NORTH ATLANTIC MILITARY COMMITTEE

COMITE MILITAIRE DE L'ATLANTIQUE NORD

MC 0583 (Final)

4 October 2010

FINAL DECISION ON MC 0583

MC POLICY FOR NATO CONCEPT DEVELOPMENT AND EXPERIMENTATION

On 9 Aug 2010 the North Atlantic Council approved MC 0583 (Military Decision). PO(2010)0119-AS1 refers.

FOR THE MILITARY COMMITTEE:

J. Bornemann
Lieutenant General, DEUAR
Director General
International Military Staff

NOTE: This Final Decision Sheet shall now be attached to MC 0583 as the top sheet. Page numbering of the complete document when this decision is attached is as follows:

MC 0583 (Final)	- Page 1
MC 0583 (Military Decision)	- 1 page
MC 0583	- 13 pages

INCORPORATED:
Change 1

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NORTH ATLANTIC MILITARY COMMITTEE

COMITE MILITAIRE DE L'ATLANTIQUE NORD

MC 0583 (Military Decision)

30 September 2009

SECRETARY GENERAL, NORTH ATLANTIC TREATY ORGANISATION

MILITARY DECISION ON MC 0583

MC POLICY FOR NATO CONCEPT DEVELOPMENT AND EXPERIMENTATION

1. On 29 Sep 09 the Military Committee agreed MC 0583, which is attached at Enclosure 1. MC 0583 is forwarded to the North Atlantic Council for approval.

2. This document clears IMSWM-0225-2009, 29 Jun 09 and all SDs thereto.

FOR THE MILITARY COMMITTEE:

FOR P.J.M. GODDERIJ
Lieutenant General, NLDAF
Director
International Military Staff

Enclosure
1. MC 0583, MC Policy for NATO Concept Development and Experimentation

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Action Officer LtCol R. Puš, P&P, (5771)

MC 0583

MC POLICY FOR NATO CONCEPT DEVELOPMENT AND EXPERIMENTATION

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References

A. MCM-0133-2000, NATO Concept Development and Experimentation (CDE), 7 Sep 00
B. MCM-0174-2005, NATO Concept Development and Experimentation Process, 12 Oct 05
C. MCM-0114-2007, The ACT Comprehensive Campaign Plan 2008-2010, 20 Nov 07
D. MCM-0054-2005, MC Guidance to the Strategic Commanders on further Development of Alliance Transformation, 6 May 05
E. MC 20/10 (Final), MC Policy for Military Operational Standardization, 27 May 04

I. INTRODUCTION

BACKGROUND

1. At Reference A Concept Development and Experimentation (CD&E) was adopted as an Alliance tool to explore, demonstrate and evaluate future operational concepts that will drive changes in NATO's capabilities. To reflect developments in the NATO Command structure and responsibilities thereafter, NATO CD&E was revised by Reference B, at which the Military Committee (MC) noted the ACT internal directive as NATO CD&E Process and encouraged HQ SACT to keep this document updated, based on lessons learned, including synchronization with higher-level budget planning. It also requested an annual CD&E Campaign Plan to ensure full transparency.

2. CD&E process has been adapted to reflect both best practices in this relatively new area and ACT's attempts to improve the efficiency and transparency of the process. After MC recommendations, the CD&E Campaign Plan evolved into an over-arching document, the Comprehensive Campaign Plan (CCPlan), linking other HQ SACT's functional domains' Programmes of Work (POWs) with CD&E, with a view of enhancing synergy and avoiding duplication with other senior planning committees and organizations.

AIM

3. The aim of this MC policy is to set out the role of CD&E in support of the Alliance's transformational goals, to clarify responsibilities of the various actors, and to provide a robust basis for defining a detailed CD&E process within NATO.

SCOPE

4. This MC Policy describes the nature of NATO's CD&E as a tool for adapting the Alliance to future challenges, its position within NATO capability development and the relationships with other related processes (Annex A). It also identifies the good CD&E practises that help to ensure a common understanding within the Alliance. The paper does not include process-related details, which will be part of the HQ SACT internal directive

approved by the MC. This policy is also meant to inform NATO nations, partner nations and other entities outside the NATO Command Structure (NCS) on how they might best contribute to the Alliance transformation within the framework of NATO CD&E.

