NORTH ATLANTIC TREATY ORGANIZATION

ORGANISATION DU TRAITE DE L'ATLANTIQUE NORD

SH/ACO/PLANS/25-100272/1 ACT/MDFD/DCOS/TT-0037/SER:180

BI-STRATEGIC COMMAND DIRECTIVE 075-007

EDUCATION AND INDIVIDUAL TRAINING DIRECTIVE

DATE: 24 March 2025

REFERENCES:
A. MC 0458/4 (Final), NATO Education, Training, Exercise and Evaluation (ETEE) Policy, dated 03 January 2023.
B. SH/SDP/J7/FPR/TRR/AP/22-010631, Revision to Bi-Strategic Command 75 Series Directives, dated 31 March 2022.
C. SH/ACO/PLANS/23-011422, Bi-SC Command Directive 075-002, NATO Education and Training (E&T) Directive, dated 12 June 2023.

1. **Status.** This directive supersedes the Bi-Strategic Command Directive (Bi-SCD) 075-007, dated 10 September 2015.

2. **Purpose.** This directive provides guidance and details the responsibilities and planning aspects to NATO's Systems Approach to [individual] Training (SAT), including the addition of responsibilities and planning aspects. It should be used as a comprehensive guideline for how to analyze, design, develop, implement, evaluate, and manage all NATO education and individual training (E&IT) solutions, whether delivered through residential or distributed means, including mobile training solutions (MTS).

3. **Applicability.** This directive is applicable to both Strategic Commands, and all Education and Training Facilities (ETFs), as per Reference A, that execute E&IT activities supporting the preparation of the NATO Command Structure (NCS), the NATO Force Structure (NFS) and individuals assigned to current and future NATO-led operations. Non-NATO Entities (NNE) and non-nationally owned training providers that are temporarily fulfilling recognized ETEE requirements are required to comply with the guidance provided herein when planning and executing E&IT SAT activities on behalf of NATO. Nations involved in providing a NATO capability should apply this directive to projects involving education and training via the Common Funded Capability Delivery Governance Model.

4. With the approval of this directive, Bi-SCD 075-010, Mobile Education and Training Teams, dated 28 November 2017, and ACT Interim Guidance to Education and Training Facilities regarding Advanced Distributed Learning, dated 04 May 2020, are rescinded.

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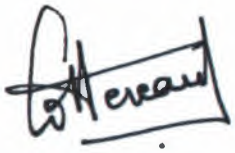
5. **Supplementation.** Supplementation may be requested to HQ SACT / Multi-Domain Force Development (MDFD) Directorate and published after authorization. When authorized, the draft supplement will be fully coordinated with SHAPE J7 prior to issuing.

6. **Publication Updates.** Updates are authorized when approved by Chief of Staff (COS) HQ SACT and COS SHAPE. An assessment for a revision is to be carried out not later than five years after the release date of this publication.

7. **Proponent.** The proponent for this directive is HQ SACT DCOS MDFD, Education and Training Plans and Programmes Branch.

FOR THE SUPREME ALLIED COMMANDERS, EUROPE AND TRANSFORMATION:



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VERSION HISTORY

Change Number	Rationale for Change	Complete Rewrite / Paragraph(s) Changed	Date of Document
0	Bi-SC COS Task, Revision of Bi-Strategic Command 75 Series Directives, dated 31 March 2022	Complete rewrite	March 2025

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CHAPTER 1 – INTRODUCTION

BACKGROUND

1-1. NATO Education and Training (E&T) activities are core functions for preparing the NATO Command Structure (NCS) and NATO Force Structure (NFS) for NATO's three core tasks of Deterrence and Defence, Crisis Prevention and Management, and Cooperative Security (CS)[1] in accordance with the Alliance's level of ambition (LOA)[2]. NATO conducts E&T to ensure headquarters and forces are ready, effective, and interoperable. NATO E&T also strengthens relations with Partner nations[3] and non-NATO entities (NNEs)[4] and, as such, fortifies CS[5]. NATO E&T activities provide a visible deterrence and can be an effective assurance measure. NATO E&T ultimately demonstrates the strength and resolve of the Alliance.

1-2. Within NATO, preparing individuals, headquarters and forces is a continuum with the responsibilities shared between the Alliance and each nation. The preparation of the individual contributes directly to collective effectiveness. Within NATO, there is a holistic approach to E&T. This is illustrated in the NATO Education and Training Spectrum[6], Figure 1. The individual focus within the NATO Training Spectrum consists of two elements[7]:

a. Education.

b. Individual Training

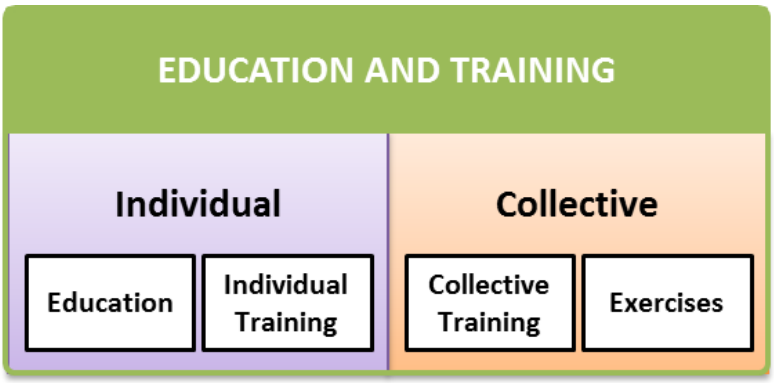

Figure 1 - The NATO Education and Training Spectrum

[1] As per Reference A, Paragraph 7, nations are responsible for the education and training of their personnel and forces allocated to NATO. The use of common funding for E&IT is addressed further beginning in Chapter 2, Paragraph 2-17.
[2] Refer to Reference A, Paragraph 21.
[3] As described in Reference A, Annex E, a NATO Partner refers to Partnership for Peace (PfP), Mediterranean Dialogue (MD), and Istanbul Cooperation Initiative (ICI) countries, as well as Partners across the Globe (PAtG) with a partnership programmed with NATO.
[4] As described in Reference A, Annex E, NNE includes International Organizations (IO), Governmental Organizations (GO) of non-NATO nations, Non-Governmental Organizations (NGO), Non-NATO Multinational forces, Host Nations (when the Host Nation is not a NATO nation), Contractors on operations, exercises and transformational activities as well as Non-NATO countries that do not meet the definition for "NATO Partner".
[5] CS is one of NATO's three core tasks. Refer to Reference D.
[6] As per Reference C, Chapter 1.
[7] The terms "Education" and "Individual Training" are defined in Reference A, Paragraph 6. A glossary is provided at Annex A. Appendix 2.

1-3. NATO relies upon nations to address Education and Individual Training (E&IT) requirements that are specific to the Alliance. As such, these E&IT requirements are addressed by training programmes and activities. Together, E&IT within NATO is comprised of the activities that develop the knowledge, skills, and attitudes (KSA) required in the performance of assigned duties and upon which information can be correctly interpreted and sound judgement applied[8]. The structure of work and the supporting elements are summarized in Figure 2. The *Right People [with] Right Skill* critical enabler, as defined in the NATO Warfighting Capstone Concept, is a key element of NATO's E&IT efforts[9]. It aims to have the right people with the right KSAs to cope with speed, complexity and data-centric technology of the future environment, and think and operate effectively in a multi-domain context in line with the concepts in force.

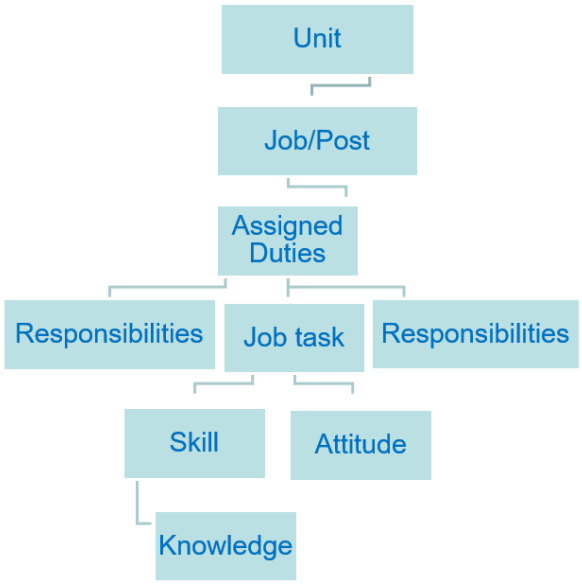

Figure 2 – Structure of NATO Work

POLICY FOUNDATION

1-4. The Military Committee (MC) establishes the policy framework which governs NATO E&T. The Bi-Strategic Commands (Bi-SC) subsequently interpret the policy and produce unified direction. The hierarchy of the E&T policy and directives within NATO which have influenced this directive are illustrated in Figure 3.

[8] Within Chapter 4, beginning in Paragraph 4-21, the rationale for combining E&IT and the related delineation of responsibilities between the Alliance and each nation is explained.
[9] Refer to Reference E, Paragraph 23.

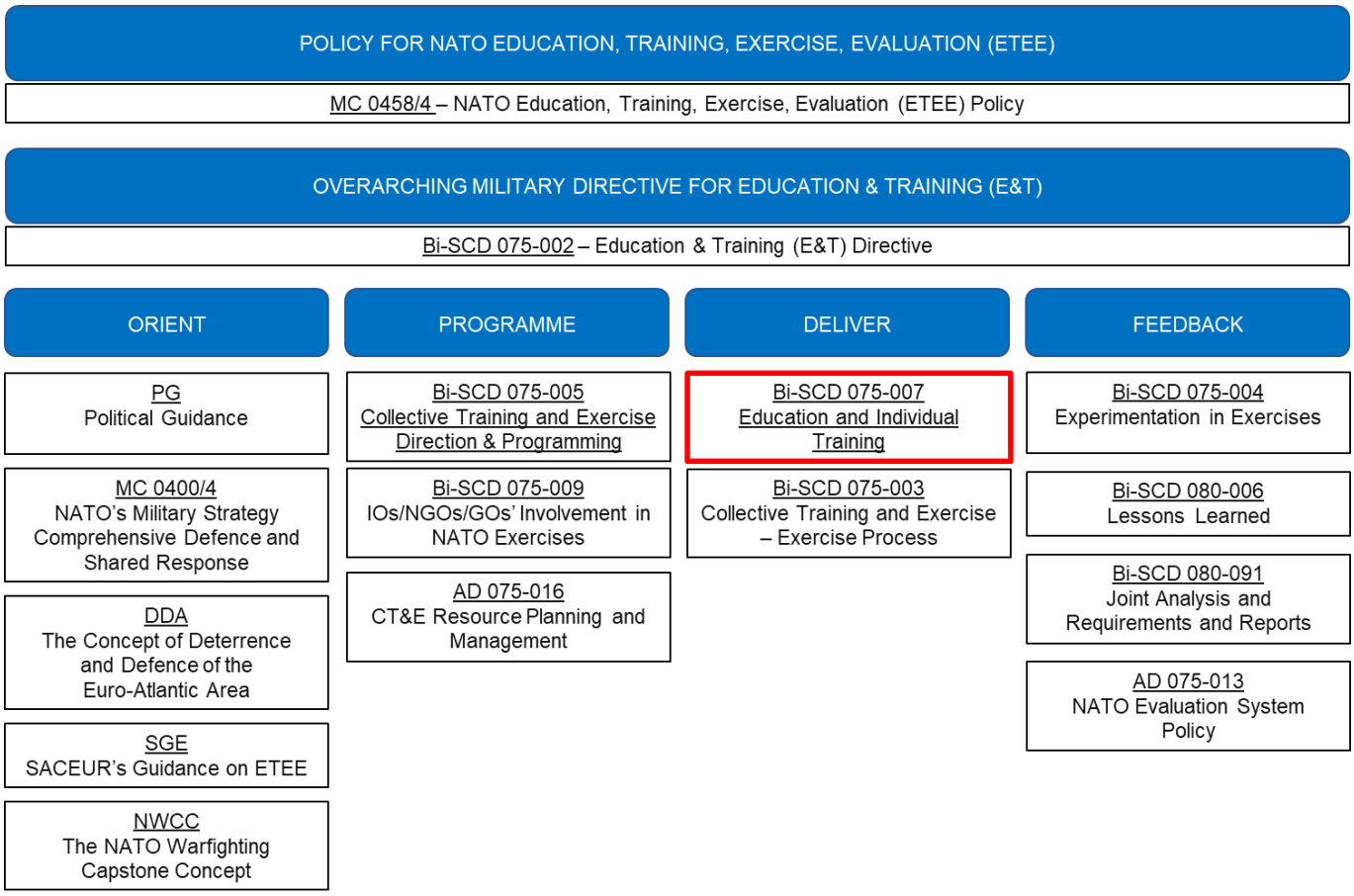

Figure 3 - NATO's E&T Hierarchy of Policy and Directives

AIM

1-5. The aim of this directive is to define the processes and products supporting NATO E&IT and situate this within the NATO Global Programming Approach[10] as described in Reference A.

SCOPE

1-6. This directive details the processes[11] and products supporting the development, implementation, maintenance and overall management of effective[12], efficient[13], and relevant NATO E&IT solutions[14] that meet NATO-specific requirements.

[10] Will be referred to as Global Programming for the remainder of the directive.
[11] The Systems Approach to Training (SAT) can also be used to effectively develop non-training solutions (no ETOC course code qualifications would be granted) such as seminars, workshops, master classes, and micro-learning events. See Paragraph 4-2 and 4-8, as well as Chapters 5-9 for information on SAT. To support the complete implementation of Global Programming and this directive, several courses have been developed and details are provided in Annex C.
[12] Summarized as the extent to which the E&IT has prepared the individual for the effect/intended outcome.
[13] Summarized as the extent to which the resources to enable the execution of E&IT are optimized and ensure there is value for money spent.
[14] The solutions may be an existing course, a new course or updates to an existing course.

APPLICATION

1-7. This directive is applicable to:

a. The NCS, in the fulfilment of their responsibility for the management and execution of NATO E&IT through the Global Programming Governance activities.

b. HQ SACT Multi-Domain Force Development (MDFD) in the fulfilment of their responsibility for the accreditation of NATO E&IT institutions and the certification of courses.

c. The Requirements Authorities (RA), in the fulfilment of their role, as they are consulted and informed during the various phases of the systems approach to training, including requirements identification and confirmation, and development of Course Control Documents (CCD) I and II.

d. The Department Heads (DH), in the fulfilment of their role as they are either accountable or responsible for the creation of CCDs, ensure alignment between CCDs II and III, and monitor course conduct for alignment to CCDs.

e. All Education and Training Facilities[15,16] (ETF) operated by, and all E&IT activities conducted by NATO and Partner nations supporting the preparation of the NCS, NFS and individuals assigned to current and future NATO-led operations, including the Allied Response Force (ARF), to meet the NATO LOA[17].

PRINCIPLES

1-8. This E&IT directive incorporates all ETEE principles stated in References A and C. In addition, this directive incorporates a ‘best practices’ approach to meet the demand, without inhibiting the latitude of solution providers to act in a timely and scalable or tailored fashion.

[15] Reference A, Annex C provides a list of NETFs, NATO Accredited COEs, and NATO-recognized PTECs; however, HQ SACT Multi-Domain Force Development maintains the most current list of ETFs supporting NATO E&T.

[16] ETFs, by their classification, are compliant with NATO procedures and standards. These include NATO Education and Training Facilities (NETFs), NATO-Accredited Centres of Excellence (COEs), NATO-recognized Partnership Training and Education Centres (PTECs), Multinational Training Institutions/National Training Institutions (MNTI/NTI) from NATO nations. In addition, and as necessary, ETFs may also include NNEs (referred to as Other Training Facilities) that comply with NATO procedures and standards, and serve as complementary E&IT assets that fulfil recognized NATO ETEE requirements through the provision of E&IT solutions in line with Reference A.

[17] The ETF scope is defined in Reference A, Paragraph 23. ETFs are controlled by, or otherwise report to, NATO, a NATO nation, a NATO recognized Partner nation or any combination thereof.

CHAPTER 2 - EDUCATION & INDIVIDUAL TRAINING MANAGEMENT

GLOBAL PROGRAMMING

2-1. Global Programming is NATO's management framework, including a governance structure, designed to optimize the quality and quantity of E&T to meet NATO-specific requirements, while minimizing the resources (personnel, equipment and finances) devoted to E&IT programmes[18]. NATO E&IT is managed through Global Programming. The aim of Global Programming, as it relates to E&IT, is to ensure the right E&IT is provided to the right personnel at the right time, in the right location, and in the most efficient manner possible. This extends to the alignment of E&IT to specific training courses stipulated in the NCS and NFC Peacetime Establishment (PE) and Crisis Establishment (CE) (PE / CE) posts' Job Descriptions (JD).

DISCIPLINES

2-2. Global Programming relies upon disciplines to categorize, capture and manage the requirements that become the basis for E&T solutions. A discipline is a NATO training category encompassing an approved (and distinct) body of knowledge and skills, which supports existing or evolving capabilities[19]. The NATO discipline structure is relatively stable while the E&IT requirements to develop these capabilities are captured within the individual disciplines can flexibly evolve and change over time to continuously meet NATO's political and military needs. The list of disciplines is approved annually by the MC[20].

GOVERNANCE

2-3. HQ SACT, through the MDFD Directorate, manages Global Programming and the associated discipline structure. For each discipline, there is an assigned Requirement Authority (RA), a DH supporting HQ SACT in the centralized coordination and decentralized execution of E&IT through the MDFD Discipline Point of Contact (POC). Details on the governance structure are captured in References A and C. As well, the RA and DH roles are summarized within Reference C, Chapter 3. NATO relies on a variety of ETFs, as specified in paragraph 1-7, to provide NATO E&IT solutions. Control of these organizations rests with different authorities, but the responsibility for seeking a NATO-unified effort lies with HQ SACT. Through the Requirements Authority Steering Board (RASB), co-chaired by SHAPE DCOS Plans and HQ SACT DCOS MDFD, strategic direction(s) to the disciplines is provided when required. The RASB is a discussion and decision making body for NATO E&T, conducted annually to provide SACEUR with improved guidance over the ACO RA function and to endorse the annual List of Disciplines for submission to MC for approval.

NATO-SPECIFIC REQUIREMENTS

2-4. The requirements-driven approach of Global Programming initiates the capturing of NATO-specific requirements followed by the search for and incorporation of NATO E&IT solutions. When determining an E&IT requirement, performance and production must be considered.

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[18] Refer to Reference C, Chapter 3.
[19] Refer to Reference C, Chapter 1. Disciplines cohere training and education around meta-themes which often link to their identified functional areas.
[20] Refer to Reference A, Part 3.

a. **Performance Requirements.** Performance requirements represent key aspects of individual jobs[21]. These NCS / NFS jobs define tasks individuals are to undertake within NATO Peacetime Establishment (PE) and Crisis Establishment (CE) (PE / CE) posts[22] and also address the expected level of proficiency[23]. An individual NATO-specific performance requirement is the expression of the gap between an individual working in a NATO environment and an individual educated and trained to work in a similar national environment. Performance requirements are derived from the tasks performed by individuals as part of their principal duties during operations or while occupying specific NCS / NFS positions. NATO post JDs generally capture performance requirements[24] and this contributes decisively to defining E&IT solutions. Performance requirements may also stem from SACEUR's Guidance on Education, Training, Exercise and Evaluation (SGE), and the discipline's Community of Interest (CoI). These requirements are validated by the RA. The Training Needs Analysis (TNA) within the Global Programming's Development Methodology converts NATO performance requirements into E&IT solutions[25]. Once a discipline is set up and E&IT is being conducted to fulfil the NATO-specific requirements, these requirements are addressed. The requirements are reviewed and updated annually and captured within the Discipline Alignment Plan (DAP) report[26]. The detailed procedural guidance to support this TNA activity, which is the analysis phase of the Systems Approach to Training (SAT), is provided in Chapter 5 of this directive, with the remainder of the SAT phases found in Chapters 6 through 9.

b. **Production Requirements.** Production Requirements concern quantity and as such, it is the number of personnel to be trained to meet specific performance requirements within a defined period. Production is guided by SGE and supports national efforts to prepare personnel for future NATO posts as per the respective JDs. Production requirements are essential to determine the priority of effort as well as the timeframe and location for conducting E&IT[27]. The Individual Training and Education Programme (ITEP) consists of planning and synchronization forums as well as the NATO Digital Training Management System[28] (NDTMS) to manage production requirements as part of the Global Programming - Production Planning Process. The ITEP also provides tools to ensure E&IT solutions are in place to address the NATO E&IT requirements that have been identified across the whole NATO discipline structure.

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[21] Often derived from job descriptions within the 'responsibilities' statements.

[22] CE/PE posts within the NCS / NFS will be referred to as 'NCS / NFS posts' throughout the directive.

[23] Also referred to as Proficiency Level, these refer to post requirements and not the content that would be shared between an outgoing and an in-coming person that will fill a NCS or NFS post. The Hand Over-Take Over process is not part of E&IT.

[24] NATO-specific task performance statements are inferred from the statements captured within the post responsibilities.

[25] The requirements are consolidated in the annex to the Training Requirements Analysis (TRA) Report.

[26] The Requirements Review output product is captured in an annex to the DAP.

[27] E&IT schedules, where possible, should be synchronized. For example, NATO-offered courses for the same discipline at various ETFs to ensure that the greatest number of students possible can attend E&IT. In addition, where possible, course schedules and CT/EX schedules covering personnel within the same discipline should try to be de-conflicted.

[28] The electronic-Individual Training and Education Programme (e-ITEP) is rebranded NDTMS IAW Reference C.

NATO COMMAND STRUCTURE / NATO FORCE STRUCTURE TRAINING MANAGEMENT

2-5. **Valid Job Descriptions.** Each NATO post has an associated JD which identifies the duties, responsibilities and qualifications[29]. For nations to select the right person with the right skills for an identified post, the JDs must be kept up to date[30]. Thus, the candidate's responsible Personnel Department and the Training entities will be coordinating preparation of personnel for posts for essential E&IT qualifications, and within NATO, the J1 and J7 entities for desirable[31] E&IT qualifications.

NATO DIGITAL TRAINING MANAGEMENT SYSTEM

2-6. The NDTMS is a web-based platform that provides the E&IT component of NATO's Training Management System[32]. This system is primarily intended to support E&IT production management. The NDTMS is constructed to manage in-year production, project future year E&IT production requirements and provide trend analysis data based on activity from previous years. The NDTMS shares data with NATO's Automated Personnel Management System (APMS). One of the main intents for NDTMS is to capture NATO's E&IT production requirements, through the APMS links, and compare this with E&IT opportunities scheduled within the NDTMS. The result is that the NDTMS can project and match the demand for E&IT with the available solutions[33]. The NDTMS production plan is premised on valid and reliable NATO PE / CE management data and this is enabled through the APMS[34].

2-7. **Education and Training Opportunity Catalogue.** The NDTMS also includes broader functionality to support the management of NATO E&IT, including the Education and Training Opportunity Catalogue (ETOC). As an integral part of NDTMS, the ETOC is NATO's E&IT catalogue or data base for solution management. It provides the opportunity data to support the matching of training requirements and opportunities of today and in the future. This repository of course information includes the essential documents that support NATO certified courses[35]. The ETOC is an open system which permits courses offered to NATO to be aligned with a discipline and to be certified subsequently. In addition, the ETOC permits:

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[29] Refer to Reference G, Chapter 5, SWP 7, Paragraph 1.

[30] Refer to Reference G, Chapter 5, SWP 7, Paragraph 4.f. indicating JDs to be reviewed at least every three (3) years.

[31] Refer to Reference G, Chapter 5, SWP 7, Annex A, Paragraph 6.a.

[32] Refer to Reference C, Chapter 6. NDTMS is the generic name for e-ITEP in case the programme may change. Support is available through the 'contact us' button within the Education and Training Opportunity Catalogue.

[33] This will provide visibility to the discipline, ETF and Community of Interest of the link/relationship of the annual supply (number of iterations and seats offered) and demand (based on requirements) of E&IT. The ITEP report will indicate if any gap in production through training existed in the previous calendar year.

[34] The NATO Defence Workforce Committee oversees the APMS. The APMS pulls course data from NDTMS. The NDTMS relies on individuals to use the APMS to select courses and update PE/CE JDs. The JDs provide the NDTMS with the overall notional demand for NATO courses.

[35] When approved by HQ SACT MDFD Education and Training Plans and Programmes Branch, NATO-Approved, NATO-Selected and Listed courses may be uploaded into ETOC. Courses certified as "NATO-Approved" and "NATO-Selected" are deemed to meet a NATO-specific requirement and fall under the term "NATO-Provided" courses. Listed courses may meet national E&IT requirements and often support broader capacity building objectives.

a. ETFs covered within the scope of this directive to offer their courses to all ETOC users, providing insight into available E&IT opportunities.

b. Individuals with potential opportunities to support their continuous professional development and access to NATO's most relevant E&IT resources.

2-8. Information on the Individual Training Plan, e-Learning, and course schedules as they are related to NDTMS can be found in Reference C, Chapter 6.

CERTIFICATION OF COURSES[36]

2-9. NATO Course Certification is described in Chapter 5 of Reference C. Amplifying information is provided in the subsequent paragraphs. The workflow and approval process are depicted in Annex M, Appendix 2.

2-10. Course certification is awarded by HQ SACT DCOS MDFD based on an E&IT course (i.e. the solution), no matter the mode of delivery[37]:

a. being entered into ETOC[38,39,40].

b. meeting a NATO-specific requirement[41].

c. having CCDs II and III produced and alignment verified[42]and noted in CCD I.

d. being conducted by a specific ETF[43,44].

2-11. The certification category[45] of courses by NATO is dependent on HQ SACT MDFD institutional accreditation and the alignment of a course with NATO's E&IT requirements.

[36] HQ SACT is responsible for the management of course certification as per Reference A, Paragraph 49.f.
[37] See Paragraph 5-21.
[38] Once a course is entering into ETOC, a course code is generated for tracking and certification purposes. The assigned course code will reflect the discipline title and (functional) area.
[39] The course title in the original entry in ETOC is not to contain "NATO" in its title. Once course certification status is granted, a request to change the title to include "NATO" may be submitted. When a course is to be re-identified to support a different discipline, the request must be captured in the relevant DAPs (losing and gaining) and be coordinated with SHAPE J1 (requirement to change the applicable JDs).
[40] The ETOC code is required on the course control documents. The course code assigned by an ETF through its own learning management system is likely not the same as the one auto-generated in NDTMS.
[41] The requirement is the identified gap from the national qualification or skills set and the NATO over and above need. The DH uses the documentation produced during the TNA to assess the fit between a NATO E&IT requirement and the proposed E&IT solution and thereby avoid visits to individual ETFs. Visits to ETFs that are institutionally accredited by HQ SACT should only occur in exceptional circumstances. Engagement and coordination with HQ SACT is required for visits to ETFs outside the DH's discipline responsibility when the visit involves assessing the solution/requirement fit or other similar quality assurance activity.
[42] HQ SACT MDFD relies on the advice of the DH for the assessment of a course certification request.
[43] More than one ETF may implement the same solution; CCD II is identical, and CCD III should be almost identical or nearly identical giving flexibility in instructional strategies and time. In the end, the graduate of the same ETOC course code, no matter the ETF, must be able to perform the identified requirements and tasks from CCD II at the identical PLs.
[44] See footnote 17 regarding categories of ETFs that can provide an E&IT solution. Solutions provided by private commercial entities/companies are used as an interim measure when no other alternates exist until such time as a NATO or Partner nation can provide. If the course receives NATO certification, it will be valid for a period no longer than 18 months.
[45] NATO-Approved, NATO-Selected or Listed. For definitions, refer to Annex B.

Courses will be assessed using appropriate control documents that have been uploaded and / or populated within the ETOC and contain the required course information[46]. The DH assessment is essential to certifying courses and is used, in part, to determine if a proposed E&IT solution is eligible for common funding as a NATO-Provided course.

2-12. The certification of a course is not transferable between institutions unless endorsed by the DH, approved by HQ SACT DCOS MDFD and the ETFs involved being unconditionally accredited by HQ SACT MDFD. Exceptions to the certification of courses are administered and adjudicated by HQ SACT DCOS MDFD based on the best interests of NATO[47].

2-13. Course certification is a continuous process. Course certification may be sought after the NATO-specific requirements have been identified during a TRA or as part of the sustainment of the discipline following the Global Programming Battle Rhythm. Requirements are updated during the activities of the Annual Discipline Conference (ADC), and existing solutions are reviewed. The results of the reviews are captured within a DAP and could trigger changes to courses captured in the ETOC[48]. NATO-Approved and NATO-Selected courses must remain responsive to NATO's evolving E&IT requirements. Furthermore, the CCDs must remain accessible and up-to-date in the ETOC. Finally, the conduct of a NATO-Approved or NATO-Selected course is to be routinely evaluated by the course Officer of Primary Responsibility (OPR) (internal or external) and / or the DH as appropriate to ensure that the correct information is delivered in accordance with the requirements, as captured in the CCDs, as well as the teaching points (TPt), media, methods of instruction, environment and timing from CCD III[49,50]. Where there is a divergence of the course content / material delivered with that required, the ETF is afforded an opportunity to rectify the situation, otherwise the course would be decertified[51].

[46] Chapters 5 and 6 identify the detailed course information required to assess the alignment between a proposed/existing E&IT solution (a course) and a NATO E&IT requirement. Technical support within ETOC is available through the 'contact us' button in the top tool bar.
[47] For example, when authority for a mature course to be implemented at an additional ETF is granted, dispensation to award a certificate of course completion, certifying the course as being NATO-Approved/NATO-Selected, may be granted for the pilot iteration when appropriate staff have monitored the effectiveness of the course conduct. See Chapter 7, Step 17.
[48] Depending on the status of the requirement and if the solution is still needed, a course in the ETOC could be deleted or archived for potential future use or downgraded if the solution no longer meets a NATO-specific requirement.
[49] A listed course would only be evaluated when a DH/ETF is looking at potentially upgrading the course to NATO-Approved or NATO-Selected to meet a NATO-specific requirement. The result would be potential changes to the course to be more in line with NATO requirements, and the monitoring of the listed course as a pilot iteration with formal CCDs.
[50] Refer to Step 8 for details.
[51] See Para 8-15 – Monitoring Course Content. The DH and/or the External OPR will raise the discrepancy to the ETF.

RE-CERTIFICATION OF COURSES

2-14. Once a course has been granted a certification category of NATO-Approved or NATO-Selected[52], the DH must review and update[53] CCD II, and the ETF[54] must review and update CCD III at least once every three (3) years. Where the dates (and signature dates) on CCD I are older than three years, rectification action[55] must be taken, otherwise the course certification category may be withdrawn by HQ SACT DCOS MDFD and thus downgraded to Listed.

2-15. When a certified course changes significantly[56], the ETF is to reapply for NATO course certification. Based on the requirements review outcome and striving for continuous improvement of the course, the DH, RA and ETF are to execute their Global Programming SAT tasks[57]. Significant changes to a course may result in the conduct of a course pilot iteration.

NATO-PROVIDED COURSES

2-16. A NATO-Provided Course is an E&IT solution that is programmed and conducted to meet the NATO-specific requirements, categorized as compliant, and is certified by HQ SACT MDFD as **NATO-Approved** or **NATO-Selected** within the ETOC[58].

a. To be certified as a **NATO-Approved** course within the ETOC, the course must:

(1) Satisfy a NATO E&IT requirement that is identified by a SACEUR-appointed RA[59].

(2) Be delivered by an ETF that has successfully completed the HQ SACT MDFD Quality Assurance institutional accreditation / re-accreditation process.

b. To be certified as a **NATO-Selected** course within the ETOC, the course must satisfy a NATO E&IT requirement that is identified by a SACEUR-appointed RA.

[52] The granting of course certification is based on an approved set of CCDs as well as the institution's accreditation rating.
[53] The DH or a designate subject matter expert (e.g. External OPR) would be required to update CCD II.
[54] Once the CCD II and III are updated and the DH is informed, a new CCD I will be initiated and finalized by the DH and submit/upload into the NDTMS by the ETF.
[55] Verification of the validity of the CCD alignment should be completed as part of the pre- / Annual Discipline Conference.
[56] Examples of significant changes are changes to requirements affecting CCDs II, III and courseware; changes to instructional strategies, learning environment, and course activities affecting CCD III and courseware; and changes to the number of Performance Objectives (in CCDs II and III) or Enabling / Learning Objectives (in CCD III).
[57] The assignments of the Governance personnel are captured in Figure 10 in Chapter 4 of this directive.
[58] To prevent misinterpretations, a NATO-Provided course refers to a specific course iteration that is programmed by an ETF at a specific place and time for NATO. A NATO-Provided course should be clearly distinguished from similar activities and the NATO-Provided course should be explicit within planning documents and programmes of work.
[59] The appointed RA may be from within or external to SHAPE. RAs are appointed as per Reference A, Part 3, Paragraph 15.a.

FUNDING AND RESOURCES

2-17. **Overarching Principles.** The NATO Resource Policy and Planning Board (RPPB) issues policy and direction on how NATO common funding may be used to support NATO E&IT activities. This includes funding for NATO-Provided courses. Providing further amplification to reference C, the following overarching principles guide RPPB decision making concerning the use of common funding for E&IT.

a. **"Over & Above".** NATO common funding eligibility will focus on the fulfilment of NATO-specific requirements which are over and above those which can reasonably be expected to be made available from national resources[60].

b. Separate requirements from resourcing. There is a need to maintain a clear separation between requirement identification, eligibility, and affordability. Eligibility does not infer automatic affordability or entitlement to resourcing through common funding. Resourcing should not limit the identification and definition of new requirements. Where there is a genuine need, E&IT solutions will be sought.

c. Justification of military requirements in line with Alliance objectives and priorities. For E&IT, a clear link must be established which connects E&IT requirements with NATO objectives and priorities[61].

d. Each nation is responsible for filling their military posts with fully qualified and trained personnel who meet the nationally approved essential requirements as detailed within the NATO post JDs[62,63]. Consequently, the E&IT is entirely nationally funded.

e. NATO-specific E&IT required by military personnel provided to NATO bodies is a NATO responsibility. NATO common funding will provide funds to cover such training costs for military and civilian personnel. This can include investment requirements from the NATO Security Investment Programme, generally for facilities and equipment identified as a military requirement in a capability package.

f. Disciplines with cross-cutting topics may request, and when approved, access funding / resources to help support the integration of their cross-cutting topic across NATO E&IT activities.

2-18. **Course Fees and Exceptions.** With only a few exceptions, the institutions supporting NATO E&IT are largely customer-funded and further resourced through

[60] As per reference at footnote 17: NATO-specific E&IT required by military personnel provided to NATO bodies is a NATO responsibility (Reference F, Paragraph 5.1).
[61] The link between E&T requirements and the objectives and priorities of the Alliance are established through a MC approved Strategic Training Plan (STP). Allies have the right to request a case-by-case MC endorsement and NAC approval of the STP if there is a perception of political sensitivity (Reference A, Paragraph 17.b)
[62] Refer to Annex A to SWP 7 to Chapter 5 to Reference G, Paragraph 5.b.(4).
[63] Refer to Reference A, Paragraph 7 and Reference C, Paragraph 2-2.

established recurring national and multinational funding contributions[64,65]. In the area of E&IT, ETFs may rely on course fees provided by the requesting / sponsoring organization to resource the design, development, conduct and maintenance of existing E&IT solutions. Exceptions may be made in support of NATO Partnership programmes and to address immediate operational requirements, in particular E&IT for pre-deployment and in-theatre needs.

2-19. **New Capabilities.** In situations where new capabilities are being introduced, initial funding for related equipment as well as initial development of the required E&IT solutions may be provided through NATO common funding from the applicable Capability Programme Plan. These initiatives primarily stem from the new capabilities developed following the Common Funded Capability Delivery Governance Model (CFCDGM)[66,67]. Once introduced as a capability, the steady-state E&IT resourcing will remain consistent with the overarching funding principles outlined above. A Voluntary National Contribution Fund may also be used to initially build NATO capabilities.

2-20. **Subject Matter Experts (SME) for Course Delivery.** Travel and subsistence costs for SMEs originating from outside the NCS[68] required to deliver E&IT during for the conduct of NATO-Provided courses are eligible for common funding[69]. The approval of the funding remains subject to NATO affordability constraints and demand for SMEs. HQ SACT MDFD oversees the approval and funding process in accordance with the criteria the (NATO HQ) Resource Policy and Planning Board (RPPB) provides. Annual direction and guidance on the funding allocation is provided by HQ SACT DCOS MDFD[70].

2-21. **DHs from Outside the NCS.** Travel costs, for DHs outside the NCS, required to execute their tasks in accordance with their DH Appointment Letter are eligible for common funding[71]. The approval of the funding remains subject to NATO affordability constraints and demand. HQ SACT MDFD oversees the approval and funding process in accordance with the criteria the RPPB provides. Annual direction and guidance on the funding allocation is provided by HQ SACT DCOS MDFD[72].

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[64] NATO Defence College has an allocation of NATO PE positions and support funding and is responsive to the MC.

[65] Within the NCS, resources are allocated towards orientation and initial staff induction / on-boarding programmes. These programmes are unit specific and are not generally captured as part of broader NATO E&IT requirements.

[66] Refer to Reference U. For operationalization of the model, refer to Reference V.

[67] New capabilities may also be identified in a new discipline's STP, approved by MC. Allies have the right to request a case-by-case MC endorsement and NAC approval of the STP if there is a perception of political sensitivity (Reference A, Paragraph 17.b).

[68] This refers to personnel from NATO nations only. 'For profit / not-for-profit' companies are not eligible to receive funding support for travel and subsistence.

[69] Refer to Reference F, Paragraph 20.

[70] As a rule, prioritization will be given to NATO-Approved courses over NATO-Selected ones. In most cases, this will aim to enable two SMEs per course iteration; exceptions will be considered on a case-by-case bases. MDFD has an internal process including the announcement letter for bids, and the bid submission and approval process.

[71] Refer to Reference F, Paragraph 20.

[72] As a rule, prioritization will be given to the Discipline ADC and to activities related to NATO-Approved courses over NATO-Selected ones. MDFD has an internal process including the announcement letter for bids, and the bid submission and approval process.

EDUCATION AND INDIVIDUAL TRAINING WITH PARTNERS AND NON-NATO ENTITIES

2-22. Cooperation of Partners and NNEs with NATO in ETEE activities is conducted as specified in Annex A to Reference A. E&IT is a key element of NATO's military cooperation with Partners and with NNEs[73]. Partners and NNEs are therefore encouraged to participate in, observe or otherwise contribute to NATO E&IT activities. **NATO-Selected**, **NATO-Approved** and **Listed** courses for Partner involvement are inserted in the Partnership Cooperation Menu (PCM) for review and agreement by the Partnership Management Board, with political oversight by Allies. In case of Allied questions or concerns, the Partnerships and Cooperative Security Committee will be addressed. Involvement of NNEs in NATO E&IT activities is subject to case-by-case MC endorsement and NAC approval[74]. The NNEs' requests[75] for NATO E&IT activities should be considered in a timely manner to enable proper planning and approval[76].

2-23. For Partners specifically, E&IT activities are captured in the Recommended List of Activities (RLA) and aligned with NATO's Partner-specific military objectives and priorities, which are based on the MC Direction and Guidance, and ultimately the Individually Tailored Partnership Programme. The RLA has the aim to provide further guidance for Partners in the selection of specific PCM events for participation, including courses delivered by ETFs. Many courses that are published in the ETOC support NATO's efforts of cooperation and partnership goals with Partners. Partner nation participation in a NATO E&IT activity from the PCM is conditional upon the presence of, and in accordance with the agreed individual/tailored cooperation programmes, or packages under the Defence and related Security Capacity Building Initiative, and is supported by the Partnership Real-time Information, Management and Exchange (ePRIME) system. Subject to SHAPE Partnerships Directorate (PD) coordinator approval, the **NATO-Selected** and **NATO-Approved** courses in the ETOC, including those offered by Partners, are eligible for an ACT reference number in ePRIME. The SHAPE PD also determines the eligibility of the ETOC **Listed** courses for an ACT reference number. Eligibility is based on NATO's partnership objectives and priorities; however, security considerations must be followed depending on the security classification and location of a course. SHAPE PD may also seek support from HQ SACT MDFD, to provide SHAPE PD with an assessment of an individual course in the ETOC in relations to a specific partnership goal. Bi-SC Commanders' Guidance – Military Co-operation provides further details supporting the use of the PCM and ePRIME[77].

EDUCATION AND TRAINING FACILITY TRAINING MANAGEMENT

2-24. ETFs that deliver NATO solutions, whether accredited or not, often share best practices and work with their respective DH(s) and the broader Global Programming community. The following are good practices for DHs and ETFs that may be implemented on a voluntary basis. Good training management practices involve designing and

[73] As defined in Reference A, Annex E, NNE includes non-NATO countries that do not otherwise meet the definition for "NATO Partner".
[74] Refer to Reference A, Annex A, Paragraph 3.f. HQ SACT MDFD is to remain informed of all potential NNE involvement with NATO-Provided courses at a NATO Accredited COE or NATO Recognized PTEC.
[7575] NNE involvement in NATO-Provided courses must adhere to guidance on information and intelligence sharing with NNEs as per Reference M. An efficient amount of time is at least 120 days prior to the start of the E&IT event.
[76] Refer to Reference A, Annex A, Paragraph 3.a.
[77] Refer to Reference N.

developing course control documents and curricula, allocating resources, scheduling course iterations, managing student registration, conducting training, collecting feedback and analyzing the effectiveness and efficiency of E&IT.

2-25. Production Planning. An ETF's training management system provides a tool to manage/control/coordinate all training operations within the facility aimed at delivering successful training that meets the NATO-specific requirements and addresses the required numbers of graduates[78]. The main effort should be to ensure personnel are qualified in preparation for NATO posts, operations and ARF deployments.

2-26. Effective practices of training management include:

a. **Forecasting Production (Out-year to 3 years).**

(1) Prior to publishing the out-year calendar, ETFs should confirm internal instructor or External OPR availability[79].

(2) When addressing the demand signal, the ETFs should engage the DH and RA to discuss the number of personnel needing E&IT. As much as possible, the number of course iterations and seat availability should match NATO's production planning requirements based on JD and forecasted and unexpected personnel rotations.

(3) When multiple training solution providers exist to meet the NATO-specific requirements, the DH is to work with the respective ETFs to best de-conflict schedules.

b. **Scheduling Solution.** Produce the initial ETF out-year training calendar including courses and number of iterations to meet the minimum NATO–specific requirements. In addition, reconcile iterations and resources, including instructors and infrastructure.

c. **Integrating Solution.** Many activities are administrative in nature: confirm instructors and guest presenters/speakers, confirm NATO course identification code, and finalize initial out-year schedule. In addition, solicit nominations for course iterations, match attendees to iterations, activate course, reconcile cancellations when a waiting list exists, track payment of course fees, if applicable. Finally, create and distribute course loading message. ETFs are to adhere to the policy on information and intelligence sharing to NNEs when NNE students have been approved by NAC to attend NATO-Approved or NATO-Selected courses[80].

d. **Delivering Solution.** Activities include updating course attendance, recording student results, completing/closing out iteration, and capturing cost.

