish liaisons with HN, IOs "Force level" and local engineer related actors;

(8) support the preparation of arrangements with HN and IOs when ME is concerned.

e. CCHQs and units. ME activities have a direct impact on Air, Land and Maritime Operations and therefore Engineer staffs need to be involved in the planning process from an early stage. Following considerations are to be taken:

(1) Component level Engineer staffs contribute to the FHQ tasks in a close cooperation and coordination spirit between engineers;

(2) Component level Engineer staffs contribute at the internal planning steps of the

CC HQs in the same spirit than the FHQ level;

- (3) at lower levels, a decision-action cycle, based on the plan/prepare/execute steps with regular assessments, is a relevant model for feeding the planning of engineer tasks.

25. **Conduct of the Operation.**

- a. EU Military Staff. A Mission Monitoring Team (MMT) is activated for monitoring the Mission and supporting whenever necessary the OHQ. The in-house ME Expert is usually part of this MMT and maintains a close liaison and exchange of information with the Engineers in the HQs.
- b. OHQ. At the Military Strategic level, the main tasks of the Chief Engineer and his ME staff are:
  - (1) control the proper execution of the OPLAN;
  - (2) monitor the continuous adequate level of ME Capabilities assigned and the management of common resources allocated;
  - (3) participate to the regular assessments on the Crisis development and the conduct of the Operation;
  - (4) provide a continuously support to the Intelligence and Targeting process;
  - (5) maintain regularly the strategic liaisons, including with the EUMS;
  - (6) monitor the proper execution of the arrangements with partners when ME is concerned;
  - (7) support CJ8 in the reporting process to ATHENA;
  - (8) support the preparation of the re-deployment phase and the arrangements with a follow-on actor.
- c. FHQ. At the Military Operational level, the main activities and responsibilities of the Chief Engineer and his ME staff cover the support to current operations, to future operations and campaign synchronisation, and to plans. Main tasks assigned are:
  - (1) provide a continuous ME situation assessment, monitor the CCs engineer operations and the execution of engineer tasks to Units;
  - (2) support the monitoring of the Common Operational Picture and contribute to the

reporting process;

- (3) participate to the Joint Effect Management Process and provide a continuous flow of ME information to appropriate levels;
- (4) participate to the drafting of Fragmentary Orders and to the Contingency Planning;
- (5) maintain a pro-active co-ordination with other Joint Branches, especially for the sustainment of the Force;
- (6) maintain liaisons with HN, IOs "Force level" and local "engineer related" actors;
- (7) control the execution of arrangements with HN and IOs when ME is concerned;
- (8) support the preparation of the Force re-deployment and/or the hand-over to a follow-on actor.

## FINANCIAL CONSIDERATIONS

26. The European Union has established a specific financial mechanism, ATHENA, for managing the common costs of EU Operations having military or defence implications.

27. **ATHENA and the Engineer related common expenditures**<sup>50</sup>. ATHENA is of central importance for the "Chief Engineer" and his ME staff because it covers the financing of common engineer related expenditures. Key impacts of the ATHENA decision on Engineers are:

- a. "HQs infrastructures". The multinational HQs are concerned - OHQ, FHQ, CC HQs, SOF HQ. The common costs can cover the deployment, installation and sustainment of deployable HQ infrastructures and the acquisition, rental or refurbishing of existing facilities for an HQ use.
- b. "Supporting the Force as a whole". When absolutely needed for the Force as a whole to fulfil its mission, other key engineer expenditures fall under the common eligibility such as (not exhaustive list): works related to points of disembarkation, logistics roads and logistic bases, water and energy supply, Medical Role 2 and 3 facilities approved in OPLAN, static FP works, EP recovery measures.
- c. "Exceptional expenditures". In specific circumstances and under appropriate procedure,

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<sup>50</sup> See Ref O - Annex III

additional engineer related expenditures can be considered keeping in mind the common interest such as (not exhaustive) the acquisition, rental or refurbishing of premises in theatre (buildings, shelters, tents), unforeseen specific equipment essential for the execution of the operation, resources linked with demining and disarmament tasks.

28. **ATHENA and the facilitation of the common Military Engineering support**<sup>51</sup>. The ATHENA Special Committee may entrust the OpCdr to manage in common certain expenditures in relation with the Operation, Nation Borne Costs (NBC), while remaining of the responsibility of the TCNs which it concerns. This option allows the Chief Engineer on behalf of TCNs to:
- a. manage commonly more engineer resources (e.g. class IV supplies) and so improve their availability for the TCNs;
  - b. reduce the cost of engineer resources and works by a scale effect in common contracts;
  - c. significantly facilitate and enhance the ME support to the Force as a whole.

## EU COMPREHENSIVE APPROACH - INTERNATIONAL FRAMEWORK

29. **EU Comprehensive Approach.** The European Union can support a Crisis Management with several instruments, mainly the diplomatic, financial, humanitarian and security instruments. Three type of missions illustrate the EU actions: EU CSDP Military Operations , EU CSDP Civilian Missions<sup>52</sup> and EU Disaster Relief Missions<sup>53</sup>.
30. **International Framework.** One or several International Organisations (IOs) can be involved simultaneously or consecutively in the management of a Crisis with Military and/or Civilian instruments. For this reason, EU Military Operations/Missions are rarely conducted independently from other IOs<sup>54</sup>.
31. **Implications for the Engineer staffs.** For the "Chief Engineer" and his staff, the International Framework and the EU Comprehensive Approach are to be taken into consideration from the beginning of the operational planning process. Within limitations and guidance provided by the OpCdr, there are three kind of imperatives for the Engineers:

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<sup>51</sup> See Ref O - article 28.

<sup>52</sup> CSDP actions are conducted under the political control of the Political and Security Committee (PSC), the European Commission plays an important role in financing the CSDP Civilian Missions.

<sup>53</sup> Disaster Relief Missions are ordered, conducted and financed by the European Commission.

<sup>54</sup> E.g. : UN, NATO, AU, OSCE, Arab League.

- a. establish liaisons at all levels with any EU or IO Staffs interacting closely with the Military Engineers;
- b. co-ordinate the engineer planning and activities with these EU Staffs<sup>55</sup> aiming at optimizing the key resources and infrastructures, and promoting synergies;
- c. co-operate with these IOs Staffs with the objective to facilitate and improve the ME support to the EU Operation.



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<sup>55</sup> E.g. : for a EU CSDP Mission, the Civilian Planning and Conduct Capability (CPCC) at strategic level and the Mission Staff at mission (operational) level.

**Support to C2**

- advisory role
- contributions to HQ activities
- subject matter expertises
- liaisons

**Support to Sustainability**

- infrastructure engineering support
- general engineer support
- management of class IV supply
- support to environmental protection

**Support to Manoeuvre and Fires**

- mobility
- counter-mobility
- support to air operations
- support to maritime operations

**Contribution to Intelligence process**

- engineer information collection
- engineer information exploitation
- engineer information memory

**Support to FP**

- survivability
- participation in EOD operations
- contribution to C-IED operations
- support to military search
- support to CBRN defence

**Contribution to CIMIC**

- relationship facilitator
- subject matter expertises support
- complement resources/capabilities

<sup>56</sup> Main tasks, not limited to.