DEFINITIONS

5. **CD&E** is one of the tools that drive NATO's transformation by enabling the structured development of creative and innovative ideas into viable solutions for capability development. This could be conducted in an iterative manner since there might be a cyclic dependancy of concepts being spirally improved by experimentation. CD&E-related definitions are at Annex B but the following working definitions are used in order to establish a common understanding of NATO CD&E:

Concept[1]. A solution-oriented transformational idea that addresses a capability shortfall or gap[2].

Concept Development. A process aimed at identifying conceptual solutions to capability shortfalls or gaps.

Experimentation. Based on a conceptual rationale, an experimentation is a controlled investigation to discover information, confirm or disprove a hypothesis or formally validate a concept.

II. CD&E AS A TOOL FOR TRANSFORMATION

PURPOSE OF CD&E

6. Continuous transformation keeps NATO relevant in the security environment and capable of carrying out its roles effectively. The key elements of NATO transformation are conceptual and organisational agility and the development of robust capabilities that are deployable, sustainable, interoperable and usable for future operations and missions. The primary purpose of CD&E is to provide credible solutions to capability shortfalls. The inclusive and iterative nature of CD&E aims at capturing the best ideas and enabling potential solutions to be thoroughly explored through Concept Development, tested and validated through Experimentation, either within NATO or collaboratively with nations.

SUPPORT TO CAPABILITY DEVELOPMENT

7. Capability development covers strategic analysis, identification of capability requirements, solution identification and solution implementation. Capability requirements may result from the assessments of potential future requirements such as Long Term

[1] This definition is to be considered an amplification, for CD&E purposes, of the AAP-6 definition.
[2] Capability gap refers to non-existing but recognised capability

Requirement Studies (LTRS), but also from Crisis Response Operations Urgent Requirements (CUR) and Lessons Learned (LL), informed by the Multiple Futures Project (MFP). The Capability Requirements Review (CRR), as a step of the NATO Defence Planning Process (NDPP), also identifies Minimum Capability Requirements (MCR) and the shortfalls to which CD&E may offer solutions.

8. Henceforth, capability shortfalls are prioritized and further analyzed within the NDPP, including an assessment of methods or tools that might best contribute to a solution. CD&E plays an important role and can be used when innovative answers to capability shortfalls are needed, particularly when potential solutions involve developing new approaches to operations, new procedures, new organizational structures and the application of new technologies. These are considered to be the primary sphere for CD&E.

9. Against the background of Alliance operations, the Lessons Learned process has gained significant momentum. In particular, evidence from ongoing operations or exercises, complemented by strategic and operational analysis, often identify important capability shortfalls. Lessons Identified are assessed at the appropriate level in order to seek remedial actions, which could lead to the need for CD&E support when developing and refining proposed solutions.

10. While CD&E primarily develops conceptual solutions for capability shortfalls already identified by other processes, it can also contribute to capability development through the introduction of previously unknown capabilities. New ideas may result from "out of the box" thinking or may be gained from Research and Technology (R&T) endeavours. A new or emerging technology or technique may be identified as having a potential for a military application within NATO. This could be turned into a potential new capability and developed through CD&E if an operational benefit could be expected.

CONCEPT DEVELOPMENT

11. The role of Concept Development, as already described, is to identify recommended solutions to capability shortfalls or gaps. New problems may be brought about by some combination of political, social, economic, technological, doctrinal factors, or by the introduction of new objectives to a pre-existing situation. A new concept may also be developed to propose a better solution than currently exists. This solution may be delivered through technological, organizational, tactical, societal or other developments that did not exist before, or it may be required due to the failure of an existing but sometimes obsolete concepts.

12. A basic distinction can be made between strategic and operational concepts. The first type contains political or high level politico-military assessments, objectives and guidance. These concepts also generally encompass a broad strategy on which military operations are to be based or provide a vision for the Alliance for the mid to long-term future. They may address key elements of NATO's defence posture, such as command or force structure or contain a broad military strategic framework. Their development might

lead to the identification of CD&E projects. The second type addresses the levels at which campaigns and joint operations are planned and conducted in order to accomplish strategic objectives within a theatre of operations. These concepts are normally the overarching element of a CD&E project. A hierarchy of operational concepts can be found at Annex B.

13. Concept development provides the framework within which a solution may be developed. Solutions may or may not be refined through experimentation, but require validation in every case.