[78] The ETF's learning management system (LMS) may also include training for listed or national courses.
[79] The need for an External OPR for E&IT is identified in the CCD I (Refer to Appendix 1 to Annex N). Based on requirements, the ETF or when multiple ETFs provide the solution should offer enough seats to cover the minimum requirements.
[80] Refer to Reference M and Reference U, Paragraph 22.

e. **Reporting Solution Outcome.** The initial verification step involves the ETF reconciling its E&IT annual production of the previous year against the ETF calendar (planned production). The final step is the ETF reporting training completion statistics in NDTMS for HQ SACT MDFD NLT 1 Feb of each year, which will become statistical data within the annual ITEP report[81]. In addition, for the purpose of identifying external support from outside ETFs related to conduct of E&IT, ETF's report data on External OPR/SME requests versus provided. ETFs may report completion data more than once a year. ETFs that deliver courses using MTSs (in accordance with CCDs II and III) including, and are granting course qualifications, are to report those[82].

f. **Conducting a Yearly Curriculum Review Board.** ETFs that offer NATO-Approved or NATO-Selected courses should conduct a yearly NATO Curriculum Review Board (or similarly titled) with DH involvement where they would review the lesson plans and CCD III for currency and alignment as well as the alignment of CCD III to CCD II. Any action items assigned to an ETF within the current approved DAP for a specific discipline would be identified and assigned for completion if not already completed.

g. **Granting Certificates for Initial Course Pilot Iteration.** The DH or appropriate staff are to monitor and provide periodic feedback during the conduct of the initial pilot course to DCOS MDFD QA/ ETE policy OPR[83] as part of the MDFD process for ETFs to request for the granting of a "Pilot XXXX Course Completion" certificate subject to all POs being met. Once NATO course certification has been granted by DCOS MDFD on behalf of SACT, the ETF may retrospectively issue a second certificate to the graduates of the pilot course annotating it as NATO-Approved or NATO-Selected.

2-27. **ETF Course Codes.** NATO course codes are generated by the ETOC program when a course is first created in the catalogue. In addition to this course code, ETFs may generate their own internal course codes for internal management of the ETF annual course calendar, in-year and out-year[84]. CCDs are to include the ETOC course code.

[81] The e-ITEP Report capture course completion numbers in an annex.
[82] Data should be reported for the ITEP report. As well, when an ETF is accredited, the data should be reported in their respective annual QA report.
[83] The DH requires situational awareness. If the DH is not monitoring, the monitoring person is to include the DH in the distribution of periodic feedback of the pilot iteration given that the DH is to sign off / finalize CCD I.
[84] The ETF codes may include attendee classification for NATO Nation personnel only; NATO and PfP nation personnel; and NATO, PfP, MD, ICI, PAtG, and International Organizations.

CHAPTER 3 – QUALITY MANAGEMENT

INTRODUCTION

3-1. A wide variety of ETFs offer E&IT solutions to NATO[85]. The intent of this chapter is to detail the mechanisms and processes implemented by NATO to assure the quality of E&IT provided by ETFs that offer solutions aligned with the NATO E&IT requirements identified. These are annually validated by a SACEUR-appointed RA[86].

3-2. It is important to ensure that the planned and systemic approach to building, maintaining and improving the execution of E&IT activities is in alignment with required standards[87]. Compliance with these standards provides confidence that the design, development and conduct of E&IT continues to be aligned to support NATO-specific requirements[88]. HQ SACT MDFD conducts institutional accreditation to provide confidence to the Alliance that recognized ETFs supporting NATO utilize an effective Quality Management System (QMS). Institutional accreditation is also harmonized with the certification of individual courses, as described in Chapter 2.

QUALITY MANAGEMENT SYSTEM

3-3. An established QMS within an ETF ensures the highest quality of E&IT solutions. A QMS incorporates the required continuous improvement process (CIP) to address change and emerging challenges. A QMS has four dimensions each with its own purpose, depth and scope derived from quality related practice. The quality dimensions and their specific application in NATO E&IT are illustrated in Figure 4. In broad terms, the four dimensions of a QMS are as follows:

a. **Inspection.** Inspection is implemented mainly for identifying and correcting errors before they may cause persistent problems.

b. **Quality Control (QC).** QC is a systematic approach to identifying and rectifying problems at each step of the process.

c. **Quality Assurance (QA).** QA widens the responsibility for quality to include other functions beyond the main training activities (e.g. the impact of support functions). The focus is the overall quality of the output and is aimed at preventing errors, mistakes and defects.

d. **Quality Management (QM).** QM is a way of thinking and working with emphasis on:

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[85] The scope of ETFs to be considered is provided in Paragraph 1-7 with further detail provided in footnotes 16 and 17, and Paragraph 3-15 of Reference C.

[86] For NATO, quality E&IT is effective, efficient and affordable. This chapter addresses the E&IT standards and mechanisms identified in Reference A, in particular Paragraphs 7, 13, 23, 24, and 49.f. Requirements can be identified by different entities, but they will become NATO E&T Requirements once validated by the RA.

[87] The standards presented here were influenced by the 3rd edition of the International Education Standards which were produced by the European Network for Quality Assurance in Higher Education in 2009; however, they have been adapted to suit NATO's needs by HQ SACT MDFD.

[88] The planned and systemic approach to managing NATO E&IT is achieved through a two-stage approach guiding the definition and delivery of E&IT solutions. Within this directive, the two stages are subsequently broken out as the Analysis, Design, Development, Implementation and Evaluation phases of the NATO Systems Approach to Training. Details are provided in Chapters 5 through 9.

(1) Meeting the needs and expectations of customers.

(2) Covering all parts of an organization.

(3) Involving every person in the organization.

(4) Examining all aspects related to quality.

(5) Aiming at “right the first time” by designing in quality at the earliest point rather than inspecting for quality afterwards.

(6) Developing systems and procedures which support quality and continuous improvement.

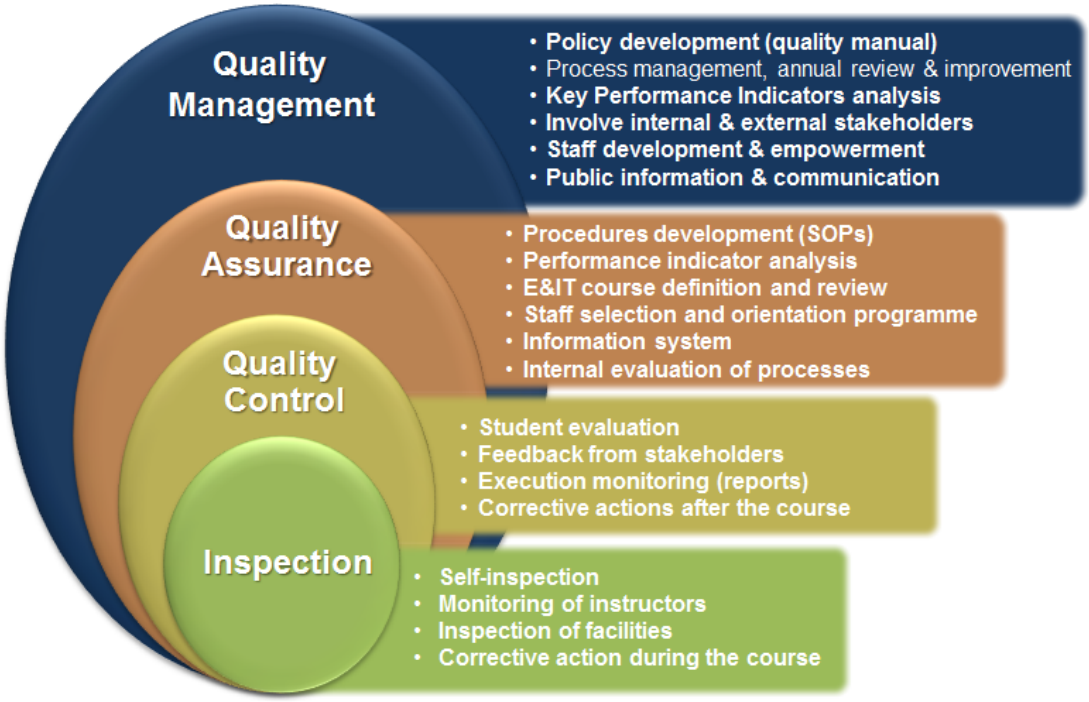

Figure 4 - Quality Dimensions Applied to NATO E&IT

3-4. A QMS is a complete set of quality standards, procedures and responsibilities. The QMS within an ETF defines and covers all facets of the operation, from identifying and meeting the needs of the stakeholders to planning, implementing, monitoring and reviewing the E&IT, together with all the relevant activities regarding these functions. The QMS regulates the organizational structure, the responsibilities, the processes, the procedures and the resources of the institution. The documentation that usually comes with a QMS describes the quality policy, the system, the objectives, the organizational structure, the responsibilities, the jobs/functions and outlines procedures in detail. QMS includes enforcing the set regulations.

CONTINUOUS IMPROVEMENT PROCESS

3-5. A CIP is an essential element of QM and is embedded within a QMS. It is a sustained effort within an organization aimed at enhancing its operations, services, or products over time. A CIP must be in place within an ETF to ensure that it will consistently address NATO E&IT requirements. HQ SACT MDFD conducts ETF institutional accreditation to complement an ETF's CIP, thereby providing the Alliance with assurance that their NATO training solutions are delivered to the correct standards and quality.

3-6. For ETFs subject to NATO institutional accreditation, the CIP consists of internal and external loops, as illustrated in Figure 5. Both loops are executed continuously. The frequency of the internal loop depends on the ETF's normal planning and execution cycle. ETFs are expected to gather relevant information, analyse it, make judgements concerning results and in the final step, if necessary, make changes to improve their processes and procedures. The external Continuous Improvement (CI) loop includes an initial ETF institutional accreditation, and this leads to an evaluation report which provides an ETF with recommendations to improve internal processes and procedures, as required. There is an additional external feedback loop which is provided through an annual QA Report produced by the ETF. HQ SACT MDFD generates a consolidated QA Summary from the ETFs' annual returns. The summary highlights findings and best practices and is distributed annually to ETFs.

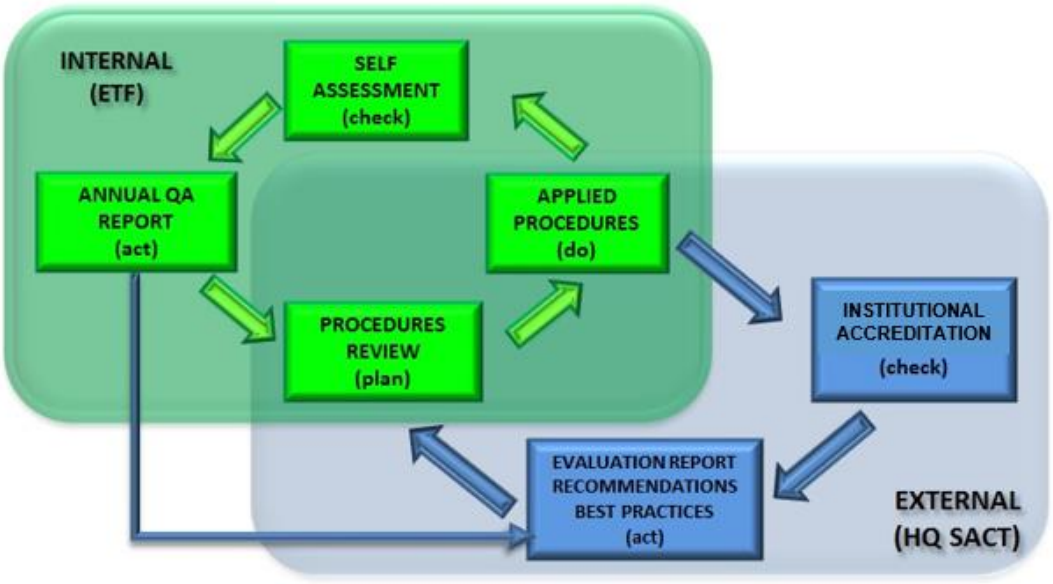

Figure 5 - Continuous Improvement Process

RESPONSIBILITIES IN QUALITY MANAGEMENT

3-7. The primary responsibility for providing quality E&IT for NATO rests with the commanders/commandants/directors of the respective ETFs supporting NATO. It is important to acknowledge and emphasize there are valuable contributions made by other major stakeholders that can influence an ETF's QMS. Operational Commanders contribute by providing updates on evolving requirements based on the latest developments in the operational environment to include exercises as well as by providing feedback to ETFs concerning the graduates they receive. Everyone involved with providing E&IT (the trainers) along with those receiving it (the trainees) contributes to the quality and continuous improvement of E&IT.

3-8. HQ SACT is responsible for[89]:

a. The management and execution of E&IT.

b. The accreditation of institutions.

c. Developing and maintaining doctrine and quality standards for NATO E&IT.

d. Ensuring that the E&IT in support of NATO complies with NATO standards.

e. The certification of courses.

3-9. Accredited ETFs are responsible for:

a. Establishing, maintaining, and reviewing their QMS and adhering to the standards described in Annexes D and E.

b. Submitting an annual QA report to HQ SACT MDFD[90].

INSTITUTIONAL ACCREDITATION

3-10. Institutional accreditation requires an ETF to demonstrate the existence of an effective QMS and compliance with the QMS standards outlined in Annex D. Additionally, the ETF must provide evidence of their contribution to NATO. HQ SACT MDFD establishes and leads a QA Team of Experts (TOE) and relies on their recommendations to accredit ETFs. The institutional accreditation process is based on NATO Quality Standards which are focused on three broad areas, as detailed in Annex E. The QMS is based on a set of seven standards detailed in Annex D.

INSTITUTIONAL ACCREDITATION PROCESS

3-11. The main steps for the institutional accreditation process are identified in Figure 6 and the steps are:

[89] Refer to Reference A, Paragraph 49 and Reference D, Chapter 2 for full list of responsibilities.
[90] Submission is due no later than the end of February beyond the reported year.

Figure 6 - Institutional Accreditation Process

a. **Application.** Participation in the accreditation process is on a voluntary basis. ETFs providing NATO E&IT should apply for accreditation when they have developed and effectively implemented their QMS, and they deliver a minimum of one NATO-Selected/NATO-Approved course. HQ SACT MDFD will provide an application template upon request. The application will be formally submitted to HQ SACT MDFD and to the QA TOE (hqsact.jftqualityassurance@nato.int). Once the QA TOE has evaluated the information provided by the ETF to ensure that the eligibility criteria for institutional accreditation have been met, the application will be forwarded to DCOS MDFD for approval.

b. **Self-assessment Report.** After DCOS MDFD acknowledgement and approval of the formal application, the ETF submits to HQ SACT MDFD an evidence-based self-assessment report (SAR). It contains qualitative and quantitative information, and further analysis concerning the ETF's activities. The document is to describe how the institution meets each of the NATO Quality Standards at Annex E; amplifying information is provided at Appendix 1 to Annex E. HQ SACT MDFD will provide additional guidance to an ETF for preparing the report, if requested. The self-assessment report is to be submitted to HQ SACT MDFD a minimum of six weeks prior to the mandatory on-site visit (OSV). HQ SACT MDFD may ask for additional documentation, as necessary, to complete the evaluation. As a minimum, copies of the ETF's Quality Assurance Policy, the Strategic/Long-term Plan and the Communication Plan(s) will be requested. Additionally, a list of the ETF's SOPs or equivalent documents will also be required.

c. **On-site Visit.** The actual time for the visit will be coordinated and agreed between the ETF and HQ SACT MDFD, and it is based on ETF readiness and availability. During the visit, the QA TOEs will assess the QMS and the internal CIP as well as associated activities contributing to the provision of efficient, effective and affordable E&IT solutions. This assessment is completed through open discussions and interviews with relevant staff members as well as by reviewing relevant documents, examining supporting tools and computer information systems, and inspecting the ETF facilities to assess compliance with the NATO Quality Standards. The QA TOE conducting the on-site visit may include additional specialists selected from the NATO QA Programme Pool of Experts (POE)[91]. The on-site visit will be tailored to the uniqueness of each ETF. The schedule of events will be coordinated and agreed at least one month before the on-site visit.

[91] This approach reinforces the credibility and transparency of the Institutional Accreditation process, ensuring support to HQ SACT MDFD and best practices sharing. The HQ SACT Education & Training Plans & Programmes (ETPP) Branch QA Section Head recommends individuals for the POE to DCOS MDFD.

d. **Evaluation Report.** The QA TOE will prepare a draft report based on the on-site evaluation. The report is intended to support the ETF's further development through external feedback and expert advice[92]. The evaluation will be based on conformity analysis of each criterion against the pre-established NATO quality standards. There will be three possible ratings; where outstanding results are identified, a "best practice" will be acknowledged. The ETF will have the opportunity to comment on the findings within the draft evaluation report before it is finalized. The three possible results are as follows:

(1) **ETF Meets the Standard.**

(2) **ETF Partially Meets the Standard.** In this case, the ETF will be provided with recommendations to improve.

(3) **ETF Does Not Meet the Standard.** In this case, the ETF will be provided with recommendations to resolve and improve.

e. **HQ SACT DCOS MDFD Accreditation Decision.** DCOS MDFD will base the final decision on the QA TOE recommendation and evaluation report. The following decisions are possible:

(1) **Unconditional Accreditation.** An accreditation remains valid for six years.

(2) **Conditional Accreditation.** The ETF partially meets the Standard and has been granted accreditation valid for one year. This accreditation can be upgraded to unconditional status by DCOS MDFD any time after six months from the initial accreditation decision. This is contingent upon the ETF demonstrating with appropriate evidence provided that the area(s) identified for improvement have been adequately addressed. Dependent upon the nature of the required improvement(s), the QA TOE might need to conduct a focused visit to the ETF, rather than a full on-site visit.

(3) **Not Accredited.** The ETF does not meet the Standard. It shall be provided with recommendations to address and improve specific areas as a prerequisite for another application to be institutionally accredited by HQ SACT MDFD.

MONITORING AND INFORMING

3-12. Following successful institutional accreditation, HQ SACT MDFD monitors each accredited ETF throughout the validity period through an annual QA Report[93]. The annual QA Report is based on a template structure provided by HQ SACT MDFD[94] and due by the

[92] An evaluation report provides an ETF with recommendations to improve internal processes and procedures. The costs incurred to accomplish these recommendations must be borne by the ETF and not NATO.
[93] An accreditation remains valid for the designated period (one or six years) as long as the Institution continues to conduct one NATO-Approved course in support of NATO-specific requirements. HQ SACT MDFD retains the right to withdraw accreditation if an institution no longer continues to contribute to NATO or satisfy the NATO Quality Standards provided at Annex E or fails to submit its Annual QA Report.
[94] See Appendix 3 to Annex D.

end of February each year[95]. The annual QA Report demonstrates a continuing commitment to quality and is essential to sustaining the ETF institutional accreditation status.

3-13. Based on the annual QA reports provided by accredited ETFs, DCOS MDFD will issue an annual QA Summary which includes best practices collected from ETFs, common problems and proposed solutions. The summary will be distributed to the community of interest.

INSTITUTIONAL RE-ACCREDITATION

3-14. Re-accreditation will be conducted following the same steps described in Paragraph 3-11.

ACCREDITATION OF COMMERCIAL ENTITIES

3-15. NATO institutional accreditation is intended for ETFs, as defined in Paragraph 1-7. Commercial entities and industry in general, including privately operated firms, consulting companies, professional and academic institutions and other private (commercial) entities/companies, are not within the scope of NATO institutional accreditation. Entities which enter service(s) contracts with NATO will have the terms and conditions of these arrangements explicitly detailed in the contract[96] and, where appropriate, this will include E&IT quality management considerations.

THIRD PARTY ACCREDITATION AND CREDIT RECOGNITION

3-16. ETFs that are institutionally accredited by an external organization or another third party, other than HQ SACT MDFD, are still required to apply and go through the NATO accreditation process to achieve NATO ETF institutional accreditation. ETFs are not mandated to go through the NATO ETF institutional accreditation process; it is a voluntary but rewarding effort.

3-17. NATO E&IT courses may receive recognition and potentially transfer credits towards an alternative qualification or credential which is conveyed by a body outside of NATO, including a professional certification, a certificate, and a diploma and/or a degree. This additional credit recognition through professional and academic institutions is a desirable secondary effect for NATO E&IT which can provide a valuable incentive to encourage further learning and personal development. ETFs that have completed institutional accreditation are encouraged to summarize their academic partnership activities and achievements within their annual QA Report.

HQ SACT RECOGNITION

3-18. In recognition of achieving and maintaining institutional accreditation, ETFs are authorized to promote their accreditation by using one or both of the following:

a. An HQ SACT authorized accreditation mark[97].

[95] Refer to Reference D, Chapter 5.
[96] HQ SACT, supported by the DH, is responsible for producing the contract. Cross-refer to footnote 37. Any documentation shall include the expiry date for providing the solution to NATO and Partners.
[97] See Appendix 2 to Annex E.

b. The notation “NATO-Accredited Education and Training Facility”.

These elements may only be used when the institution is promoting itself as an ETF delivering a NATO-Approved Course. The notation must be used in conjunction with the ETF’s letterhead or logo, while the accreditation mark must be accompanied by the ETF’s logo. It is important to note that the use of these elements does not imply or authorize any ETF authority to represent NATO or HQ SACT beyond indicating that the ETF is a “NATO-Accredited Education and Training Facility” or that the course is a NATO-certified course.

3-19. Course completion and attendance certificates for NATO-Provided Courses may include an authorized mark[98] that depicts the course’s certification status. While other courses may be similar, and may even be based on NATO doctrine, only NATO-Provided Courses can bear HQ SACT recognition. This recognition must not be associated with education-related seminars, workshops or other similar forums. Any exceptions regarding the use of HQ SACT recognition for E&IT must be resolved through the DCOS MDFD. Accredited ETFs are expected to carefully avoid any ambiguity or confusion between NATO-Provided Courses and those offered for national purposes or other reasons. ETFs are required to summarize their use of HQ SACT Recognition in their annual QA Report.

[98] See Appendix 2 to Annex E.

CHAPTER 4 - FROM EDUCATION & INDIVIDUAL TRAINING REQUIREMENTS TO SOLUTIONS

INTRODUCTION

4-1. Global Programming, as NATO's training management system, focuses on preparing personnel to perform specified, individually oriented and collective-based activities, leading to qualified personnel and prepared entities. HQ SACT MDFD is responsible for the overall implementation and management of Global Programming, which includes the Development Methodology which is used to transition from requirements to solutions. HQ SACT MDFD relies upon various stakeholders and SMEs, both within the NCS and externally to it, to ensure essential NATO E&IT solutions are defined and delivered to satisfy NATO-specific requirements.

4-2. This chapter is focused on E&IT solutions and introduces NATO TNA[99] as part of the Global Programming - Development Methodology[100]. Using a well-established Systems Approach to Training (SAT) iterative model (as depicted in Figure 7), NATO comprises activities for all NATO E&IT, from analysing requirements to evaluating the implemented E&IT solution[101].

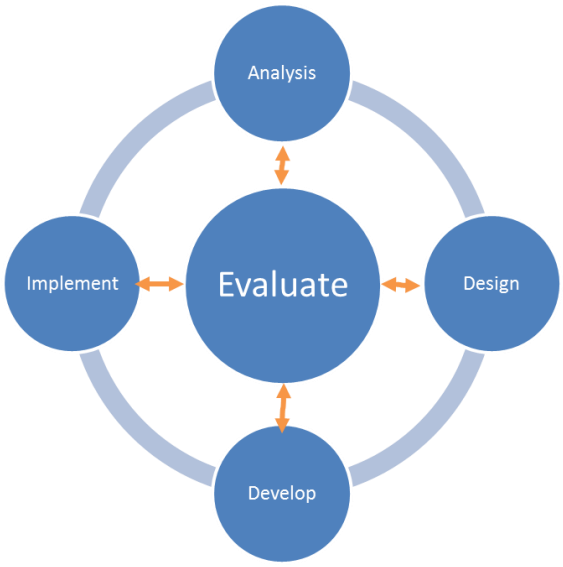

Figure 7 - Iterative Systems Approach to Training

4-3. The TNA[102] activity of the Analysis Phase, and the production of the CCD II and the initiation of CCD I follow the approval of a discipline-based STP and associated TRA Report. Within NATO, TNA concerns the provision of individual and collective E&T solutions. For E&IT, this encompasses the application of the NATO SAT[103]. The focus of the NATO SAT

[99] Refer to Reference C, Paragraph 3-37 and Annex A, Appendix 2 for initial information on TNA.
[100] While Reference C describes the Global Programming structure and responsibilities in general, this chapter concentrates on the special issues of E&IT.
[101] The SAT process permits NATO's disciplines to produce specific user-tailored outcomes in the form of identifiable and measurable procedures and products that are based on identified NATO-specific requirements.
[102] NATO's SAT process is a standardized approach that leads to predictable results. This E&IT instructional systems design model is made up of a series of activities, generally based on the well-known, iterative ADDIE Model for instructional design of courses. When well executed, instructional systems design would enable efficient learning.
[103] The NATO SAT is as an iterative and interactive sequence of activity leading from the definition of a need for education and individual training through to defining, developing and implementing effective and efficient learning solutions to satisfy the need.

is E&IT, in particular what an individual is trained to do and the level of proficiency that is to be achieved. The NATO SAT constitutes a cycle, and the evaluation phase is a fundamental element that brings about the reassessment of initial requirements and the continuous improvement and refinement of E&IT solutions. The Exercise Process, as detailed in Reference L, is used during TNA to address solutions for CT&E. The NATO SAT and the NATO Exercise Process are nested within TNA of the Global Programming – Development Methodology, as illustrated in Figure 8.

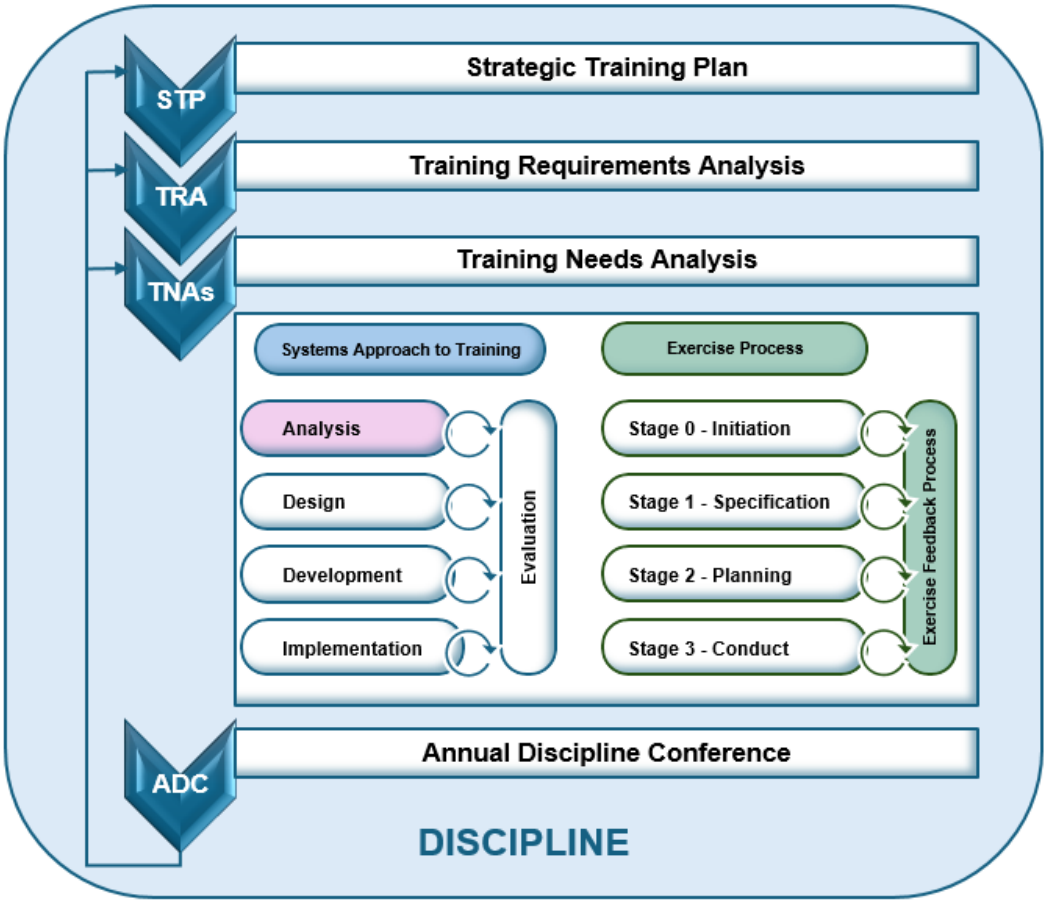

Figure 8 - Global Programming - Development Methodology

SITUATING THE SYSTEMS APPROACH TO TRAINING

4-4. A Training Requirements Identification (TRI) Report, captured in an annex to an annual Comprehensive List of Disciplines, is the decision taken by MC for the creation of a new discipline or change to an existing discipline(s)[104]. The result impacts all Global Programming reports and associated CCDs. The STP and the TRA Report verify performance gaps and scope the initial E&T requirement. The result forms a discipline-based requirements package. A TRA Report may result in several TNA Working Groups (WG) to formulate the solutions to address the E&IT gaps[105]. TNA WGs focus on the solutions to address the E&IT gaps unique to a discipline. E&IT solutions are achieved through the SAT, and new solutions are defined (through SAT) when a TRA Report identifies a gap, and no suitable solutions appear to currently exist. E&IT solutions that support NATO

[104] Refer to Reference A, Part 3 and Reference C, Chapter 3 for details including other decisions that may be taken which would initiate the need for a new STP.
[105] A performance gap is the analyzed difference between the actual vs desired / required performance.

operations or serve areas of common interests with NATO Partners may also be generated through the SAT process[106].

4-5. TNA and the SAT processes are integrated within the broader Development Methodology supporting Global Programming. This integrated approach ensures the overall need for E&T is aligned with Alliance objectives and that prior to developing E&IT solutions there is a clear link established with the principal duties and tasks within NFS/NCS JDs and, where feasible, with collective tasks and exercise objectives[107]. The STP and the TRA Report serve as the initial scoping activity intended to first assess, and then capture, an overall need for E&T, which leads to the definition and conduct of individual E&T solutions.

4-6. The ADC is the recurring annual opportunity to review all E&T activities associated with a discipline to ensure E&T solutions remain aligned with E&T requirements[108]. The review is led by the DH and involves those ETFs required by the DH to deliver the solution(s), the RA and the HQ SACT MDFD representation usually through the Discipline Point of Contact action officer. The timing of the ADC is based on the needs of the RA and the assigned DH and is aligned to the Global Programming Battle Rhythm[109]. Each discipline produces and submits a DAP summarizing the status of the discipline, including its E&T, to HQ SACT DCOS MDFD, who then on behalf of SACT grants approval[110] [111]. The DAPs provide HQ SACT with the detail necessary to provide proper management oversight of the NATO's E&T landscape.

APPLYING THE NATO SYSTEMS APPROACH TO TRAINING

4-7. Defining and delivering effective, efficient and affordable E&IT solutions to satisfy NATO performance gaps is achieved through the NATO SAT. The NATO SAT consists of five distinct phases and includes a feedback loop at the conclusion of each phase, as per Figure 9. The NATO SAT is normally engaged when an E&IT requirement is identified through a TRA, and no suitable solutions are in place to address the requirement[112]. Each of the SAT phases is supported with a discrete series of steps and activities. An overview of the NATO SAT phases and activities is provided in Annex F. The DH defines NATO E&IT solutions and informs the RA, whilst the results must be approved by HQ SACT MDFD to become recognized and NATO certified[113]. ETFs perform a vital role supporting the DH and are responsible for CCD III and the implementation of NATO E&IT solutions. Recognizing the uniqueness of NATOs E&T governance structure, and particularly the reliance on numerous entities outside the NCS, the NATO SAT is intended to be flexible and adaptive. When implementing NATO SAT, it is crucial to also use commonly agreed, clear and gender-inclusive terminology.

[106] Mission-specific E&IT requirements, based on potential performance gaps, are identified by mission commanders. When Immediate Operational Requirements are identified, the SAT process is initiated.
[107] Reference J provides a basis for collective tasks and activities.
[108] An ADC should also include a review of the integration of discipline-related requirements as part of CT&E.
[109] Refer to Reference C, Chapter 3.
[110] In the DAP, the DH should also expand on how they are integrating cross-cutting topics in their discipline (e.g. gender, climate).
[111] The details of the ADC, the DAP as well as STP and TRA are captured in Reference C.
[112] A TNA will occur when a requirement is not met by an existing training opportunity, or an existing course needs to be revised to include the new requirement.
[113] Courses could be certified as NATO-Approved or NATO-Selected, depending on the status of the ETF, i.e. whether the ETF is institutionally accredited or not. Refer to Reference C, Chapter 5.

4-8. While NATO SAT is carried out by completing a series of activities in sequence, it is important to note that the process is iterative[114]. This process is not necessarily linear, nor must it be followed prescriptively. In many cases, there may be merit in conducting phases or activities concurrently. The five phases of NATO SAT are summarized here, and detailed guidance is provided in the subsequent chapters[115]:

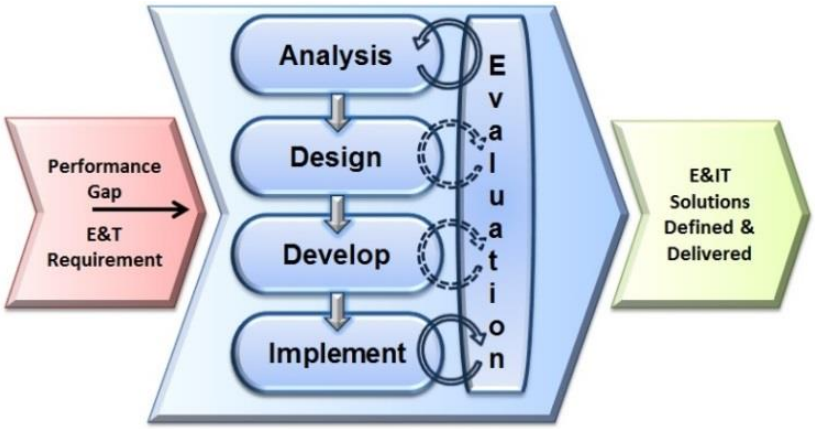

Figure 9 - NATO Systems Approach to Training

a. **Analysis Phase.** The purpose[116] of the Analysis Phase is to identify the NATO "Over and Above"[117] E&IT outcomes in terms of the on-job performance requirements. Its aim is to develop clear and precise Performance Objectives (PO). POs capture the intended outcome of essential activities on the job. NATO E&IT is to align with essential on-job performance[118], NATO operations, and performance requirements which stem from the SGE. The Analysis Phase results with the initiation of CCD I and the production of CCD II, which outlines a broad training strategy and the intent for a proposed E&IT solution[119]. The Analysis Phase is described in detail in Chapter 5.

[114] During each phase, the key output products from the previous phase are reviewed to ensure their continued accuracy and relevance. When warranted, requests for amendments should be staffed for changes. Within each step, there may also be an iterative approach in order to confirm or redefine content and / or decision accuracy.

[115] The NATO SAT process will identify the expected contents of the products defining NATO E&IT solutions. A process to develop E&IT solutions is outlined in Chapters 5-9. This is a logical and systematic approach to achieve the required products and it is offered as guidance. In many situations, suitable E&IT solutions for NATO-specific requirements already exist.

[116] Purpose is reason or rationale or motivation for doing something, e.g. an action or a decision. It is relatively broad and serves as a guiding plan.

[117] Performance requirements and E&IT that go beyond what the NATO nations do or E&IT to prepare their personnel

[118] Performance requirements are typically captured in JDs for NCS / NFS posts as part of the Principal Duties, yet there may be critical tasks that are not included in the JD but should be learned through E&IT.

[119] This directive refers to CCDs as output products that are used to define NATO E&IT solutions. CCDs are generated through the NATO SAT processes. Equivalent output products for the NATO SAT Analysis and Design Phases may already exist in alternative formats within ETFs. The products may be referred to by various names, including Training Plan, Programme of Learning, Course Curriculum, Programme of Instruction, and Course Syllabus, among other names. The alternative formats and names may be desired (or required) in accordance with local or national preferences. This directive provides templates (in Annexes J, L, and M) and identifies the elements to be included in the documents in the chapters (5 and 6) that follow. NDTMS directs what content is needed for CCD II and III when course certification status is sought.

b. **Design Phase.** The purpose of the Design Phase is to examine each performance requirement and task deemed to require E&IT from the Analysis Phase to identify the relevant competencies (skills, knowledge and attitudes) resulting in the creation of, or selection of an existing E&IT solution to enable individuals to achieve specified POs. The aim[120] of the Design Phase is to generate precise Education/Learning Objectives (ELO) in support of the associated POs. The Design Phase results in the production of CCD III which defines in detail the instructional strategy (IS) supporting an E&IT solution. The IS includes what content will be delivered, how the content will be delivered and how learning will be monitored and assessed. The Design Phase is described in detail in Chapter 6.

c. **Development (Develop) Phase.** The purpose of the Development Phase is to provide effective instructional materials that will preserve the design intent and prepare for the conduct of the instructional programme[121]. Its aim is to produce, or otherwise procure[122], the materials or services that are essential for the conduct of an E&IT solution, which are defined during the Design Phase and described in the CCDs. Details concerning the Development Phase are described in Chapter 7.

d. **Implementation (Implement) Phase.** The purpose of the Implementation Phase is twofold: provide guidance to instructors and deliver the required E&IT. Therefore, putting into operation the management, support and administrative functions necessary to successfully conduct an E&IT solution is needed. Conducting an E&IT solution requires planning, preparation, execution and completing all course close-out activities. The aim of the Implementation Phase is to produce qualified graduates ready for employment within the NCS / NFS. The Implementation Phase is described in Chapter 8.

e. **Evaluation Phase.** The purpose of the Evaluation Phase is to collect data and evaluate the efficiency[123], effectiveness[124,125] and affordability of an E&IT solution once it is implemented and ensure that instruction satisfies the intended instructional outcomes. The Evaluation Phase formally closes the NATO SAT feedback loop and determines whether a specific E&IT solution has satisfied the POs which were defined during the Analysis Phase and captured in CCD II. The aim of the Evaluation Phase is to improve E&IT solutions[126] and provide an important input to a discipline's ADC. ETFs that are institutionally accredited by HQ SACT MDFD embed a CIP, which includes post-course and institutional reviews as part of a QMS. Evaluations,

[120] The Aim is the output, i.e. the desired outcome, specific goal or outcome, objective or result of an activity that should be 'SMART', therefore more precise and gives an immediate sense of direction.
[121] Refer to Reference Q, Part 1.
[122] See Annex A, Appendix 2 for description.
[123] While course iterations are scheduled well in advance of the course date, ETFs have identified that there are frequent cancellations requiring re-allocation of available seats. The result may be an iteration being implemented at less than the optimal capacity. This leads to inefficient use of limited E&IT resources.
[124] In this context, effectiveness refers to the extent a programme achieves its goals, i.e. how well it achieved its objectives. This includes coordinated planning and forecasting of E&IT.
[125] Constraint: Without a robust external evaluation process (means to confirm with graduates and supervisors that what was taught prepared them for the job), NATO does not have completely reliable information to assess the effectiveness of E&IT programmes.
[126] Evaluation is the overarching feedback cycle.

at regular intervals and as needed, support the continuous improvement guiding principle[127]. The Evaluation Phase is described in Chapter 9.

4-9. **Continuous Improvement Process within SAT.** It is in the best interest of the Alliance, individuals working in NCS and NFS posts, Global Programming, each discipline, the ETF and the students to ensure that E&IT continuously improves. Having a CIP is an essential part of conducting effective, efficient and affordable E&IT and ensuring solutions continue to align with evolving or emerging requirements[128]. E&IT improvements[129] safeguard up-to-date and relevant content and may be related to:

a. Capturing emerging doctrine, practices and procedures, and Lessons Learned (LL).

b. Making it easier for the instructors to deliver.

c. Making it easier for the students to assimilate.

d. Reducing internal bureaucracy without reducing training capacity and capability[130].

e. Increasing the quality of E&IT without increasing costs and resources.

f. Increasing the motivation to learn, through relevant and performance-based activities.

g. Supporting the internal and external evaluation activities.

ROLES AND RESPONSIBILITIES WITHIN THE SYSTEMS APPROACH TO TRAINING

4-10. HQ SACT MDFD formalizes the specifics of the RA and DH relationships taking into consideration the unique intricacies of the associated discipline; details concerning these relationships begin to form within drafting the STP[131]. NATO is responsible for satisfying the E&IT requirements that are unique or otherwise specific to NATO. However, the Alliance relies heavily upon ETFs outside of the NCS to deliver E&IT solutions. HQ SACT MDFD conducts institutional accreditation to provide confidence to the Alliance that recognized ETFs supporting NATO utilize an effective QMS[132]. The NATO SAT model with its five phases is a tool and process enabling and enhancing the quality of E&IT. The SAT is a central element to the accredited ETF's overall approach to quality management.

4-11. Through the NATO SAT, the RA, the DH and ETFs harmonize efforts and contribute to the definition, development, and conduct of effective, efficient, and affordable E&IT

[127] Refer to Reference C, Chapter 1.
[128] Review and alignment of requirements and solutions is conducted as part of the ADC process. Refer to Reference C. Changes to requirements may cause changes to the CCDs and the courseware as identified in the DAP.
[129] Modified from Reference T, Chapter 6, Section 6.5, Paragraph 28.
[130] In this context, capacity refers to the number of students put through training, and capability refers to the instructor's ability to deliver the course as developed, including the ISs chosen.
[131] In rare instances, DHs are not assigned at this point, especially for a new discipline, and HQ SACT MDFD acts in this capacity on a temporary basis. Refer to Reference C, Chapter 3, footnote to Paragraph 3-17.
[132] A QMS includes a standardized approach to developing training solutions.

solutions to meet NATO-specific E&IT requirements. Specific assignments within each of the phases of the NATO SAT are summarized in Figure 10, which takes into consideration the autonomy of ETFs supporting NATO E&IT, as well as the roles of the RA and DH.

4-12. The appointed DH supports HQ SACT MDFD in translating NATO-specific requirements into E&IT solutions. The DH is accountable for the definition and development of E&IT solutions[133] and these responsibilities are captured within an official appointment letter which is agreed to with HQ SACT MDFD. The DH coordinates with and supports ETFs through the conduct of the course pilot iteration. The DH relies on ETFs, and the level of effort to coordinate will vary depending on the complexity of the discipline. ETFs, and not the DH, are responsible for the conducting of E&IT. From time to time, after a course has been certified and is in steady state, the DH or the external OPR on behalf of the DH, continues to offer support by monitoring the course content during course conduct to ensure that the solution remains aligned with all the existing and new NATO-specific requirements.

4-13. As an E&IT solution is defined and formalized, the DH or RA may seek HQ SACT MDFD support to identify and appoint an external (to the ETF) Course Officer of Primary Responsibility (OPR) who has content expertise and experience, and normally, but not always, come from within the NCS. Course OPRs support E&IT definition and the conduct step of the Implementation Phase as per Figure 10, in cases where the DH does not have the capacity to support an ETF or expertise is lacking within the ETF. All Course OPRs must have sufficient knowledge and skill expertise as it relates to the solution to ensure the assigned E&IT solution continues to reflect NATO policies, concepts, doctrine and procedures and thereby remains up-to-date and relevant. The Course OPR assignment is a principal duty and is to be captured within the applicable NATO NCS / NFS post JD.

4-14. A DH may need to coordinate with several ETFs to satisfy the full scope of E&IT requirements supporting a discipline. The DH remains accountable to HQ SACT MDFD; however, in some situations a designated ETF may initiate the TNA activity, particularly the production of CCDs defining an E&IT solution, with the support of the DH. Ultimately, the DH must endorse any proposed E&IT solution and reconcile this with the TRA Report.