EXPERIMENTATION

14. The role of experimentation is primarily to determine whether a concept under development will achieve its desired aim. Results from experimentation inform the concept developer whether a whole concept (or elements therein) are sound or flawed. Experimentation reduces uncertainty as to whether a concept or parts thereof have reached the required level of maturity, helps to identify and solve problems that cannot be solved through studies and analysis alone and avoids those developments which do not offer added value. Moreover, experimentation, as a 'trial and error' methodology, can also exploit a negative outcome as a way to refine concepts.

15. Experimentation can occur at each stage of Concept Development so that a single conceptual idea could give rise to one or more discovery, hypothesis testing and validation experiments. Therefore, the conceptual rationale for Experimentation could range from an initial conceptual idea to an approved concept. The important aspect is that the process be cyclical: Concept Development provides the rationale for Experimentation and Experimentation provides information to refine the concept. Assessment and refinement should involve subject matter experts and concept's customers to the maximum possible extent. Additionally, Experimentation can also be conducted throughout the implementation phase of a concept.

III. FRAMEWORK

16. This MC policy sets out the conceptual framework for NATO CD&E. The hierarchy of documents guiding NATO CD&E effort will consist of:

a. North Atlantic Council (NAC) approved, NATO CD&E Policy.

b. MC approved, NATO CD&E Process, containing the full process description.

c. Supreme Allied Commander Transformation (SACT) approved, CD&E Handbook.

17. The CD&E projects can be initiated in a number of ways. These include:

a. Direct guidance from the MC.

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b. Operational requests from a theatre commander, via SHAPE.

c. SACT's internal directions, in accordance with political/military strategic goals and objectives, Lessons Learned, recommendations from R&D, R&T or nations, or identified shortfalls derived from the NDPP.

18. CD&E activities are comprised of: deep analysis and clarification of identified capability shortfalls; consideration whether or not CD&E is an appropriate tool to address a specific shortfall; collection of inputs from stakeholders, including nations; compilation of the CD&E portion of the CCPlan; execution of CD&E projects; CD&E engagement and proposals for implementation of finalised concepts and reporting.

PRINCIPLES

19. The following principles are observed as relevant to NATO CD&E process:

a. **Innovation.** CD&E has achieved high visibility and esteem within the Alliance as an integral component of capability development effort. It represents an innovative and flexible approach to providing innovative solutions to capability shortfalls.

b. **Resource efficiency**. In an era of dynamic change, constrained resources, and rapid technological advances, CD&E's responsiveness, outcome focused approach, risk mitigation methods and verifiable data supports decision making and ensures the greatest benefit for a given investment. Such approach allows arriving at an optimum solution to generate robust joint capabilities by improved use of resources. CD&E is a resource intense process. The aim of specific projects and final purpose must be well defined in advance in order to be relevant and assess proper resource allocation (time, funding, manpower).

c. **Linkage to other processes.** A structured CD&E process needs inevitably to be linked with other processes, first and foremost with the NATO capability development process as part of defence planning.

d. **Transparency**. The CD&E process should be fully transparent and involve all stakeholders: MC, HQ SACT, SHAPE and their subordinate commands but also Centres of Excellence (CoE) and NATO members. It may also involve partners, EU and contact countries. Other NATO HQ bodies are involved in the capability development process as well. Only such a cooperative approach will ensure the mutual trust and that the principles of cost effectiveness, efficient use of resources and coherent actions are observed.

e. **Coordination and Integration**. CD&E has become a cooperative approach that fosters Alliance cohesion in tackling emerging challenges through its clearing house function to staffs, bodies, organizations and partners while integrating functional domains contributing to capability development into synergic effects.

f. **Flexibility and balance**. To be able to react quickly to CURs requested by operational commanders while relying on a balanced approach to urgent operational needs and long term challenges.

MANAGEMENT OF CD&E

20. Having an effective management system with efficient and well-defined validation and review points is essential. The CD&E portion of the ACT Comprehensive Campaign Plan (CCPlan) is the key vehicle for overarching management and coordination of NATO CD&E process supporting collaboration, cooperation and oversight. To ensure full traceability, the ACT CD&E WG will forward the CD&E POW, endorsed by ACT, to IMS for MC notation not later than 30 June every year[3]. In addition, a CD&E portion is addressed in ACT's annual report, describing achievements and progress made in the previous year.

EXPLOITATION OF CD&E

21. Exploitation of products should have a regular method of exposing CD&E activities and the publishing of results which make them accessible to NATO entities and the Nations through either Annual conference, NATO journals, web sites, etc. An effective NATO information management is required which allows corporate knowledge to be circulated, refreshed, and coupled with a technical audit process to assess whether NATO and Nations have received an adequate technical solution and value for money in conducting the CD&E activity.

IV. ROLES AND RESPONSIBILITIES

NATIONS

22. Nations are encouraged to provide information on their national CD&E projects, either being executed or under consideration, in order to make recommendations that will help align and focus efforts and to allow identification of opportunities where NATO and/or nations might capitalise on each other's work. Indeed, NATO as a whole could benefit from participation in some nations' CD&E projects, while nations could also wish to be involved in NATO CD&E. National solutions should be adapted to suit NATO where applicable and vice versa, if so agreed. This co-operation and collaboration between HQ SACT and nations will deliver synergy and allow resource savings. However, while HQ SACT can provide the required amount of funding to achieve specific NATO objectives in a national CD&E event, a clear delineation of responsibilities for NATO and national CD&E activities must be maintained to ensure accountability of Alliance resources.

23. While conducting their national CD&E activities, NATO nations also contribute to compiling the CD&E portion of the CCPlan and producing the CD&E POW through the ACT

[3] Military Validity of the CD&E Outputs will be carried out through the process of military validation of the overall CCPlan

CD&E WG, to review the past and monitor the current CD&E activities and to assess the CD&E proposals for the next Comprehensive Campaign Plan and the CD&E POW.

24. Partnership for Peace (PfP), Mediterranean Dialogue (MD), Istanbul Cooperation Initiative (ICI) and/or contact countries can be involved in NATO's CD&E activities as well. Several of these nations also conduct and develop their own national CD&E activities and can be supported by, for instance, information exchange, workshops, or training. It is in the Alliance's interest to assist partners in developing their own CD&E capabilities and processes. The aim is to share best practices, leverage each other's venues and work where appropriate, and enhance standardisation and interoperability.

25. Centres of Excellence (CoE) also contribute significantly to Alliance transformation. In view of their recognised expertise, their capacities and competences can be used for CD&E purposes, particularly in the development of concepts and in the conducts of specific experiments. In appropriate situations, CoEs could also be designated Concept Development leads, upon request and under the coordination of HQ SACT.

THE MILITARY COMMITTEE

26. The MC has the oversight of NATO CD&E process. This will be ensured by the MC assessment of the military validity of CD&E projects and activities, as part of the overall ACT programme in HQ SACT's CCPlan, and by the CD&E report as part of the ACT Annual Report. Furthermore, the resource dimension should be a part of CD&E process. Resource implications and funding considerations will be included in every MC advice to the North Atlantic Council (NAC) as required by the Comprehensive Political Guidance (CPG).

STRATEGIC COMMANDS

27. At the SC level, HQ SACT has the lead in organizing and managing NATO's CD&E programme and process, supported by SHAPE when appropriate. HQ SACT provides a clearing house function designed to identify Alliance high value CD&E requirements and then harmonise, align and coordinate NATO CD&E requirements and activities with nations' projects, and to promote multi-national participation in national and NATO CD&E events. This will improve the synergy of Alliance efforts, maximize the exchange of best practices, and ensure the principles of resource efficiency across NATO and its member nations.

28. HQ SACT's clearing house function assists nations in developing their own CD&E capabilities and processes. These activities are covered by CD&E engagement, of which the objectives are:

a. Increasing situational awareness on NATO and nations' CD&E programs.
b. Sharing of best practices.
c. Enhancing interoperability within the Alliance.
d. Avoiding duplication of effort.
e. Achieving Alliance focus and synergy through promoting collaboration.
f. Establishing a spirit of 'ownership' in Transformation.

29. The Joint Warfare Centre (JWC) and the Joint Force Training Centre (JFTC) assist Concept Development and provide venues for Experimentation, while the Joint Analysis and Lessons Learned Centre (JALLC) assists HQ SACT in the field of providing much of the required operational analysis.