4-15. HQ SACT MDFD will support DH coordination efforts by ensuring the associated tasks and the added work to support NATO's E&IT is appropriately documented and tasked, be it through a specific Programme of Work or, when necessary, through another recognized planning and tasking framework[134]. HQ SACT MDFD also assigns a Discipline POC to support the maintenance and day-to-day oversight of a discipline and may become further engaged, as required, to ensure a DH has the required support to effectively coordinate with ETFs.

[133] The DH must initiate and finalize CCD I, complete CCD II (or by their designate) and verify alignment of CCD III to CCD II, prior to the ETF submitting these three for course certification. CCD I is finalized last in the sequence prior to electronic submission for course certification.
[134] Depending on the institution, there will be different planning frameworks, e.g. MCM 236-03, MC Concept for NATO Centres of Excellence, 04 Dec 2003.

NATO Systems Approach to Training (SAT) Assignments Matrix							
Stage	**SAT Phases**	**Stakeholders**				**SAT Products**[2]	**Approval**
		RA	**DH**	**ETF**	**OPR**[1]		
Definition	**Analysis**	C	A & R	C	C	Course Control Document I & II	**HQ SACT/ MDFD**[3]
	Design	C	A	R	R	Course Control Document III	
Delivery	**Development**	I	A	R / C	C / R	Courseware	**ETF**
	Implement	I	I	A & R	R	Qualified Graduates	**ETF**
	Evaluation	I	I	A & R	R	Improved E&IT Solutions	**ETF**

Assignments Legend:

Responsible: Executes the task/activity in support of NATO.
Accountable: Ensures the task and related work is completed for NATO.
Consulted: Input is sought during the activity before it reaches final approval.
Informed: Receives updates as activities progress.

[1] An external Course OPR is required when an ETF does not have internal expertise or the capacity to dedicate to the conduct of a specific NATO E&IT solution and may be geographically co-located, or not. An external Course OPR may support several of the responsibilities within SAT depending on the capacity of the ETF and the level of available DH support. The level of Course OPR support is determined prior to activating a course, owned by an ETF, within the ETOC. When there is no expertise within the ETF and an external OPR is identified, the external OPR is considered the *content owner* thus, in concert with the ETF, is responsible for CCD III and the associated courseware (and maintenance of both), and the conduct of the training. An OPR may be responsible for multiple versions of the same course[135] delivered by different ETFs[136].

[2] CCD I is initiated in the Analysis Phase and finalized upon completion of the Development Phase. CCDs, detailed in Chapters 5 and 6, are products that define NATO E&IT solutions. ETFs may have already generated output products to address CCD II and III.

[3] HQ SACT MDFD is the approving authority for all three CCDs when certification of a course is sought. The DH, being accountable, certifies that CCDs II and III are aligned and adhere to the direction provided in this directive, the training solution meets the NATO-specific requirement, and that the course was trialled (course pilot iteration was conducted).CCD III is the last of the three to be completed. The ETF is responsible to conduct the trial.

Figure 10 - NATO Systems Approach to Training (SAT) Assignments Matrix

4-16. **Education and Training Facilities.** Resources are required to coordinate and implement a successful course iteration. Personnel filling these roles should be identified and prepared to fulfil all the associated tasks. Within an ETF that is delivering a solution to a NATO requirement, the Commandant/Commander/Director is responsible for all aspects of their courses, including:

a. Preparing, reviewing, and maintaining E&IT courseware.

[135] In this case, it may not be possible (or necessary) for the OPR to be responsible for CCD III. The OPR would then be responsible to ensure alignment of output to the correct PL(s) across the ETFs.
[136] The CCD II should be the same as the job is the same; however, the CCD III may be either identical or almost identical in that E&IT is aimed to prepare any person for that job.

b. Maintaining up-to-date CCD IIIs for all NATO-Approved or NATO-Selected courses.

c. Directing the scheduling and management of the courses.

d. Awarding the qualification (course certificates).

e. Planning future E&IT resource requirements for the ETF.

f. Planning out-year schedules for E&IT solutions.

g. Reporting E&IT course completion data annually[137].

h. Ensuring compliance with Global Programming-related policy and directive[138].

i. Ensuring effectiveness, efficiency and affordability of the E&IT solution through the evaluation process.

4-17. DCOS MDFD, under the authority of SACT, is NATO's lead agent responsible for the management of the NATO individual training spectrum and is NATO's Champion for the delivery of all mobile training solutions (MTS). In circumstances where resource and priority conflicts exist between the delivery of a MTS to an approved participant audience and the delivery of core residential training to a NCS, NFS, and individuals assigned to current and future NATO led operations, MDFD will render a decision/recommendation as to the priority.

SUPPORT TO CURRENT OPERATIONS - RAPID ANALYSIS AND DESIGN

4-18. Current operations have the highest priority regarding support from NATO's E&T resources. Emerging security threats, as well as the advent of new concepts and doctrine, may have an impact on NATO operations and readiness. NATO may also be required to train the host nation or local forces in support of operations. Responsive and agile E&IT might be one element to meet these challenges and solutions that must be developed in rapid fashion. HQ SACT will lead the process in close coordination with SHAPE.

4-19. Rapid Analysis and Design (RAD) responds to an urgent need to address operational performance gaps leading to satisfying urgent operational training requirements (OTR). RAD will accelerate the Global Programming - Development Methodology and compresses the TNA – NATO SAT process resulting in the swift production of E&IT solutions[139]. RAD will be implemented by HQ SACT to address immediate operational requirements identified by SACEUR. Once this need is identified, the first step of RAD is led by HQ SACT ICCW SHAPE. The initial step involves a clear identification and definition of the performance gap. RAD requires the identification of the area of deficiency and specifying the tasks to be performed as part of the operation. The direct input of the requesting agency is essential. Identified tasks are immediately translated into POs. Once the POs are defined, the E&T

[137] Data is provided in NDTMS in order for MDFD to produce the annual ITEP report no later than 01 February yearly.
[138] The applicable documents are References A and C.
[139] Urgent Operational training requirements are created to ensure that a short-term measure is put in place to fulfil the training element of the urgent need. At the end of the Urgent Operational Requirement, a review of the resource should match whether the capability created to meet the Urgent Operational Need is transferred to a steady state solution. If not, then all aspects should be ceased.

expertise within the Global Programming – Governance Structure, the DH, is leveraged. If DHs do not have adequate solutions in place or cannot find them elsewhere, a team of experts is formed and the activities within the SAT Design Phase commence.

4-20. When time is of the essence, an effective means to RAD and the production of the POs and ELOs is via a working group, including identified SMEs and representation from SHAPE, HQ SACT, and any identified ETF that could potentially deliver the solution. When an operation is estimated to become longstanding, course certification status may be necessary. On a case-by-case basis[140], HQ SACT DCOS MDFD may offer conditional NATO Course Certification status for a period of up to 18 months with approval of the POs and ELOs. To gain permanent NATO Course Certification status, the completed set of CCDs must be processed as per Chapter 2 and approved by HQ SACT DCOS MDFD.

EDUCATION, INDIVIDUAL TRAINING AND THE SYSTEMS APPROACH TO TRAINING

4-21. The NATO SAT applies in equal measure to education as well as to individual training. Both are not mutually exclusive events or constructs. Elements of E&IT are often blended in application to create a solution that will achieve desired learning objectives and specific performance outcomes. A NATO course is the descriptor commonly used to identify a solution to a NATO E&IT requirement. A NATO course involves planned, sequenced and structured learning activities based on pre-defined objectives for a clearly identified target audience (TA). Depending on application and context, E&IT solutions may be further categorized for ease of management. Examples include Functional Systems Training, Pre-Deployment Training, In-Theatre Training, Contractor Provided Training as well as Foundation Training among other descriptors. Regardless of the category, the attributes for a NATO course remain consistent with the description provided. The context of the event along with the related objectives and activities will determine if E&IT is a NATO or national responsibility.

4-22. **NATO and its Role in Leadership Development.** Nations are responsible for the development of their leadership, including all components of Professional Military Education for both NCOs and officers. This is exclusive to PE positions filled by Nations; however, it also recognizes that NATO International Civilians also play a role in leadership in various capacities and posts. Emergent concepts have highlighted that, with the above remaining an extant position, especially the exponential growth in technological advancement has created an emergent gap in leadership, specific to the NATO context. This has created an “Over and Above” E&IT requirement, that NATO must address through a series of E&IT solutions.

4-23. **National Responsibilities in Leadership Development.** It is a national responsibility to ensure that their leaders at all levels are adequately prepared to fulfil their responsibilities as stated in a NATO JD and have completed the essential E&IT requirements identified as pre-requisites. A term to describe this is SQEP – a Suitable, Qualified and Experienced Person. Without exception, NATO posts will have stipulations on essential and desirable training that shall be completed in relation to each JD. Desirable E&IT is described as training for an individual who has been deemed to be suitably qualified and experienced but, to fulfil the JD responsibilities, must undergo additional E&IT provided from within NATO to fulfil the requirements of the position. In cases where an individual has

[140] If in the interests of NATO.

achieved the training in previous roles or has demonstrated exceptional experience, this will be accepted in place of undergoing additional desirable E&IT.

4-24. **Professional Development.** Professional development or 'self-development' is not E&IT. It may be an institution-specific requirement/obligation or is self-motivated, which often takes the form of individuals attending events, conferences, professional seminars and related forums. Professional development may provide the opportunity for continued networking.

4-25. **Emergent Capabilities and Concepts Analysis.** All new or modified training will be created from the introduction of a new NATO concept, a new or a change in a NATO common funded capability, and/or new doctrine, policies, a standardization agreement (STANAG). The outcome of any change is a resultant impact on a NATO JD (DOTMLPFI) [141]. This manifests as a traceable link between the driving requirement (capability code), the policy statement, and the PO[142].

4-26. There are two common drivers for change: the introduction of a new NATO concept, or the introduction of a new or a change in NATO common funded capability. In all instances, a Front-End Analysis (FEA) evaluates the scope and range of the emergent concept or capability to ascertain the complexity of the task, the time permitted to analyse the issue and implement solutions. NATO Capability Management (AAP-048) would need to consider the DOTMLPFI approach. Within this model[143], the TNA covers a hierarchical job/organizational analysis, and the POs needed for each JD. To identify the "Over and Above" training gap impacting the People, Training, Leadership and the human-component of Interoperability Lines of Effort, an analysis of the emergent capability or concept is needed before standard SAT processes develop solutions.

4-27. Complex concepts or new capabilities will align to Alliance-approved commitments. These are underpinned by the NATO Defence Planning Process (NDPP) where National commitment of resources (people, infrastructure, etc.) are coordinated to fulfil the NATO Strategic Concept. All new capabilities or concepts relate to the driving NATO Capability Hierarchy Framework (CHF); this is the backstop to align requirements. All policies will subsequently achieve or fulfil capability codes or capability statements. The FEA of the change against doctrine is required to aid the understanding of the environmental conditions and standards required to fulfil the task statement in the CHF. In all cases, the methodology for analysing the changes introduced will vary; a generic methodology is illustrated in Figure 11.

[141] In many instances, emergent NATO priorities create new or modify JDs. The approach involves looking at capabilities from the lens of Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, and Interoperability.
[142] PO is the bridge between the policy and what affects personnel in their post. The applicable PO would then be further defined within the instructional analysis activity and the resulting ELO(s).
[143] NATO follows the Common Funded Capability Deliver Governance Model (CFCDGM) to deliver new capabilities. A capability could incorporate new E&IT solutions to meet training requirements.

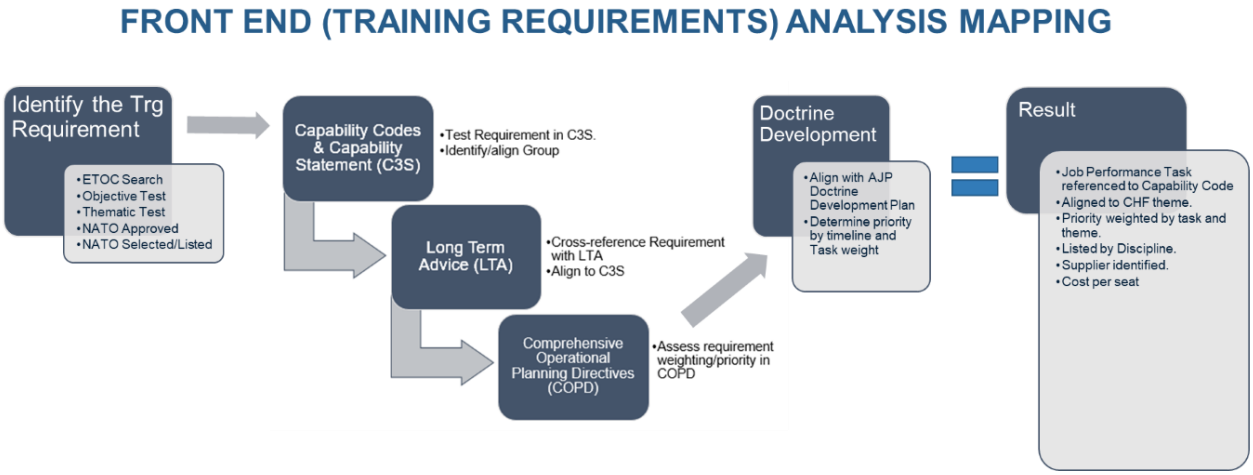

Figure 11 - Front End Analysis Mapping

CHAPTER 5 – SYSTEMS APPROACH TO TRAINING: ANALYSIS PHASE

INTRODUCTION

5-1. **Aim.** The aim of the Analysis Phase is to generate clear and precise POs. POs capture a performance gap, identify the intended outcome of NATO E&IT, and are expressed in terms of the required job performance proficiency to be achieved[144]. The analysis phase involves examining and interpreting inputs to identify, select and organize performance requirements and tasks for E&IT.

5-2. During the process of capturing a performance gap, the Analysis Phase results with answers to the following:

a. Why train? This refers to addressing the NATO-specific performance gap.

b. Who must be trained? This refers to the TA.

c. What must be trained, to what level and under what conditions? This refers to the intended outcome based on the identified requirements.

5-3. **Product.** CCD I is initiated, and CCD II is produced at the conclusion of the Analysis Phase. CCD II is uploaded into the ETOC[145] and guides the design, development, implementation and evaluation of an E&IT solution. The documents, based on an analysis of the training need, establish the agreement among stakeholders concerning the intent of an E&IT solution and provide the justification, background and detail concerning the need for the E&IT solution.

5-4. **Methodology.** The DH, both accountable and responsible for the Analysis Phase, relies on one (or more) TNA Working Group (WG) to systematically analyse the performance requirement statements in a TRA in order to identify, select and organize the specific requirements/tasks that require E&IT[146]. The WG requires inputs from the community of interest including command staffs (in particular, the RA), end-users, SMEs, and E&T specialists. Expertise from outside the NCS is often required[147]. The success of the TNA WG relies upon the discretion, experience and expertise of the assembled members and their respective abilities to make reasoned judgements throughout the Analysis Phase. The TNA WG provides the required guidance to design an E&IT solution during the next phase of the NATO SAT. When new requirements have been identified by the RA, a new TNA WG may or may not be needed to make changes to the course and associated CCDs[148].

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[144] POs may also be referred to as Behavioural or Terminal Objectives. The content is similar to Training Objectives for a NATO exercise. POs focus on individual performance, while exercise Training Objectives are focused on collective (team) performance.

[145] Initial course certification can only be sought after the conduct of a course pilot iteration and all CCDs have been completed and submitted. CCDs II may be digitally inputted in ETOC at this point or after CCD III has been completed in case changes are needed.

[146] The TRA Report provides the basis for the development of POs. The TRA Report provides a list of performance requirements and tasks, and these are expressed as performance requirements statements (PRS). During the TNA WG, these statements are examined and developed further in order to ensure precision and provide clarity and proper scope primarily related to the 'Principal Duties' for specific NCS / NFS jobs. At times, post-TNA WG activities continue in order to complete the CCD II.

[147] Funding for an initial TNA may be requested from an applicable capability package as per the Common Funding policy.

[148] Depending on the number of additions, a decision will be made; if not a WG, then through administrative work.

5-5. **Process.** The following steps are undertaken during the Analysis Phase:

a. Step 1 - Establish a TNA WG.

b. Step 2 - Analyse Performance Requirements.

c. Step 3 - Develop Performance Objectives.

d. Step 4 - Refine Target Audience.

e. Step 5 - Formulate Guidance.

f. Step 6 - Document Results.

STEP 1: ESTABLISH A TNA WG

5-6. **Overview.** The TNA WG is normally formed/planned by the DH after an approved TRA Report is released or during the sustainment of an existing discipline if there are significant changes to the requirements as identified in the most recent DAP, Annex C, E&T Programme. The TNA WG is responsible to execute the Analysis Phase of the NATO SAT process. A TRA Report should have provided a complete picture of the performance requirements; however, if this was not the case, the gap is to be addressed latest during this step as part of the confirmation of the task performance statements (TPS). TPSs are phrases representing principal duties (or main areas) of work that are primarily derived from JDs, but they may stem from emerging requirements. Reinforcing continuous improvement of an existing discipline, the NATO-specific requirements are reviewed annually for accuracy and currency[149] before the ADC. When existing performance requirements are revised or deleted, or new ones are added to the list of requirements[150], a TNA WG may be required to update the CCD II[151].

5-7. To estimate the time needed for the TNA WG, the DH must collaborate with the relevant and/or potential ETF(s) and the RA to generate a plan detailing the milestones, dates of each activity, completion timeframe, the potential for any post-WG activities, and necessary personnel.

5-8. Following the initial review of the TRA Report or the DAP report[152], and any relevant lesson learned (LL) reports from CT&Es[153], the TNA WG will reach a decision point and

[149] For further details, refer to Reference C, Chapter 3.
[150] Once a discipline is in existence and E&T is already occurring, the current NATO-specific requirements would be reviewed and updated as part of the Global Programming annual battle rhythm. These are captured in the training NDTMS.
[151] Depending on the number and complexity of changes identified in the requirements review process, a WG may be planned, or independent work may be assigned. The work produced would be sent out by the DH for SME/key stakeholder feedback when required. When changes to CCD II occur, whether revisions, deletions or additions, follow-on activities must be initiated by the ETF. A new CCD I is required to accompany the new CCD II. CCD III and course content would need to be reviewed, and updates made as necessary.
[152] Once a discipline is established and is functioning in year 1 and beyond, the PRSs from the DAP Training Requirements Review Matrix supersede those ones from the Training Requirements Matrix (annex) of the TRA.
[153] LL reports provide a feedback mechanism to E&IT.

select the appropriate way forward. During Step 1, the TNA WG will execute the following three sub-steps:

a. **Step 1.1, Confirm the Target Audience.** The TA analysis intent is to identify rank levels and the PE posts, including the organizational / command level for the posts within the NATO structure (Strategic, Operational and Tactical) that may require E&IT[154]. This step provides an initial description and should be documented as a point of reference for the follow-on TNA WG activities. The description is refined as the E&IT requirement becomes more clearly understood and will be particularly useful during the SAT Design Phase. Consider:

(1) What grouping of jobs / posts should be included in what E&IT solution (based on requirements)?

(2) What is the expected level of experience[155] and prior E&T of the TA?

(3) Is the intended TA drawn from a similar military branch, occupation background or area of specialization[156]?

(4) What are the expectations[157] of Commander's regarding the proficiency of graduates during employment on the job?

(5) What level of autonomy is expected on the job (e.g. function with minimal guidance or supervision)?

(6) How many (rotating) NATO personnel require this E&IT on an annual basis?[158]

b. **Step 1.2, Confirm Accuracy of Performance Requirement Statements.** The TRA Report should have captured all of the performance requirement statements (PRS) requiring E&IT[159]. The intent at this step is to review the new TRA Report, or the current approved DAP[160] (if one exists), and confirm understanding and accuracy as NATO-specific, and not national requirements. The TNA WG considers:

[154] Specialists may also be included as per Reference C, Annex H 3-8. As well, a discipline may wish to track 'others', e.g. political level, to maintain awareness of non-NCS / NFS (Nations) demand.
[155] Experience also includes personnel's background, rank level, and language skills.
[156] Not all personnel need to be experts at a specific task. Based on discussions / decisions, the result could be a specialist and / or generic type course.
[157] Once the initial course is designed, the PLs will be reviewed and maintained in the DAP, Annex C, Training Requirements Review Matrix.
[158] The NDTMS links to job description data in an effort to provide an estimate of the potential demand for E&IT; however, a systematic process for associating and linking the essential and desirable E&T with NCS / NFS post JDs continues to evolve.
[159] Information is captured within the annex to the TRA report.
[160] Once a discipline is in steady state and being sustained, the up-to-date requirements are captured as performance statements in the Training Requirements Review Matrix annex to the DAP report. These supersede the PRSs captured in the TRA report.

(1) **New TRA.** The list of PRSs representing principal duties of the job, which form the Training Requirement Matrix within the TRA Report, should capture the complete performance requirement for the identified TA.

(2) **Questions to ask**[161]: Does the list appear to be an accurate and complete reflection of the job? Are there any critical/important tasks missing?

(3) **Continuous Improvement within a Discipline.** If the TRA report has already resulted in the development and conduct of the E&IT solution and the discipline has gone through an annual Global Programming cycle, the TRA Training Requirements Matrix would have been superseded by an approved DAP with its annex of updated requirements. Questions to ask: Does the list of performance requirement statements within the DAP capture the complete performance requirement for the identified TA[162]? Are there any critical / important tasks missing?

(4) **TNA WGs.** All TNA WGs need to confirm that each job-based PRS captures a job performance action[163] and a clear result[164], as well as that the intended level of proficiency is identified and understood[165].

c. Whether the PRSs were captured in the TRA Report or the DAP, the statements would have been reviewed and specific ones chosen to be included in the E&IT solution. All or some of the PRSs can be in a specific solution.

d. **Step 1.3, Document Performance Requirement Statements**

(1) **New TRA and the Training Requirements Review Matrix of a DAP.** Both sets of the PRSs should be documented and the proficiency level (PL)[166] for each statement identified. If critical / important tasks were missing, they are added at this point. If PRS need clarification for accurate understanding, this is also documented at this point. Documenting the PRSs will assist the DH in maintaining an accurate picture of the performance for the related jobs.

(2) **New TRA.** Initially documenting the statements provides an audit trail confirming the source of the task and ensures the TRA Report PRSs[167] remain linked, and accounted for, relative to other E&IT solutions.

[161] Decision is reinforced or may change based on the result of the Performance Analysis. See Step 2.
[162] The decision is reinforced or may change based on the result of the Performance Analysis (Step 2).
[163] Each statement should have only one action-oriented verb and elicit a change in ability; however, job descriptions and the TRA statements often have multiple verbs in one statement. These would be de-constructed into more discrete actions in Step 2.
[164] The task should be observable and measurable with clear beginning and end.
[165] For PLs, refer to Reference C, Annex J. PLs and associated key word indicators are provided in Annex G. PLs are aimed at performance expectation on the job and correlate to the E&IT to be provided. Confirmation is needed whether the levels are realistic and appropriate.
[166] A description of the PLs to support the development of performance (and later, task) statements is provided in Annex G.
[167] The performance statements are captured in the annex to the TRA report.

(3) **Continuous Improvement within a Discipline.** On an annual basis, the (performance) requirements are reviewed. These PRSs are captured in the Training Requirements Review Matrix [168].

STEP 2: ANALYSE PERFORMANCE REQUIREMENTS

5-9. **Overview.** During Step 2, the PRSs from the TRA are examined and organized to illustrate an accurate reflection of the job requirements, job elements, and broad duties. This performance analysis provides a structured and sequenced diagram of PRSs including specific tasks, sub-tasks[169] and supporting task elements[170]. Additional PRSs may be added (and broken down into discrete tasks) to continue to provide clarity and illustrate any dependency. The result of a simple performance analysis is illustrated in the scalar in Figure 12[171]. The complete grouping will most likely require some form of E&IT to achieve the desired performance[172]. The result of a performance analysis is illustrated in Figure 12. Refer to Appendix 2 to Annex H for guidance on developing a scalar and Appendix 3 to Annex H for additional examples, including NATO-specific performance analysis scalars

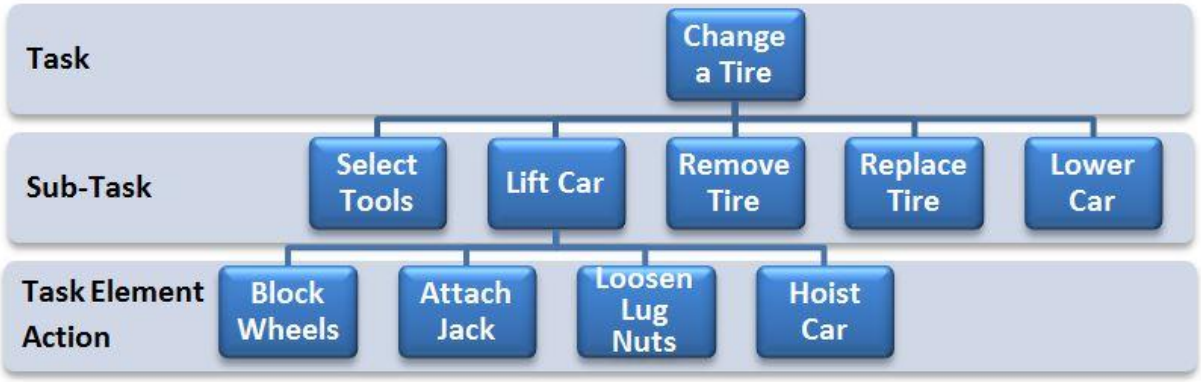

Figure 12 - Simplified Performance Analysis Scalar

5-10. **Process.** Performance Analysis consists of the following sub-steps:

a. De-construct the PRSs.

b. Select the Requirements for E&IT.

c. Structure Requirements and Tasks.

d. Refine the Training Requirements Matrix.

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[168] At this point, the DH may assign self-generated numbers to the performance requirements to be able to track the changes to the requirements over time.
[169] A sub-task is a component part of a task. It is often a major sequential step in a process.
[170] A task element is the sequenced step-by-step component of each sub-task. Ideally, only the highest-level tasks would be included in the TRA and not the sub-tasks or task elements. As these are subordinate to the tasks, they would be captured within the scalar and the Standards paragraph of the PO.
[171] The TRA performance requirement statement “Maintain vehicle road worthiness’ was de-constructed into its elements which clearly illustrates the performance statement and its supporting tasks, sub-tasks (steps in the process of executing the task) and task elements (discrete actions).
[172] Desired performance should depict what is needed on Day 1 or shortly after arriving on the job.

5-11. **Step 2.1, De-construct Performance Requirement Statements.** In the previous step, the PRSs (from the TRA report or superseded by the existing and new statements captured in the DAP report) were reviewed to confirm for accuracy. At this point, the PRSs are de-constructed (or broken down) into their identified elements[173]. If a new performance requirement (or a critical task) is required, the WG is to add it[174], identify the relevant command level (Political / Strategic, Operational and Tactical)[175] and the desired PL[176]. Performance requirements should be written as statements with accuracy, brevity, and conciseness[177] and ideally will[178]:

a. State a specific action using a key word and an object[179].

b. Be clearly definable, ideally observable, and measurable.

c. Have a definite beginning and end.

d. Be clearly assigned for completion and be achievable.

e. Have a specific purpose and a realistic result / outcome.

f. Be an action that is performed in a relatively short period of time[180].

5-12. **Step 2.2, Select the Requirements for E&IT**

a. Selection of requirements for instruction is a judgement process that requires a clear overview and understanding of the job with its performance-based requirements, including the associated tasks and sub-tasks. Task statements that are generated capturing the complete picture of the performance may not require E&IT to achieve the desired level of competence. At this point and with the aim of enabling early training decisions, the WG SMEs will review each PRS and generated tasks to determine if formalized instruction is necessary. Refer to Appendix 1 to Annex H for guidance on selecting requirements for E&IT. At the end of this process there will be a list of requirement statements which will likely require E&IT in some

[173] De-construct, or break down, performance statements into its elements: tasks, sub-tasks and supporting elements.
[174] Additions do not infer that job descriptions need to be changed; additions better describe aspects of the job.
[175] If specialist jobs are captured in the TRA annex, then they will be addressed here. Similar tasks may be performed at the political, strategic, operational and tactical levels. During performance requirement analysis, distinguishing the difference between the tasks performed at the different levels (Political, Strategic, Operational and Tactical) will be essential. When documenting the performance statements, the use of colour is one method to distinguish the statements across the different levels.
[176] Level of Proficiency reflects the circumstances of the job and will affect the type and amount of instruction required.
[177] The selection of a verb is critical when writing task statements and those related to sub-tasks.
[178] Based on the article published at Reference AB.
[179] A list of key action verbs is provided in Annex G.
[180] If the performance/task statement encompasses the entire or majority of time on the job, in the post, then it needs to be further sub-divided in tasks.

form[181]. Where necessary and as part of any iterative process[182], the list of statements may be modified or further supported with additional performance requirement or task statements to provide clarity and illustrate the dependency and, if necessary, interdependencies of elements. Both types of statements may be further de-constructed into its sub-tasks, but this is not always necessary[183].

b. It is just as important to determine and note what does not require E&IT as what does. Many requirements and tasks may be best learned through non-training solutions on the job. Refer to Reference C, Annex K for examples of non-training solutions. In addition, if a task is determined to be a national requirement and not a NATO-specific requirement, then it should not be considered for NATO E&IT[184]. If a performance requirement or task is determined to be 'no-train', the discipline's ADC's Training Requirements Review Matrix may maintain it and indicate this 'no-train' outcome[185]. The "no train" statements may still be beneficial in the next step; however, at this point those which do not require E&IT can be identified. When selecting requirements to be included in E&IT, the complexity and the associated underlying cognitive activity, as well as risks affecting E&IT and constraints affecting the job and / or training should be considered. Refer to Appendix 1 to Annex H for guidance in making 'train' / 'no-train' decisions.

5-13. Step 2.3, Structure Requirements and Tasks

a. This is the process of organizing tasks and sub-tasks, which are deemed to require E&IT, in an order and sequence based on a relationship that captures performance, as well as links and dependencies between tasks. The performance may in turn be an action which is physical (overt and observable) or more cognitive in nature. The performance analysis process is dynamic and iterative[186]. A performance analysis should highlight and identify dependency and a logical sequence. In some cases, an interdependency of common skills may become apparent. Regardless of approach, SME input is essential. The performance analysis is often captured in a performance analysis scalar[187], which is intended to provide a visual depiction and the structure and sequence to guide the writing of POs[188]. A scalar diagram of structured performance and task statements may

[181] This activity calls for the 'train'/'no-train' decisions. No-train decisions should be justified within the WG.
[182] The iterative process may involve returning to the scalar and modifying the statements, e.g. adding a critical task or moving a requirement from one PO to another where it better links to the job performance. In addition, it may involve changing a 'train' or 'no-train' decision resulting in an update to the relevant part of the scalar.
[183] Tasks and sub-tasks will be captured in CCD II as part of the standards statements as they are steps in the process of executing the performance requirement.
[184] Refer to Reference C, Chapter 2, Responsibilities.
[185] Maintaining the task statement shows that the task is still a requirement for the discipline as per a JD; however, E&IT is not the solution needed to prepare the personnel for employment.
[186] The iterative process may involve moving backward in the process to make changes. For example, move from the scalar building back to the 'train'/'no-train' decision and make a change (this decision results in an update to the relevant part of the scalar) or returning to the requirement statements and make a change. In addition, as the requirements are discussed and grouped, the groupings may change (i.e. move a requirement from one PO to another where it better links to the job performance) or a missed critical task may be added.
[187] There are automated support tools to assist with the activity, and there are alternative forms to a performance analysis.
[188] The structure of the POs provides an indication to the ETF of the general course structure, e.g. the larger POs would likely require more instructional time, and assessment could be more complex or lengthy. It is

illustrate hierarchical and procedural relationships, such as the scalar diagram[189] in Figure 13 or it may be more overlapping with interconnected dependencies such as in a concept map, illustrated in Figure 14. With procedures, there is a definite start and end. There may also be decision points and subordinate processes that illustrate a critical path. Refer to Appendix 2 to Annex H for guidance on creating Performance Analysis scalars, and Appendix 3 to Annex H for examples.

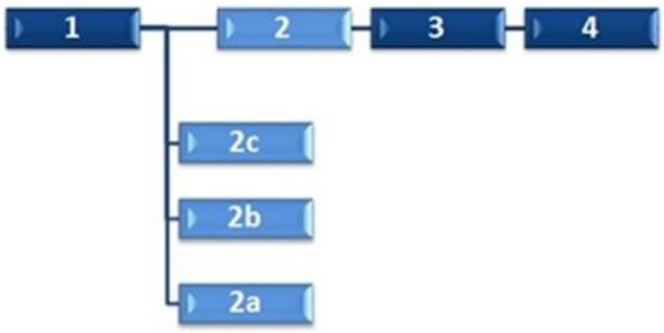

Figure 13 - Hierarchical and procedural Performance Scalar

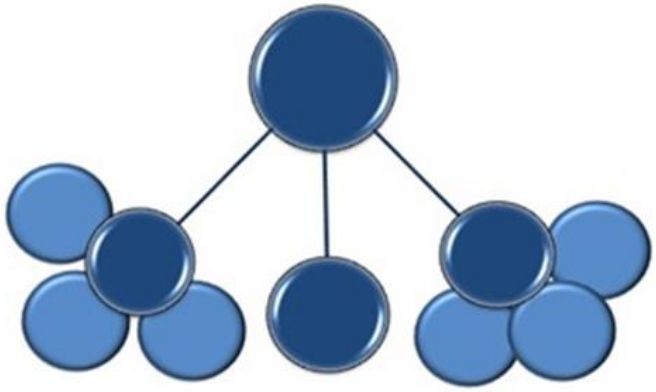

Figure 14 - Concept Map / Web Diagram

b. Scalars are useful tools for performance analysis as part of the Analysis Phase, as well as instructional analysis (IA) and assessment design as part of the design phase[190]. The performance analysis scalar[191]:

(1) Displays a structure to a job that may not be apparent in real life.

(2) Illustrates the relationship, interdependencies, and commonalities of various parts of the job[192].

(3) Reveals areas of commonality and differences between closely related jobs.

(4) Sequences the logical order of POs.

(5) Facilitates the development of the POs.

5-14. **Step 2.4, Refine the Training Requirements Matrix.** Although the approved TRA represents a point in time for the discipline, refining / updating a duplicate copy of the Training Requirements Matrix is encouraged if the discipline has completed an ADC cycle. The RA can ensure that the essential PRSs are identified, and they accurately define the expectations of the TA in terms of what they are expected to do in their posts. Any new PRSs that are added to this matrix may be assigned a distinct tracking number at this point to capture them later as part of a list of proposed TRA amendments or carried forward with

important when looking holistically at a PO, size and scale are important to the overall job synopsis and size of assessment for learning. PO order typically indicates the PO order of instruction.

[189] Refer to Appendix 2 to Annex H for guidance on how to create a performance analysis scalar.

[190] See Chapter 6 for benefits to scalaring in the design phase.

[191] Modified from Reference T, Paragraph 34.

[192] Scalaring the tasks permits the opportunity and visual to de-construct and group tasks.

the discipline's ADC Training Requirements Review Matrix. PRS changes are reviewed by the DH, approved by the RA and may be an item for discussion during the ADC.

STEP 3: DEVELOP PERFORMANCE OBJECTIVES

5-15. A PO[193] is a grouping of related tasks or job requirements, written as a formal statement that specify, in precise terms, what an individual must be able to do in terms of job performance. Once the PRS and any task statements are refined, structured and sequenced, including the additional tasks, sub-tasks and other supporting elements (or discrete actions), they are logically grouped and consolidated into POs. A PO often represents a broad duty area[194] and the PO includes a clear performance statement to represent this consolidation. In addition, a PO includes the conditions under which the performance is to be carried out and a standard which defines the PL to which individuals are expected to achieve. Not all performance requirements, tasks, sub-tasks and task elements identified during the previous step will necessarily appear in the POs, but they can help formulate the conditions and standards statements. Specific standards of performance may already be defined within existing documentation. PO standard statements should be linked to the references when possible. POs become the basis for RA and DH agreement regarding the specific outcome to be achieved because of an E&IT solution. Annex I provides further guidance for writing POs (Appendix 1) and includes examples of POs (Appendix 2).

5-16. The elements of a PO are as follows:

a. **Performance Statement.** A clear, concise and precise statement representing a logical and complete part of the job function which is observable and measurable. A well-constructed performance statement contains one verb and forms the first element of the PO, clearly answering the question "What must the NATO member do?" Performance statements may be a superior level performance as per the scalar or are derived from a TPS identified during the performance analysis activity from Step 2[195]. A performance statement of the PO becomes the PO title and often represents a group of related PRSs, tasks and activities[196]. The determining factors in grouping and combining performances and tasks are the similarity and complexity of the skills required to perform each.

b. **Conditions.** Conditions provide context and describe the situation, under which the performance must be completed. Conditions affect how the job or function is done. These are based on the actual workplace or other presumed area of operation. Condition statements answer questions such as <u>when, where, and with</u>

[193] POs become the basis for external evaluation and determine if what was learned during a course has transferred to the job context. Additional detail concerning the link with external evaluation is provided in Chapter 9.
[194] Key area or category of work as defined in the post JD.
[195] Occasionally, when a PO is a smaller and distinct aspect of the job, there may be no performance requirements from the TRA or DAP included, thus a task statement may become the PO's title and performance statement.
[196] For example: "write a memorandum", "write a military letter", and "document minutes of a meeting" are all tasks which could be combined into the following performance statement: "prepare military correspondence".

what[197] the tasks will be performed. Refer to Appendix 1 to Annex I for guidance, and types and examples of conditions[198].

c. **Standards.** Standards describe how and how well the performance and tasks must be completed. The greater the specificity provided, the more valuable the contribution to the development of E&IT solutions[199]. Clear, detailed and specific standard statements provide the scope, focus, and expectations for E&IT; they also facilitate accurate assessment of the performance. In all instances, the PL required is based on actual job performance requirements. Standards generally specify a product[200], a process[201] or a combination of the two and include measures of completeness, soundness of judgement, accuracy, and/or speed. Refer to Appendix 1 to Annex I for guidance and examples.

STEP 4: REFINE TARGET AUDIENCE

5-17. This step provides an opportunity for a quality check and is a verification of the intended audience as confirmed in Step 1. At this point, the intent is to ensure the correct ranks were identified, the PRSs are at the correct PL, and the POs, as defined, address the needs at the differing levels of the NATO organizational structure (Political, Strategic, Operational and Tactical[202]). The ***performance statement***, the first element of a PO, may apply at the different levels; however, the conditions and standards may differentiate the performance based on the required proficiency and context. This review will determine if it is necessary to capture different POs based on the level within the NATO organizational / command structure and this will determine if there is a need for multiple E&IT solutions to address the needs of the different TAs. In most cases, training individuals together across the different organizational levels leads to a unity of effort. Finally, this step confirms required language proficiency, pre-requisite assumptions (education and/or specific occupation background / experience required) and anticipated rank levels.

STEP 5: FORMULATE GUIDANCE

5-18. With a clear picture of what the result (or outcome) of an E&IT solution is expected to achieve and the intended audience, it is now possible to provide additional guidance for the Design Phase activities which will follow.

5-19. The WG will review Training Strategy[203] options and provide a preliminary estimate concerning how the E&IT requirement will likely be resolved. At the end of this step, the TNA WG complete the Training Strategy of the CCD II. The training strategy at a minimum, should include the desired learning environment(s), the structure if the course is to be set up as a multi-part course, the number of instructors needed to conduct the E&IT, the preferred size of a syndicate (when used in course) and the maximum number of students per iteration.

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[197] The conditions are written in terms of what will be given (available), denied (prohibited or realistically not available), and the environment where performance and tasks will be performed on the job by the NATO member.
[198] Table based on Reference K, Table 21.
[199] Specificity will aid in the development of sound CCD III and E&IT courseware.
[200] The product may include standards related to speed, accuracy, safety, etc.
[201] The process may include standards related to specified procedures, with a particular or flexible sequence to achieve the performance.
[202] If Specialists were identified, they will be addressed here.
[203] See definition in Appendix 2 to Annex A.

5-20. When developing guidance, the TNA WG conducts a training options analysis[204]. This includes:

a. An identification of a cost-effective training solution that meets the identified tasks or competencies that require training[205].

b. An identification of proposed and optimal methods of instruction and media[206].

c. An identification of the proposed learning environment whether residential at an ETF, e-Learning (anytime, anyplace), using a MTS (i.e. mobile education and training teams (METT)) at selected sites, or a combination / blended approach.

d. An estimate of the course duration.

e. An estimate of required resources.

f. An estimate of annual production of students.

g. Potential for alternative interventions including use of workplace-specific training, on-job experience, seminars, and/or job aids.

5-21. For most situations, the learning environment falls into one of three modes of delivery options:

a. **Residential Delivery.** Also known as centralized instruction, this is mainly instructor-led instruction and involves bringing students to a centralized location, i.e. typically an ETF. A specific ETF may possess purpose-built facilities such as classrooms, labs and training areas, and provide the students with direct access to instructional staff and learning resources.

b. **Distributed Delivery.** Distributed delivery or instruction involves taking a course to the students, whether online or with physical presence. This type of delivery offers easier and more flexible access to (and potentially completion of) courses, reduced travel/temporary duty costs and reduced time away from work for travel. Distributed delivery may be categorized as:

(1) **Electronic Learning.** Electronic learning (E-learning) replaces the traditional classroom[207]. This means of delivery infers that the instruction uses electronic and/or information technologies combined with methods of instruction which do not require the student to be present at a specific site and as a result the learning occurs at a distance. The students learn through online portals or platforms, which can involve the use of an array of digital communications and collaboration tools as well as virtual environments. This form of distributed learning could be completed independently, instructor

[204] This will be reviewed after the design phase has been conducted.
[205] Initial discussion and proposed instructional / training methods and media should be included at this step and then re-examined later.
[206] It may later result in a cost analysis followed by an options analysis to make an informed decision as to the IS. See definitions in Annex A, Appendix 2.
[207] See Annex N for consideration if contemplating e-learning as the learning environment.

supported or instructor led, depending on the content and the IS. The solutions may be self-directed (individual) programmed instructional packages, utilizing real-time instructor support or including real-time or delayed collaboration with the instructor and other students. Refer to synchronous and a-synchronous instruction learning (Appendix 2 to Annex A). E&IT could potentially be completed anywhere (in the classroom or elsewhere) or anytime. It is important that students receive allocated and adequate time to complete the electronic learning (e-Learning) material without interruption from work tasks.

(2) **Mobile Training Solution.** MTS[208] afford the opportunity for NATO E&IT activities/solutions to be tailored to the needs of the customer/audience and delivered by mobile (distributed) means, whether in the workplace or at an alternate location provided by the TA. This includes any visit where E&IT is provided on behalf of NATO outside of the ETF facility. Refer to Chapter 10 for details.

c. **Blended Delivery.** A combination of the residential and distributed instruction options may be suitable. The potential to reach large numbers seemingly anytime and anywhere, and to reduce the amount of temporary duty required and costs while still leveraging the benefits of residential delivery, makes the blended approach attractive.

5-22. When determining the mode of delivery, refer to Appendix 1 to Annex J for guidance. Delivery tends to fall within the options listed; however, there are other political/strategic or practical factors which may influence the selection of an optimal Training Strategy, such as[209]:

a. Outsource delivery to a nation, a public/private institution (e.g. civilian university).

b. Contract in expertise. Augment instructor capacity by hiring specialized instructional services for a specified period of time.

STEP 6: DOCUMENT THE RESULTS

5-23. This step is used to capture the results of the Analysis Phase. A record of proceedings is suggested in order to document the TNA WG decisions and methodology. The record of decisions may be included as part of the package which contains the two documents described below. The CCD I template form is found at Annex M. The CCD II template is found at Annex J and can be used for initially creating the CCD. It must be digitally input into NDTMS by the ETF Institution Manager or other designated and approved personnel. The intent is to ensure specific elements are addressed within the products. The two products are:

[208] MTSs include METT for E&IT and Mobile Training Teams: a NATO-led team of experts, generated mainly from the NCS and other relevant entities, acting primarily as advisers and trainers in Partner countries, and deployed for a defined period (typically one week. This directive focuses on the METT for E&IT.
[209] OJE, internships and apprenticeships are alternative and highly effective experiential strategies for developing competence; however, these approaches have limited application in support of NATO E&T.

a. **Course Control Document I – Control Form.** The Control Form is a mandatory coversheet to a proposal for a new (or change to a pre-existing) NATO E&IT solution. The coversheet is specific to a course. The Control Form, initiated and finalized by the DH, serves as the basis of agreement for moving forward and formalizing an E&IT solution with a specific ETF. ***All NATO-Approved and NATO-Selected E&IT solutions, including those which are already developed and in place, require a Control Form.*** The Control Form will identify the specific stakeholders concerned with managing a discipline and concerned with the definition and conduct of E&IT solutions. The sign offs acknowledge work is being undertaken by the discipline to develop an E&IT solution, or sufficient updates to an existing course have been completed in response to updated performance requirements. When an External OPR is annotated as needed, this infers that obligations to be involved in the course will be assigned and NATO post JDs should be considered for updating. The Control Form includes specific sign offs, namely the RA Representative (on behalf of the RA), the ETF and the DH. The Control Form, including amplification for the signature blocks, is provided in Annex M.

b. **Course Control Document II – Course Proposal.** As per Figure 10, the DH is accountable and responsible for the CCD II, although the drafting can be a collaborated effort with the ETF, an External OPR or SMEs. It provides the foundation for a new E&IT solution and includes enough detail to identify where and how the solution fits within the discipline landscape. The Course Proposal template is found in Annex J. This CCD is a digital document developed and stored in NDTMS and is divided into two parts. CCD II, Part 1 captures course requirement information, and Part 2 is designated for the POs and the PL. Annex I, Appendix 3 provides examples of Part 1.

5-24. The Analysis Phase concludes with a clear definition of the E&IT requirements and provides guidance for designing E&IT solutions. After the completion of CCD II, the DH may wish to wait to move this content to ETOC's digital format as there may be changes once CCD III is developed. When seeking course certification, the complete set of three CCDs must be submitted by the ETF to HQ SACT MDFD – the signed pdf of CCD I is uploaded, and the data for CCDs II and III is inputted in e-NDTMS. Without a set of CCDs approved by MDFD, a course will only have 'Listed' status in ETOC.

5-25. Based on new requirements, as captured in the DAP, there is a potential requirement for a new CCD I and CCD II to be drafted and approved by DCOS MDFD. A secondary effect of the new CCDs would be the review and revision of CCD III and courseware, both the responsibility of the ETF. Based on the NATO Systems Approach to Training (SAT) Assignments Matrix, Figure 10, the DH is accountable and responsible for both CCD II and accountable for CCD III. Close collaboration between the DH and the ETF would occur during the development of the CCD III.

CHAPTER 6 – SYSTEMS APPROACH TO TRAINING: DESIGN PHASE

INTRODUCTION

6-1. **Aim.** The aim of the Design Phase is to generate precise ELOs, including the relevant competencies (KSA) which will enable individuals to achieve specified POs constructed in the Analysis Phase.

6-2. **Product.** The design phase will produce CCD III – Programme of Classes that will enable future and current NCS and NFS[210] personnel to achieve the POs defined in the CCD II from the analysis phase. At the conclusion of the Design Phase, an IS[211] is generated which includes what content will be delivered, how the content will be delivered and, most important, how learning will be monitored and assessed. In addition, and linked to these three aspects of IS, are what learning outcome will be reached by the student[212] and what is the learner criteria for assessments. For new courses, this strategy is outlined in the CCD III, and this is to be uploaded into the ETOC[213].

6-3. **Methodology.** The ETF generates the CCD III and relies upon the support, creativity and expertise of a Design Team. The Design Team includes instructional staff (course director and faculty), the external OPR if one is designated, and other content area experts and if available, the support of an instructional design specialist to complete the NATO SAT definition stage. During the development of CCD III, the DH can possibly facilitate, lead, or support the process, depending on desire, expertise, or availability[214]. The final structure of content as well as the selection of methods and media is heavily influenced by the philosophical views of the Design Team and, in particular, beliefs concerning instruction and how individuals learn.

6-4. **Process.** The following steps are undertaken during the Design Phase, and this builds upon the six steps which were started during the Analysis Phase. While the provision of specific steps appears prescriptive, the SAT within NATO is intended to be flexible and adaptive. The goal of design is to simulate the real-world job conditions as closely as possible within the learning environment[215]. The process described below is a logical and systematic means to generate Course Control Document III - Programme of Classes:

a. Step 7 - Define Learner Characteristics.

b. Step 8 - Develop Enabling/Learning Objectives[216].

c. Step 9 - Determine the Plan for Assessment.

d. Step 10 - Document the Programmes of Classes.

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[210] NATO's responsibility is to the NCS and NFS. Others may benefit from using the CCD III format. ETFs are recommended to use the CCD template for all courses, even if not seeking course certification, in case the course meets a NATO training requirement in the future.

[211] See Annex A, Appendix 2 for definition.

[212] The focus should be on the learning needs of the student, and not the preference of the instructor.

[213] See Footnote 38 for additional guidance concerning format and structures for courses and solutions which already exist, and which may serve as a suitable alternative to CCD III.

[214] As per Figure 10, the DH is accountable for CCD III.

[215] The closer the learning conditions replicate the job, the more likely the learning will transfer to the job.

[216] The term ELO acknowledges the subtle difference which may be in place within national E&IT systems. ELOs may be referred to as 'Enabling Objective' or 'Learning Objective'. They are considered synonymous and serve the purpose of providing the incremental steps which enable the essential learning required to achieve a broader, job-focused PO.

STEP 7: DEFINE LEARNER CHARACTERISTICS

6-5. For an E&IT solution to be effective and efficient, it must build upon what the prospective students can already do and what they know, as well as provide a meaningful learning experience that motivates. In this step the TA, defined earlier in the Analysis Phase, is revisited; however, the focus is now towards how the generalized characteristics of the TA may affect learning. Considerations such as the size and location of the TA may affect decisions concerning how the E&IT solution is delivered. The focus is usually on the following three areas:

a. **Subject-matter Competence.** Examining current subject-matter competence assists with identifying the start point for learning. It also identifies potential prior experience and prior/pre-requisite knowledge of the learner which could be leveraged during the conduct of E&IT.

b. **Preferred Training Strategy.** The TA data from the analysis phase and the demographic data, including the prospective student location(s), can influence the selection of the instructional environment. Consider how much student interaction[217] is required to achieve the learning outcomes. Consider the TA age group, education and the general attitude towards the use of computers and online learning options.

c. **Student Motivation, Attitudes, and Aptitudes.** These are characteristics that can influence the selection of instructional strategies. The answers to the following questions will influence whether a more direct or controlled approach is required:

(1) What is the motivation level of the students[218]?

(2) Is this E&IT required (essential course as per the post's JD) and does it have direct implications on performance on the job?

(3) What is the general attitude towards learning?

(4) Does the TA have common interests?

(5) What is their attitude towards the subject matter being taught?

(6) What is their language ability?

(7) What is their reading and writing ability (e.g. residential instruction) or if an indirect approach is appropriate (e.g. e-learning)?

STEP 8: DEVELOP ENABLING/LEARNING OBJECTIVES

6-6. The aim of IA is to determine everything a student needs to learn and do to achieve the POs (as specified in CCD II when course certification is sought). The focus is on the learner and not the instructor.

[217] Whether the training strategy's environment would be residential, distributed or blended, the intended interaction of student-to-student, student-to-instructor, or student-to-content needs to be considered.
[218] Student motivation may influence perception of performance, subject matter and training itself.

6-7. **Step 8.1, Apply Learner Characteristics**

a. When all the components of the PO have been identified, the learner characteristics are applied. The intent is to identify the core content that students will need to learn, perform, and be assessed at in order to achieve the POs identified during the Analysis Phase[219] and will result in the content of the instructional programme. See Appendix 5 to Annex K for examples of IA.

b. To ensure that the desired outcomes are achieved when designing and developing E&IT, the principle of learner-centred E&IT should be applied when and where possible. Instructors need to provide E&IT in a way that recognizes students' life experiences and allows them to take ownership of their own learning. In this way they are motivated to learn and become independent and 'agile' learners. Learner-centred E&IT means enabling students to actively take part in their learning[220], rather than passively receiving instruction. As well, the E&IT uses active methods of instruction and lets students learn from each other and from their own mistakes. Overall, learner-centred E&IT promotes deeper learning that is meaningful and memorable[221], rather than surface learning that is easily forgotten.

6-8. **Step 8.2, Conduct Instructional Analysis**

a. IA begins with an examination of the POs to identify all components and sub-components of the tasks that make up the PO, including supporting KSAs. The aim is to determine everything a student needs to learn. The most effective means to deconstruct the PO into its components, sub-components and supporting elements is through the scalaring process. POs are deconstructed into its sub-components, known as ELOs[222] or manageable-sized units of learning[223]. Through de-construction, the Design WG confirms that all the PO Standards' components are included in the IA scalar. ELOs are ordered or sequenced suitable for learning, building on previous learning, and logical transitions from one subject to the next using the most appropriate IS[224]. ELOs, in turn, are further broken down into the TPts.

b. POs are examined as they contain the required key supporting elements (performance, conditions, and standard). It is necessary for the Design Team to identify KSAs which may be generated through discussion and brainstorming as well

[219] Any component or sub-components which do not require training should be identified as no-train.
[220] Active learning means learning how to think and solve problems by drawing on past experiences, using common sense and logic to research and evaluate evidence, then reflecting on their findings to draw conclusions.
[221] New skills and knowledge are often retained when content is presented, applied or practiced and then reviewed.
[222] Refer to Annex A, Appendix 2 for definition.
[223] ELOs may correspond to the major components identified in the Performance Analysis, may represent major steps toward achieving the PO or may result from grouping several related components. The key in developing ELOs is to define manageable units of learning that are logical, and of suitable scope and appropriate for testing progress. An ELO, when de-constructed, will facilitate the organization of content into lessons with focused content (i.e. the TPts).
[224] When there are safety aspects to a PO, they should be considered for inclusion in an early ELO of the PO. Where there is no apparent direct linkage between ELO groupings, the ELO order (and associated numbering) may vary. This decision is taken by the Design WG.

as extrapolated from reference material, including doctrine, procedural manuals, directives, LLs and personal experience. Indicators of attitudes that affect a PO include safety and security considerations and dimensions of character and leadership (i.e. elements of judgement, ethical decision making and the care/concern for others). An example of a simple IA is outlined in Figure 15[225] and NATO examples are found at Appendix 5 to Annex K.

c. Skills and knowledge elements are broken out into their sub-components when it is anticipated that separate demonstrations (of skills and attitudes) or explanations (of knowledge or attitudes) will be useful. This deconstruction, or scalaring, process follows along similar processes to that of a Performance Analysis and stops when the identified elements are at the level of the TA's entry level abilities (baseline KSAs). The KSAs become essential parts of the ELO and the lesson(s)[226]. Refer to Appendix 1 to Annex K for guidance on developing an IA scalar diagram.

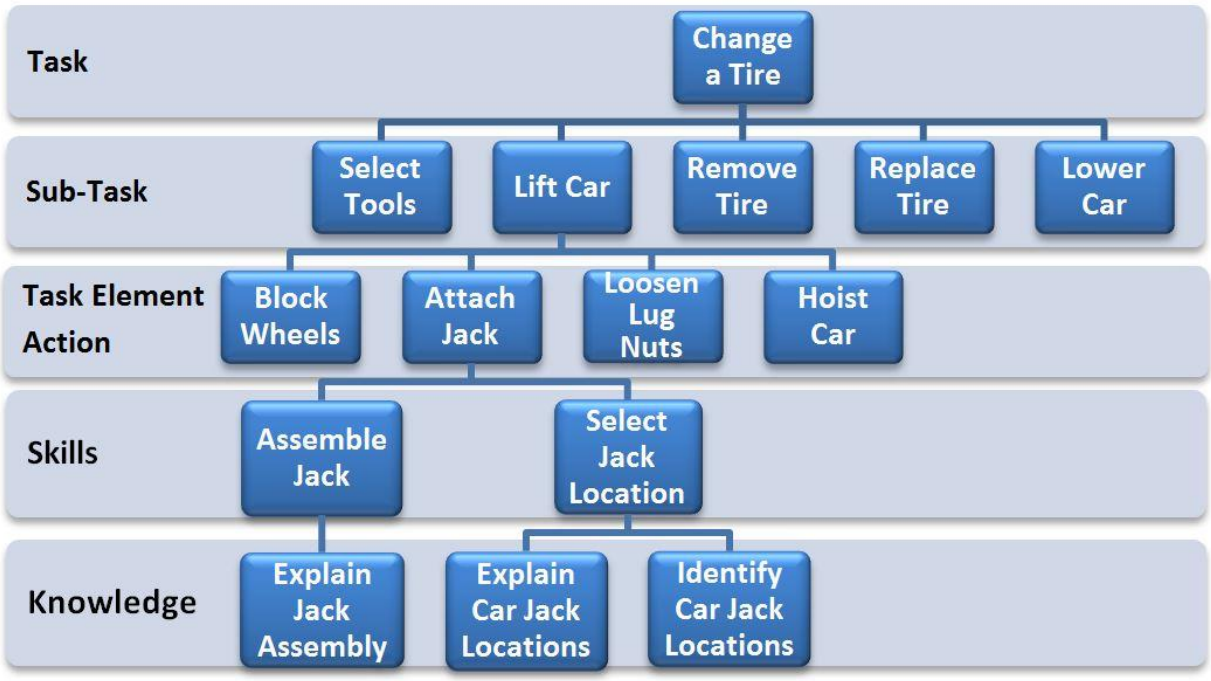

Figure 15 - Simplified Instructional Analysis Example

d. IA is complete once the main points (i.e. the TPts) associated with the supporting (enabling) elements have been identified. TPts are the discrete steps, facts or concepts that will require a separate demonstration or explanation.

6-9. STEP 8.3, Write ELO Performance, Conditions and Standards.

a. ELOs identify a segment of instruction which constitutes a major step to enable PO achievement[227]. ELOs further build the foundation for instruction; ELOs define

[225] The IA scalar starts with the performance analysis scalar and then expands by adding KSAs and linking them to the specific performance or task components.
[226] Lesson plans are created during the Development Phase.
[227] ELOs are the supporting components or building blocks that contribute to the learning outcome of a specific PO and provide guidance to those developing the master lesson plans for the conduct of E&IT.

what the individual will learn and do, and are the basis for providing evidence of student progress. In addition to writing the ELOs, this step also includes grouping and sequencing the supporting content, also known as TPts.[228]

b. ELOs often correspond to the major components (tasks and sub-tasks) identified when deconstructing POs during Step 8.2(Conduct Instructional Analysis); however, an ELO may also be structured based on the supporting KSA elements. A well-written ELO provides the basis for student assessment, and this is generally the basis for the decision to develop an ELO. The ELOs will also guide the sequencing of instruction and other decisions which follow concerning an IS[229]. The KSA elements, which support tasks, are categorized into specific learning domains and structured to reflect different levels of learning required during a course. KSA descriptors are summarized in Figure 16 and additional detail concerning the application of the levels within the related learning domains is provided in Annex K, Appendix 3.

Supporting Element (Domain)	Definition	Examples
Knowledge (Cognitive)	The theoretical and practical understanding of subject matter required to perform work. It is the information required to effectively accomplish a step, task, or job. This involves the cognitive processing of information (storing, recalling and interpreting) and its subsequent application,	Explain the format of the operations order. Describe the steps for clearing a building.
Skill (Psychomotor)	An organized and coordinated pattern of mental and/or physical activity that becomes refined through repetition and practice.	Clear a building, organize inventory, refinish furniture. Critical thinking, decision making, logical reasoning, abstract thinking, processing speed, focused attention.
Attitude (Affective)	An opinion or conviction which underlies or motivates behaviour. A pre-disposition to behave in certain ways and generally believed to be developed over time and largely shaped by an environment. Attitude is composed of cognitive (belief), affective (emotional), and behavioural (action) components.	Safety consciousness. Cultural sensitivity. Ethical conduct.

Figure 16 - Abilities: Knowledge, Skills, and Attitude

c. ELOs may also take shape because of clustering related supporting skill and knowledge components which are common across a PO or POs. This most commonly occurs when it is necessary to create a base of shared knowledge or foundational skills which would otherwise be common across several ELOs. It may be necessary to go through several iterations during the IA to establish a satisfactory structure and ultimately define the ELOs and content for the E&IT solution.

d. **Elements of ELOs.** ELOs, like POs, are composed of three essential parts: a performance statement, conditions statement, and a standard. The difference

[228] TPts become the content for an E&IT solution. Given the iterative nature of this activity, capturing the TPts during this step will provide greater clarity and assist with the grouping and sequencing of ELOs.
[229] ELOs are sequenced to facilitate learners making logical transitions from one subject to the next and are the building blocks of learning towards the attainment of the PO.

between the two types of objectives is the focus; the PO is intended to articulate job performance whereas ELOs are situated within the learning context and describe what an individual will have learned and performed following instruction. Examples of ELOs are provided in Appendix 3 to Annex L. The elements of an ELO are as follows:

(1) **Performance Statement.** A clear, concise and precise statement representing a logical and complete segment of what is to be learned to achieve a PO. This statement provides an indication of the learning domain and the level of learning to be achieved.

(2) **Conditions.** Conditions describe the context in which learning will occur[230]. This answers *where* and *with what* the learning will occur.

(3) **Standards.** Standards define the criteria for acceptable performance by a student within the E&IT environment. Standards may be stated in terms of a performance sequence, completeness, accuracy, time and/or other qualitative characteristics. The standard identifies the depth and level of learning the students must achieve when they perform under the specified conditions. Without a standard, it is difficult to determine when students have achieved the required level of learning. When appropriate, the standards may also include the criteria for attitudinal indicators/traits (e.g. safety consciousness) given it is rare for an ELO to be constructed, which specifically addresses attitudes without some element of skill and knowledge.

6-10. **STEP 8.4, Design Enabling/Learning Objective Lessons.**

a. **Step 8.4.1, Identify Teaching Points.** Once the ELOs have been identified and defined, the supporting TPts are determined and can be grouped and sequenced within the ELOs. A lesson may be made up of one or more TPts. The ELOs and the TPts guide the remaining Design Phase activity, including the identification of the activities required to achieve the intended levels of learning or learning outcome. TPts represent the learning outcomes and core course content for the E&IT solution and generally fall within one of five content categories: facts, concepts, processes, procedures, and principles.

b. A complete ELO will identify a type of learning (e.g. skill versus knowledge) and define the level of learning to be achieved through an E&IT solution. Levels of learning are expressed in terms of a Depth of Knowledge (DoK) and skill[231]. DoK is aligned with the performance requirement PLs. A matrix illustrating the alignment of DoK and job performance PLs is provided in Annex K. This matrix is used during future steps to make design decisions and may also be useful when assessing the fit between a NATO E&IT requirement and existing E&IT solutions.

[230] CCD III conditions reflecting the learning environment should be as much as possible the same as the conditions of the job as captured in CCD II.
[231] Depth of Knowledge (DoK) refers to the level of skill and knowledge to be learned as a result of an E&IT solution. DoK is intended to be an inclusive term covering all three learning domains. The DoK levels should be aligned with job performance PLs but not always. See Annex K, Appendices 3 and 4.

c. **Step 8.4.2, Sequence Instruction.** IA provides a visual representation to support the grouping and associating of the ELOs and TPts. Once the ELOs are defined and sequenced[232], linking the TPts becomes straightforward. The ELOs[233] and TPts should be structured into logical units and organized into a sequence that will guide learning. Suggested TPt structures are captured in Annex K. A complete picture of the hierarchy of objectives and TPts is provided in Figure 17.

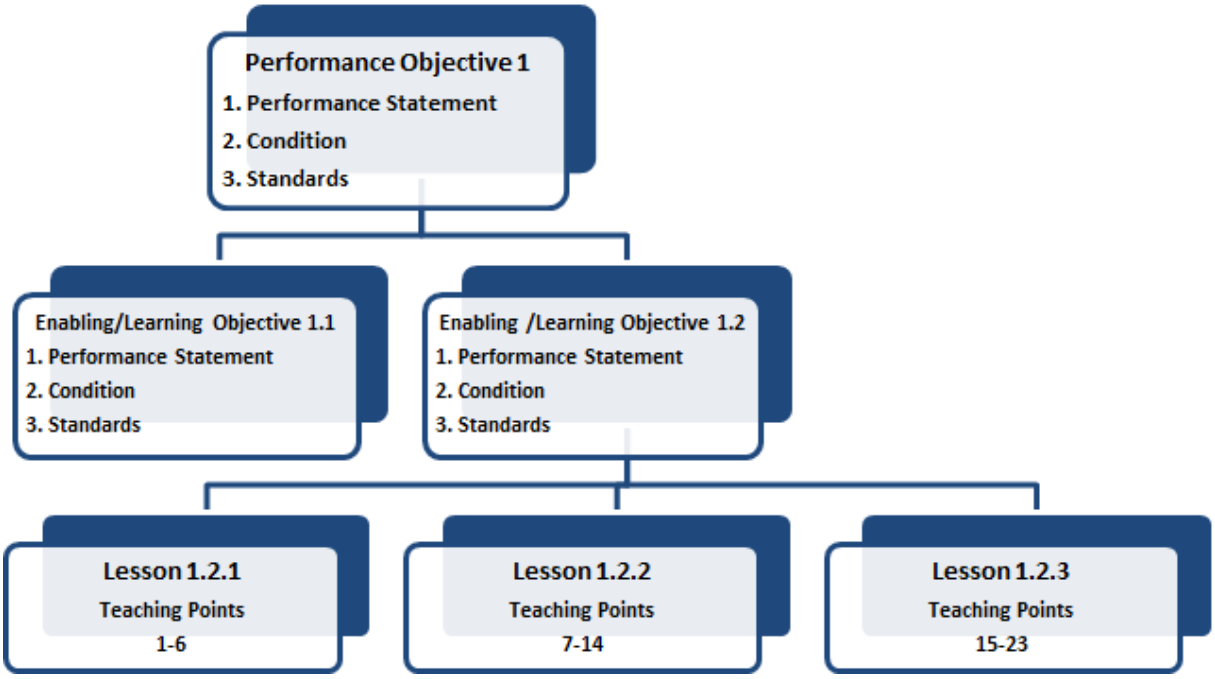

Figure 17 - Hierarchy of objectives

d. **Step 8.4.3, Determine Instructional Strategies.**

(1) **Overview.** An IS is a combination of instructional methods, media and the environment within which they are used to conduct instruction; the interconnections are illustrated in Figure 18. The purpose of this step is to identify viable instructional strategies for each ELO. The three elements are examined to determine how the content will be delivered and how the optimal conditions for learning are created[234,235,236]. The key to good design comes in the form of meaningful activities more so than content, and in particular:

[232] ELOs are often sequenced and then re-adjusted before an appropriate order is finalized. Once this is completed, the hierarchy of the ELOs and the TPts in the scalar can be confirmed.
[233] ELOs may be arranged according to learning order, logical order of groupings or job performance. Refer to Reference I, Paragraph 24.
[234] One example of an IS is a lecture (method), led by an instructor with supporting material (the medium/media) in a classroom (environment). Another is problem-based syndicate learning (method), facilitated by an instructor with support Exercise material (medium / media) conducted in syndicate rooms (environment).
[235] Instructional strategies should be based upon the overall training strategy, e.g. residential, distributed or blended.
[236] Clarification: IS versus learning strategy. IS is a preferred term given it defines the environment where learning takes place, including the activities, events and media; these are the conditions external to the learner. Learning, on the other hand, is dependent on individuals; learning is an outcome, the result of instruction. A Design Team creates the conditions for learning through the structure, sequence and the planning of events; however, it doesn't "design learning" given this is an internal, individual process.

(a) Ensuring the instructional experience is realistic, relevant and ideally problem-centered.

(b) Embedding opportunities for interaction, participation and active engagement during the learning process.

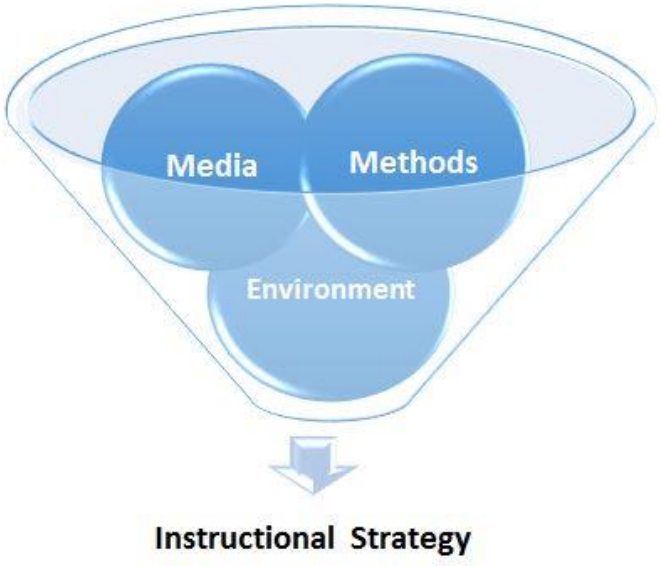

Figure 18 - Instructional Strategy Elements

(2) **Verify the Environment.** At the conclusion of the Analysis Phase, a broad Training Strategy is outlined within CCD II. The Training Strategy proposes the environment and overall approach to achieve the POs. The Training Strategy is an expression of intent. At this point, the proposed environment is reviewed and the feasibility assessed[237]. When an e-Learning environment is proposed, the selection of methods and media can often require greater sophistication, examination and planning. The ELOs and the assessment strategy defined earlier in the Design Phase (Steps 9 and 10) will remain integral to guiding IS decisions regardless of instruction being delivered on-line or through a more traditional residential course. HQ SACT MDFD provides further guidance to support the governance, development, and use of e-Learning[238].

(3) **Identify and Select Methods of Instruction.** The term method refers to a type of learning activity or instructional event, such as a practical demonstration, case study, self-study, or guided discussion. There are a wide variety of instructional methods, and many factors influence decision making. A description of suggested instructional methods and their application guidelines is provided in Annex K, Appendix 6. The aim is to identify methods that have a high probability of promoting learning and that support the transfer of what is learned back to the work/operational environment. Method selection

[237] Feasibility is confirmed by the institution providing the E&IT solution. There are several factors which determine feasibility. The importance and relevance of the considerations are determined by the institution supporting the E&IT solution and the associated chain of command. The considerations include organizational and student readiness, the business case as well as the appropriateness and suitability of the content.
[238] Refer to Reference P. For technical advice: adl@act.nato.int.

is primarily influenced by the ELO. Other considerations include the course content and structure as well as the assessment plan and the philosophical considerations regarding the learning process. The philosophical considerations will influence the social dynamics and the level of control over the learning environment[239]. The grouping of TPts as well as suitability for, and size of, the intended audience also influence method selection. A method selection matrix based on the ELO, and in particular the type and the intended level of learning to be achieved, is provided in Annex Q. The following considerations should be factored into the overall IS, specifically for the method selection:

(a) What will interest, engage, and motivate students? Different types of student interaction facilitate learning and strive to attain the learning outcomes or ELOs. They are:

1/ Student-to-student[240].

2/ Student-to-instructor[241].

3/ Student-to-content[242].

(b) Does the TA have previously acquired skills/knowledge and/or other experiences which could be leveraged?

(c) Are there opportunities for reflection embedded in the course overall? A well-designed course provides opportunities for reflection, such as allocating time for a post exercise debrief. Reflection in the context of learning can be described as linking ideas and constructing meaning from experiences, be they personal or otherwise. Individuals do not learn from direct experiences on their own. The learning results from reflecting on the experiences.

(d) Are there operational scenarios, observations, LL, best practices[243], incident reports or stories which could be leveraged and used to promote higher levels of learning through more active engagement? This in turn could influence decisions to use specific imagery and video.

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[239] Depending on the ELO, it may be appropriate to provide students with opportunities to assume greater control and influence within the learning environment and provide opportunities for individuals to learn from each other. The characteristics of the TA will determine the degree to which a learner centred approach would be appropriate. The characteristics of the TA, reviewed at the start of the Design Phase (Step 7), capture subject matter competence and experience levels which could be leveraged during instruction. Leveraging student experiences encourages active engagement and assists with overcoming potential resistance and can have a positive effect for student motivation.

[240] Promotes collaboration, cooperation, and self-directed learning. Increases learner comfort with others and the online environment.

[241] The instructor facilitates the learning process, monitors strident progress, and provides timely feedback. A positive relationship may improve learner performance and overall behavior.

[242] May improve learner understanding of content. Interaction with relevant examples promotes practice.

[243] Refer to Reference S.

(4) **Identify and Select Media.** Media[244] are the delivery vehicles (the means, instruments, or materials) used to provide the sensory stimulus and inputs to a student essential for learning. Refer to Annex K, Appendix 8 for examples. Although the selection of instructional methods and media is discussed individually, they cannot be considered separately. In an instructional situation, media is used to communicate a message or otherwise support the message to be communicated. Proper media selection ensures that information is presented to the students by the most effective and cost-efficient means possible. To be effective at achieving the ELO or lesson objective, the following must be considered[245]:

(a) **Medium/Media-method alignment.** A medium (or media) must be able to support the selected method(s) of instruction.

(b) **Subject Matter.** Key aspects of the target performance may clearly favour a certain type of mode of delivery based on one-on-one interaction, group interaction, performance of a physical skill, and need for a role model, e.g. learning an attitude.

(5) To be instructionally effective, a medium – or combination of media – must complement the method and ideally elicit a response. In general terms, the media selected should:

(a) Have a degree of realism and encourage practical application.

(b) Provide feedback to the student.

(c) Encourage interaction between students and the instructor, or the support system should there be no instructor in the loop.

(d) Align with the assessment of students in accordance with the assessment plan.

(6) **Leverage technology.** Incorporating technology into training programmes may make learning more engaging, interactive, and effective. This can include virtual reality, augmented reality (AR), simulations, and e-Learning. By leveraging technology, instructors can deliver E&IT that is more accessible and relevant to today's military personnel. The rapid advancement of artificial intelligence tools means they should be integrated into the learning environment, increasing the chance to strengthen individuals' capabilities. Technology may even replace the instructor as the new medium.

(7) **Influence of Instructor Ability.** The ability of instructors, both from within the ETF and external, may affect the identification and selection of Instructional Strategies. Lack of exposure to and experience with media, methods of instruction and varying environments' different modes of instruction (i.e. DL or blended approaches) may decrease the effectiveness of the ELO or lesson.

[244] The singular version of media is medium.
[245] Refer to Reference I, Part 6.

e. **Step 8.4.4, Determine Time and References for Teaching Points.** Based on the lesson, associated TPts, and chosen instructional strategies, time is to be allocated, and reference(s) identified. The references at a minimum should duplicate the references identified in CCD II as they pertain to references needed for the job. The estimated time identified when a course was first created in CCD II is not necessarily the principal driver for the actual course duration[246]. The chosen methods of instruction, PLs and the DoK do have a major influence on the time required for instruction to achieve the PO requirements.

STEP 9: DETERMINE THE PLAN FOR ASSESSMENT

6-11. **Purpose of Assessment.** Assessment measures the degree to which students can perform the required tasks and have acquired the necessary knowledge, skills and attitudes during E&IT. The Assessment Plan establishes the overall strategy for student assessment based on desired learning and performance outcomes that stem from the PO and ELO Standards. The Assessment Plan specifies how achievement of the POs and learning outcomes[247] will be assessed and how the student progress will be measured. Student progress is based on the assessment of the ELOs. The plan for a specific E&IT solution will also take into consideration broader Standard Operating Procedures (SOPs) and related instructions within the ETF (e.g. policies for plagiarism, attendance, progress review/appeals, and personal conduct).

6-12. **Performance Orientation.** The plan should include performance-oriented assessment to the maximum extent possible, to determine achievement. Practical tests require the student to apply skills and knowledge and perform in realistic job settings within the training environment.

6-13. **Although** the emphasis should be on performance-based assessment, theory tests can be an effective supplement to practical tests. Theory tests are generally in written form (e.g. short answer) and employ sampling. Sampling involves selecting representative elements from a larger field of knowledge. Oral interaction/examination may also be an effective means of student assessment. When developing the assessment plan, consideration must be given to any time constraints of the course duration or time allotted to the PO, especially when desiring to assess key tasks.

6-14. **Assessment Sampling Strategy.** Based on time or resource constraints, it may not be feasible to test the performance of some or all the tasks or every aspect of the knowledge learned. Sampling may be a way to select representative performance[248]. Performance-based assessment may focus on the most important or the most difficult elements of the performance. Knowledge-based (theory) tests may select a random sample to represent the overall knowledge learned. This can be captured in an ETF Test Plan providing guidance to those who will develop the assessment instruments in the development phase.

6-15. A plan for assessment guides for the construction of the assessment instruments during the Development Phase. Considerations for an assessment plan are captured and explained in Figure 19.

[246] Once CCD III is created and a pilot iteration is conducted, the CCD II course duration information should be reviewed and updated as necessary.
[247] Learning outcomes and TPts should align. As much as possible, assessment should be performance-based.
[248] Based on Reference I, Part 4.

Element	Purpose	How	When / Time	Time	Resources
PO /ELO # to be assessed	*What content is being assessed? Is it formative or summative assessment?*	*How will content be assessed – practical and/or theory, and as An individual or in a syndicate?*	*When in the sequence of ELOs/POs and the overall schedule will assessment occur?*	*What time is needed for assessment and class/individual de-briefs?*	*Which specific resources are required?*

Figure 19 - Assessment Plan Considerations

STEP 10: DOCUMENT THE PROGRAMME OF CLASSES

6-16. A clear description of the IS completes the Design Phase and concludes the definition stage within the NATO SAT. The details are documented in the Course Control Document III - Programme of Classes. At this point, a security classification can be confirmed. The Course Control Document III details are subsequently uploaded into the ETOC, and this will lead to the activation of a NATO-recognized E&IT solution. This step will also capture the description of the intended audience, specifying who is eligible to enrol in the course. The results of the previous steps in the Design Phase are documented and the following additional detail is captured:

(a) **Time Allocation.** An estimate of the time required to satisfy each of the ELOs based on the methods and media selected as well as the additional administration and support time to be captured in an individual course schedule/timetable. This will eventually determine the length of the course based on need and not convenience of scheduling.

(b) **Proficiency Level / Depth of Knowledge.** Identify the average PL of performance-based requirements and tasks. Also identify the depth of knowledge.

(c) **References.** A list of the reference material in particular NATO doctrine, procedural manuals, directives and documented LL which are applicable to a given ELO.

(d) **Limitations.** A description of limitations which prevent the completion of a PO. These limitations often effect student assessment and are a result of resource constraints or other limiting factors based on conditions and the desired standard to be achieved. Proficiency requires experience, hence it is reasonable to assume the standard of a PO will require a period of on-job-experience to achieve the desired levels.

(e) **Resource Requirements.** A list of the specific facilities, equipment and materials essential to successfully implement the overall IS as well as personnel (e.g. additional staff to conduct syndicate activities) required during individual events or lessons.

6-17. If an ETF determines it would like to conduct a course using different instructional strategies, more specifically two modes of course conduct (a residential programme and a

blended one), two sets of CCDs II and III must be produced for course certification of Approved or Selected category.

6-18. The results of the Design Phase, and particularly the details in the CCD III, are used by the DH to verify and endorse the alignment (the degree of fit) between the proposed E&IT solution and NATO's E&IT requirements[249]. The Designated ETF who is responsible for developing and delivering a training solution for NATO ensures that CCD II and CCD III are in NDTMS (if not already). When the DH has verified that the documents align, they will initiate and finalize CCD I and have it uploaded into NDTMS for the ETF to seek course certification[250,251] from HQ SACT MDFD. The approved format[252] for the Course Control Document III - Programme of Classes as per NDTMS is provided at Appendix 2 to Annex L. The main concern for HQ SACT MDFD as approving authority (see Figure 10) is that the required content is contained within the document format.

[249] See Certification of Courses (Chapter 2) for details pertaining to the review of existing courses which are uploaded into the ETOC. The DH is to verify CCD II and III are aligned and fulfil the requirement as a viable training solution prior to the ETF submitting a request for certification to HQ SACT MDFD.
[250] Step 6 captures the essential and specific elements required for the certification of courses. Courses will only be considering for certification once MDFD receives the set of three CCDs, CCD I to CCD III. See Certification of Courses (Chapter 2) for details pertaining to the review of existing courses which are uploaded into the ETOC. Additional support with ETOC is available through the 'contact us' button in the top tool bar.
[251] Without a set of CCDs approved by MDFD, a course will only be considered listed in ETOC.
[252] Pdf versions are no longer acceptable.

CHAPTER 7 – SYSTEMS APPROACH TO TRAINING: DEVELOPMENT PHASE

INTRODUCTION

7-1. **Purpose.** The purpose of the Development Phase is to provide effective courseware[253], including instructional materials, and/or services that are essential to support the conduct of an E&IT solution and ultimately satisfy the objectives described in the CCDs.

7-2. **Product.** The Development Phase results with the production or procurement of courseware which is defined during the Design Phase and is described in the CCDs. The courseware products are produced by ETF, SMEs, and/or contractors and will vary in their complexity and sophistication based on the IS. Courseware developers need to create courseware that supports student learning and complements instruction. Real world relevance incorporated into the courseware increases learner motivation and maximizes the transfer of learning to the job. Products can include student hand-outs, electronic presentations and master lesson plans (MLP) (standardized lesson plans[254]), and through to more sophisticated programmed e-learning applications, training devices and simulators.

7-3. **Methodology[255].** The execution of the Development Phase will vary based on the required products and the level of resident expertise. In some situations, the Development Phase will require a specific management plan to provide the necessary controls and oversight. A project management plan is essential for Development Phase initiatives involving the procurement of specialized services for courseware production as well as the procurement of training aids, devices and equipment (e.g. procuring simulators, developing e-Learning solutions). The ETF is responsible for the development of the courseware; however, External OPRs may play an important role in this activity given their expertise. As per Figure 10, they can develop or consult on the development of courseware, as well as verify the content aligns with the ELOs from CCD III.

7-4. **Process.** There are seven milestones to be achieved during the Development Phase. The supporting activity will often occur concurrently, as opposed to a specific sequence of steps as described in earlier SAT phases. The Development Phase should, nonetheless, conclude with the conduct of trials. The following are the milestones to be achieved in the Development Phase:

a. Step 11 - Review E&IT programme requirements.

b. Step 12 - Determine resource requirements.

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[253] The components of courseware are included in the description in Appendix 2 to Annex A. ETFs with education-only courses may be referred to as curriculum.

[254] MLPs / lesson plans are important to both the instructor and student. The instructors can ensure a standardized delivery of content and that all TPts are presented in an organized manner. The students can confirm that the lesson learning goals are identified and met.

[255] At this point the decisions made concerning the IS will influence the development methodology. The Development Phase for e-Learning solutions will rely on a different approach to the path taken for more traditional - residential courseware. E-Learning generally requires specialized design, development as well as programming expertise to produce more detailed design treatments and build the products to satisfy the ELOs defined during the NATO SAT Design Phase. The methodology is dynamic (not linear) and often relies on a prototyping approach. The additional considerations and supporting work products can include style guides and scripted storyboards, which outline course navigation and flow, along with plans for student interaction, possible collaboration and communications. During e-Learning development, visual elements and other embedded multi-media objects to be incorporated into courseware also may be specified. Additional training supporting the design, development and evaluation of e-Learning courseware is available through NSO.

c. Step 13 - Produce/Procure Instructional Materials.

d. Step 14 - Produce/Procure Assessment Instruments.

e. Step 15 - Develop an Optimum Schedule/Timetable.

f. Step 16 - Prepare Instructional Staff/Faculty Plan.

g. Step 17 - Conduct Trials.

STEP 11: REVIEW E&IT PROGRAMME REQUIREMENTS

7-5. Prior to making the decision whether to produce or procure instructional material, the output products (CCD II and CCD III) from the previous phases must be thoroughly reviewed. The programme guidance will include the instructional strategies, projected annual throughput of students, the assessment plan, and resource and lesson requirements.

STEP 12: DETERMINE RESOURCE REQUIREMENTS

7-6. Each ELO within CCD III indicates the resources required for instruction. The resources may need to be expanded based on omissions, course student maximum numbers, or consumables related to assessment. Resources may be broken down into the following categories: consumables, non-consumables, and facilities.

a. **Consumables.** Consumables are material[256] that needs to be replaced each iteration of a course. The quantities should be tracked to ensure the instructor and all students per iteration receive the appropriate allotment.

b. **Non-consumables.** Non-consumable items[257] may be reused[258] iteration to iteration.

c. **Facilities.** Facilities[259] should be identified during the development phase. It should be noted that some facilities require additional personnel to operate specialized equipment. In addition, based on classification of courses, specialized physical spaces may be required.

STEP 13: PRODUCE / PROCURE INSTRUCTIONAL MATERIALS

7-7. **Instructional Materials.** As part of the courseware package, instructional materials for residential delivery include the lesson plans, training aids (including real equipment) and other resources essential to guide and support learning. The materials also include the references as well as potential job aids, templates and checklists that, in addition to supporting the conduct of E&IT, will also facilitate the transfer of learning to the workplace. Appropriate materials may be procured or may already exist or be available from alternative

[256] Examples of consumables include pens, paper, paper-based scenarios, fuel, ammunition, and flip chart paper.
[257] Examples of non-consumables are equipment, computer programmes, vehicles, and electronic templates.
[258] Depending on the non-consumable, serviceability and equipment functionality testing may be required between iterations.
[259] Facilities may include classrooms, breakout or syndicate rooms, theatre, ranges, and computer labs.

sources, including other ETFs; however, more often a significant amount of in-house effort will be required to fully develop an E&IT solution. Excluding the procurement of major equipment, training devices and simulators, the main materials to be developed generally include:

a. **Student Manuals and Handouts.** These are the reference handbooks[260] and support materials used and retained by the students, ideally in an electronic format. The contents vary but the intent is to support learning and encourage the transfer of learning to the workplace.

b. **Instructor/Course Director Guides.** These are the procedures and specific instructions for use by the instructor/faculty and Course Directors during the planning, preparation, execution as well as close out of specific E&IT activities. The guide links to relevant institutional guidance, such as unit SOPs. The Instructor Guide may also include instructions for individual learning events and lessons, emphasizing coordinating instructions and potentially the key TPts. When applicable, guidance concerning guest speakers/lecturers may be included to ensure proper coordination and that the objectives of the specific activity are achieved. An Instructor/Course Director Guide is intended to provide the definitive coordinating instructions essential to planning, preparation, execution and closeout of a course but should avoid duplicating existing SOPs. Instructor Guides are even more essential for e-Learning solutions. The use of electronic formats provides greater flexibility and adaptability.

c. **Master Lesson Plans.** MLPs are standardized[261], non-personalized, lesson plans, generally used for all course iterations to provide detailed guidance and the required supporting materials (e.g. electronic presentations) to minimize the preparation time for the instructors. Tailored lesson plans by the instructors may be permitted by the ETF.