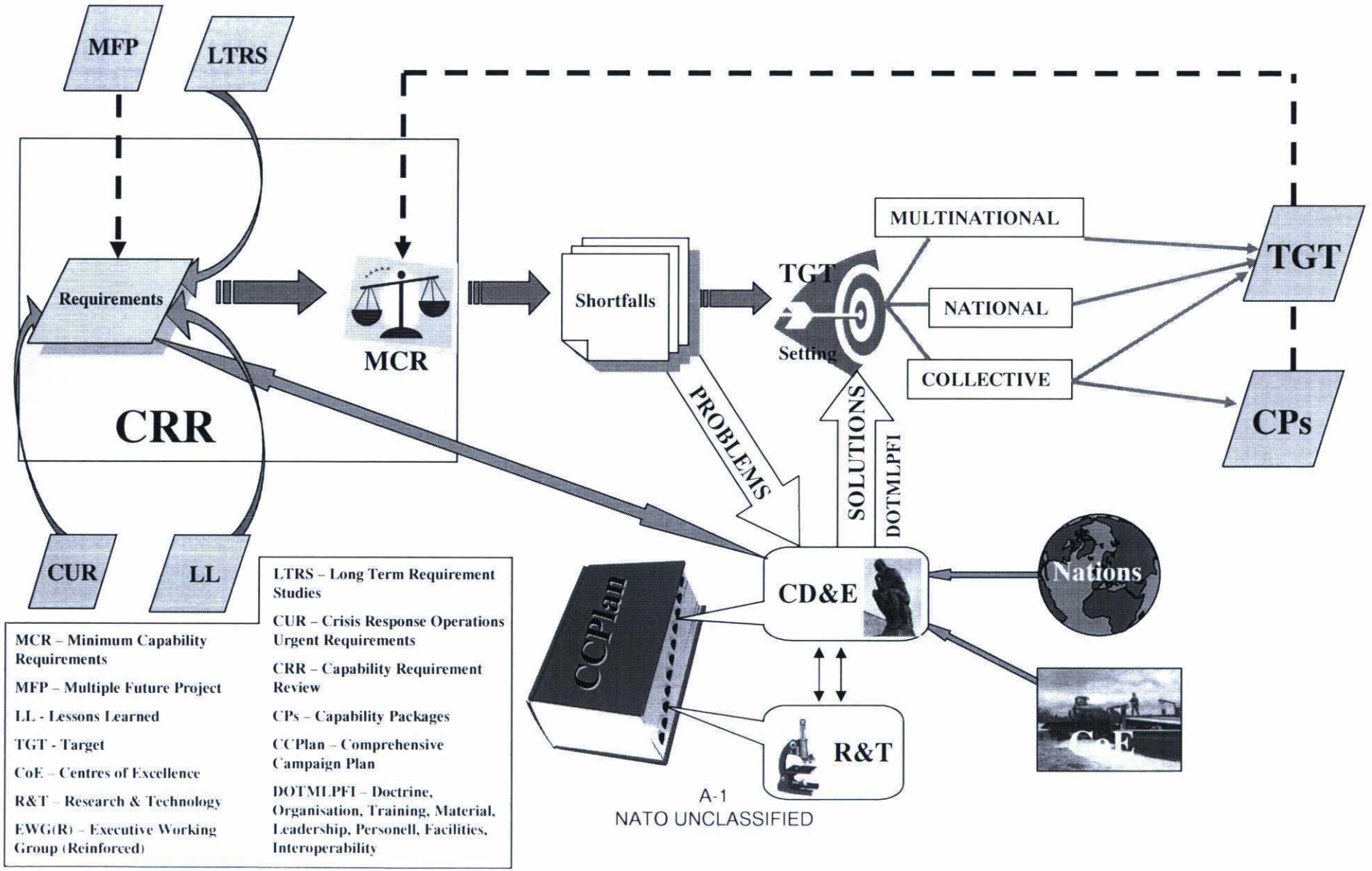
30. ACO and its subordinate commands are the main "customers" of Alliance capabilities enhanced through CD&E efforts. Hence, the early involvement of ACO in all preparatory work for an envisaged CD&E project is of paramount importance. Since ACO focuses mostly on current operations and near-term solutions, it is important to pay particular attention to ACO's Lessons Identified, which are drawn from operations, exercises and training. ACO provides subject matter expertise, not only for describing the shortfall but also for assisting in the development of proposed concepts and solutions. All other "customers" are encouraged to maintain close relationship with the CD&E community.