(1) **Developers of the MLPs.** The instructors who will teach the E&IT programme, whether internal to the ETF or identified as the External OPRs, develop and maintain[262] the MLPs.

(2) **Degree of Detail.** The degree of detail varies based on institutional practices and preferences. The MLPs, based on the ELOs of CCD III, serve as detailed guides and a standardized approach to instruction/learning. Where appropriate, MLPs provide the opportunity for individual faculty/instructors to personalize.

(3) **Types of Student Interaction.** MPLs need to take into consideration the types of interaction that were considered during the design phase, identify and select media step[263]. Creating content that enables opportunities for practice of tasks and performance requirements engages learners.

[260] The student handbook or manual may be electronic or paper-based. It may contain excerpts of references related to key procedures and information and can be used as a guide on the job after the course is complete. References will always take precedence.
[261] MLPs are helpful when there is a high turnover of instructor staff within an ETF.
[262] Based on changes needed as identified in the Discipline's DAP, the MLPs may need to be reviewed and updated.
[263] See Chapter 6, Step 8.4.3

d. **Supporting Courseware to MLPs.** These materials include in-class individual and syndicate activities plus instructions & answer keys, exercise scenarios and homework and applicable solutions/answer keys), and case studies and key take-away points.

7-8. **Supplemental Student Materials.** Supplemental Student Materials are optional material to be developed and used, whether available electronically or hard copies. If used during the course, these should support the ELOs being taught. Examples include additional handouts, answer keys to quizzes, and supplemental readings.

7-9. **Media Development.** Many factors affect the development of instructional media and material. Different medium may vary in importance of the following factors: personnel, time, funding, equipment and facilities[264]. The curriculum developers will determine to use the media and material as they are, make modifications/changes, purchase or create new. Some material desired to be used may be copyrighted, e.g. reference books, videos. Permission to use must be sought from the owner/holder. If given, ensure that material is referenced in the MLPs[265]. Media, whether produced or procured, ensures standardized presentation of content and learning.

7-10. **Courseware-CCD III Alignment.** Whether the courseware is developed (produced) within the ETF or procured (purchased 'Commercial off-the-Shelf' or contracted out), it is to be developed to meet the direction/content contained in CCD III, thus ensuring standardized learning. Content that is to be contracted out for development should:

a. Adhere to any contracting for services or contracting for goods policy.

b. Ensure material meets classification requirements.

c. Have products verified before final acceptance.

7-11. **Courseware Storage.** All courseware and source files[266] produced or procured for NATO-specific courses (Approved and Selected) may or may not be the intellectual property of the ETF[267]. All course content should be stored internally within the ETF.

STEP 14: PRODUCE/PROCURE ASSESSMENT INSTRUMENTS

7-12. The plan for course assessment, developed during the SAT Design Phase, identifies the assessment instruments to be constructed. The primary purpose for assessment is to determine if learning has occurred and the POs have been satisfied. Assessment also provides insight regarding student progress. These forms of assessment are often framed as formative assessment and summative assessment. The Assessment Plan will identify the type of assessment, whether formative or summative.

[264] Refer to Reference H, Page 122.
[265] It may help with the request to indicate that the material will be used for government / NATO training and education.
[266] An example is Sharable Content Object Reference Model (SCORM)-compliant e-learning source file which adhere to a purely technical standard for programmers to write code and governs how learning content and a Learning Management System (LMS) communicate. Refer to Reference AD.
[267] Intellectual property rights are dependent on whether NATO funds were used to pay for courseware development, and whether the person who created the course content is employed by NATO.

7-13. **Types of Student Assessment.** The following types of assessment are considered and incorporated into E&IT as means to confirm learning and skill acquisition have occurred:

a. **Formative assessment** assesses the students' progress, struggles and learning gaps during learning, the transfer of learning, as well as measures the effectiveness of E&IT. It can be conducted as a performance-based activity or a knowledge test upon completion of an ELO or several ELOs. Feedback provided and corrective intervention can be applied immediately and prior to any associated summative assessment.

b. **Summative assessment** is the culminating assessment at the end of an instructional unit, i.e. for a PO, a group of POs or at the end of a course. Summative assessments should reflect the Standards of the PO(s) captured in CCD II[268], the level of proficiency assigned to the performance requirements and tasks (captured in CCD II and III), as well as the guidance provided in the assessment plan. This type of assessment informs the student and the instructor if a student can perform according to the Standard of the PO(s).

c. **Diagnostic assessment** is a form of assessment conducted before formal instruction[269]. Delving into the student's existing KSAs provides the instructor and the student with information on the starting KSA level. This assessment may inform instructional decisions (i.e. slightly tailoring instruction to better support individual learning) by revealing learning gaps and individual needs.

7-14. **Test Plan.** An ETF may wish to develop a test plan for each knowledge-based assessment. This would consider the direction or plan for assessment for the course from the Design Phase to develop further refined focus for each assessment, e.g. numbers of questions, subject focus of questions, TPts to assess. Based on the test plan, the assessment instruments would be created.

7-15. Assessment instruments generally fall into two broad categories:

a. **Performance-Based.** A performance-based assessment[270] is a test that closely replicates a job context potentially using the same equipment, resources, setting, or circumstances that the individual would encounter. Performance based assessment requires the student to demonstrate what they know and are able to do, and tends to increase the transfer of learning. Limitations of time, staff, and resources often constrain the degree of realism in practical, performance-based testing. Normally, a performance checklist is used to record the level of achievement. The test will require specific instructions for both the instructor and the student.

[268] As much as possible, PO assessment should be performance-based. There may be limitations within the ETF or a lack of time within the schedule to summatively assess all components of the PO Standard.
[269] Examples are Threshold Knowledge Test and homework assignment. These assess the baseline knowledge during a self-study or a course pre-requisite submission by the student to inform the instructor of existing KSAs phase prior to the residential phase of a blended learning solution.
[270] Examples of a performance-based assessment are oral presentations, demonstrations, a scenario-based written assessment and / or report which reflect the job context, final individual or group project, and hands-on procedures.

b. **Knowledge-Based (Theory).** Knowledge-based assessment can be in an oral or written form. This method of assessment does not necessarily evaluate an individual's ability to perform the required job skills; however, it does provide an indication if the individual within the learning environment has acquired the required foundation, the know-how to perform. Although the emphasis is on practical testing, theory tests[271] may be effective supplements to the performance-based approach. The advantage of knowledge-based tests is the potential for a high degree of objectivity in scoring and the capability of measuring many facts, concepts and principles in a relatively short time. For types of knowledge-based assessment and variation of how to deliver the assessments, refer to Annex N.

7-16. Assessment instruments generally consist of three parts:

a. **Administrative Instructions.** The guidance necessary to establish required conditions for assessment to occur and this includes:

(1) **Instructions for the Administrator.** This outlines what is required prior to conducting student assessment (the set-up) and the instructions to be followed during the assessment event as well as the administrative routine afterwards.

(2) **Instructions for the Student.** These instructions set expectations concerning behaviour during the assessment process and inform student of what to expect during the test situation, and what must be done to succeed.

(3) **Instructions for the Proxy or Scorer.** These instructions outline how to score the test, interpret results and make a judgement which will determine the result.

b. **Assessment Instrument.** The actual test or practical checklist which is used to gather data regarding student achievement.

c. **Scoring Guide.** For knowledge-based assessment instruments, the guidance or instrument (answer key) and grading key are to be created and used to assess answers, interpret results, and make the judgement concerning student achievement and success[272].

7-17. **Performance-based Assessment.** The main materials to be created for this type of assessment include the three administrative instructions as detailed above for knowledge-based assessment, a scenario, if necessary, an assessment checklist, and a marking guide[273] to the expected outcome to be performed/observed.

STEP 15: DEVELOP AN OPTIMUM SCHEDULE / TIMETABLE

7-18. Once the instructional materials and assessment instruments are developed or procured, the course content can be sequenced or scheduled, in order that the E&IT solution

[271] Knowledge tests are typically constructed from a selection of multiple choice, matching, true-false, essay and / or short answer.
[272] Measuring student achievement may involve numerical scoring or letter grading or a combination.
[273] Guidance must be provided as to what substantiates meeting the Standard, or not.

is conducted in the correct order to optimize both the acquisition and retention of the KSAs. As a result, an optimum schedule/timetable[274] is developed. Schedules will also have to factor in administrative requirements and other standard briefings including security briefs as part of the institutional routine. A master schedule can be created that details the structure of the course to include lesson times, titles, locations, and references. This may be modified for each course iteration, depending on instructor, facility and resource availability, and statutory holidays. The e-Learning solutions within JADL will also have to factor in student availability across multiple time zones in addition to potential maintenance interruptions which may block access to the online learning management system (LMS). Schedules must be well-planned, incorporating several factors and considering multiple characteristics. Refer to Annex N.

STEP 16: PREPARE INSTRUCTIONAL STAFF / FACULTY

7-19. Preparing the instructor staff/faculty addresses organizational readiness and is part of the essential steps for preparing for implementation. Staff will generally need to be familiarized with the necessary coordination and administrative routines (booking accommodations, resource management and funding routine) while instructors must be able to deliver the E&IT solution effectively, be it residential within an ETF, online or a combination once it is developed. While instructor expertise is often dependent upon individual skill level and experience, formalizing an instructor development plan closes the readiness gap and establishes the conditions for success. Guidance for an ETF instructor development plan/programme is captured in Annex N.

7-20. Instructor preparation is part of a broader faculty and staff development framework[275]. This process is initiated each time new personnel join an ETF. For the instructor cadre this is an on-going process throughout the period of employment, and there are three main elements to support this:

a. **Initial Orientation.** This begins prior to arrival with a welcome package and continues through to a unit specific orientation programme which may potentially include familiarization training to support local procedures, workflow and unique web/software applications.

b. **Initial Skills Development.** This promotes integration within the ETF and includes instructor development courses as well as any additional E&IT that is required in accordance with a JD[276]. During this phase there are opportunities to observe and integrate within the instructor cadre and formalized observation periods – instructor supervisor monitoring sessions.

c. **Continuity Training.** Implementing additional professional development in support of a continuous learning culture and to maintain expertise. This is supported by formalized observation periods and potentially the opportunity to conduct peer observations.

[274] An optimal schedule / timetable is a plan of instructional activities intended to achieve the best possible learning conditions.
[275] An ETF, which is accredited, will have a general-type instructor development programme as part of their QMS.
[276] Required E&IT will be annotated as ‘essential’ qualifications within a JD.

7-21. **External instructors.** Instructors from outside the ETF require adequate preparation time prior to the start of a specific course iteration. Based on the agreed-upon content/lessons to instruct, the external instructors need to review the relevant ELO(s) from CCD III and associated courseware including assessment.

STEP 17: CONDUCT TRIALS

7-22. Trials, including course pilot iterations, are conducted to not only to validate what works, but also to identify design flaws and other deficiencies or problems with the planned instruction so that revisions and improvements can be made. Trials are conducted after the courseware is developed and prior to institutionalizing a course and making significant investments in major equipment, simulators or other training devices to support an E&IT solution. Trials will also serve to refine further the resource requirements as well as the time required for conducting instruction. Trials consist of repetitive cycles of development, testing, and revision until evidence shows that the E&IT solution is effective. As the trials continue, the necessary changes are made until the courseware is complete and ready for implementation. The level and number of reviews will depend on several factors including:

a. The sophistication of the instruction/courseware.

b. The consequence of error resulting from poor or incorrect instruction.

c. The remaining investment necessary to finalize an E&IT solution.

d. The urgency of generating graduates with the requisite KSAs to perform tasks related to high NATO priorities.

7-23. Trials may be conducted on three levels, when feasible, and this reflects the transition from initial (pre-) production internal testing through to external pilot-testing with members of the TA. At a minimum, a new course shall undergo a pilot iteration as a precursor to requesting course certification. There are three levels of trials to be considered during the Development Phase are:

a. **Level 1 - Internal Reviews.** The purpose is primarily to identify content inaccuracies[277], instructional design weaknesses and potential resource shortfalls. Internal reviews are conducted throughout the Development Phase. SMEs are verifying technical compliance, i.e. making sure the content being provided is technically accurate and the depth of coverage is adequate. Curriculum developers ensure that the material follows sound instructional principles and that the methods and activities are well defined and appropriate to the content for the specified TA[278]. During internal review the following can be resolved:

(1) Lack of agreement between the ELOs and course content.

(2) Inaccuracies in content and subject matter. There are many ways to review the subject matter for accuracy, completeness, and quality. The bottom

[277] The aim is to assess if the right content was taught to achieve the learning and performance outcomes.

[278] A trial permits the opportunity to confirm that the right content was taught in accordance with CCD II and III using the most effective and efficient method to achieve the learning and performance outcome.

line is to cross-check the content with the data sources and references including NATO technical orders, regulations, directives, and checklists.

(3) Incomplete or weaknesses in materials including the details and instructions supporting scenarios, case studies, practical exercises as well as media elements including visual mock-ups, storyboards and scripts.

(4) Incomplete or weaknesses in assessment instruments including the validity, reliability, objectivity, comprehensiveness of the assessment instruments and the details in the instructions.

b. **Level 2 - Individual and Small Group Try-outs.** The purpose is to confirm decisions made during the Design Phase and verify the quality of the instructional materials. During the individual and small group[279] try-outs the curriculum developer tests the materials based on small segments or specific learning "events" as they are developed with a sample of the intended audience. The try-outs serve to confirm assumptions made about the intended audience, in particular the prerequisite knowledge, time allocations and clarity of assignment and instructions.

c. **Level 3 - Course Pilot Iteration (Field Trial).** The purpose is to assess the effectiveness of the developed course and assess the quality of lesson guidance and course material with actual students. The pilot iteration is conducted like a regular serial/iteration[280]; however, the course content is monitored closely[281] during lessons conduct by appropriate staff[282] and additional data is gathered; feedback from instructors and students is essential. The number of pilot iterations is based on need and is influenced by the results of an initial trial and the complexity of the instruction. Every course intending to meet a NATO-specific training requirement, whether to be conducted at one or more ETF, is to undergo a pilot iteration. Observations from a pilot iteration can be very broad and include:

(1) Incompleteness of, or weaknesses in, the schedule/timetable[283].

(2) Inadequate methods or weaknesses in how content is conveyed.

(3) Inadequate detail in the content of, or relevancy of the content, by PO.

(4) Clarity of, or weaknesses in, the instructions/guidance to the instructors, as well as for the course activities/events and student assessment.

(5) Confusion with test items.

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[279] A small group try-out consists of 6-12 people who are representative of the intended training audience.

[280] This pilot is fully 'staffed' with genuine students and all the allocated training resources and administrative support.

[281] The ETF should strive for 100% monitoring of course content during a pilot iteration.

[282] Staff may be internal to the ETF or an External OPR. Appropriate staff infers that the SME is qualified in the course (e.g. earned a formal qualification in the subject matter or has sufficient proven experience performing the principal duties of the job, including tasks, thereby negating the requirement to complete a similar course). Where there is uncertainty or disagreement regarding the appropriateness of the SME monitoring the pilot iteration, the DH, in consultation with the MDFD E&T Policy OPR, will serve as the final arbiter.

[283] This may cover continuity or lack of smooth transitioning / flow from one instructional event to the next, as well as the accuracy of the time allocations as per CCD III.

(6) Verification that the class size is appropriate as per CCD II.

(7) Clarity with the administration procedures and support coordination within the institution.

7-24. **Course Pilot Iteration Management.** Management of pilot iterations includes the planning, consideration of the students and data collection. Refer to Annex N for details.

7-25. **Post-Course Pilot Iteration Activities.** Based on the data collection and analysis, changes to CCD III and the courseware may be needed. Depending on the degree of changes required, an additional pilot iteration may need to be conducted. The determination for an additional pilot iteration is made by the DH in consultation with the ETF[284]. Minor changes do not require a pilot iteration. A pilot iteration is required for a new E&IT solution and when major changes are made to an existing course. In both instances, CCDs should be updated. Once a pilot iteration is conducted (if deemed necessary) and the CCDs have been updated, course certification may be sought.

7-26. Resources and time rarely permit the completion of all three levels of trials for a course. Nonetheless, ETF should strive to complete all three, and at a minimum conduct a pilot serial as it is necessary for course certification. The opportunity to receive feedback, and review and refine an initial course, enables the ETF to apply any observations, LL, and best practices, and to move the course towards steady state.

[284] The DH is to inform the RA that a pilot iteration was completed, the E&IT meets the requirement, and course certification will be sought.

CHAPTER 8 – SYSTEMS APPROACH TO TRAINING: IMPLEMENTATION PHASE

INTRODUCTION

8-1. **Purpose.** The purpose of the Implementation Phase is to put into operation the management, support and administrative functions necessary to successfully conduct E&IT solutions as per the POs/ELOs.

8-2. **Product.** The Implementation Phase results with the production of qualified graduates ready for employment.

8-3. **Methodology.** The Implementation Phase addresses four key activities: planning, preparation, execution as well as close out (after action) activities, which support a specific course. Prior to conducting E&IT, the solution must be integrated into ETF operations, and this is captured within the ETF's overall QMS.

8-4. **Process.** The following steps are undertaken during the Implementation Phase:

a. Step 18 - Integrate an E&IT solution[285].

b. Step 19 - Initiate the Update of Applicable PE/CE Job Descriptions.

c. Step 20 - Conduct E&IT.

STEP 18: INTEGRATE AN E&IT SOLUTION

8-5. The specific procedures for integrating an E&IT solution within unit operations will vary from ETF to ETF. The integration of an E&IT solution requires clear policy, procedures and work instructions which establish the routines within the ETF. The policy and procedures should define how a new, or revised, E&IT solution is to be integrated with the core QMS processes within an ETF. This is intended to align and harmonize the management, administration and support functions with the overall main effort: the production of qualified graduates. In situations where an ETF may be multifaceted and have other roles (e.g. NATO-accredited Centre of Excellence (COE)), the links between E&T and the other functions should be captured and transparent (e.g. links between E&IT conduct and doctrine development and/or LL).

8-6. **Management.** Management, including personnel, resource and general management concerns the practice of directing and controlling all the processes effecting ETF operations. This begins with a well-communicated plan for the institution, which includes a commitment to quality that is based on a mission and vision which is aligned with NATO priorities[286] and the expectations of major stakeholders. Key performance indicators are also identified and captured to report progress. Management activities address:

a. Recruiting, supervising, motivating and developing staff and faculty in accordance with clearly defined roles and responsibilities.

[285] Integrating a solution is captured here as part of the NATO SAT Implementation Phase; however, it is likely that many of the considerations and procedures were addressed as part of the pilot iteration which was run during the Development Phase.
[286] Refer to Reference B.

b. Controlling expenditures, managing budgets and contract management (as applicable).

c. Production management. In-year and projected future-year production requirements are tracked and compared with demand[287].

(1) Establishing annual future-year E&IT production targets.

(2) Allocating resources and monitoring progress against targets in-year.

(3) Reporting completion training data from previous year[288].

d. Communicating effectively internally and externally with stakeholders including through designated feedback systems and at Global Programming key events.

e. Leveraging information systems and institutional knowledge management. Collect, analyse and efficiently use relevant information for the effective management and conduct of E&IT and related activities.

f. Assessing projecting and planning for future facility requirements, infrastructure, equipment and related maintenance as well as logistics support.

g. Planning and implementing organizational improvement projects including related initiatives to support staff and students in line with the overall mission.

h. Identifying and solving problems and managing change with the goal of continuous improvement.

8-7. **Administration.** Administration is a very broad area, and integration issues address three areas:

a. **Course Administration.** Defining the routine tasks which support personnel, and in particular students, must be addressed as a course is integrated into operations. This involves policy and processes for student registration, course fee payments, generating student course lists, the arrival in-routine and processing, generating certificates, dispatching graduates (out-clearance) and records management (e.g. managing and archiving student and course related files).

b. **Institutional Administration.** This concerns the administrative instructions and activity which has a broader management impact, including the distribution of information internally as well as the information to be shared publicly, visit protocols and this includes support for External OPRs/guest speakers as well as, depending on the ETF, security and force protection measures.

c. **E&IT Management Administration.** Through these administrative processes, the support to unit operations is activated and often the data essential to

[287] See Reference C, Chapter 6. Production management is tracked in NDTMS. Specific ETF due dates for forecasting and course completion numbers are captured in Reference C, Chapter 2.
[288] Training data is captured within the Accredited ETF's annual QA report for all ETFs in NDTMS as per the due date annotated in Reference C.

tracking key performance indicators is generated. Depending on the circumstance, E&IT management administration addresses:

(1) **Production Administration.** Ensuring the E&IT solution is assigned appropriate course codes[289] and integrated within the appropriate planning processes and training management systems (e.g. NDTMS and ETFs) in order to forecast demand, schedule courses, match bids with the available opportunities (or slots) and, as required, de-conflict internally with an overall master schedule for the ETF[290].

(2) **Documentation and Courseware Maintenance.** Maintaining a system of record for administering CCDs and course materials, including version controls and, when applicable, copyright permissions. At this point the CCD III, uploaded in NDTMS during the Design Phase, is revised based on Pilot Iteration feedback and DH input.

8-8. **Support.** Support addresses the essential functions, activities, and tasks necessary to sustain ETF operations and the conduct of E&IT. The essential infrastructure assets and facilities including a training area, laboratories, classrooms, syndicate rooms, fitness facilities and other infrastructure are most likely in place along with the core logistics support functions including supply, transportation, lodging and meals. As part of implementing a course, the links must be established to the support processes to ensure it is in place when it comes time to conduct E&IT. The resource and support requirements are often unique for each course and the materials, supplies, equipment and training aids are initially captured as E&IT solutions are developed through the NATO SAT process.

STEP 19: INITIATE THE UPDATE OF APPLICABLE PE/CE JOB DESCRIPTIONS

8-9. As E&IT solutions are integrated and become operationalized, it will be essential to ensure applicable NATO PE/CE JDs are updated to reflect the essential and desirable qualifications and, as applicable, the related course codes[291]. Although existing PE/CE review procedures will continue to be followed, the Discipline RAs are responsible for informing and advising the relevant Communities of Interest who will subsequently inform and advise the (local) J1 divisions and affected Divisions/Branches about new, changed and obsolete courses. The advice will include whether a course should be included as essential or as desirable. This JD related information and advice will be reflected in the DAP and the ADC will be the forum to track progress in this area.

[289] Within ETOC, course codes are aligned to the relevant discipline and a functional area within that discipline.
[290] Within NATO the administration activity ensures proper course codes and reference numbers are assigned. This permits the integration of information with other systems including the NATO Automated Personnel Management System for NATO job descriptions and with Electronic Partnership Real-Time Information Management and Exchange System (e-PRIME) to support Partner requirements.
[291] Refer to SWP 7 – Annex A – Format for a Military Job Description in a NATO Military Body of Reference F for the JD review procedure.

STEP 20: CONDUCT OF E&IT

8-10. The conduct of E&IT requires a finished product[292] to be in place and the course to be integrated within the management, administration and support functions of the ETFs QMS. Generating graduates through the execution of E&IT is the centre of gravity; however, there are other activities which are part of a systematic approach. A Course Director is generally appointed, in accordance with specific Terms of Reference, to administer and manage a course from planning through to close out[293]. The activities supporting the conduct of E&IT are captured in Figure 20, and these form an overall planning timeline which can vary from course to course and are often unique to a particular ETF. The following activities are considered as part of conducting E&IT:

a. Course Planning.

b. Course Preparation.

c. Course Execution.

d. Course Close Out.

Figure 20 – Conduct Phase Activities

8-11. **Step 20.1, Course Planning.** Course planning generally takes place 4-12 months[294] prior to execution and occurs once the production planning process has defined the ETFs overall master schedule. Many of these considerations are addressed as part of administrative processes (e.g. matching bids with course vacancies); however, course specific issues concern:

a. **Course Readiness.** Ensuring the observations raised during the pilot iteration, or a recent review of the course, are addressed.

b. **Feasibility.** Verifying the planned IS is feasibility. A course may be ready; however, other conditions may exist which compromise the planned mode of delivery, be it residential, distributed (includes e-Learning and MTSs), or blended.

[292] A finished product implies the approved CCD III and the complete courseware package.
[293] The Course Director may be a position, or an appointment depending on the ETF, and may also be known as a Senior Instructor, Lead Instructor and / or Course Manager.
[294] Depending on the size and scope of NATO training at an ETF, more lead time may be established.

c. **Course Information.** Confirm the accuracy of course information packages to be distributed to students and made available publicly.

d. **Instructor Support**

(1) Verify there are adequate instructors to support execution in accordance with the planned schedule[295].

(2) Initiate contact, invite and confirm guest speakers and other stakeholders (as required).

8-12. **Step 20.2, Course Preparation.** Course preparation for residential courses generally takes place 6-8 weeks[296] prior to course execution and occurs once it is confirmed that a course will go forward as scheduled and that it will be delivered in accordance with the mode of delivery previously identified during course planning. Blended solutions may involve more lead time to account for a lengthy period of self-study.

8-13. In general, course preparation primarily involves internal coordination:

a. Reconciling final bid selection. Confirms the course list[297,298] and transportation as well as lodging are arranged.

b. Finalizing course supplies and distributing joining instructions and pre-course materials (as required).

c. Scheduling and coordinating course support (e.g. transportation, facility booking).

d. Finalizing the course-specific schedule/timetable including the sequence of events, instructor assignments and programme instructor monitoring[299].

e. Distributing outlines, potentially previous presentations, to invited Guest Speakers and other SMEs supporting course execution. It is essential that those involved appreciate and understand the specific objectives and topics their contribution is intended to address.

f. Distributing any joining instructions to the students.

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[295] As not all ETFs have sufficient instructors for all iterations of courses, the Course Director or Course Manager should coordinate with the Course OPR to ensure that the instructor requirements are planned and met in terms of numbers, qualifications and expertise, i.e. confirm that sufficient, qualified instructors are available for the iteration. Depending on where the instructor(s) originate, funding may need to be forecasted and budgeted.

[296] The time may be longer depending on the internal ETF processes.

[297] The ETF needs to maintain the wider view of the course demand (information comes from the relevant discipline DAP and the IPB). If there is a need to overload the course numbers as per CCD II, the Course Director and the (External-) Course OPR should discuss feasibility and come to consensus prior to a decision. Instructional Strategies, activities, and room sizes should be considered.

[298] It is likely that the ETF J1 or J7 function (or student services equivalent) would promulgate the final course list.

[299] This is the iteration-specific schedule / timetable that considers availability of rooms, instructor support, guest presenter availability, as well as factors affecting optimal learning (Annex O). Ample time is available to de-conflict any problems.

8-14. **Distributed and Blended Modes of Course Conduct.** For those courses that use a learning management system, several activities are involved in preparing for conduct of E&IT:

a. Shipping courseware to an alternate location (employing a MTS such as METT).

b. Setting up a course iteration within an on-line LMS (for e-Learning).

c. Providing guidance on student pre-arrival requirements and the residential portion[300].

d. **Deploying the course**[301]**.** The course is made available with the help of the LMS to the learner by the instructor or technical expert.

8-15. **Step 20.3, Course Execution.** Course Execution concerns the actual running of a course, and this begins with pre-course preparation, generally one to three weeks prior to the start of a course and continues through to student graduation. Course execution is completed in accordance with ETF policies, directives and specific work instructions supporting the ETF's QMS. The ETF should have prescribed SOPs to address a wide range of issues, and they generally regulate the daily routine (hours of operation), security protocols, student assessment procedures and possibly complaint resolution.

a. **Step 20.3.1, Pre-course Preparation.** Ahead of the arrival of students, there are a series of tasks that are to be completed with the purpose of improving the chance of course success. The tasks, which may also have separate SOPs, include the following:

(1) Instructors reviewing:

(a) Assigned lesson plans to ensure familiarity with the content, ensure it contains all the required components and aligns with the ELOs from CCD III.

(b) Media to ensure it matches the information in the lesson plan and is in working order.

(c) Student tests to ensure complete understanding of how the students will be assessed.

(d) Guest Speaker/SME presentations in advance to ensure continuity and fit with the flow of instruction, meet the intent of CCD III and allow for time to make adjustments prior to delivery.

[300] This is often referred to as the Student Welcome Package.

[301] An example of simple deployment is a course made available on JADL to anyone who has access. The course may be voluntary (or optional) or part of a blended solution. A more complex online course or blended solution would involve student registration, student LMS technical support, synchronous and a-synchronous activities which would involve more precise planning and scheduling for a specific timeframe, active communication with the students and more detailed administration. Refer to Reference P.

(2) Instructors rehearsing individual lessons[302].

(3) Finalizing set-up and preparation of the environment, be it a physical structure or online[303].

(4) Completing pre-course preparations with instructional staff and ensuring debriefs ("hot washes") are conducted, as necessary, throughout the course to monitor course execution and address any concerns which may arise.

(5) Preparing/briefing Guest Speakers and other SMEs supporting course execution.

(6) Finalizing and administering instructor and student feedback forms.

(7) Collecting course/tuition fees[304] (as applicable).

b. **Step 20.3.2, Delivery of Course Content**

(1) The delivery of the content, i.e. the training solution to meet a NATO-specific requirement, involves both the instructor and the monitor (may also be known as Standards personnel). During execution, instruction is delivered, and student assessment is conducted as planned.

(2) From the start and throughout the course, the instructor is responsible for:

(a) Setting up the daily learning environment, if needed.

(b) Adhering to the lesson plan.

(c) Administering student assessment[305].

(d) Debriefing Guest Speakers, post-lesson.

(3) **Post-Assessment Debrief.** Debriefs by the instructor or assessor inform the student of their formative learning and their summative performance (of the PO) to facilitate growth and improvement[306]. Debriefs should occur immediately or soon after the assessment event and be completed one-on-one, to the syndicate or the class, depending on the assessment plan and if there were any commonalities.

[302] Benefits of rehearsing include determining the most effective wording, ensuring a smooth flowing presentation, better gauge of time needed versus time allocated. Refer to Reference H, Chapter 4, Page 168.
[303] Aids in creating an organized and smooth presentation of the lesson to maximize the acquisition of KSAs. Where possible, the learning environment should replicate the job setting. This is identified in CCD II and III.
[304] There is no NATO regulation of course fee collection. ETFs would adhere to their national standards or senior committee decision.
[305] As per Reference H, Chapter 4, Section 5, this involves gathering test materials, preparing the environment, clarifying direction, providing an opportunity for questions, and conducting the test.
[306] Debriefs should include areas where the student performed well and areas for improvement based on the Standards content of the PO / ELO.

(4) Being prepared for informal, unannounced monitoring[307].

(a) **Monitoring Instructor's Ability.** Instruction is monitored to ensure execution of the plan and the instructor's ability. Instruction events are observed during the delivery and later debriefed. The ETF Chain of Command monitors to assess delivery techniques[308], lesson plans, and the effectiveness of course design[309].

(b) **Monitoring Course Content.** The DH or designate, or the External OPR, may conduct periodic monitoring for adherence to the intent of the CCDs, confirming that the NATO-specific requirements identified for E&IT occurred[310].

(5) Standardized execution of E&IT over different iterations ensures that E&IT delivery complies with the CCDs as they were intended, and NATO personnel are properly prepared for their posts/roles. Instructors ensure that the overall objectives, or the lesson, are met and that the relevant CCDs are adhered to.

8-16. Step 20.4, Course Close Out

a. Course close out involves activities which commence at the conclusion of course iteration execution and typically continue for one week afterwards, finalizing any outstanding administrative and support issues. Refer to Paragraph 9-5 for details of this process. The ETF tracks course completion data for reporting in NDTMS and to MDFD/DCOS.

b. **After Action Report.** Course close out culminates with an immediate after action report (AAR) that summarizes impressions concerning the conduct of the course iteration and becomes an essential input into the Evaluation Phase. The AAR, a formal *critique*, is based on observations by instructors, support staff, and students, and answers *Was the course aim achieved?* This report captures issues that may have an impact on future courses related to course planning, preparation and execution. The issues identified may impact the quality of E&IT solutions, including administration and support concerns. The AAR includes recommendations to maintain best practices and areas to improve the quality of E&IT[311]. The AAR also captures student demographic data, which is used to confirm the course is being delivered to the intended TA.

c. Typically, the granting of course qualifications in the NATO APMS[312] is completed by the graduate's NCS or NFS entity[313].

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[307] ETF SOPs may provide guidance on this activity.
[308] Included may be the instructor's skills in communication, responding to learning challenges, questioning techniques, and classroom management.
[309] Course design issues include time allocation and methods of instruction.
[310] The DH or the External OPR may conduct periodic monitoring of a course, with financial approval, especially for a pilot iteration or an existing course that involves major changes.
[311] Modified from Reference AC.
[312] If the graduate is not from an NCS position or they are completing an essential training requirement to fill a NATO post, they have proof of course completion via the course certificate.
[313] The NFS entity must have APMS capability and are using it.

CHAPTER 9 – SYSTEMS APPROACH TO TRAINING: EVALUATION PHASE

INTRODUCTION

9-1. **Purpose.** The purpose of the Evaluation Phase is to assess the efficiency, effectiveness and affordability of an E&IT solution and determine how it can be conducted better within an ETF which seeks to continuously improve.

9-2. **Product.** The Evaluation Phase results with improved E&IT solutions and feedback to the ETF and the discipline's ADC.

9-3. **Methodology.** The NATO SAT Evaluation Phase consists of a systematic quality review process and feedback loops which supports continuous improvement[314]. ETFs that are institutionally accredited by HQ SACT MDFD embed end of course assessments along with other institutional review processes as part of a QMS. These processes formalize the Evaluation Phase and ensure that there is an opportunity for continuous improvement and innovation. The results of the Evaluation Phase provide an indication of the fit between E&IT requirements and specific solutions; the results of the Evaluation Phase are a valuable input for the related ADC to confirm continuing suitability.

9-4. **Process.** There are two distinct processes supporting the Evaluation Phase and they are:

a. Post-course reviews (PCR) across iterations of a course, which are part of the programme evaluation assessing the merit or value of a programme[315], focus on judgements pertaining to a specific E&IT solution. It is the process of gathering and analysing data from inside and outside the E&IT environment to determine how well E&IT was conducted and how well graduates are prepared for their job[316].

b. Institutional reviews, which focus on the institution and provides for a periodic review of quality management overall.

CONDUCT POST-COURSE REVIEW

9-5. The PCR, as part of the programme evaluation, is a is a structured and systematic process which involves collecting and analysing both quantitative and qualitative data to assess the quality (effectiveness[317], efficiency and affordability) of an E&IT solution and improve results. There are two distinct elements to a PCR, as highlighted in Figure 21. The initial PCR involves an internal evaluation, and this is a report that builds from the observations outlined in the AAR which is compiled immediately following each course. This report should identify the areas of a course that require improvement along with an action plan to bring about improvements. The results of an internal evaluation may influence the need for an external evaluation. External evaluation is a follow-up process which occurs

[314] The NATO SAT Evaluation Phase includes secondary cycles of review which are integrated within the Design and Development Phases of the NATO SAT model, and these are applied as new solutions are defined and implemented. See Figure 9.
[315] Refer to Reference R, Part 2.
[316] Overall, the review should answer the following questions: "Did the course meet its intended goals as per the requirements identified in the Analysis Phase?" As well, "Were the learning / performance outcomes attained to prepare people for their NATO role?"
[317] The analysis should include the accuracy of the clear link to POs and how the course fulfils those in the PCR, ensuring that the ETF is going beyond participant satisfaction.

after graduates have had time to apply acquired skills within the job/operational context. The period varies based on the skills / knowledge acquired and the job context; however, it generally occurs within six months. The PCR process is adapted to fit within the QMS of an ETF[318]. The details concerning the two distinct elements are as follows:

Figure 21 - Post Course Review – Data Souces

a. **Internal Evaluation.** The internal evaluation PCR concentrates on feedback and E&IT management administration data captured from within the ETF. The primary focus is to assess the reactions and perceptions to a recently conducted course and verification[319] that learning has occurred[320]. There are many data sources which support internal evaluation, and a sample is illustrated in Figure 22. The scope of internal evaluation can include course monitoring[321], which can assess overall course alignment as well as include instructor monitoring. Further details supporting course monitoring are provided in Annex O. Internal evaluation is an essential component of an effective ETF QMS, and this will normally, at a minimum, address student reaction and learning.

(1) **Student Reaction.** The reaction of students during a course can provide an indication of their motivation along with their overall level of satisfaction. This data can be used to make inferences regarding the design and delivery of instruction including the products of the SAT Development Phase. Overall, the ETF is seeking to answer the following question: "Did the student perceive the E&IT as useful when compared to their expectations?" There is not one specific approach to take when gathering student feedback. The approach will depend on what is appropriate for the training audience and their experience level. Feedback can be sought at the conclusion of a course, once students have had the opportunity to reflect on the entire experience, or throughout the execution of a course. Feedback can also be captured using a combination of both approaches. Where appropriate, graduates can self-assess their learning[322] or offer an assessment of the importance or value a course may contribute to their current or future job. In general, the input is

[318] Example: The AAR and internal evaluation PCR may be combined. Regardless of approach, it is essential that the process is clearly defined.
[319] See footnote 321.
[320] As outlined in the Implementation Phase (Chapter 8), the conduct of E&IT includes: Course Planning, Course Preparation, Course Execution and Course Close Out.
[321] Course monitoring may include the DH / RA periodic observation / instructional support. They would ensure instructional delivery IAW lesson plans and CCD III."
[322] Learners can provide personal feedback on their ability to achieve the course goals and if their expectations were met.

sought during a course and occurs at the conclusion of a meaningful segment of instruction. For ease of analysis, specific quality indicators and a consistent ordinal rating scale is used. Indicators attempt verify if the desirable conditions for learning have been established given this can have an impact on student motivation. Example indicators to consider are:

(a) **Time Allocation.** Indicates if the amount of time allocated to this event was appropriate.

(b) **Relevance.** Indicates the degree to which the content is made applicable to the job.

(c) **Confidence.** Indicates the degree of confidence an individual has in applying what was learned (or presented) back at their job, should the opportunity present itself.

(d) **Adequacy.** Indicates the level of detail and depth that the subject matter was covered.

(e) **Clarity.** Indicates how well and individual understood the subject matter. Were explanations clear?

(f) **Quality of Materials.** Indicates the quality of materials used during the session. Were the materials provided useful?

(g) **Pacing.** Indicates the quality of materials used during the session. Were the materials provided useful?

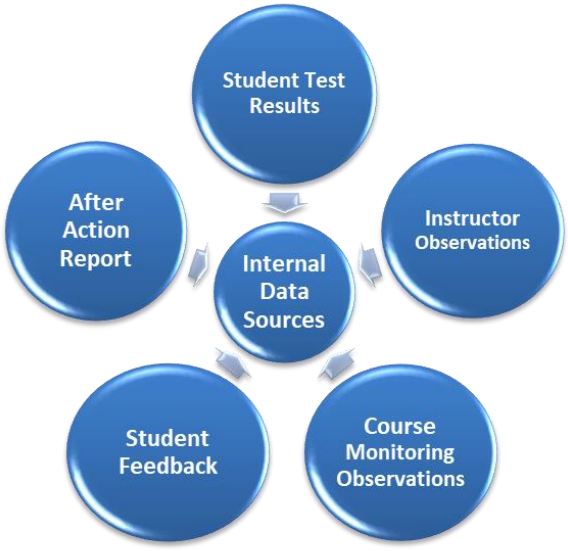

Figure 22 – Post-course Review – Internal Data Sources

(2) **Learning.** This documents the quantitative (production) results of the course and confirms that learning has taken place. Overall, a course is considered effective to the extent that the students have successfully satisfied the POs and learning has occurred. Summative assessments confirm that the POs have been satisfied. The ETF is seeking to answer the follow questions:

"Were the KSAs developed?" and "Is the graduate able to perform the tasks and JD principal duties on the job?" The plan for assessment for a course is formulated during the NATO SAT Design Phase (Step 10) and this also maps out how learning progress is monitored (formative assessment). Results from both formative and summative assessments may be used to identify potential concerns with course design and development as well as how it was implemented. Results may also identify weaknesses in student selection (e.g. did students meet the pre-requisites?). The priorities for future course monitoring can be influenced by the results from formative and summative assessment. The reliability and validity of tests used during a course provides the foundation for effective evaluation of student performance and learning. Both the reliability and validity of a test should be verified to confirm the appropriateness of the test as an accurate measure of instructional effectiveness. Test items should undergo considerable scrutiny during the trials step within the SAT Development Phase. Additional test item analysis techniques can be applied following implementation and details are provided in Annex O.

b. **Instructor Observations.** Instructor feedback[323] as an internal evaluation mechanism is another valuable data source. Instructor feedback can highlight course conduct concerns impacting quality and learning in addition to administrative and logistic support issues.

c. **Annual Course Review.** An annual review of a course[324] permits the ETF to conduct trend analysis[325] that helps predict future outcomes and make informed decision on CCD III and courseware content. Input to this activity includes the individual course iteration AARs or synthesized course iteration AAR summary report. The annual course review supports the DH in executing their responsibility of reviewing the accuracy of the training solutions[326].

d. **External Evaluation[327]**

(1) The External PCR concentrates on observations and feedback from the field of operations. The primary focus is to assess the degree to which what was learned during the course has transferred to on-the-job performance and achieved results. The results of an external evaluation feed back into the NATO SAT Analysis Phase, as highlighted in Figure 23. The data gathered is used to determine whether the initial E&IT requirement has been satisfied through the E&IT solution that was conducted during the SAT Implementation Phase. The E&IT requirement is captured in the POs defined during the SAT Analysis Phase. External evaluation is carried out after graduates have completed a course and have had the opportunity to apply what they have learned within the job / operational context. The subtle but significant nuance for effective external evaluations is to avoid having graduates reflect directly

[323] Instructors include those from the ETF, guest speakers and External OPRs designated to instruct.
[324] This may be conducted as part of an ETF annual curriculum review board/WG.
[325] There may have been specific course iteration feedback that did not result in immediate changes to the course but a decision to observe subsequent iterations before any changes might be made.
[326] The DH responsibility is included in the steps of the ADC process. Refer to Reference C.
[327] External evaluation, depending on the nation or the ETF, may be referred to as delayed feedback or validation.

upon their course experiences – this feedback is best gathered during internal evaluations. The focus is on a graduate's ability to perform specific tasks. As such, the ETF is seeking to answer questions such as:

(a) Has the graduate's behaviour changed as a consequence of E&IT and can this be measured when the individual is carrying out the related task?

(b) Has the graduate started using the knowledge or skills learned in E&IT?

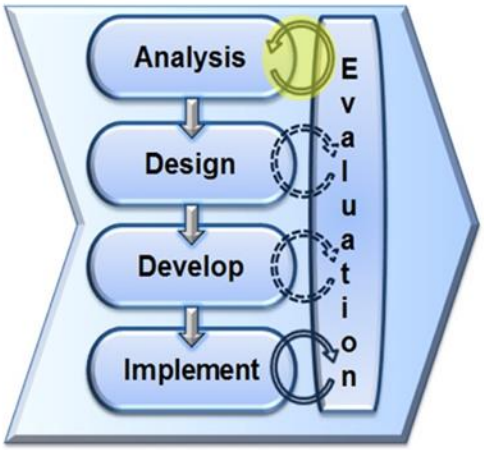

Figure 23 – Evaluation Feedback Loops

(2) There are many data sources which may be selected to support external evaluation, and a sample is illustrated in Figure 24. One of the more common, and efficient, data gathering methods is a survey[328]. Through an external evaluation survey, feedback is provided by the graduates and possibly their supervisors directly from the field. For advanced level courses, the feedback generally comes directly from graduates[329]. Effective external evaluation data is based on the TPSs captured within a PO and feedback is provided pertaining to the relevance and application within the job context[330]. Each PO is reviewed by a survey respondent relative to a series of quality indicators. The data gathered is subsequently analysed to determine if the right person, is being trained the right things and to the required level[331]. Example indicators include:

(a) **Importance.** How important is the proper execution of the performance statement to the graduate's success on the job?

[328] Interviews are another method of external evaluation, whether on-site or on-line; however, these are more time consuming and at times, previous students (course graduates) may be difficult to reach.
[329] Feedback may be gathered through self-assessment during the course as well as delayed at approximately 6-12 months after the completion of the course
[330] It may be necessary to refine and add to the list of TPSs. A lot will depend on how well the POs were defined during the Analysis Phase.
[331] Results are shared internally as well as with the DH and RA at the ADC.

(b) **Relevance.** Is the performance statement applicable to a graduate's job? Is this something they do or could do if the situation presents itself?

(c) **Confidence.** Is the graduate confident in their ability to execute the performance statement, should they be required to?

(d) **Adequacy.** Do graduates feel they are adequately prepared to execute the performance statement?

(3) Impact from Post-course Reviews. An outcome from PCRs, whether internal or external, may be changes to CCD II and III, courseware, and an identification of a training requirement that was not addressed in the current course[332].

Figure 24 – Post-course Review – External Data

CONDUCT INSTITUTIONAL REVIEW

9-6. The Institutional Review is a self-assessment of overall organizational performance by leadership. The focus is an analysis of the institution's key performance indicators with the emphasis on the core E&T mission. Institutional Review is an organizational internal check – a quality management instrument supporting a CIP. Depending upon the ETF, an Institutional Review should be conducted annually[333]. The review examines E&IT relying on qualitative and quantitative data as well as, when applicable, financial performance. In general, the intent of the Institutional Review is to ensure institutional processes are aligned and determine the following:

a. Is the organization delivering the right courses to the right people?

b. Are the courses of desired quality (effective, efficient and affordable)?

[332] Feedback could come from a student, the job or operational environment, or a new requirement identified in an applicable discipline's Discipline Alignment Plan.
[333] Chapter 3 provides further detail concerning quality management, CIP (internal/external checks) and the related ETF institutional accreditation process.

c. Are the courses sustainable and financially viable?

d. Are the results consistent with near term and long-term organizational plans?

9-7. The annual institutional review produces an internal 'QA Report' that leads to the creation of an Action Plan and subsequent activities. A review of courses is central to these proceedings, as is other activity such as, but not limited to, reviewing staff satisfaction surveys, key performance indicators, key documents, procedures and job descriptions. The data captured during this review can assist with the production of the ETF's Annual QA Report to HQ SACT (see Appendix 3 to Annex D for the required content of the Annual QA Report).

CHAPTER 10 – IMPLEMENTING A MOBILE TRAINING SOLUTION

INTRODUCTION

10-1. **Background.** Delivering NATO ETEE using MTSs[334] is an invaluable component of NATO's ETEE mission. MTSs enable our NATO and Partner nations to gain valuable E&IT but promote Defence Capacity Building in support of CS as well as NATO's two other core tasks. As well, MTSs demonstrate NATO's resolve and global agility and contribute to desirable strategic communications effect. The appetite for MTS support from NATO continues to grow. In many cases, NATO E&IT activities, delivered by mobile means, leverage the same training resources that DCOS MDFD relies on to conduct E&IT already planned for residential delivery within ETFs to support NATO's primary training audience: the NCS, NFS, and individuals assigned to current and future NATO-led operations. There is no intention to adversely impact the delivery of MTSs for Partner nations; however, in a climate of limited resources MDFD needs to balance the needs of our primary training audience with those of our Partners' and NATO nations' military components.

10-2. **Purpose.** To ensure the standardized approach to the planning, execution, evaluation and reporting of E&IT solutions (i.e. NATO-Provided courses), delivered by mobile means on behalf of NATO[335], is compliant with the ETEE Policy[336] and the NATO Education and Training Directive[337], and is standardized in such a way to ensure high quality.

MULTI-DOMAIN FORCE DEVELOPMENT DIRECTORATE ROLES AND RESPONSIBILITIES

10-3. MDFD, under the authority of SACT, is NATO's lead agent responsible for the management of the NATO individual training spectrum and is NATO's Champion for the delivery of all E&IT MTSs. In circumstances where resource and priority conflicts exist between the delivery of a MTS to an approved participant audience and the delivery of core residential training to a NCS, NFS, and individuals assigned to current and future NATO led operations, HQ SACT MDFD will render a decision / recommendation as to the priority.

PLANNING AND EXECUTION

10-4. **Due Consideration.** In addition to the principles laid out in Chapter 1, 'tailorable, timely and cost effective' must also be deliberated when considering the use of any MTS[338] undertaken to implement E&IT activities on behalf of NATO ETEE.

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[334] MTSs is any NATO E&T activity/solution which may be tailored to the needs of the customer/audience and delivered by mobile means, typically off-site by the organization responsible for the development, implementation and evaluation of the training. The venue is normally provided by the training audience. This includes any visit where E&T and instruction is provided on behalf of NATO.

[335] Education and training conducted on behalf of NATO includes education, training, and learning activities conducted through activities including but not limited to formal courses, seminars, conferences, coaching, mentoring, etc., with an express aim to improve skill or knowledge of individuals or groups. In accordance with MC 458/4, these activities include not only those for member nations but also "partnership activities, interoperability and defence and security capacity building". Some Partner nations may request a 'tailored' course that meets their needs.

[336] Refer to Reference A.

[337] Refer to Reference C.

[338] A critical element of any MTS approach to supporting Partners includes a 'Train-The-Trainer' aspect. One aim should be to facilitate/enable Partners to become self-sufficient in addressing security challenges.

10-5. **Scheduling.** All organizations[339] with the ability to provide MTSs on behalf of NATO are required / encouraged to determine their capacity / availability and advertise these windows of opportunity electronically via ETOC and (PCM ePRIME, ideally one year in advance). In many cases, MTSs are executed on a 'short notice'[340] basis, in response to an emerging requirement. In these cases, organizations are encouraged to satisfy the request as best can be achieved, exercising an innovative and agile approach that will best support the training audience and reflect positively on NATO. Short notice MTSs conducted on behalf of NATO should take the following into consideration:

a. **Staffing.** Organizations developing a short notice MTS should utilize their own 'resident' personnel to execute the training. In some cases, these solutions require the support of SMEs, interpreters and additional instructors from outside of the parent unit / command. While this approach is encouraged, to achieve the best possible result, consideration must be given to the second and third order effect of their participation. If the participation of a specific SME results in a 'calendar conflict', or exhausts finite TDY personnel resources previously dedicated to supporting residential training for a NCS / NFS audience at another institution, an alternate staffing support solution needs to be explored[341]. While such a conflict may not necessarily preclude them from supporting this initiative, priorities much be considered, and a decision / recommendation may need to be rendered by DCOS MDFD ICCW SHAPE.

b. **Tailored versus Approved or Selected Course Content**

(1) **Tailored Course Content**

(a) The content of E&IT delivered via a mobile solution on behalf of NATO may be requested to be tailored to meet the needs of the training audience and conform to the time available. This content should, as best can be achieved, be consistent with NATO standards. The decision affects the type of course certification that may be granted. Refer to Paragraph 10-6. POs from CCD II must still be met.

(b) The activities, examples, and exercises may be tailored to become more relevant to the training audience (allowing flexibility) and to the specific audience. The development of content should also use best practices and processes for rapid development when appropriate. In most cases, MTSs leverage lesson plan products / presentations from existing NATO-Approved, selected and listed courses. This should not be done without the express permission of the institution that developed / owns these products. Organizations planning / leading the delivery of MTSs on behalf of NATO must initiate direct dialogue as required to obtain that approval. In cases where content and format conflicts arise, DCOS MDFD Staff should be consulted. If time permits, it is prudent to consult the appropriate DH to confirm that planned

[339] Organizations include ETFs and the Bi-Strategic Commands.
[340] Short notice often refers to in-year demand.
[341] External instructors should not be 'pulled off' regular instructional duties to deliver a MTS unless it is to support a high priority operation or high-readiness force unable to attend a residential iteration as scheduled.

training content is consistent with the most current NATO doctrine, training, tactics and procedures.

(2) **Approved or Selected Course Content.** An ETF conducts the E&IT solution off-site from their location as per the CCDs.

c. **Security.** All existing security and material classification considerations in terms of transporting / delivering content are extant.

d. **Partner Nation and NNE Participation**.

(1) **Partner Nation.** SHAPE PD is the ACO organization that provides direction, coordination, support, and assessment of Military Cooperation activities at the ACO level and across the Alliance[342]. It directs and oversees all Partners' involvement in military aspects of partnership programmes, events and activities, and includes oversight and coordination role of the MTSs generated for Partner nations. Reference Z describes the overall military cooperation process with ACO and provides guidance for planning and executing MTSs. SHAPE PD is responsible to coordinate the generation of MTSs for the Partner Nations with NETFs, COEs and PTECs[343].

(2) **NNE.** SHAPE PD is responsible to coordinate the generation of MTSs for the NNEs with NETFs, COEs and PTECs support. The NNEs applications are required to be submitted to IMS for MC endorsement and NAC approval, with SHAPE PD assessment and recommendations included. As per ETEE Policy[344], the involvement of NNEs in NATO E&IT activities is subject to case-by-case MC endorsement and NAC approval.

10-6. **Execution.** Course execution concerns the actual conduct of the course by the METT and shall be completed in accordance with Chapter 8 of this directive, CCDs II and III, and the course lesson plans. The use of MTSs may be an efficient and affordable means to conduct E&IT[345].

10-7. **Granting of Course Completion Certification.** The METT conducting E&T on behalf of NATO need to be sensitive to the fact that some training audiences might falsely perceive that 'NATO taught me, therefore I am NATO qualified' and manage expectations accordingly. The provision of certificates denoting course completion, or any qualifications granted, must be conducted in accordance with Reference C, and Chapter 8 of this directive, and the course conducted must meet the intent as per CCDs II and III. When a course conducted deviates too much from the intent of CCD II and III, then an attendance (participation) certificate is to be issued. For listed courses conduct by MTS on behalf of NATO, training audiences should only receive an attendance certificate.

10-8. **Reporting Process.** MTSs that are delivered in accordance with the standard set out in the CCDs are to be reported by the applicable ETF[346]. Annually in February, MTS

[342] Refer to Reference Y.
[343] Refer to Reference AA.
[344] Refer to Reference A, Annex A, Paragraph 3.f.
[345] A MTS may be a more cost-effective way of delivering a solution. Instead of the sum of the cost to send many personnel for residential E&IT, it may be more cost-effective to send the instructors to the students.
[346] The ETF's course completion data is a contribution to HQ SACT MDFD's annual Individual Training Education Programme (ITEP) report.

course completion data will be submitted in ETOC as part of the applicable course data submission.

FUNDING RESOURCES

10-9. The funding of MTSs is achieved through various frameworks / means. This directive does not provide additional funding mechanism or direct any changes to existing funding schemes. Subordinate Commanders and Organisations are to utilize existing / traditional means and include a summary of how the initiative is being funded in their MTS Delivery Report.

10-10. **SME Instructor Funding.** Travel and subsistence costs for SMEs originating from outside the NCS required for the conduct of NATO-Provided courses (IAW CCD III) provided through an MTS are eligible for common funding. The approval of the funding remains subject to NATO affordability constraints and demand for SMEs. HQ SACT MDFD oversees the approval and funding process in accordance with the criteria the (NATO) RPPB provides. Annual direction and guidance on the funding allocation is provided by HQ SACT DCOS MDFD.

10-11. Broadening Common Funding Eligibility to Capacity Building Support to Partners[347] is enabling the NCS to adopt a leaner and more tailored method to deliver capacity building support to Partner Nations. According to the decision made by RPPB (Reference W), expenses related to deploying NCS (subsistence) and non-NCS (subsistence and travel) SMEs to deliver NATO-led in-country capability building to Partners are eligible for common funding to increase the pool of experts delivering capacity building to Partner Nations. The budget is controlled by SHAPE PD. The travel expenses related to deploying NCS SMEs is covered by existing policy[348].

[347] Refer to Reference W.
[348] Refer to Reference X.

ANNEX A TO
Bi-SCD 075-007
DATED 24 MAR 25

GLOSSARY OF ABBREVIATIONS AND TERMS

APPENDICES

1. Abbreviations.
2. Terms Used in Education and Individual Training.

APPENDIX 1 TO
ANNEX A TO
Bi-SCD 075-007
DATED 24 MAR 25

GLOSSARY OF ABBREVIATIONS AND TERMS

AAR	After Action Report
ACO	Allied Command Operations
ADC	Annual Discipline Conference
ADDIE	Analysis, Design, Development, Implementation and Evaluation
APMS	Automated Personnel Management System
AR	Augmented Reality
ARF	Allied Response Force
Bi-SC	Bi-Strategic Command
Bi-SCD	Bi-Strategic Commands Directive
CCD	Course Control Document
CE	Crisis Establishment
CIP	Continuous Improvement Process
COE	(NATO-accredited) Centre of Excellence
COS	Chief of Staff
Course OPR	Course Officer of Primary Responsibility
CS	Cooperative Security
CT&E	Collective Training & Exercises
DAP	Discipline Alignment Plan
DCOS	Deputy Chief of Staff
DH	Department Head
DIF	Difficulty – Importance – Frequency
DoK	Depth of Knowledge
E&IT	Education and Individual Training
E&T	Education and Training
e-ITEP	electronic Individual Training and Education Programme
e-Learning	electronic Learning
ELO	Enabling / Learning Objective
e-PRIME	electronic Partnership Real-Time Information Management and Exchange (System)
ETEE	Education, Training, Exercises and Evaluation
ETF	Education and Training Facility
ETOC	Education and Training Opportunities Catalogue
GO	Governmental Organization
HQ	Headquarters
HQ SACT	Headquarters Supreme Allied Commander Transformation
ICI	Istanbul Cooperation Initiative
IO	International Organization
IS	Instructional Strategy
ITEP	Individual Training and Education Programme
JADL	Joint Advance Distance Learning

JD	Job Description
KSA	Knowledge, skills, and attitudes
LL	Lessons Learned
LMS	Learning Management System
LOA	Level of Ambition
MC	Military Committee
MD	Mediterranean Dialogue
MDFD	Multi-Domain Force Development (Directorate)
METT	Mobile Education and Training Team
MLP	Master Lesson Plan
MNTI	Multi-National Training Institution
MTS	Mobile Training Solution
NAC	North Atlantic Council
NCS	NATO Command Structure
NDTMS	NATO Digital Training Management System
NETF	NATO Education and Training Facility
NFS	NATO Force Structure
NGO	Non-Governmental Organization
NNE	Non-NATO Entity
NTI	National Training Institution
OJE	On-job Experience
OPR	Officer of Primary Responsibility
OSV	On-Site Visit
PAtG	Partnerships Across the Globe
PCR	Post Course Review
PCM	Partnership Cooperation Menu
PE	Peacetime Establishment
PfP	Partnerships for Peace
PO	Performance Objective
POC	Point Of Contact
POE	Pool of [Quality Assurance Institutional Accreditation Process] Experts
PRS	Performance Requirement Statement
PTEC	(NATO-recognized) Partnership Training and Education Centre
QA	Quality Assurance
QC	Quality Control
QM	Quality Management
QMS	Quality Management System
RA	Requirements Authority
RAD	Rapid Analysis and Design
RPPB	(NATO) Resource Policy and Planning Board
SACEUR	Supreme Allied Commander Europe
SACT	Supreme Allied Commander Transformation
SAR	Self-Assessment Report
SAT	Systems Approach to Training
SCORM	Sharable Content Object Reference Model

SGE	SACEUR's Guidance on Education, Training, Exercise and Evaluation
SHAPE	Supreme Headquarters Allied Powers Europe
SHAPE PD	SHAPE Partnership Directorate
SME	Subject Matter Expert
SOP	Standing Operating Procedure
STANAG	Standardization Agreement
STP	Strategic Training Plan
TA	Target Audience
TPt	Teaching Point
TOE	Team of [Quality Assurance] Experts
TNA	Training Needs Analysis
TRA	Training Requirements Analysis (Report)
TRI	Training Requirements Identification
WG	Working Group

APPENDIX 2 TO
ANNEX A TO
Bi-SCD 075-007
DATED 24 MAR 25

TERMS USED IN EDUCATION AND INDIVIDUAL TRAINING

1. The E&IT terms and definitions / descriptions lacking doctrinal reference have been carried forward from the 2015 version of this directive or have been derived for this directive. Many terms have been carried forward from the Bi-SC Directive, 075-002, Education and Training.

2. Terms are divided alphabetically:

a. **A**

(1) **Abilities** – The capacity, or talent to perform skills (the cognitive / practical know how) and to apply knowledge to solve problems and fulfil tasks successfully. They are divided into cognitive abilities (logic, intuitive and creative thinking) and practical abilities (coordination and use of methods, material, tools and instruments).

(2) **Accreditation** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(3) **Advanced Distributed Learning** – An interactive, outcomes-focused approach to education, training, and performance-aiding that blends standards-based Distributed Learning. Within NATO, this means of delivery infers that the instruction uses electronic and / or information technologies combined with methods of instruction which do not require the student to be present at a specific site and as a result the learning occurs at a distance.

(4) **Affective Domain** – A classification system for learning objectives focused on attitudes and values that is specified in five levels: receive, respond, value, organization and characterization.

(5) **Aptitude** – A natural ability to acquire and utilize specific skills and/or knowledge.

(6) **Assessment** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(7) **Assessment Strategy** – An overarching approach to assessment for a course / segment and the supporting rationale for the approach. It must also include the consequences of failure of the course / segment.

(8) **Asynchronous Learning (Instruction)** – Any learning event which is not occurring at exactly the same time, and may cross various time zones; a learning event where the interaction is delayed over time yet does not negate the need for sufficient time for learning and clearly stated expectations to maintain motivation. Examples are a correspondence course, self-guided

lesson, streaming video content, virtual library, posted lecture notes, threaded discussion, and message board, used within online applications.

(9) **Attitude** – A deeply held opinion or conviction which underlies and motivates human behaviour and performance.

(10) **Augmented Reality** – An interactive technology, engaging multiple senses, that overlays computer-generated 3D content onto the real world, enhancing physical environments with additional digital information. AR systems are characterized by three key features: blending real and virtual worlds, enabling real-time interaction, and ensuring accurate 3D alignment of digital content with physical objects.

b. **B**

(1) **Blended Learning** – A mode of course delivery considered to be an appropriate mix of residential learning and self-study / e-learning methods and media.

c. **C**

(1) **Certification** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A and AAP-06 2014.

(2) **Cognitive Domain** – A classification system for learning objectives focused on knowledge and thinking skills. The Cognitive Domain taxonomy specifies six levels to include: remembering, understanding / comprehension, application, analysis, synthesis and evaluation.

(3) **Collective Training** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(4) **Competence** – Ability to perform a particular skill or range of skills to a prescribed standard under prescribed conditions.

(5) **Content** – The material provided during an instructional programme, which is primarily captured in TPts, the singular element or step in a procedure for performing a job or task. Content generally falls into one of five categories: facts, concepts, processes, procedures and principles.

(6) **Course** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(7) **Course Control Documents** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(8) **Courseware** – The instructional package / educational material comprising presentation materials, instructional aids, tests, textbooks, software, documentation and other media resources necessary for the student to achieve the course learning objectives supporting an E&IT solution.

(9) **Criteria** – The principles, quality, or standards by which an item, event, individual or team is judged. Criteria are indicators of success that are linked to a standard. The development of criteria provides the evaluator with specific measures to indicate whether a standard has been achieved.

(10) **Curriculum** – The combination of strategies and learning employed to fulfil specific learning objectives of an educational institution or training unit. Also see syllabus.

d. **D**

(1) **Depth of Knowledge** (DoK) – The level of learning to be achieved based on an E&IT solution. DoK is an inclusive term addressing the Cognitive Domain (Knowledge elements) as well as the Psychomotor Domain (Skill elements) and, when appropriate, the Affective Domain (Attitude / Values).

(2) **Department Head** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(3) **Diagnostic Assessment** – A type of pre-course assessment, planned in the Design Phase, created during the Development Phase and given to the students during the Implementation Phase, enabling the instructor to gauge how much knowledge a student has on a subject and where the potential gaps lay prior to learning to monitor learning and improve instruction.

(4) **Difficulty – Importance – Frequency Analysis** – A method to analyse job information through the Difficulty, Importance and Frequency of tasks within the job, with the aim of enabling decisions to be made regarding the priority and / or necessity of the training.

(5) **Discipline** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

e. **E**

(1) **Education** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(2) **Education and Individual Training** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(3) **Education and Individual Training Solution** – See: **Course**.

(4) **Education and Training Facility** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(5) **Education and Training Programme** – See **NATO Education and Training Programme**.

(6) E-Learning **(electronic learning)** – Training, education, coaching and course content that is delivered digitally, normally through a network or the Internet, but it may also be delivered via CD-ROM.

(7) **Enabling / Learning Objective** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(8) **Evaluation** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A and AAP-06 2014.

(9) **Exercises** – An exercise is 'a military manoeuvre or simulated wartime operation involving planning, preparation, and execution. It is carried out for the purpose of training and evaluation. It may be a combined, joint, or single service exercise, depending on participating organizations' (AAP-06 2014).

(10) **External Evaluation** – A validation activity specific to the NATO SAT Evaluation Phase, this is the process of gathering and analysing objective evidence (data) to determine how well E&IT graduates are prepared for their jobs[349] and satisfying job performance requirements[350].

f. **F**

(1) **Formative Assessment** – A range of formal and informal assessment tools, planned in the Design Phase and created during the Development Phase, employed during the conduct of E&IT (component of the Implementation Phase) to monitor student learning and improve instruction.

g. **I**

(1) **Individual Training and Education Programme** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(2) **Individual Training** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(3) **Inspection** – A Quality Management activity involving a formal examination or review of performance and outputs to determine adherence with regulations, assess effectiveness and to ensure fitness for purpose. Inspection is implemented mainly for screening out defects before they may cause problems and may identify areas for improvement.

(4) **Instruction** – The process whereby learners are provided with the means to acquire knowledge, skills and attitudes. It provides the conditions to develop skills, knowledge and attitudes.

(5) **Instructional Analysis** – A deconstruction process by which each Performance Objective is analysed to determine the supporting ELOs. Skills and knowledge elements are broken out into their sub-components when it is

[349] External evaluation validates graduates' capabilities to perform what was deemed to require E&IT during the TNA as part of the SAT Analysis Phase.
[350] The requirements are the POs' defined Standards in CCD II.

anticipated that separate demonstrations (of skills and attitudes) or explanations (of knowledge or attitudes) will be necessary during a course.

(6) **Instructional Strategy** – A plan or set of actions used to ensure students learn and achieve the E&IT course content combining media, methods and environment:

(a) **Environment** – The location where learning activities take place, e.g. classroom, ranges, home.

(b) **Method (of Instruction)** – The type of learning activity or instructional event.

(c) **Media** – The means of delivering instructional activities to the learner.

(7) **Internal Evaluation** – Specific to the SAT Evaluation Phase, uses both qualitative and quantitative data to assess the overall quality (the effectiveness, efficiency and affordability) of a course, including if the instruction provided has satisfied the intended objectives in relation to the resources expended. This is an essential activity within an ETF's Quality Management System.

h. **J**

(1) **Job Description** – Refer to Bi-SC Directive, 075-002, Education and Training, Annex A, Appendix 2, and AAP-16(E)REV1 (Reference T). From a job perspective, a JD is the key component in the process of selecting the right person for an appointment. From an E&IT perspective, JDs capture performance requirements and are essential to define E&IT solutions.

i. **K**

(1) **Key Leader Training** – Training aimed to familiarize selected command and staff officers, designated to fill specific HQ positions in a national or multinational environment, with the force mission and organization, updated situation, supporting plans, key reference documents, SOPs and HQ responsibilities in order to provide a common foundation on related issues. This training focuses on specific topics exposing the leaders to challenges they could face during a specific exercise or upcoming military operation. (Bi-SCD 075-003)

(2) **Knowledge** – Facts, concepts, principles and other information acquired through experience or instruction; consists of a theoretical and / or practical understanding of a subject matter.

(3) **Knowledge Management** – Strategies and practices for exploitation and development of insights and experiences by all the individuals of an organization with a view to furthering the organization's objectives.

j. **L**

(1) **Learning** - Learning in the most basic form is the acquisition of knowledge, skills and attitudes and is confirmed through a change in behaviour. Learning is a process by which an individual assimilates and internalizes information, ideas and values thereby acquires knowledge and know-how as well as develop skills and overall abilities. Learning occurs through personal reflection, reconstruction, social interaction, and practice and may occur consciously or unconsciously. It may take place in formal, non-formal or informal settings. Learning is evolutionary; it does not happen all at once but rather builds upon and is shaped by an environment and by what is already known and believed to be true.

(2) **Learning Management System** – An application, running on a server accessible through a network that provides a suite of capabilities designed to deliver, track, report on, and administer digital learning content, student progress, and student interactions.

(3) **Lesson Plan** – A guide, developed in the Development Phase, used by instructors to ensure instruction follows a specific goal-oriented plan (as per CCD II).

k. **M**

(1) **Method of Instruction** – A strategy used for imparting skills, knowledge and attitudes, e.g. interactive lectures, demonstrations and role-play.

(2) **Mobile Education and Training Team** – A type of MTS where a single instructor or team delivers an E&IT solution outside of their respective ETF[351] based on an approved request for the solution. Typically, it is more efficient and affordable to send the instructor(s)[352] to a specific training audience vice bring the training audience to the ETF, as well as these are typically not part of out-year planning. Delivering the complete NATO course, with tailored aspects to the training audience, still results in course certificates.

(3) **Mobile Training Solution** – Any NATO education and training activity / solution tailored to the needs of the customer / audience and delivered by mobile / distributed means, typically off-site by the organization responsible for the development, implementation and evaluation of the training. The venue is normally provided by the training audience. This includes any visit where training, education and instruction is provided on behalf of NATO[353].

l. **N**

(1) **(NATO-Accredited) Centre of Excellence** – A multi-nationally or nationally established and sponsored entity, which offers recognized expertise

[351] The ETF is to provide METT course completion numbers as part of the data submission for the annual ITEP report.
[352] Instructors may originate from the ETF, or the External OPR may be requested to support the METT.
[353] This includes Mobile Education and Training Teams and Mobile Training Teams.

and experience within a defined subject matter area to the benefit of the Alliance within the four pillars of NATO's COE program (as described in Paragraph 7. A COE is not a part of the NCS or of other NATO entities, but forms part of the wider framework that contributes to the functioning of the Alliance. (MC 0685 (Final), Military Committee Policy for Centres of Excellence, dated 8 Sep 2020. Paragraph 7.a.).

(2) **(NATO-Recognized) Partnership Education and Training Centre** – A national or multinational sponsored facility, recognised by NATO in accordance with the terms of the Concept, which, by the decision of the sponsoring nation(s), conducts education and training activities related to NATO partnership programmes and policies and which is open to Allies and Partners. (PO(2012)0045, Concept for Partnership Training and Education Centres), dated 01 Feb 2012, Paragraph 4).

(3) **NATO-Approved Course** – A HQ SACT DCOS MDFD certified course open to NATO (and Partners) that meets NATO-Specific E&IT Requirements and the ETF providing the solution is an institution accredited by DCOS MDFD within the NATO Quality Assurance Programme.

(4) **NATO Education and Training Activity** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A. In addition, E&T activities do not include the supporting or related management events necessary to define, plan, organize, and coordinate E&T activities, such as conferences, meetings, working groups and other proceedings not involving the provision of E&T.

(5) **NATO Education and Training Facility** – A Military Committee-designated ETF. Refer to Reference A, Annex C.

(6) **NATO Education and Training Programme** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(7) **(NATO) Listed Course** – A course with this default certification category, taught in English and open to NATO (and Partners), has not been certified by HQ SACT DCOS MDFD as meeting NATO-Specific E&IT Requirements. Listed courses meet the E&IT needs of nations and often support broader capacity-building objectives, i.e. the pooling and sharing of national E&T opportunities.

(8) **NATO Partner** – Refer to MC 0458/4, Education, Training, Exercises and Evaluation, Annex E and Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(9) **NATO-Provided Course** – an E&IT solution that is programmed and delivered to meet the specific needs of NATO, categorized as compliant, and is certified by HQ SACT MDFD as NATO-Approved or NATO-Selected within the ETOC.

(10) **NATO-Selected Course** – A HQ SACT DCOS MDFD confirmed course open to NATO (and Partners) that meets NATO-Specific E&IT

Requirements; however, the ETF providing the solution is not an institution accredited by DCOS MDFD within the NATO Quality Assurance Programme.

(11) **NATO Systems Approach to Training** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A. In addition, SAT is an Instructional Systems Design model and is often synonymous with the "ADDIE" model.

(12) **Non-NATO Entity** – Refer to MC 0458/4, Education, Training, Exercises and Evaluation, Annex E (Reference A), and Bi-SC Directive, 075-002, Education and Training, Annex A, Appendix 2.

m. **O**

(1) **On-job Experience** – A non-training solution where a person obtains informal, loosely-structured experience on-the-job.

(2) **Other Training Facility** – ETFs from NNEs that are compliant with NATO procedures and standards and serve as complementary E&IT assets that fulfil recognized NATO ETEE requirements through the provision of E&IT solutions.

n. **P**

(1) **Performance Analysis** – The systematic process of identifying how a performance requirement and any additional task are completed, as well as a detailed analysis of each. Task analysis involves skills analysis.

(2) **Performance Gap** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(3) **Performance Measurement** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(4) **Performance Objective** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(5) **(NATO-specific) Performance Requirement** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A. In addition, performance requirements are often derived from the principal responsibilities captured in NCS / NFS and may be as discrete statements (like tasks) or in broader terms capturing job duties or responsibilities.

(6) **Performance Statement** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(7) **Pilot Iteration** – A trial or first delivery of an E&IT solution with students being conducted under conditions as close to the job as possible, prior to full implementation, with monitoring.

(8) **Pool of [Quality Assurance Institutional Accreditation Process] Experts** – A group of qualified professionals managed by HQ SACT MDFD with extensive expertise in quality assurance applied to E&IT. Members of the POE are selected to support QA activities, including Institutional Accreditations, ensuring the consistent application of NATO Quality Standards across ETFs.

(9) **Post Course Review** – A structured and systematic programme evaluation process within NATO SAT designed to collect data in order to assess (make judgements concerning) the quality of an E&IT solution and improve results in the future.

(10) **Procure** – Obtain (purchase or contract) materials or services that are essential for the conduct of an E&IT solution.

(11) **Professional Military Education** – The systematic instruction of professionals in subjects enhancing their knowledge of the science and art of war, and providing and developing the knowledge, skills, understanding and appreciation of leaders in the nation's armed forces.

(12) **Proficiency Level** – A scale which defines a degree of competence required to perform principal duties and execute tasks on the job and affects the type and amount of E&T required.

(13) **Programme Evaluation** – An SAT Evaluation Phase activity that assesses the merit or value of an E&IT programme, both through a post-course review (one iteration) and annual curriculum review (all iterations within one year).

(14) **Psychomotor Domain** – A classification system for learning objectives focused primarily on physical skills addressing coordination, dexterity, manipulation, strength and speed, consisting of multiple levels ranging from observation and imitation through to mastery and adaptation.

o. **Q**

(1) **Qualification** – A formal result of judgement and validation process of an authorized ETF that determines an individual's learning output complies with defined standards.

(2) **Quality Assurance** – The application of checks and audits, focusing on preventing faults and ensuring processes are performed correctly from the onset, to ensure quality procedures are being carried out.

(3) **Quality Management System** – A complete set of quality standards, procedures and responsibilities.

p. **R**

(1) **Requirements Authority** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

q. **S**

(1) **Simulation** – The imitation of the operation of a real-world process or system over time. The act of simulating first requires that a model be developed and the model represents the key characteristics or behaviours/functions of the selected physical or abstract system (process). The model represents the system itself, whereas the simulation represents the operation of the system.

(2) **Simulator** – A training device which captures the significant features of an operational environment to the level of fidelity necessary to maximize the degree of transfer from the training situation to the job.

(3) **Skill** – A developed aptitude or ability supporting performance, described as motor, manual and cognitive / intellectual and is applied according to the context. A skill is an organized and coordinated pattern of mental and / or physical activity that is often built up over time through repeated training, practice or other experience.

(4) **Standards** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(5) **Strategic Training Plan** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(6) **Summative Assessment** – A formal assessment tool, planned in the Design Phase and created during the Development Phase, employed during the Implementation Phase to determine the degree to which the learner has achieved the Performance Objective(s).

(7) **Syllabus** – A syllabus is, in its simplest form, a written statement of the subjects included in a course of study. In the field of training, syllabuses are constructed in terms of learning objectives that specify the skills, knowledge and attitudes to be acquired by trainees. Also see **Curriculum**.

(8) **Synchronous Learning (Instruction)** – Events that occur at the same time between the learners and the instructor with students, not necessarily in the same location. Examples are video conferencing, teleconferencing, live chatting and live-streaming lectures.

(9) **Systems Approach to Training** – See: **NATO Systems Approach to Training**.

r. **T**

(1) **Target Audience** – The individuals assigned to NATO NCS / NFS posts who require specific E&IT to resolve a performance gap related to the job and linked to the JD. This perspective takes the job point of view and is considered during the TNA, which will influence the development of CCD II.

(2) **Task** – A discrete segment of work with a definite beginning and end that can be produced, compiled, achieved and / or accomplished on their own. Tasks combined make up broader parts of duties of a job.

(3) **Teaching Point** – See: **Content**.

(4) **Team of [Quality Assurance] Experts** – A specialized section within HQ SACT / MDFD responsible for managing the NATO QA Programme, ensuring institutional alignment with NATO Quality Standards through Institutional Accreditation and Course Certification processes.

(5) **Test** – An event during which a learner is asked to demonstrate an aspect of task performance, skill, knowledge or attitude. Tests which measure the extent to which a task, performance, skill, knowledge or attitude has been learned are deemed achievement tests.

(6) **(Test) Reliability** – The degree to which a test / test item gives consistent results each time it is used.

(7) **(Test) Validity** – The extent to which a test measures what it is designed to measure.

(8) **Training Audience** – From an E&IT perspective, the individual / participant component derived from the Target Audience (i.e. person in the post) shifting to a training / student point of view and is considered during the Design Phase which influences the development of CCD III and the courseware.

(9) **[Training] Effectiveness** – The extent to which E&IT appropriately prepares students to meet NATO post requirements.

(10) **[Training] Efficiency** – The extent to which resources (i.e. materials, personnel, facilities, and funds) have been best used to bring students to the required standard (as per CCD II).

(11) **Training Needs Analysis** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(12) **Training Objective** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(13) **Training Requirements Analysis** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(14) **Training Requirements Analysis Report** – Refer to Bi-SC Directive, 075-002, Education and Training, Appendix 2 to Annex A.

(15) **Training Strategy** – In broad terms, an overall approach for delivering a solution to satisfy an education and individual training requirement, whether a residential, distributed or blended approach.

(16) **Transfer of Learning** – Previously acquired knowledge and skills are re-used in new learning and the performance of a related task, in other words, learning from one situation facilitates/enables learning in another.

(17) **Transfer of Training** – The degree to which skills learned E&T will affect are transferred to on-job or operational performance. It should be noted that high fidelity does not necessarily imply a high degree of transfer of training.

(18) **Trial** – The activity of delivering a test version of a course[354] and evaluating / vetting the content, activities, timing and assessment prior to the course 'going live' / 'going into steady state'. A course pilot iteration, the third level of trials must be completed prior to seeking course certification.

(19) **Tuition** – The mandatory charges for a course including tuition, administration, assessment, and registration.

s. **V**

(1) **Virtual Reality** – An immersive experience, engaging multiple senses, which uses 3D near-eye displays and pose tracking to transport users into a simulated world where they can explore the artificial world, move around, and interact with virtual elements. Modern VR systems, using headsets or multi-projected environments, create realistic images, sounds, and sensations that replicate a user's physical presence in a virtual space.

[354] When a course involves e-learning, in addition to the identified aspects to observe and evaluate, the following should be evaluated: internet, LMS and navigation.

ANNEX B TO
Bi-SCD 075-007
DATED 24 MAR 25

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ANNEX C TO
Bi-SCD 075-007
DATED 24 MAR 25

NATO EDUCATION AND INDIVIDUAL TRAINING - LIST OF RELATED COURSES

1. **Introduction.** The NATO School Oberammergau (NSO) prepares NATO personnel in their E&T roles by providing a series of tailored courses to develop the KSAs of educational leaders, instructors, instructional designers and standards/QA personnel. The following courses were developed, based on NATO requirements, to support the implementation of E&IT related Bi-SC Directives and, where applicable, may be appropriate for personnel from ETFs supporting NATO and personnel involved in Global Programming activities. The courses are designed for different jobs, with different performance and enabling/learning objectives, as well as different training audience. Refer to ETOC or NSO's website for further detail on the courses.

a. **M7-135 NATO Global Programming Analysis.** The ETOC course code is ETE-PP-31627 for this Approved course. The target audience for this course is selected NCS / NFS personnel, DHs and RAs. The aim of this course is to provide participants with the knowledge required to implement or otherwise support the Bi-SC 075-002 Education and Training (E&T) Directive. This one-week course will enable military and civilian personnel in E&T management positions to support Global Programming.

b. **M7-136 NATO Systems Approach to Training.** The ETOC course code is ETE-PP-31629. The target for this Approved course audience for this course is selected NCS / NFS personnel, DHs and ETFs supporting NATO E&IT. The aim of the course is to educate and train those individuals involved in the design and development of training in a standardized process, enabling them to create effective and efficient training solutions. This one-week course will enable military and civilian personnel in positions involved with the definition and delivery of E&IT.

c. **M7-137 NATO Quality Assurance.** The ETOC course code is ETE-QA-31628 for this Approved course. The target audience for this course is selected NCS / NFS personnel, DHs and ETFs supporting NATO E&IT. The aim of this one-week course is to provide participants with the knowledge and skills required to develop and implement a QMS at ETFs in order to meet the Quality Standards enabling course certification, and permit ETFs to seek NATO institutional accreditation.

d. **S7-126 eLearning Instructional Design.** The ETOC code is ETE-IT-31550 for this Approved course. The target audience is those who will be involved in designing, developing and implementing an online course that includes synchronous and asynchronous activities with active involvement of the instructor.

2. Instructor Development. NSO recognizes that excellence in instruction does not happen by chance. Instructors are the essential ingredient and NSO has developed two instructional programmes to increase the overall skills and abilities of instructors supporting the delivery of NATO E&IT. A course offered at the NETF is **M7-98 Academic Instructor Course.** NSO offers a '*NSO Instructor Development Programme'* open to NSO staff and outside personnel from NATO and Partner nations.

ANNEX D TO
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DATED 24 MAR 25

QUALITY MANAGEMENT SYSTEM STANDARDS

ETFs which are Institutionally Accredited by NATO are expected to establish, maintain and review their internal processes and procedures to ensure that the following seven standards and guidelines are implemented.

1. Policy and Procedures	
STANDARD:	The Institution has a policy and procedures in place for Quality Management including clearly defined responsibilities and authority of all involved. The policy describes the Quality Management System (QMS) and how it involves the major stakeholders (internal and external) and of how they contribute to continuous improvement of an institutions main processes. An appropriate level of internal and external transparency should be guaranteed.
GUIDELINES:	The policy is expected to include[355,356]: • the internal relationship between the main activities (within an ETF) (e.g. relationships or links between teaching, research, doctrine development, lessons learned) • the organization of QMS • the responsibilities of different departments and individuals for quality management • key performance indicators • the involvement of main internal and external stakeholder in the CIP.
2. Staff / Instructor Development	
STANDARD:	The institution ensures that staff / instructors are competent and qualified. Staff development is a continuous process supported by the institution.
GUIDELINES:	The ETF is expected to have: • principles, procedures and selection criteria for the recruitment of staff and external instructors • procedures and programmes to support the professional development of staff and instructors (including continuously improving instructor abilities) • a minimum level of competency and education and training requirements included in the job descriptions • the working conditions of the staff encouraging a positive environment.
3. Information Systems and Knowledge Management	
STANDARD:	The ETF collects, analyses and efficiently uses relevant information for the effective management and conduct of their training and related activities.

[355] Amplifying information that should be included in a QA Policy document is provided at Appendix 1.
[356] A suggested format for the QA Policy document is provided at Appendix 2.

GUIDELINES:	Information management system is expected to manage: • relevant internal and external stakeholders' satisfaction/feedback • course / curriculum development and version control • resources (courseware) • lessons learned • learning/teaching resources • profiles of students (training audience) • tracking key performance indicators.
4. Public Information	
STANDARD:	The ETF publishes and regularly updates objective information, both qualitative and quantitative about their courses and related activities.
GUIDELINES:	The ETF) is expected to: • provide and regularly update adequate information about the courses provided (e.g. course catalogue) on their website and accurately reflected in Education Training Opportunities Catalogue (ETOC) • inform main stakeholders and the Community of Interest (CoI) about intended major changes in course control documents (CCD) and especially enabling / learning objectives (ELO) • develop and maintain a communication network with ETFs and CoIs related to the subjects covered by the CCDs.
5. Definition and Delivery of Instruction	
STANDARD:	The Institution has instructions and controls for the analysis, design, development, implementation and evaluation of Education and Individual Training (E&IT) including how the institution plans and schedules courses, monitors course quality and conducts periodic reviews ensuring the continued relevance of the E&IT that is provided.
GUIDELINES:	CCDs exist for each NATO course, and they define the E&IT solution. CCDs confirm stakeholder engagement and include: • the background explaining the need for a course and the fit with NATO requirements • the aim / intent of the course • details concerning the intended audience • performance objectives which capture the performance gap to be addressed through E&IT • ELOs which are part of an overall strategy capturing course content and defining what will be learned, how it will be learned and how long it will take • a reference list supporting the course content • a resource estimate identifying facility, personnel, equipment and materials essential to conduct a course. The planned and systemic approach to address E&IT delivery is documented including the administration activities within the institution supporting the development, implementation and evaluation of courses:

	• course design considers previous training and professional experience of the intended audience • the number of seats for each course is planned in accordance with NATO and national needs and the capacity and purpose of the institution • courseware, including instructional materials, student assessment instruments and optimum schedules / timetables are in place for each NATO course • appropriate planning and coordination instructions exist to support the preparation, execution and close out of a course serial/iteration • formalized post-course reviews intended monitor quality and improve E&IT are in place.
6. Student Assessment	
STANDARD:	Students are assessed using published criteria, regulations and procedures which are applied consistently and systematically. Students are aware of what will be expected from them and how their performance will be evaluated.
GUIDELINES:	Student assessment procedures are expected to: • be designed to measure the achievement of the intended learning outcomes • be appropriate for the purpose (e.g. formative / summative / practical / theory) • be based on clear and published criteria • be traceable to ensure the accuracy and adequacy of the procedures • where applicable, should not rely on the judgement of a single evaluator • have procedures in place for student appeals • include rules regarding student attendance.
7. Learning Resources and Student Support	
STANDARD:	The ETF has appropriate resources available to support students throughout the learning process.
GUIDELINES:	Learning resources and other support mechanisms should be: • readily accessible to students • designed according to student's needs • responsive to feedback from those who use them • routinely monitored and improved.