V – CONCLUSIONS

31. Since its inception in NATO, CD&E has proven its value as a cost effective, solution-oriented tool, where meaningful contributions to capability development have been achieved. CD&E has gained high visibility and esteem within the Alliance and amongst partner Nations. This is a major achievement, which must be continued.

32. From this MC Policy, a detailed and updated NATO CD&E process will be derived by HQ SACT and submitted to the MC for approval. Furthermore, HQ SACT is encouraged to develop and maintain an ACT CD&E Handbook for use by CD&E staff. CD&E courses at NATO School should also be expanded to fulfil current and future demands. This will ensure understanding of CD&E from the MC level down to individual staff officers.

RELATIONSHIPS AMONG PROCESSES



CD&E-RELATED DEFINITIONS AND CATEGORISATION

Transformation. Transformation in NATO is a continuous and proactive process of developing and integrating innovative concepts, doctrine and capabilities in order to improve the effectiveness and interoperability of NATO and partners as appropriate.

Capability. The ability to execute a specified course of action or achieve a certain effect. Within the transformational arena, the definition includes one or more elements of the Doctrine, Organisation, Training, Material, Leadership, Personnel, Facilities and Interoperability (DOTMLPFI) spectrum.

Concepts hierarchy. In order to identify the aim, scope, and possible content of a concept and its relationship to other transformational efforts a hierarchy of operational concepts should be observed. This hierarchy is not meant to be rigid, but it rather reflects the fact that concepts can be stand-alone or have links with other concepts.

a. A Capstone Concept is an overarching concept with the purpose of leading force development and employment primarily by providing a broad description of how to operate across significant portions of the complete spectrum of operations and describing what is required to meet strategic objectives.

b. An Operating Concept is a concept that describes how a commander will perform a military function or type of operation. It identifies the effects necessary to achieve the end-state and the capabilities required.

c. A Functional Concept is a concept that describes a particular capability, which suggests a solution to a specific or applied requirement. Its purpose is to identify in a detailed manner how to solve an explicit or practical capability problem, and what solution sets, tactics, techniques and/or procedures may be employed.

Experiments. Experiments are categorised into three different types:

a. A Discovery Experiment is used to introduce novel systems, concepts organizational structures, technologies, to a setting where their use can be observed.

b. A Hypothesis Testing Experiment advances knowledge by proving or disproving a hypothesis or discover their limiting conditions. For example; if "proposed change" is implemented then "improved capability" is delivered.

c. A Validation Experiment provides final demonstrated evidence through recreation of a known truth that a prototype capability will improve mission effectiveness or interoperability.

TASKING FOR CONCEPT DEVELOPMENT AND APPROVAL OF CONCEPTS

1. Authorisation to develop a specific concept and its final approval are of particular importance, especially since Concept Development and/or a finalised concept almost always imply or entail an impact on resource allocation.

2. The MC has the oversight on the entire process and can task ACT to start any specific CD&E project at any time.

3. The mission of SACT is, inter alia, to explore concepts, promote doctrine development, conduct experiments and support research and acquisition processes of new technologies through interaction with agencies/boards, as appropriate, in order to find and deliver improved interoperability, standardisation and qualitatively transformed capabilities. HQ SACT will involve the MC at an early stage if resource implications associated with development of any specific concept will be significant.

4. If SACT believes MC consent to develop a concept is required due to potential sensitivities, explicit approval should be sought on a case by case basis. In those specific sensitive areas, the formal MC approval to develop a concept should not only be sought through submitting the CCPlan or CD&E POW.

5. Since in most cases SHAPE is the primary user of HQ SACT's products, a mutual understanding between the SCs should be achieved prior to embarking on the drafting of a new concept.

6. Regardless of the tasker issuing authority, the MC, and therefore nations, will get full transparency through the annually submitted CCPlan and CD&E POW which allows the MC to seek for additional information and approve CCPlan's military validity.

7. Each envisaged concept will be carefully scrutinised prior to any formal decision on starting Concept Development. The assessment should include: the problem to be solved; why a new concept is needed; concept scope; operational benefit expected; experimentation possibly needed, risks to be considered; resource considerations for developing the concept; identification of appropriate authority to officially initiate Concept Development and to approve the final concept.

8. All concepts submitted to approval authorities must contain proposals on how to implement them.