Figure D-1 – Quality Management Systems Standards

APPENDICES:

1. Contents of a Quality Assurance Policy Document.
2. Suggested Template for a Quality Assurance Policy Document.
3. Suggested Layout for an Institutionally Accredited ETF's Annual Quality Assurance Report to HQ SACT.

APPENDIX 1 TO
ANNEX D TO
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DATED 24 MAR 25

CONTENTS OF A QUALITY ASSURANCE POLICY DOCUMENT

The table below provides direction and guidance on the contents required in a quality assurance policy document for an ETF seeking institutional accreditation.

Mandatory / *Advisory / Best Practice*[357] / QA Policy Document Check Sheet
Note: *Some areas could be explained in detail or briefly described to give a general understanding and then cross referred to an Annex / SOP / SOI / Directive / Plan etc.*
- Introduction / Background – Short description of the ETF (who, what, why, where, how) and what the QA Policy covers.
- Policy Statement: - General statement (of the organization's commitment to quality. It states a commitment to customer requirements and the requirements of the standard. It also contains a pledge to work toward continual improvement).
- Vision and Mission. *- Core Values.*
- Guiding Principles (e.g. Systems Approach, Compliance (to NATO policies, doctrines and directives), Accountability, Transparency, Continuous Improvement, Cooperation, High Quality Products).
- Documents of QMS: *- Internal & External (e.g. SOPs and MoUs, NATO Policies and Regulations, Doctrine).* *- Key documents (no need to detail everything - can describe products generically).*
- Goals (Strategic Objectives) and Objectives.
- Aim of Quality Assurance Policy (QAP) / Purpose of QAP Document.
- Applicability of QAP- Who applicable to.
- Key Stakeholders: - Internal and External.
- Quality process / definition / description of key terminology: - Inspection, QC, QA, QM.
- QMS Roles and Responsibilities: - QMT and Organization Diagram. - Roles and Responsibilities of QMT, including course director, course administration, OPRs, Trg Branch etc. *- RACI Matrix.*
- QA Review Cycle/ Continuous Improvement Process: - After Action Review, Post-Course Review, Curriculum Review (Board), Annual QA (System / Institution) Internal Review, Annual QA Report (SACT), External (re-accreditation). - KPIs and how used to measure progress. - Surveys (Student, Graduate, Supervisor and Instructor feedback, and Staff Satisfaction). - Instructor monitoring / assessment / course monitoring. - SOP / SOI review cycle. - Policy Review / Update Cycle.

[357] Advisory /Best Practice items for inclusion in the QA Policy document are shown in italics and blue.

Mandatory / *Advisory / Best Practice*[357] / QA Policy Document Check Sheet
- Student Assessment (Strategy): - Formative / Summative (including assessment criteria, e.g. student engagement criteria – outstanding to unsatisfactory). - Graduation Criteria (minimum attendance of course programme (e.g. as a percentage) and required grades / pass marks) – Completion vs Attendance Certificate.
- Student Appeals.
- Staff Management and Recruitment: - Staff / Instructor Development (induction / orientation, initial training, continuous/further training, professional development, development plans). - Instructor monitoring / assessment / evaluation / course monitoring.
- Definition and Delivery of Instruction: - NATO SAT (e.g. five (5) SAT Phases briefly describe Purpose / Process / Product) & Global Programming. - Conduct of Courses (e.g. scheduling / programming, resourcing, responsibilities, activity timelines for course delivery, resilience, etc.).
- Communication Plan.
- Information Systems and Knowledge Management – briefly describe.
- Public Information – briefly what and how (e.g. websites, social media, publications etc.).
- Relationship between teaching, research, doctrine development and Lessons Learned.
- Learning resources and student support (e.g. what and how): - What resources are available. - How students are supported. - How use / action / incorporate student feedback.
- Glossary / Definitions.
- List of SOPs[358]*.*

Figure D-1-1 – Quality Assurance Policy Document Check Sheet

[358] Some organizations use SOPs, while others incorporate similar information into different types of documents. These may include, but are not limited to, Operating Guidelines, Process Guidelines, Workflow Procedures, Process Manuals, Operational Manuals, Business Practices Manuals, Operational Procedures, Business Procedures, Procedures Manual, and Process Documentation.

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SUGGESTED TEMPLATE FOR A QUALITY ASSURANCE POLICY DOCUMENT

Below is a suggested layout for a QA Policy Document[359]. It includes a brief description of what should be included by the institution.

Reference number: XXXX/XXXXX/XXXXX

SUBJECT: _____ **QUALITY ASSURANCE POLICY**

DATE: XX Month YEAR

REFERENCE(S): A. List in order that the reference first appears in the doc.
B. List in order that the reference first appears in the doc.

1. **Purpose / Aim of QA Policy Document.** (Answering the question – why?). Purpose / Aim of the document.

2. **Background.** Description of the framework where the Institution is operating and main factors that are influencing its activities. The ETF's mission and vision.

3. **Applicability.** To whom the policy applies.

4. **Policy Statement.** The organization's commitment to quality.

5. **The Principles.** The fundamental principles that underpin the institution's QA programme (e.g. continuous improvement, accountability, transparency, cooperation etc.).

6. **Quality Management System.**

a. **Organization.** (Answering the question – who?). Organizational matrix (figure or graph) illustrating the command, coordination and support relationships between the internal and external QA stakeholders (e.g. branches, sections, RA, DH, staff, students).

b. **Roles and Responsibilities.** (Answering the question – what?). What are the roles and responsibilities for each of the elements identified in the organizational matrix and what is the output. Designation of office or person that is the leader of the QMS. Designation of a quality management office / or personnel that is responsible for the implementation, monitoring and evaluation of the QA programme (this includes who is responsible for reporting procedures to QA leadership and are available, and who ensures QA reports are available for review upon request). Who are the key stakeholders?

7. **Implementation Strategy.** (Answering the question – how?). How will this policy be implemented, monitored, and reviewed? Identify the process the Institution has

[359] ETFs can use alternative layouts if they enhance readability and / or improve understanding.

implemented that collects feedback and evaluation data, analyses, and synthesizes the results to produce an efficiency and improved effectiveness; what are the elements of the Institution's Continuous Improvement Process? Definitions of key terminology (e.g. Inspection, QC, QA, QM). Goals, Objectives and KPIs (more detailed information could be included in an Annex). Communications strategy/plans. Describe areas of strength and weaknesses and actions to resolve or identify uncontrollable elements that weaken the strength of the institution's ability to produce higher quality products (and any opportunities that the institution can take to off-set the weakness).

8. **Quality Assurance Review Cycle.** (Answering the question – when?). When will the efficiency and efficacy of the QA program be evaluated, feedback is reviewed, policy revised and elements that influence other processes and procedures are improved (includes an internal and external communication plan).

9. **Quality Assurance Supporting Elements and Resources.** Below are the Quality Management System Criteria. Ensure all elements listed are covered in each annex (or the main body of the policy document). Short description of Annexes included:

a. Definition and delivery of Instruction.

b. Student Assessment.

c. Staff and Faculty development.

d. Learning resources and student support.

e. Information systems and knowledge management.

f. Public information.

10. **Contact Information.** The point of contact for any questions.

Signature block
Commanding Officer Name
Title

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A. Definition and delivery of Instruction.
B. Student Assessment.
C. Staff and Faculty development.
D. Learning resources and student support.
E. Information systems and knowledge management.
F. Public information.
G. Communication Plan.

APPENDIX 3 TO
ANNEX D TO
Bi-SCD 075-007
DATED 24 MAR 25

SUGGESTED LAYOUT FOR AN INSTITUTIONALLY ACCREDITED EDUCATION AND TRAINING FACILITY'S ANNUAL QUALITY ASSURANCE REPORT TO HQ SACT

1. Below is a suggested layout for an Institutionally Accredited ETF's Annual Quality Assurance Report (AQAR) to HQ SACT. It includes a brief description of what should be included by the institution.

2. **Amplifying Information**

a. ETFs should avoid unnecessary repetition of information from the previous year's report. If there are no new updates to add to some of the topic areas included in the document (e.g. student assessment), the phrase "No change" should be used to clearly indicate this status.

b. For activities planned in the previous year that continue into the following year, such as the introduction of a project or initiative, it is essential to provide a clear explanation for their rollover. This should include reasons for the extension, progress made, and any modifications or developments since their initial planning.

c. When documenting activities in the report, it is important to not only list the challenges encountered but, more importantly, to describe the solutions implemented or proposed. This approach provides an overview of both the obstacles faced and the strategies employed to overcome the challenge.

d. When drafting the AQAR, ETFs must address all the 7 standards included in the QMS, in accordance with Annex D to Bi-SC Directive 075-007. This ensures a thorough understanding of the QMS's implementation across all its essential aspects.

e. Occasionally, HQ SACT may require ETFs to include additional topics in the AQAR (e.g. activities that contribute towards Multi Domain Operations and/or Digital Transformation). Institutions will be advised when this is required.

Reference number: XXXX/XXXXX/XXXXX

SUBJECT: _____ **ANNUAL QUALITY ASSURANCE REPORT**

DATE: XX Month YEAR

REFERENCE(S): A. List in order that the reference first appears in the doc.
B. List in order that the reference first appears in the doc.

ANNUAL QUALITY ASSURANCE REPORT FOR YEAR XXXX

1. **Table of Contents.**

2. **Introduction.** (maximum 1 page).

a. **Purpose.** (Main aim of the report. According to Bi SC Dir 75-7 the report is expected to prove the Institutions continuing commitment to quality).

b. **Background.** (Description of the main factors that have influenced the Institutions E&T activities within the reporting period – e.g. Global Programming discipline related).

3. **Main output.** (This is the quantitative part of the report. The content is expected to consist mainly on numbers, depicted in graphs. Describe/explain trends, having comparison to previous years. If there is a change, it should be briefly commented – what were the reasons?).

a. **Courses.** (E.g. how many, what certification level were held, how many are uploaded to ETOC, course fill-up rate).

b. **Students.** (E.g. how many participated, graduation rate, how many countries, how many NATO Command Structure/NATO Force Structure/Partner Nations).

c. **Instructors.** (E.g. Number of instructors (internal/external), new instructors, and training/development received/planned for instructors.

d. **NATO contribution.** (E.g. participation in conferences (including ADCs and ADF), workshops, TNAs, exercises, doctrine development work).

4. **Quality Management System.** (This is the qualitative part of the report. Based on gathered feedback from stakeholders, describe the main outcomes, results of analysis, strengths and weaknesses per area of the QMS and future actions for the next year).

a. **Policy and procedures.** (E.g. change in structure, responsibilities, new major stakeholder).

b. **Definition and delivery of Instruction.** (E.g. courses that went well, have some issues, what were the reasons and what is/was the remedy plan).

c. **Student Assessment.** (E.g. what assessment methods and tools proved to be useful, what needed to be improved).

d. **Staff and Faculty development.** (E.g. how many instructors participated on how many courses, seminars etc.).

e. **Learning resources and student support.** (E.g. what resources and type of support was proved to be good, what needs to be improved).

f. **Information systems and knowledge management.** (E.g. new capabilities, change in software).

g. **Public information.** (E.g. new information posted on webpage).

h. **Other accreditations.** (E.g. NATO, International Organization for Standardization (ISO) (e.g. ISO 9001), National or other (e.g. European Foundation for Quality Management, U.S. Army Training and Doctrine Command).

5. **Best practices.** (Identify the areas and solutions that the ETF assesses to have worked well for your Institution and that can be shared with other ETFs).

6. **Resilience.** (E.g. the resilience plans/measures in place to enable the ETF to maintain key training outputs during disruptive incidents, including NATO training solutions. Instances of where resilience plans have been either implemented or exercised to test the system).

7. **Challenges and Possible Solutions.** (Key challenges experienced or anticipated along with their accompanying or proposed solutions).

8. **Continuous Improvement.** (Looking ahead, describe main goals, challenges and perspectives for the next year, provide updates on recommendations from the latest NIA Evaluation Report[360], Areas of Improvement).

9. **Contact Information.** (Point of contact for any questions).

Signature block
Commanding Officer Name
Title

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[360] Updates should be provided for both an initial accreditation and re-accreditation.

ANNEX E TO
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DATED 24 MAR 25

NATO QUALITY STANDARDS

NATO Quality Standards support NATO Institutional Accreditation for ETFs. The Quality Standards validate the education and training mission, including overall leadership and management, of an organization and confirms the relevance of the organization to NATO. To become Institutionally Accredited, an ETF must demonstrate a contribution to NATO. NATO Quality Standards address three broad areas and are detailed in the tables that follow.

1. LEADERSHIP AND MANAGEMENT	
1.1 General Management	**Standards**: 1.1.1. Institution has a long-term plan based on its mission and vision, which considers NATO priorities and the expectations of major stakeholders. 1.1.2. The Institution has implemented a QMS that is supported by relevant documents that are regularly reviewed and remain up to date. 1.1.3. Internal and external communication of the institution is purposeful and managed. 1.1.4. The institution uses information systems that support its management and the coherent performance of its core functions.
1.2 Personnel Management	**Standards**: 1.2.1. The Institution has principles and procedures for personnel recruitment and development. They arise from the Institutions objectives and ensure training quality and sustainability. 1.2.2. Personnel satisfaction (including working conditions, flow of information) is monitored and practices to support staff motivation are implemented. 1.2.3. The faculty and staff have the Education and Training (E&T) qualifications as per the job descriptions and CCDs.
1.3 Resource Management	**Standards**: 1.3.1 The Institution has a sustainable budget. 1.3.2. The Institution has defined the principles for budgetary decision making.

	1.3.3. The allocation of financial resources of an institution is based on the Institution's actual needs and priorities in accordance with its mission and objectives. 1.3.4. The working conditions of the staff and the learning conditions of students (e.g. library, classrooms, and laboratories) meet the needs arising from the learning objectives, specifics of the institution and the expectations of major stakeholders.
2. EDUCATION AND TRAINING	
2.1. Define and Deliver Instruction	**Standards**: 2.1.1. Each NATO course is defined and delivered in accordance with principles of Global Programming and the NATO Systems Approach to Training. 2.1.2. The ETF has resilience plans in place that ensure the continuity of key NATO and other essential training solutions during disruptive incidents. 2.1.3. Student satisfaction with the quality of instruction and graduate feedback is considered in the development of instruction. 2.1.4. Supervisors'/commanders' satisfaction with the performance of graduates is considered in the development of instruction. 2.1.5. Instructor feedback concerning course delivery and quality is considered in the development of instruction.
2.2. Student Assessment	**Standards**: 2.2.1 Student progress is monitored and supported throughout the course. 2.2.2. Student assessment supports learning and is in line with learning objectives. 2.2.3. Assessment and graduation criteria are predefined and acknowledged before teaching. 2.2.4. The institution has procedures in place for student appeals.
2.3. Support for Training and Learning	**Standards**: 2.3.1 The resource allocation for courses meets the student needs and fits with the learning objectives. 2.3.2. The institution provides students with guidance in support of their studies (as required).

	2.3.3. Up to date resources are used to support training. 2.3.4. Student feedback concerning support is taken into account as part of improvement activities.
3. CONTRIBUTION TO NATO	
3.1. Support to NATO Requirements	**Standards**: 3.3.1. The institution has identified its role in support of NATO. 3.3.2. The institution offers NATO-Approved/Selected courses. 3.3.3. The Institution exploits operational lessons learned to improve training. 3.3.4. The institution's core activities are aligned to support NATO objectives, and personnel participate in other NATO activities (WGs, projects, etc.).
3.2. Support to Discipline Management.	**Standards:** 3.2.1. The institution contributes to (training) discipline(s) development. 3.2.2. The institution contributes to maintaining NATOs (training) discipline framework.
3.3. Contributions to Other NATO Associated Activities.	**Standards**: 3.3.1. The institution contributes to the evolvement of NATO in different ways (e.g. doctrine development, research & development, lessons learned, operations and defence planning).

Figure E-1 - NATO Quality Standards

APPENDICES:

1. General Guidance on the Contents of the Self-Assessment Report.
2. HQ SACT Recognition of Institutional Accreditation and NATO-Provided Courses.

APPENDIX 1 TO
ANNEX E TO
Bi-SCD 075-007
DATED 24 MAR 25

GENERAL GUIDANCE ON THE CONTENTS OF THE SELF-ASSESSMENT REPORT

1. Below is a suggested structure for an ETF's SAR, excluding any annexes or enclosures.

COVER PAGE

TABLE OF CONTENTS

INTRODUCTION

General information about the Institution.
Contact info, mission, vision, main areas of activities, year of establishment and short history/main achievements, contributing nations and main partners, number of NATO- Approved/Selected courses, number of students per year, number of staff and faculty.

1. **Leadership and Management**
   - 1.1 General Management
     - 1.1.1 Long-term Plan
     - 1.1.2 Quality Management
     - 1.1.3 Communications
     - 1.1.4 Information Systems
   - 1.2 Personnel Management
     - 1.2.1 Personnel Recruitment
     - 1.2.2 Personnel Satisfaction
     - 1.2.3 Personnel Qualifications
   - 1.3 Resource Management
     - 1.3.1 Institutional Budget
     - 1.3.2 Budgetary Decisions
     - 1.3.3 Allocation of Financial Resources
     - 1.3.4 Working Conditions
   - 1.4 Strengths and Areas of Improvements

2. **Education and Training**
   - 2.1 Define and Deliver Instruction
     - 2.1.1 Global Programming
     - 2.1.2 Resilience
     - 2.1.3 Student Satisfaction
     - 2.1.4 Supervisor Satisfaction
     - 2.1.5 Instructor Feedback
   - 2.2 Student Assessment
     - 2.2.1 Student Progress
     - 2.2.2 Student Assessment
     - 2.2.3 Assessment and Graduation Criteria
     - 2.2.4 Student Appeals
   - 2.3 Support for Training and Learning
     - 2.3.1 Resource Allocation
     - 2.3.2 Student Guidance
     - 2.3.3 Resources used to Support Training

OVERARCHING GUIDANCE FOR CREATING A SELF-ASSESSMENT REPORT

2. The SAR is an evidence-based[361] self-assessment that provides qualitative and quantitative information and analysis about the ETF's activities[362]. It will be used as a foundation for evaluating the Institution against NATO quality standards. The Institution is expected to demonstrate an effective internal QMS as well as provide evidence of their contribution to NATO by covering all standards as defined in the Bi-SC Directive 075-007.

3. The NATO Quality Standards address three broad areas: Leadership and Management; Education and Training; and Contribution to NATO. Each area is divided into sub-areas that contain several standards. The SAR should describe how each individual NATO standard (i.e. 1.1.1 to 3.3.1) is met by the Institution. The explanation should be descriptive and be supported by appropriate tables, charts and graphics. As a minimum, the text should address the questions who, what, when and how. Addressing the additional areas of why, where and outcomes/impact might also prove to be useful. The level of detail is up to the Institution (as much information as necessary, while keeping the 'big picture' in focus). Using references to additional documentation for more in-depth information is welcomed. In doing that, the Institution is expected to make available reference documents for the HQ SACT Quality Assurance Team of Experts (TOE) on request. Where appropriate, detailed information and supporting illustrations may be included in annexes. The main body of the SAR (i.e. excluding annexes, appendices and enclosures) should, ideally, be no more than 40 pages long (see amplifying guidance below). This is, however, a general guide. Each ETF is uniquely different and, therefore, may need fewer or more pages to describe how they meet all the NATO Quality Standards. Use the "If in doubt, leave it out" rule.

4. After having described how each of the NATO Quality Standards are met for a specific broad area (e.g. Leadership and Management), the institution is expected to make conclusions based on information provided for the NATO standards in that area. Strengths

[361] For example, in many cases the evidence can be the feedback from stakeholders that is stored in Institutions IKM system.
[362] If the Institution has additional core tasks than providing training, it is expected to explain how these tasks are covered by QMS and specifically how they are supporting E&T.

and areas for improvement should be identified. Examples of actions taken and results achieved are welcomed. Where areas for improvement are identified, the Institution is expected to have a plan for taking necessary actions.

AMPLIFYING GUIDANCE FOR THE PRODUCTION OF AN ETF'S SAR

5. **Timing of Submission of the SAR.** ETFs are required to submit a SAR not later than six (6) weeks before their on-Site Visit (OSV), which describes how they meet each of the 31 NATO Quality Standards as described in Annex E of the Bi-SC 075-007. This timeline enables the TOE to review the SAR, and any supporting documentation, and, if necessary, provide feedback during the Preparation VTC (Pre-VTC).

6. **Producing the SAR.** The SAR is the foundation/starting point for evaluating an ETF during the OSV. Therefore, it needs to demonstrate an effective Quality Management System, describe/explain how the institution meets the NATO Quality Standards contained in Annex E of the Bi-SC 075-007 and highlight strengths, as well as areas of improvement, for each of the three broad areas of the NATO Quality Standards (i.e. Leadership and Management, Education and Training, and Contribution to NATO). As stated in paragraph 3, as a minimum, the text should address the questions who, what, when and how; ETFs may also find it useful to describe the why, where and outcomes/impact. The following might prove to be a useful aide:

a. **Who:** Identify the people or groups involved.

(1) Who is responsible for implementing and maintaining the standards?

(2) Who are the stakeholders and key personnel involved in the process?

b. **What:** Describe the actions, processes, or programs in place.

(1) What measures and practices are in place to meet the standards?

(2) What resources and tools are used to ensure compliance?

c. **When:** Provide timelines and schedules.

(1) When are the various standards reviewed and updated?

(2) When are assessments and audits conducted?

d. **How:** Explain the methods and procedures.

(1) How are the standards implemented and monitored?

(2) How is compliance measured and reported?

e. **Why:** Justify the importance and relevance.

(1) Why are the standards important for the organization?

(2) Why were specific measures or practices chosen over others?

f. **Where:** Specify locations and contexts.

(1) Where are these standards being implemented within the organization?

(2) Are there particular departments or areas where certain standards are more applicable?

(g) **Outcomes/Impact:** Measure effectiveness and results.

(1) What are the outcomes of implementing these standards?

(2) How has compliance with the standards impacted the organization?

7. **Expected Size (i.e. Number of Pages) of the SAR?** Each ETF possesses unique organizational structures, subtly varied working practices, and differing training output volumes. Consequently, a standardized approach to the length of a SAR is not advisable. As a general guideline, the main body of the SAR -excluding enclosures, annexes, and appendices (if required) - should not exceed 40 pages. However, ETFs have produced perfectly acceptable SARs that exhibit the following characteristics:

a. **Main Body.** Ranging historically in size from 22 to 80 pages, with an average size of approximately 30 pages.

b. **Enclosures, Annexes and Appendices.** Ranging from none to 106 pages.

Note: ETFs should avoid long explanations of the philosophy and history behind a concept or standard and omit a description of how they meet the standard or what the standard involves at their institution.

8. **Structure of the SAR.** Most ETFs start with a title page. This is followed by a table of contents, detailing on which page each of the 31 NATO Quality Standards and the strengths and areas of improvement for each of the three broad areas can be found; it also lists any enclosures and annexes. Guidance on each component of the SAR is as follows:

a. **Introduction.** The length of the introduction is at the discretion of the ETF. A typical range would be between one and five pages, with the average length generally being three pages.

(1) **Content of Introduction.** The aim of the introduction is to set the scene and provide context for the main body of the SAR. It orientates the NATO QA TOE conducting the OSV. Therefore, it is useful to provide general information about the organization, including a brief historical overview of the unit, its roles and tasks, its mission and vision, main/significant achievements, and its organizational structure/organizational diagram. The provision of key statistical data/useful facts and figures, such as the following, can help set the scene:

(a) The names of the commanding officer/commandant/director and quality manager.

(b) Key partners and stakeholders.

(c) Web address (and social media addresses, if appropriate).

(d) Number of courses provided, including the student throughput.

(e) Manning details, including total establishment, number of posts filled, number of instructors, number of guest speakers per year.

(f) ETF's infrastructure, particularly one used to support/provide training (including classroom facilities)[363].

(2) **Main Body.** The main body is where the ETF explains/describes how each of the 31 NATO Quality Standards is met as well as any strengths and areas of improvement. When describing how the standards are met, consider the following:

(a) **Type of Data.** Use a combination of quantitative and qualitative data, as required.

(b) **Address each standard separately.** Address each standard (as outlined in Annex E of the Bi-SC 075-007) separately[364] and in numerical sequence, starting with 1.1.1, then 1.1.2, followed by 1.1.3, 1.1.4, 1.2.1 until you reach the thirty-first standard (i.e. 3.3.1). Do not try and address multiple standards at the same time and in the same paragraph. It is confusing for the reader and often leads to key information being omitted from the report.

(c) **Clear and unambiguous.** Make sure that it is clear to the reader what standard is being addressed. It may seem obvious, but clearly identify the standard being addressed with the paragraph title and/or number under which it is being described. Some ETFs like to use the same paragraph numbering as the standard being described, others use the standard as a paragraph title.

Keep things clear and simple.

(d) **Level of detail.** Include sufficient information to describe how the organization meets the standard. Assume that the reader is someone who is unfamiliar with the ETF but is someone who understands the NATO Quality Standards. The amount of information provided does not need to be exhaustive[365]; however, it should provide sufficient detail to stand by itself and provide assurance that the standard is met. Further detail can be provided as an enclosure or annex or by cross referring to an SOP[366]. If appropriate, include relevant SOPs/SOIs as enclosures/annexes to the SAR.

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[363] This could be addressed under one of the NATO Quality Standards (e.g. 1.3.4).

[364] Do not, for example, provide an explanation of the four standards under 1.2 - Personal Management - as a whole, where the reader has to decide which part of the narrative describes each of the individual standards.

[365] Do not state, "See SOP 701" and expect that to be sufficient explanation of how, for example, standard 2.2.1 "Student progress is monitored and supported throughout the course."

[366] See footnote 363 in Appendix 1 to Annex D, which lists alternative documents where organizations record information similar to that found in an SOP.

(e) **List of Acronyms and a Glossary.** Include a list of acronyms; it makes reading and understanding the SAR much easier for the NATO QA TOE conducting the OSV. If necessary, provide a glossary to define terms that are uncommon or specialized (i.e. jargon, and technical or specialized vocabulary) that might not be familiar to all readers.

(f) **List of SOPs.** Include a list of the institution's SOPs within the main body of the SAR or as an annex/enclosure. After reviewing the SAR, the TOE will determine which additional documents are required for a thorough understanding prior to the OSV. The TOE will then request these documents to be forwarded accordingly.

9. **Pre-VTC.** Scheduled approximately one month prior to the OSV, the pre-VTC serves multiple purposes. It is primarily used to address any outstanding administrative issues related to the OSV and to discuss the visit programme. A draft of the programme will be forwarded to the ETF in advance for comments or amendments. If not previously requested, the TOE may also request any supporting documentation related to the SAR during the VTC. It is conducted on an unclassified basis. Additionally, if necessary, the TOE will use this opportunity to discuss any concerns that they might have regarding the contents of the SAR.

10. **Supporting Documentation.** Given that each ETF is unique in how it organizes itself and its working practices, the specific supporting documents required by the TOE can vary and may not be fully identified until after the SAR has been reviewed. Conversely, as a minimum requirement, each ETF must provide copies of the SAR along with the Quality Assurance Policy, the Strategic/Long-term Plan and the Communication Plan. Additionally, a list of the ETF's SOPs or equivalent documents is also necessary. These core documents - including the Quality Assurance Policy, Strategic/Long-term Plan, Communication Plan, and the list of SOPs - should be forwarded to the HQ SACT QA TOE along with the SAR. Electronic copies[367], ideally in PDF format, are preferred.

[367] The documents can be forwarded in one or multiple emails (noting that email server capacities can be limited to receiving approximately 13 to 14 MB in one message) or via Google Drive, One Drive or any other such cloud storage.

APPENDIX 2 TO
ANNEX E TO
Bi-SCD 075-007
DATED 24 MAR 25

HQ SACT RECOGNITION OF INSTITUTIONAL ACCREDITATION AND NATO-PROVIDED COURSES

1. **Authorized Accreditation Mark.** The accreditation mark shown below has been authorized for use by institutionally accredited ETFs when promoting themselves as an ETF delivering a NATO-Provided Course[368]. As detailed in Reference B and Paragraph 3-18 of this Directive, the QA mark can be used on ETF products related to NATO-Provided courses, but only in combination with the logo of the accredited ETF. Digital copies can be obtained from the HQ SACT MDFD.

Figure E-2-1 - NATO E&IT QA Mark for Use by Institutionally Accredited Institutions

2. **Authorized Mark for use on Course Certificates.** Course completion and attendance certificates may bear an authorized mark depicting the certification status of a NATO-Provided Course[369]. Details regarding the use of the following marks are specified in Reference B and Paragraph 3-19 of this Directive. Digital copies can be obtained from the HQ SACT MDFD.

Figure E-2-2 - Recognition Mark for a NATO-Approved Course

Figure E-2-3 - Recognition Mark for a NATO-Selected Course

[368] The Accreditation mark has been approved by the NATO Branding Hub in 2024.
[369] The course certificate marks have been approved by the NATO Branding Hub in 2024.

ANNEX F TO
Bi-SCD 075-007
DATED 24 MAR 25

NATO SYSTEMS APPROACH TO TRAINING OVERVIEW

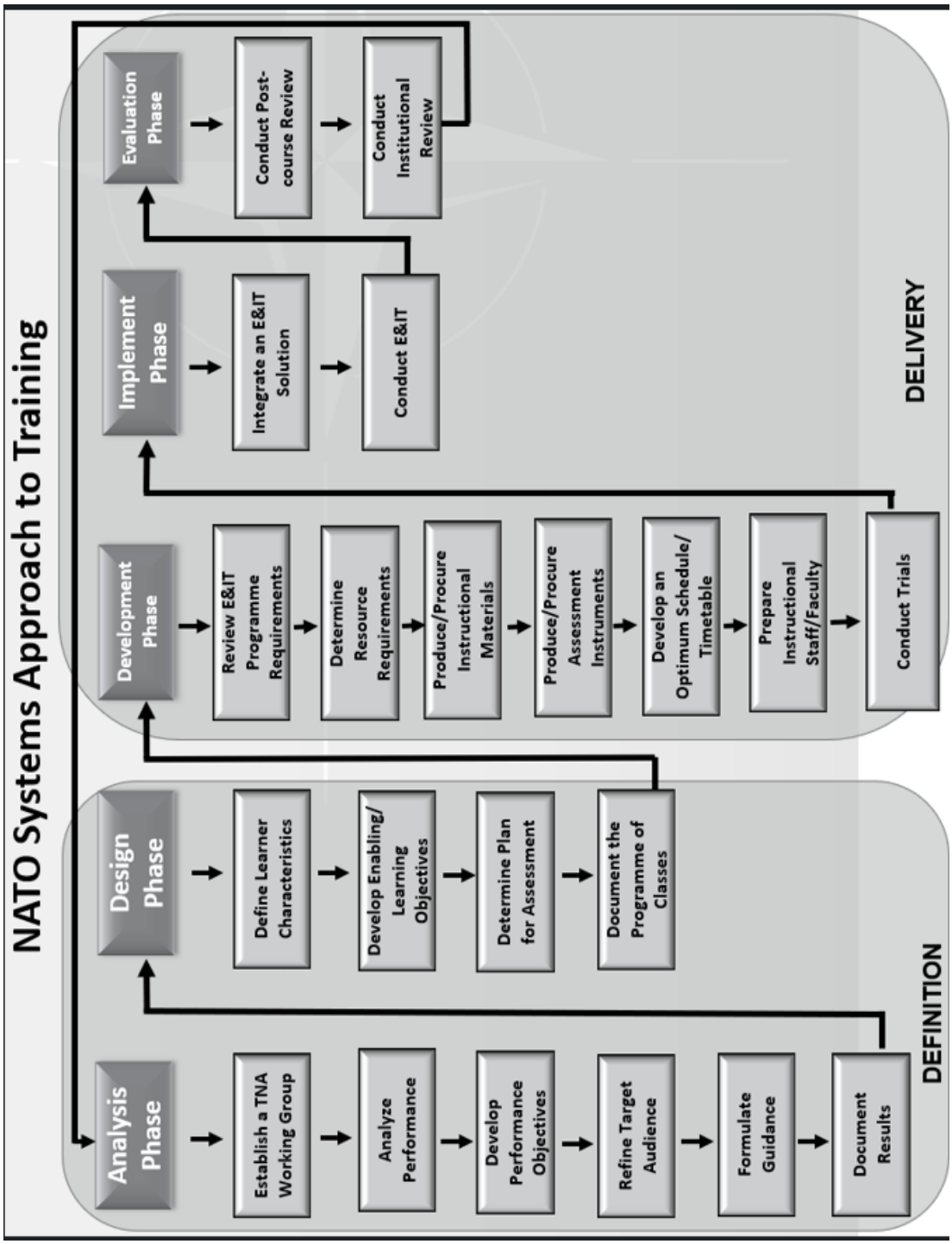

Figure F-1 – NATO Systems Approach to Training

ANNEX G TO
Bi-SCD 075-007
DATED 24 MAR 25

PERFORMANCE PROFICIENCY LEVELS AND KEY WORDS

1. **Basic through to Expert.** PLs provide a scale which defines a degree of competence ("expertise") required to perform principal duties and tasks on the job within NATO. The duties and tasks are used to capture the performance gap while the PL scale determines the depth of knowledge and skill that an E&IT solution is intended to target in order to resolve the performance gap[370]. Key action words are used to describe job performance, and the action words are categorized based on broad areas (or categories). The levels of proficiency are based on a modified version of the generic skill descriptions used to augment NATO Occupation Codes. The levels of proficiency and related generic skill descriptors are as follows[371]:

a. Rudimentary Level – Follow/Respond.

b. Novice Level – Assist/Recognize.

c. Independent Level –Employ/Execute/Incorporate.

d. Expert Level – Advise/Foster/Initiate/Shape/Influence.

2. **Institutional Leaders.** Enterprise level descriptors, that are indicative of institutional leadership, are not included in the PLs listed above. Institutional leadership positions within NATO are responsible for setting the vision and strategy as well as inspiring and providing overall leadership. Institutional leaders have significant experience and substantial professional military education which prepares them for work within a complex global environment. Institutional leaders will make the critical decisions which shape and position the organization for future success, and this will also integrate a long-term view. Key Leader Engagement events, conferences, seminars and related senior level planning forums are frequently conducted within NATO in large part to keep a broad audience aware of evolving issues and their implications. These forums, combined with expert and master level briefs, provide institutional leaders with the essential foundation to make informed decisions and achieve institutional leadership. An exception to this comes in the form of formalized foundation training which is provided to a specific a Training Audience supporting an operational mission and/or exercise.

[370] The generic eight skill levels outlined in NATO Occupation Codes – Generic Skill Descriptions have been modified given four levels of proficiency are adequate to identify and define NATO E&T requirements. The eight levels are outlined in Appendix C to NATO Occupational Area Codes, Version 4.0, published 14 December 2007 by NATO C3 Agency.
[371] Refer to Reference C, Annex J for further details.

Job Performance Proficiency Levels - Performance, Skills & Knowledge Levels	
1 0 0	**Rudimentary Level (Follow)** **Skill & Knowledge** The level of proficiency required to successfully perform a routine task or series of task elements (e.g. a step in a sequence of actions) in a structured environment with direct supervision. The person is expected to seek guidance in unexpected conditions. This requires remembering information including facts, terms, concepts, principles as well as the processes and procedures defining job requirements. This level results from foundational level E&IT. **Functional Area:** Support, Participate, and Contribute.
2 0 0	**Novice Level (Assist)** **Skill & Knowledge** The level of proficiency required to become functional and successfully perform a series of tasks independently with minimal oversight. Uses discretion in resolving problems and may plan and schedule work within short timeframes. This requires interpreting information, constructing meaning and the comprehension of facts, terms, concepts, and principles as well as the processes and procedures essential to enable understanding and accomplishing job requirements. **Functional Area:** Communication, Administrative, Technical and Finance.
3 0 0	**Independent Level (Apply/Employ/Use)** **Skill & Knowledge** The level of proficiency required to interpret direction and guidance and successfully plan and complete tasks independently as well as potentially monitoring the work of others. The person uses discretion to resolve increasingly more complex problems. This requires the application of concepts, principles processes and procedures in both non-routine (new) and concrete situations as well as executing, implementing and carrying out processes and procedures to satisfy job requirements. **Functional Area:** Communication, Administrative, Technical, Finance, Teaching, Creating and Leadership/ Management.
4 0 0	**Expert Level (Advise/Foster/Initiate/Shape/Influence)** **Skill & Knowledge** The level of proficiency required from training and experience to execute a broad range of complex professional strategic, and organizational and/or technical work activities acquired from leveraging current and prior education, training and practical experience; this includes maintaining an awareness of developing trends within the wider occupational field or across the enterprise, analytical thinking and providing institutional leaders discipline and/or inter-disciplinary related advice. This level requires setting work objectives and assigning task and the ability to deconstruct and integrate concepts, principles and procedures to support reasoning and as well as the application of a systematic approach to solving non-routine and ill-defined problems. It may also involve assessing and evaluating risks and understanding the implications of new concepts, technologies and trends. This level involves significant E&IT and job expertise. **Functional Area:** Communication, Administrative, Technical, Finance, Teaching, Creating, Research and Leadership/ Management.

Figure G-1 - Job Performance Proficiency Levels

Job Performance - Key Word Areas & Indicators

The following key action words are used to describe task performance of the job. Key word indicators are categorized into nine broad areas. Additional areas may be created as deemed necessary. Most of the key words provided below are common across multiple PLs; however, some of the functional areas are more applicable to specific PLs. Example: "Support" key words are applicable to the Basic PL while other functional areas (e.g. Research) are more applicable to higher levels.

Support	Administrative	Communication	Creating	Finance	Teaching	Technical	Leadership / Management	Research
aid assist contribute help out observe support	approve arrange catalogue classify collect compile contract dispatch distribute execute file generate implement operate organize prepare process purchase record retrieve screen specify staff systematize tabulate transcribe validate	address advise arbitrate arrange articulate author clarify collaborate compose condense confer consult contact convey convince correspond counsel debate develop direct display draft edit enlist formulate incorporate influence inform interpret judge lecture market mediate moderate negotiate persuade promote propose publicize reconcile recruit staff suggest translate synthesize write	adapt assemble build combine compose conceptualize create customize design develop devise direct establish fabricate fashion illustrate improve initiate institute integrate introduce invent originate pioneer plan prepare revitalize select shape solve	administer adjust allocate analyse appraise assess audit balance budget calculate classify compile compute commit conserve contract correct determine develop estimate forecast inspect manage market measure monitor plan predict project purchase quantify reconcile reduce research verify	adapt advise clarify coach convey coordinate demystify develop enable encourage evaluate facilitate familiarize guide inform instruct mentor persuade stimulate train	activate administer advise aim calculate calibrate construct debug design devise diagnose dismantle dispose dissect dissemble engineer engage estimate extract fasten inspect install maintain manipulate manufacture map measure mend mix monitor move navigate operate overhaul plot predict programme propose rehabilitate remodel repair replace restore sight solve survey target test verify	activate administer advise allocate analyse approve appraise assign authorize chair control coordinate delegate develop direct enforce enhance establish estimate evaluate execute formulate guide improve implement initiate inspire judge lead mentor modernize motivate organize oversee plan preside prioritize produce recommend resolve review schedule select spearhead structure supervise transform	analyse assess attain clarify collect conduct critique diagnose detect determine evaluate examine experiment extract formulate identify inspect interpret interview invent investigate locate measure organize research review select solve study summarize survey systematize test verify

Figure G-2 - Job Performance - Key Word Areas & Indicators

ANNEX H TO
Bi-SCD 075-007
DATED MAR 25

PERFORMANCE ANALYSIS

1. During the performance analysis process with the Analysis Phase of SAT, the WG deconstructs the performance requirements (principal duties of a NCS / NFS post) and key tasks into its components. The performance requirements are identified within the TRA Training Requirements Matrix or, through continuous improvement of the discipline, within the DAP the Training Requirements Review Matrix. The outcome of the performance analysis process is the production of a scalar, which will enable the creation of the PO.

APPENDICES:

1. Guidance for Selecting Requirements for E&IT.
2. Guidance for Creating a Performance Analysis Scalar.
3. Performance Analysis Scalars – Examples.

APPENDIX 1 TO
ANNEX H TO
Bi-SCD 075-007
DATED 24 MAR 25

GUIDANCE FOR SELECTING REQUIREMENTS FOR E&IT

1. Making sound decision to train or not impacts future performance on the job and/or the student in the learning environment. A good decision to train will better prepare personnel to perform on the job in their NATO post on operations; a poor decision to train may result in duplicated learning from previous training or employment, and ultimately result in waited time and resources, including funding. A decision guide to assist with selecting tasks for E&IT is provided in Figure I-1-1 below. These considerations are based on the difficulty, importance and frequency of performance (DIF (Difficulty, Importance and Frequency) Analysis). Ultimately, judgement will still be required, and the following should be considered:

a. Is the target audience already able to perform the task[372]?

b. What is the consequence or impact of an error[373]?

c. What are the consequences from not training this task?

d. Could the task or the supporting knowledge be better covered by pre-requisite instruction (via e-learning)?

e. What is the time between completion of E&IT and task performance? The longer the timeframe, the more likely that there will be a decay of skills.

f. Could a job performance aid or self-study packet be used in place of E&IT as part of a course?

g. Is the task better suited to learn through on-job experience (OJE) or workplace-specific training where there is no common standard across the NCS / NFS?

h. Is there a coaching/mentoring programme set up in the work environment or does the environment embrace using coaching (by those already conducting related work) as a way to improved job performance?

2. During discussion to determine if tasks require E&IT, risks and constraints should be analysed.

a. **Analyze Risks.** Any perceived risk to the design and execution of E&IT (e.g. technical, financial, contractual) should be analyzed and recorded[374] and have mitigation measures identified. Tracking and assessing existing risks are an iterative process during the development and execution phases of SAT.

[372] A question to ask oneself, “Is the ability to perform based on national requirements or previous training?”
[373] A question to ask oneself, “Could there be safety concerns?”
[374] Based on JSP 822, Volume 2 Paragraph 23.

b. **Analyze Constraints.** Constraints affecting the outcome of the Analysis phase work of the TNA WG should be analyzed and recorded[375]. Constraints may be identified in strategic concepts, doctrine and policy, safety, legal, cost or time to develop, or resources.

Figure H-1-1 – DIF Analysis Decision Tree

[375] Based on JSP 822, Volume 2 Section 3.4, Paragraph 22.

APPENDIX 2 TO
ANNEX H TO
Bi-SCD 075-007
DATED 24 MAR 25

GUIDANCE FOR CREATING A PERFORMANCE ANALYSIS SCALAR

1. **Overview.** Once the performance requirements statements have been confirmed for E&IT, they are organized, which in turn will assist in writing the POs. Deconstructing the performance requirements and producing a performance analysis scalar is the recommended way to organize tasks. The visual diagram will highlight hierarchical and procedural relationships which is useful for guiding the development of PO conditions and standards. When complete, the scalar allows the WG members to see the job as a whole, along with the interdependencies among duties/parts of the job. In addition, the instructors can start to visualize what the students must learn to be able to perform on the job.

2. The Purpose of the Performance Analysis Scalar is to:

   a. Facilitate the grouping of performance requirements and tasks into POs.

   b. Show relationships including interdependencies.

   c. Show a rational structure for the job.

   d. Show the size of the job.

   e. Eliminate redundancies.

   f. Visually identify what will be trained.

3. The following steps are highlighted for deconstructing[376] performance requirements:

   a. Organize performance requirements and tasks into initial groupings. Group like performance requirements of a similar topic, duty of the job, etc. together as per Figures I-2-1 and I-2-2.

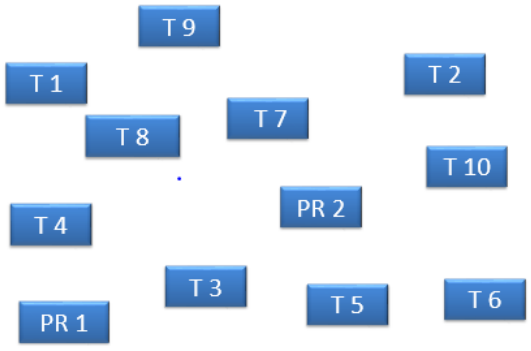

Figure H-2-1 – Initial Grouping of Performance Requirements

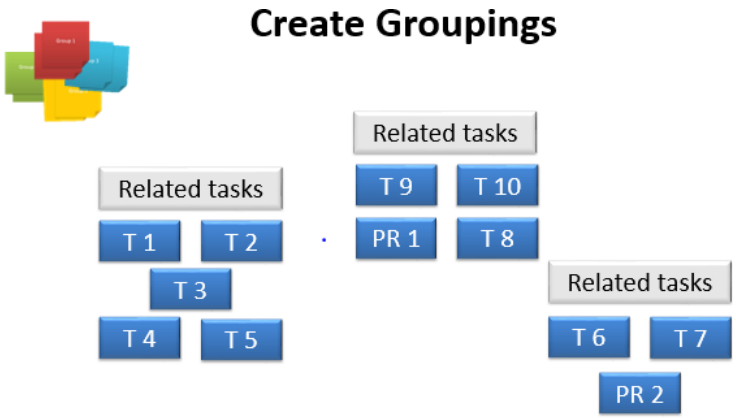

Figure H-2-2 – Grouping of Performance Requirements into POs

[376] 'PR' is the abbreviation for Performance Statements (Requirements from the JDs) and 'T' represents the specific task statements.

b. Internally organize each group. Within each group, organize the performance statements based on:

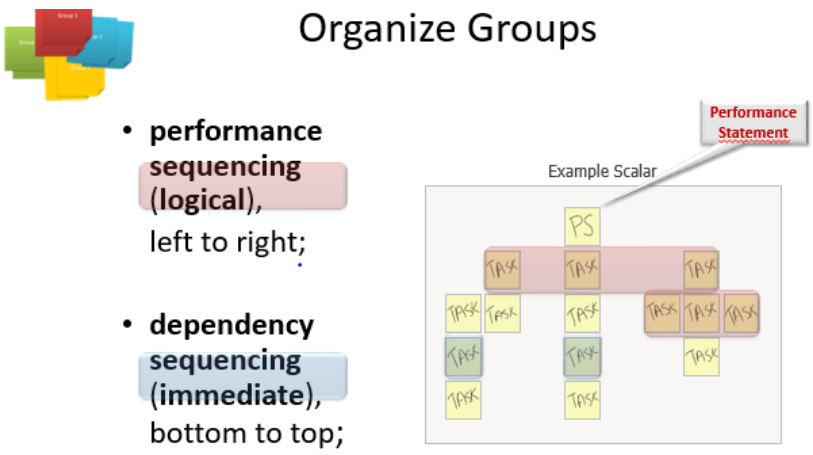

Figure H-2-3 – Organization of Performance Requirements' Groupings

(1) **Performance Order.** Build the scalar left to right, which captures the key steps in the process. When there is more than one order for completing performance and task requirements, the WG SMEs will determine the order.

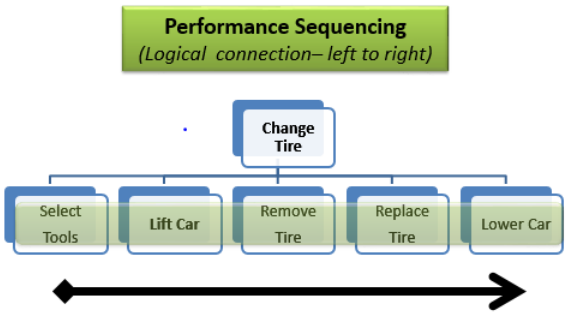

Figure H-2-4 – Performance Order Scalar

(2) **Dependency.** Build the scalar from bottom to top, which captures the sub-tasks or steps that are strongly dependent on being completed prior to a task. A question to ask: "What must I do next?" or "What must be done before I complete this task?"

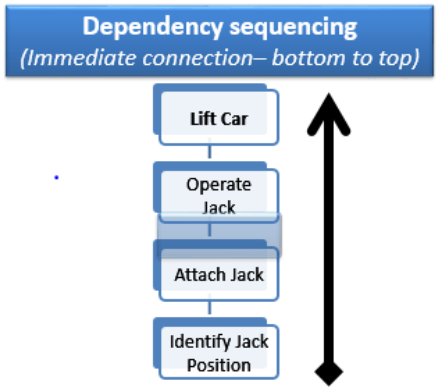

Figure H-2-5 – Dependency Order

(3) The performance analysis scalar may reveal that a PO involves both sequenced and dependent performance requirements and tasks.

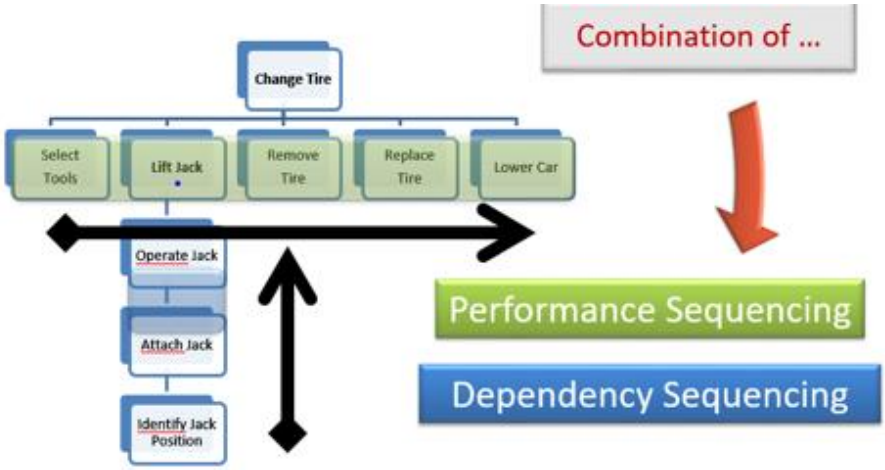

Figure H-2-6 – Combination of Performance and Dependency Sequencing

c. **Confirm Organization.** During this activity, it is common for performance statements and tasks to be re-organized. This could be movement within a group, to another group, to a new group, or merger of groups to form fewer.

d. **Sequence and Number POs.** This can be job-based, simple to complex, or based on the context of the other POs. The WG SMEs guide the decision to classify the groupings as a PO and likely the sub-groups within, grouped again or in isolation, ELOs. It is possible that the WG may be able to assign tentative performance statements to each PO, prior to moving to the next step of writing POs.

4. **General Guidance**.

a. If there are few performance statements within a group, it is likely they would form a straight line of dependency (bottom to top) or progress left to right revealing performance order. It is not necessary to scalar; for ease, list the tasks.

b. If the performance requirement or grouping is not related to other groupings but is more complex, more uncommon or builds on performance and skill development of other grouping, these could be moved to the right to become a later PO.

c. The scalar may include de-constructing the requirements into its tasks, sub-tasks and task elements; requirements are often broken down to the lowest level, ensuring understanding of the parts of the job to provide a clear picture.

APPENDIX 3 TO
ANNEX H TO
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PERFORMANCE ANALYSIS SCALARS – EXAMPLES

Example 1: Maintain Fuels Systems

The top level in this scalar reveals the job.

The lower three levels of the scalar represent, in order top to bottom, the principal duties of the job, the important/critical tasks in support of executing the principal duties, and the sub-tasks.

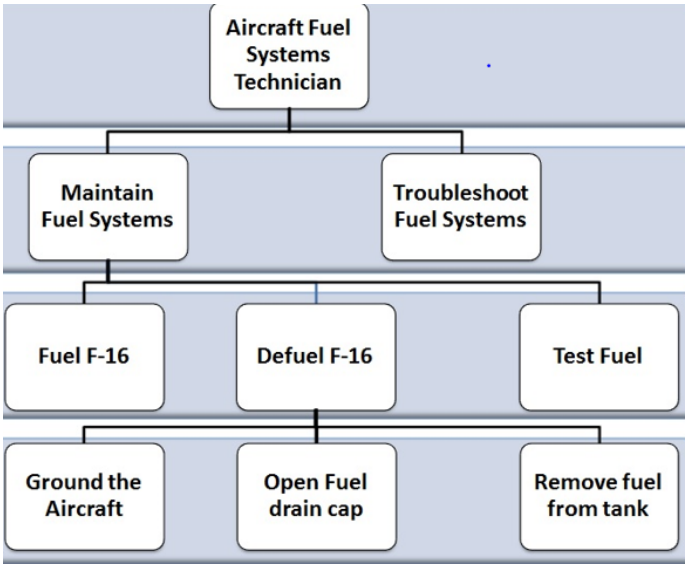

Figure H-3-1 – Performance Analysis Scalar Example 1

Example 2: Preventative Medicine

The highest level of the PO scalar is a performance requirement, i.e. a principal duty of the job. The next level down in the scalar represent, the important/critical tasks in support of as part of the principal duties, and the sub-tasks. The lower two levels are the supporting tasks that provide further amplification to the tasks.

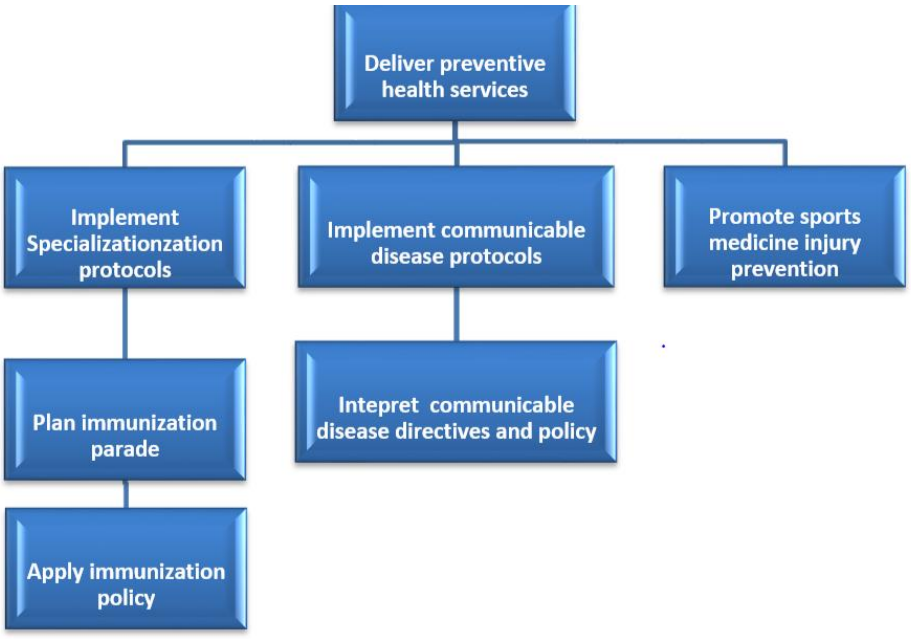

Figure H-3-2 – Performance Analysis Scalar Example 2

Example 3: QA Analyst

The top level in this scalar reveals the job.

The lower three levels of the scalar represent, in order top to bottom, the principal duties of the job, the JD principal duty statements and important/critical tasks in support of executing the principal duties, and the sub-tasks.

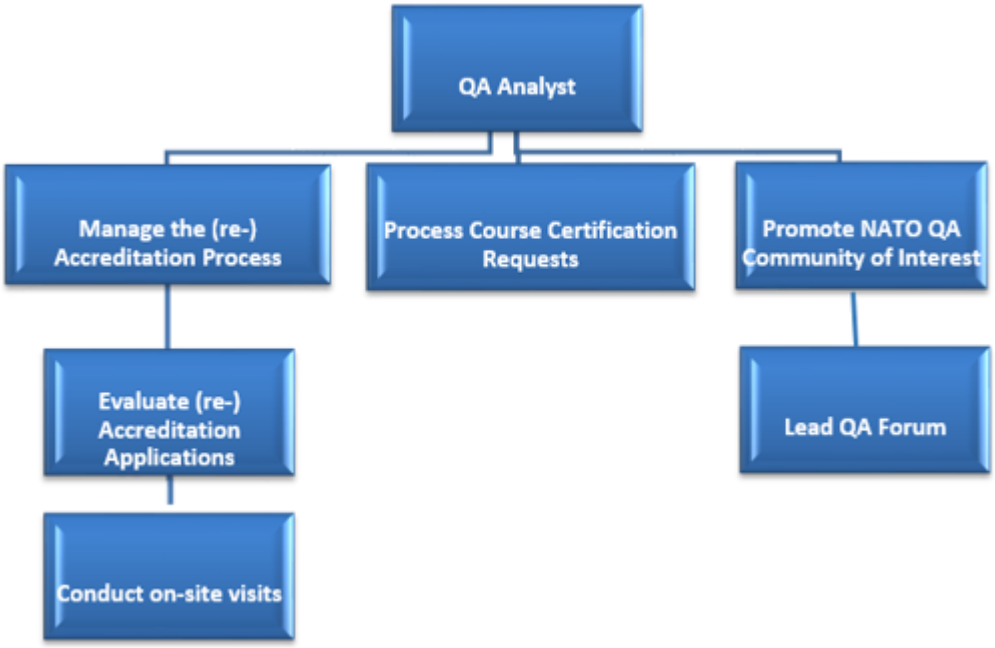

Figure H-3-3 – Performance Analysis Scalar Example 3

ANNEX I TO
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PERFORMANCE OBJECTIVES

1. After the creation of the performance analysis scalar, the WG develops the POs as part of CCD II.

2. This annex contains two appendices, providing information of POs and how to construct, examples of POs, as well as guidance to completing CCD II:

APPENDICES:

1. Guidance for Developing Performance Objectives.
2. Performance Objectives - Examples.
3. Part 1 of CCD II – Examples.

APPENDIX 1 TO
ANNEX I TO
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GUIDANCE FOR DEVELOPING PERFORMANCE OBJECTIVES

1. POs specify, in precise terms, what an individual must be able to do in terms of job performance and how well. The following will:

a. Describe the three parts to a PO.

b. Provide guidance to support the development of POs

c. Include example POs. The example POs provide additional considerations to include in a final product

2. A PO includes:

a. A performance statement which is a clear, concise and precise statement representing a logical and complete part of the job function (a duty area) which is observable and measurable.

b. Conditions statement which describe the situation, context, in which the performance is accomplished

c. Standards describe how, and how well, performance must be completed. Standards specify a definite level of achievement and provide the clear and specific criterion defining the required degree of proficiency. The Standards Statement provides the guidance for practice of performance aspects of the job and assessment of learning.

WRITING PO PERFORMANCE STATEMENTS

3. Performance statements can eliminate the subjective interpretations and ambiguity of what is to be accomplished. The ***performance statement*** is the first element of a PO and represents a balance of clarity and brevity while capturing multiple tasks often associated with a duty area. The performance statement is ideally a single sentence with one key (action) word, an object for the action word and any necessary qualifiers. The following conventions apply:

a. **Clarity.** Represent actual and specific job performance. Also, avoid the use of technical and/or occupational jargon.

b. **Brevity.** Limit verbosity by not exceeding what is sufficient for follow-on activities.

c. **Flexibility.** The task should be adaptable enough to meet minor and evolving work criteria.

d. **Limit the Performance or Task Statement to One Verb (Key (Action) Word).** At times, two action words may seem necessary; however, one of the two action words is often a supporting action. The superior action should be used in the task statement because it signifies the “end”. The additional supporting elements will

get defined during the development of E&IT solutions. At this point the focus is job performance:

(1) **Example 1: Analyse and Identify = Provide feedback.** One must first "Analyse" in order to "Identify," therefore Analyse and Identify are the supporting actions. "Provide feedback" is the superior task.

(2) **Example 2: "Assemble and Disassemble".** These action words are frequently together in the same task statement. In most cases, the first step in assembling is disassembling. Therefore, the job task is to assemble. Occasionally disassembly is performed independently of assembly and task procedure is inherently separate. In this situation "assemble and disassemble" are two separate and discrete job tasks.

e. **Avoid Expressing Ambiguity and Value Judgements.** The key is to express what tasks are accomplished on-the-job, not how and/or how well tasks must be completed (e.g. effectively Identify Tactical Intelligence Factors) or degree (e.g. thoroughly Identify Tactical Intelligence Factors). The proficiency of a task completion is stated in operational policy/doctrine manuals and associated training publication

f. **Avoid Expressing How Job Performance/Tasks are Achieved.** Consider the outcome of overall performance when selecting action verb. The focus must be on what the person must do[377], rather than how they will do it.

(1) Example. An Intelligence Operator must first "Analyse Tactical Intelligence Data" in order to "Identify Tactical Intelligence Factors." The act of "identification" demonstrates that analysis has occurred. In this situation, "analysis" is the most prominent skill based supporting activity that enables the identification of tactical intelligence factors. The most significant means to the outcome of a task (such as analysis) are almost always skill and/or applied knowledge based supporting activities (e.g. operating machines and tools, analysing sources of information, methods employed, steps of a procedure, and cognitive and/or psychomotor skills). These activities support and/or enable the completion of a genuine job task.

g. **Focus on action, Not Knowledge.** Avoid expressing statements that indicate what knowledge a student would need to learn. Knowledge statements may be reflected in the *Standard*. Do not use statements such as: "Demonstrate a thorough knowledge of…" or "Demonstrate an understanding of…" as these do not reflect job performance, but the supporting knowledge needed in support of completing a task or performance requirement.

4. Constructing performance statements involves the application of principles described previously. Figure I-1-1 reviews examples and provides further guidance to consider when developing performance statements. Note: A Performance Statement often becomes the PO title.

[377] Good examples: "Weld pipe" or "engage enemy with personal weapon". Poor examples are "use welding equipment" or "use personal weapon".

Performance Statements	
Example	**Comments**
Obtain a venepuncture blood specimen	Good example: • Identifies the task being done with one action word – ***Obtain***. • Identifies the object (what) is being acted upon – ***a blood specimen***. • Qualifies the action. When necessary, uses a qualifier to distinguish a means, methodology or approach - ***venepuncture***. **Note:** qualifiers are only necessary when there are alternative means, method or approach for conducting the action.
Plan, organize and control travel expenses	More than one key (action) word – a performance statement is not intended to be a list of sub-tasks; however, often these statements are found in the JDs. **Revision:** Control travel expenses
Understand the laws of armed conflict	Focus on job performance action words **not** the enabling supporting elements (knowledge). Knowledge requirements may be reflected in the *Standard;* however, knowledge elements are often better left to defining/writing the Enabling/Learning Objectives during the Design Phase. **Suggestion**: When constructing performance statements focus on the outcome - "Why" is the knowledge required; ***understanding the laws of armed conflict*** is required in order to? **Revised:** *Advise Commanders on the laws of armed conflict*.* *** Note:** Context is important and in some situations a performance statement which is "knowledge based" maybe better reflected in the standard. Example: "*Apply the laws of armed conflict" i*s not an ideal performance statement given "Why" is the knowledge required is still not clear. A clear understanding of the Target Audience is also essential to correctly describe desire performance
The student will learn forklift operations by studying the operator's manual	This is **not** a performance statement. This refers to a learning activity (knowledge acquisition) not a performance outcome to be achieved as a result of E&IT. Observing the student reading provides no measure of whether learning has occurred and there is no clear result or product from the specified action. **Revised**: • *Load trailers (Condition: given: a forklift)* • *Operate a forklift (Standards: move pallets and cargo, maintain situational awareness, adhere to safety procedure outlines in reference X)* *** Note:** Desired performance must be placed into the proper context, hence the Conditions and Standard statements become important and, in many situations, provide qualifiers for the performance statement.

Figure I-1-1 - Performance Statement - Guidance

WRITING PO CONDITIONS

5. Conditions, the second element of a PO, reflect the work situation as accurately as possible, but include only those factors that influence job performance. Condition statements answer the questions: When? Where? With what? Conditions address what is

normally provided ("given") as well as what might otherwise not be unavailable ("denied"). Common types of conditions[378] are as follows:

Types of Conditions	Examples
Tools and equipment.	Protective clothing Tools/equipment used Replacement parts
Job aids, reference manual, and specific material	Procedural checklists/technical manuals Maps, blueprints Manufacturer's specifications Textbooks
Supervision	Under direction of a crew commander
Assistance	Task requires two or more personnel
Specific physical, psychological demands	Confined workspace Noise, distracting areas Deadlines Lack of sleep
Environment	Arctic, tropical areas At night, in total darkness Heavy rain/snowfall Under fire Day/night, in any weather condition Office space
Cues	Malfunction Hazardous situations Requisition/work order

Figure I-1-2 - Types of Conditions

WRITING PO STANDARDS

6. Standards reflect the product, process or combination of both which describes how and how well the task(s) must be satisfied, i.e. required level of job performance[379]. Product refers to the description of the expected characteristics of a product. Process refers to the completion of a sequence of steps[380] or procedure needs for completion of a performance requirement. Combination denotes both the procedural aspect as well as the product produced.

7. Performance requirements and tasks what were captured in the Performance Analysis scalar can be used as an initial start to write the PO Standards. The Standards statements (and the associated levels of proficiency) provide guidance to those involved in E&IT (i.e. learners, instructional designers and instructors), the graduates from E&IT, and the unit chains of command of the graduate. The Standards should directly link to the E&IT assessment of the expected outcome of the student in order to verify that they are able to perform specific task as part of their post-course performance requirements.

[378] Expanded from Reference K, page 31.
[379] The main thing to keep in mind is that the type of standard will help guide the 'how well' piece. If a standard is a product, then the end goal will be the how well.
[380] These are the sub-tasks or major steps in a procedure

8. Standards are based on actual job requirements and included specific criterion which are either based in doctrine or references and reflect the performance outcome to be judged. The measure generally addresses as following:

a. **Speed.** The speed of performing a task can have a critical effect on the outcome of a mission: a rapid response can contribute to the success of a mission, but too slow a response may spell disaster. In other settings, work must be done quickly in order to avoid backlogs and to promote overall unit effectiveness. Standards of speed must reflect operational requirements as in the following examples:

(1) Tie a rescue hitch within three minutes.

(2) Don a CBRN NATO 2B-3 mask within nine seconds.

b. **Soundness of Judgement.** If the judgement or decision required in performing a task is such that successful performance will be seriously affected by a wrong decision, it must be shown as a measure in the standard[381]. For example, “patient is referred to medical officer when seriousness of ailment is beyond the medical assistant’s own authorized scope of care”. If the end product is the decision itself, then the standard must directly measure the adequacy of the member’s analytical or decision-making ability, or logical reasoning.

c. **Measures of Accuracy.** Accuracy measures are often used as a means for describing a desired level of proficiency (tunes a radio to achieve a signal strength within 5% of maximum range) or physical dimensions of a finished product as well as a maximum error rate.

d. **Completeness.** This can describe the steps to be followed in a process, specific sequence of steps adherence to a format to complete a product, as well as all critical characteristics.

9. **Detailed versus Brief Standards.** References should be identified for the PO Standards. Detailed standards are needed when multiple references or different parts of one reference are needed for different sub-tasks, major steps or supporting skills, as well as when no SOP or reference is available[382]. When the procedure is captured in sequence within one reference, the PO Standard may be written in brief format.

10. A well-written PO provides a synopsis of an aspect of the job. In addition, it ensures close alignment between the E&IT programme (course) and the performance requirements on the job. Refer to the next appendix for example POs and Annex K for the CCD II template.

[381] The instructor may observe the student’s judgement during the application of a skill or in the execution of a task.

[382] When no reference is available, the content of the PO Standards will become the guidance for CCD III and the courseware. See Appendix 2 to Annex I for examples.

APPENDIX 2 TO
ANNEX I TO
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PERFORMANCE OBJECTIVES - EXAMPLES

1. The following are exemplary POs. POs are included in Part 2 of CCD II - Course Proposal. Additional paragraphs may be included to further amplify the requirements described within the first three paragraphs of the PO. Note: Each PO should include the proficiency level indicator.

PERFORMANCE OBJECTIVE - EXAMPLE 1: CONDUCT DECONTAMINATION OPERATIONS

Performance Objective 1	
Performance Statement:	Conduct decontamination operations.
Conditions:	
Given:	1. Individual Protective Equipment (IPE). 2. References. 3. Decontamination equipment. 4. Access to Chain of Command for reporting.
Denied:	Nil.
Environment:	office, workspace, buildings or any outside space.
Standard:	The CBRN specialist, IAW references, shall conduct decontamination operations by: 1. Protecting oneself (i.e. using the IPE). 2. Detecting the contamination. 3. Identifying of the type of contamination (persistent / non/persistent). 4. Using the self-decontamination equipment. 5. Reporting the contamination to one's superior.
Proficiency Level:	300
Reference:	1. NATO STANAG 2451 - AJP 3.8, Allied Joint Doctrine for CBRN Defence. 2. NATO STANAG 2521 - ATP 3.8.1 Volume 1, CBRN Defence on Operations. 3. NATO STANAG 2522 - ATP 3.8.1 Volume 2, Specialist CBRN Defence Capabilities. 4. NATO STANAG 2520 - ATP 3.8.1 Volume 3, CBRN Defence Standards for Education, Training and Evaluation
Remarks.	Limitation: E&IT will be to proficiency level 300. On-job experience will provide the opportunity for the CBRN specialist to reach proficiency level 400 within a reasonable time.

Figure I-2-1 – Performance Objective – Example 1

PERFORMANCE OBJECTIVE - EXAMPLE 2: IDENTIFY KEY COMPONENTS SUPPORTING NATO RESOURCE MANAGEMENT

Performance Objective 2	
Performance Statement:	Identify key components supporting NATO resource management. (*JADL course, part 1 of blended course)
Conditions:	
Given:	NATO references, job and training aids, access to NATO JADL or equivalent Learning Management System.
Denied:	Nil.
Environment:	Any.
Standard:	The CFCD practitioner will identify the key components supporting NATO Resource Management to include the following topical areas and functions: 1. The relationships between requirements, resources and capabilities. 2. Common Funded Principles. 3. The relationship between common funding and joint funding. 4. The Common Funded Capability Delivery Governance Model (CFCDGM). 5. Overview of the NATO resource structure and main actors. 6. Review NATO security investment program (NSIP). 7. NATO work force. 8. Crisis response operations urgent requirements (CUR).
Proficiency Level:	100 (Follow/Respond)
Reference:	A, E, F, J
Remarks.	Nil.

Figure I-2-2 – Performance Objective – Example 2

PERFORMANCE OBJECTIVE - EXAMPLE 3: CONDUCT THREAT AND RISK ANALYSIS WITH REGARDS TO THREATS OF PHYSICAL VIOLENCE ON CIVILIANS IN MILITARY OPERATIONS

Performance Objective 3	
Performance Statement:	Conduct threat and risk analysis with regards to threats of physical violence on civilians in military operations.
Conditions:	
Given:	1. Limited/restricted time for completion. 2. Tasking to complete (as demanded). 3. Individual's initiative and decisions on how to best support the work (process or product focus). 4. Support from relevant staff. 5. Access to specialists (e.g. LEGAD, GENAD) 6. References including NATO and UN directives, guidelines and other documents. 7. Brief or point paper, or presentation format. 8. Threat Assessment Template. 9. Risk Analysis Template. 10. Network
Denied:	Additional time to complete task.
Environment:	Workspace.
Standard:	Conduct threat and risk analysis with regards to threats of physical violence on civilians in military operations in accordance with Reference, Chap 4 by: 1. Identifying potential threats and risks 2. Evaluating risk outcomes 3. Identifying relevant response activities.
Proficiency Level:	200
Reference:	XXXX
Remarks.	Member has solid expertise and experience on their own field and may encounter resistance when completing task.

Figure I-2-3 – Performance Objective – Example 3

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PART 1 OF CCD II - EXAMPLES

COURSE CONTROL DOCUMENT II - COURSE PROPOSAL	
COURSE TITLE: NATO and UN Approaches to the Protection of Civilians (NATO-UN POC)	**ETOC CODE:** MCP-CM-2XXXX
PART 1: COURSE REQUIREMENT	
Requirement:	Initial training requirements found in NATOs Military Contribution to Peace Support Training Requirements Analysis (TRA) –final report and updated list of performance statements in a Discipline Alignment Plan (DAP). This course fills the NATO requirement for strategic and operational level at the Proficiency Level 200 and Proficiency level 300 after on-job experience.
Aim:	-Develop practical understanding of the role of the UN, NATO and civilian organizations as protection actors in operations. The course: -focuses on how to protect civilians from threats of physical violence, including harm from their own actions. -enhances the military's understanding of how military options impact civilians and how the military can support other non-kinetic actions to minimize the negative impacts of conflict on civilians. -enables analysis of civilian vulnerabilities, prevention and response to conflict-related sexual and gender-based violence and cross-cutting topics such as gender, children and youth. -enables analysis of complex threats such as those arising from political violence, criminal activity, violent extremism and terrorism, and how they affect civilian populations in the areas of operations. -enhances the knowledge and critical understanding of the multiple dimensions and meanings of the protection of civilians. The students are trained to understand the roles and responsibilities of the military, police and civilian actors involved in protection work and the relationships between these actors. The participants will enhance their understanding of the operational environment through learning to identify perpetrators of violence, threats to the population, and assessing the vulnerabilities and resiliencies of the populations.
Security Classification:	NATO Unclassified

Security Classification Caveat:	Releasable to NATO Partner nations
Target Audience:	
General Description	-Military Officers (OF-3 through OF-5) or civilian equivalents working at the strategic or operational level in NATO, NATO-Partners or UN T/PCC. -Working in analysis, planning, operational, management, or leadership roles and who are required to or are positioned to act on Protection of Civilians in their respective organizations. -NATO HQ IS/ISM, NATO Allied Command Operations (HQ SHAPE, Joint Force Commands, and Component Commands), NATO Allied Command Transformation (HQ SACT, Joint Warfare Centre (JWC), Joint Forces Training Centre (JFTC) and Joint Analysis and Lessons Learned Centre (JALLC)) NATO Force Structure and Potential Staff members. – NATO Partner nations` Staff. – UN Staff (All Levels), UN TCC Staff. – CIMCORD, IOs, NGOs, Academia. -Educational background: Experienced experts on their own field. Experience from working in a multinational staff. Academic degree EQF 6 and 7 or equivalent military education. -Pre-requisites: Complete all the pre-course task before arriving at training centre and motivated to integrate these cross cutting topics into their daily work.
Rank Level	OF3 and higher and civilian equivalents.
Language Proficiency	English Level 3 language skills according to NATO STANAG 6001: Listening (3); Speaking (2); Reading (3); and Writing (2) or according to Common European Framework of Reference for Language level B2-C1/Upper Intermediate-Advanced level).
Training Strategy:	Blended learning solution. Part 1: 1 day, is a distance learning period with self-study assignments that are obligatory. Pre-course homework includes a test, which all the participants must pass. Part 2, residential portion: 7 days includes 1. The 'KAHOOT[383]'- test at the beginning of the course contributes to diagnostic assessments. Individual and

[383] A web-based tool that can be used for assessment, content review, homework assignments, games.

	group learning activity products throughout the course will be used as a formative assessment. 2. Summative assessment exercise with briefs to commander, role play and written products. Moodle is used as the learning management system to support blended learning approach Modules: 4 modules: (1) Military Role; (2) Operational Environment; (3) Threat and Risk Analysis; and (4) Exercise.
Estimate Number of Students per Year:	48
Course Iteration(s)	Max 16 / Min 20 per iteration 2 iterations/year 2 instructors/iteration
Course Duration:	8 days comprising 1+7 days (distance learning + residential part with blended learning approach).
Proficiency Level / Depth of Knowledge:	Depth of Knowledge: 200. Proficiency level 200 Uses discretion in resolving problems and may plan and schedule work within short timeframes. This requires interpreting information, constructing meaning and the comprehension of facts, terms, concepts, and principles as well as the processes and procedures essential to enable understanding and accomplishing job requirements. With additional on-the-job training and working experience 300 level will be reached.
Assessment Strategy:	Diagnostic Assessment within Part 1 (pre-course homework, self-assessment. Formative by individual and in small groups. Summative (Formal): PO 4 Discussion and Group Exercise – threat assessment with instructor feedback.

Figure I-3-1 – Course Control Document II Part 1 – Example 1

COURSE CONTROL DOCUMENT II - COURSE PROPOSAL	
COURSE TITLE: NATO Protocol Course	**ETOC CODE:** ETE-SP-3XXXX
PART 1: COURSE REQURIEMENT	
Requirement:	Standardization and synchronization amongst military and civilian personnel assigned to Public Affairs/Protocol posts within the Alliance. In addition, this applies to National MODs, Foreign Affairs and EU Offices.
Aim:	Enable NATO military and civilian personnel to apply the key factors, concepts and principles of protocol in support of events within an international environment.

Security Classification:	NATO Unclassified
Security Classification Caveat:	Releasable to NATO Partner nations
Target Audience:	
General Description	Military Officers, Non-commissioned Officers, or civilian equivalents who are assigned to Protocol duties or involved in aspects of Protocol.
Rank Level	Military Officers (OF-1 through OF-5). Non-commissioned Officers (OR-4 through OR-9). Civilian equivalents.
Language Proficiency	English SLP 3332 IAW STANAG 6001
Training Strategy:	Informal pre-requisite: ADL 227, *Protocol Basics*. Outside of Global Programming (i.e. not in direct support of content of CCD II). Residential course using the following methods of instruction: 1. Interactive lectures 2. Practical, scenario-based syndicate work 3. Role Play
Estimate Number of Students per Year:	40
Course Iteration(s)	Max 25 / Min 20 per iteration 2 iterations/year 4 instructors/iteration
Course Duration:	1 week
Proficiency Level / Depth of Knowledge:	300 (Apply)
Assessment Strategy:	Summative (Formal) assessment: POs 1 and 3. Scenario-based assessment in syndicates with instructor and classmate feedback.

Figure I-3-1 – Course Control Document II Part 1 – Example 2

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COURSE CONTROL DOCUMENT II – COURSE PROPOSAL

1. The Course Proposal provides the foundation for an E&IT solution and includes enough detail to identify where and how the solution fits within the discipline landscape. The Course Proposal, along with the coversheet (Course Control Document (CCD) – I) is entered into the NATO Education Training Opportunities Catalogue (ETOC) by the responsible Education and Training Facility (ETF) to initiate a course. Course certification status may only be sought once all three CCDs are entered into ETOC.

APPENDICES:

1. Creating and Maintaining Course Control Document II.
2. Course Control Document II Course Proposal – Template.

APPENDIX 1 TO
ANNEX J TO
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DATED 24 MAR 25

CREATING AND MAINTAINING COURSE CONTROL DOCUMENT II

Initial Creation of CCD II

1. The DH is ready to start drafting the CCD II when the TNA WG has completed the two processes, conducted the performance analysis and developed the POs. This may be possible at the end of the WG, if not, after any necessary post-WG activities have been completed. As per Figure 9 (SAT Assignments Matrix), the DH consults the RA/RA Rep, the ETF and the External OPR (if one is assigned) prior to inputting the information in the NDTMS and seeking course certification process.

Template

2. The CCD II template is available at Appendix 2 to Annex J. The template is divided into two parts:

a. **Part 1, Course Requirement**, includes the following:

(1) Requirement for a Course.

(2) Aim of the Course.

(3) Security Classification.

(4) Target Audience.

(5) Training Strategy[384].

(6) Estimated Number of Students per year based on Requirements.

b. **Part 2, Performance Objectives**, includes the three essential part, performance, conditions and standard, as well as the PL.

Training Strategy

3. Within Part 1's Training Strategy section of the CCD II template, the TNA WG will capture the mode of delivery[385] for the E&IT solution. The POs should guide the method of instruction and delivery providing the kind of learning environment that has the best impact based on preparing personnel for NCS / NFS positions. The TA, POs and potential methods of instruction should be considered. Consider:

a. Should it be residential, completely online, or would blended learning work better in achieving the same outcome?

[384] A driving factor could be existing or new time constraints. Can include whether E&IT will be residential, online or blended and the duration. Additional info may be added if the expected PL of the graduate from E&IT would be lower than that expected on the job. For example, the course aims for PL 200 and with on-job experience the member will reach level 300.

[385] Refer to Paragraph 5-21 for description of the three modes of delivery.

b. Is simultaneous learning (synchronous learning) or anytime learning (asynchronous learning) more appropriate?

c. How long is the anticipated E&IT to meet the NATO-specific requirements?

d. What is the required bandwidth and internet connectivity?

e. What tools, software programs or apps that need to be installed or downloaded?

f. Do learners need devices for learning, i.e. speakers, microphones, cameras, headphones?

g. What browser(s)/LMS would work best for the online or blended course?

Blended E&IT Solutions

3. To create a standardized presentation of POs across courses and disciplines, when a blended mode of delivery is determined to meet a NATO-specific requirement, PO 1 within CCD II should represent the online learning portion/content that precedes the residential portion of the course. As a result, the multi-part E&IT solution would be captured sequentially in one set of CCDs. If the decision to develop a blended solution is determined at a later point (likely during the development of CCD III) but prior to seeking course certification, the DH, in consultation with the ETF, can reorganize the POs in CCDs II and III to represent the online PO as PO 1.

Examples of Training Strategies for Blended Solutions

4. The training strategy for the Joint Synchronization Course is as follows: This course consists of two parts covering a maximum of 10 working days of which a minimum of 4 days is to be residential:

a. In part 1, students will complete independent, self-study and receive interactive lectures and training. This part could be residential or distributed. Part 1 must be completed prior to the start of part 2.

b. Part 2 is the residential part of the course in which students will engage in problem-based learning, supported by interactive lectures, syndicate work and practical exercise(s).

5. Refer to Appendix 3 of Annex I for CCD II Part 1 examples that include training strategy.

Expediting the Course Certification Process

6. When the aim of the ETF is to seek course certification status, the formal creation[386] is completed digitally in the ETOC component of NDTMS. Within the ETF, the role of Institution Manager must be assigned and approved.

7. Suggestions to expedite the course certification process are as follows:

a. Creating a course in ETOC. Insert the course duration, in hours or days. Prior to inserting the estimated number of students per year should be received by the RA/RA Rep, not just based on the ETF historical throughput but the annual ITEP report[387].

b. CCD I. Verify that a pilot course is scheduled as this must be completed prior to course certification being sought.

c. CCD II. Draft CCD II in the word doc template to facilitate faster content transfer in the digital template in NDTMS when the ETF has limited personnel with the assigned role to input CCDs into NDTMS.

d. CCD III. Ensure that there are performance-based activities included in the course, reflecting aspects of the performance requirements from CCD II. Ensure that there is some form of assessment.

Continuous Improvement of E&IT

7. It is expected that continuous improvements will occur to an E&IT programme over its lifetime, including responding to changes in requirements as identified by the RA. This will necessitate reviews and changes to performance objective(s) in CCD II, as well as CCD III and the associated courseware.

8. Ahead of a discipline's Annual Discipline Conference, a key Global Programming activity, the RA will provide any changes to the requirements to the discipline. Any changes to the requirements result in the DH or designate reviewing the alignment of the CCD II to the changes in requirements[388]. At a minimum, the CCDs II and III must be reviewed once every three years as per the course certification guidelines (refer to Chapter 2 of this directive)[389] and to confirm to the Global Programming governance bodies and HQ SACT MDFD's Quality Assurance Section that the courses remain in alignment with the requirements. When it is observed that the E&IT solution needs updating to align with the

[386] An ETF must have an approved (by HQ SACT / MDFD) Institution Manager (or designate). This assigned role would enable the ETF to upload a course into ETOC and then later, if planning to seek course certification, upload the three CCDs.
[387] For certified courses (NATO-Approved / Selected), it is mandatory for the ETF's ETOC Institution Manager to upload course iteration data and completion data into NDTMS. This should be completed quarterly.
[388] The Discipline Alignment Plan captures the requirements within an annex, whether additions, deletions or changes. The requirements review is a step leading up to a discipline's Annual Discipline Conference, ensuring that the E&T solutions are aligned to the requirements. Refer to Reference C.
[389] Courses will be valid in ETOC for a maximum of three years without completing any review and updates as needed to ensure alignment of CCD III to CCD II.

updated requirements[390], the DH is to update the CCD II with the changes. To follow, the ETF that delivers the E&IT solution is, in cooperation with the DH, to review and update the CCD III in accordance with the revised CCD II. Afterwards, the DH will staff a new CCD I and all three CCDs will be inputted into NDTMS. The final step in the process of document alignment is for the ETF is to ensure that the courseware is updated in line with the revised CCD III.

[390] Updates to the requirements will be provided by the RA at, or prior to, the Requirements Review step leading to the ADC.

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COURSE CONTROL DOCUMENT II COURSE PROPOSAL – TEMPLATE

COURSE CONTROL DOCUMENT II - COURSE PROPOSAL	
COURSE TITLE:	**ETOC CODE:**
PART 1: COURSE REQUIREMENT	
Requirement:	*The rationale (need) (including background and relevant history) for the creation or otherwise modification of an E&IT course. For a new course, this rationalizes the initial tasking to address a performance gap and as such responds to performance requirements identified in the TRA. During the sustainment of a discipline, modifying an existing course responds to changes in requirements captured in the Requirements Review process.*
Aim:	*Provides the overall intent of the E&IT.*
Security Classification:	*Identifies the security clearance required for the course.*
Security Classification Caveat:	*Identifies any releasabilities (e.g. NATO Partner Nations).*
Target Audience:	*A brief description confirming the intended audience specifying who is eligible to enrol on the course. The details further identify the rank level, language proficiency and other assumed prerequisites.*
General Description	
Rank Level	
Language Proficiency	
Training Strategy:	*A brief description concerning how the E&IT requirement will likely be resolved including an estimate of the duration for a course or other alternative intervention.*
Estimate Number of Students per Year:	*An estimate of the demand from the NCS, NFS, NATO Nations, Partners and others that may potentially require this course on an annual basis. The RA is expected to capture the potential NCS / NFS demand while MPD should capture Partner nation demand.*
Course Iteration(s)	*Maximum / minimum numbers of students per iteration, based on demand, instructional strategies.* *Number of iterations/year.* *Number of instructors (ETF and External OPR(s)).*
Course Duration:	*Identify the number of days of the course.*
Proficiency Level / Depth of Knowledge:	*An estimate of the level of performance proficiency or depth of knowledge to be achieved through the course. This is the extrapolated from the average or most common PL assigned to the Performance Objectives.*
Assessment Strategy:	*Overall vision for assessment on course, whether formal or informal; formative, summative, and or diagnostic; and completed as an individual or in syndicates.*
PART 2: PERFORMANCE OBJECTIVES (PO) *Details each of the intended outcomes to be addressed through an E&IT solution, includes a performance statement (essential task), the conditions and prescribed standard to be achieved. POs also specify the PL and may include other additional details to support the design of E&IT solutions.*	
Performance Objective #	

Performance Statement:	*A clear, concise and precise statement representing a logical and complete part of the job function, which is observable and measurable.*
Conditions:	*Conditions provide context and describe the situation, under which the performance must be completed.*
Given:	*What the person is given on the job.*
Denied:	*What the person is denied on the job.*
Environment:	*Where the performance or tasks are performed on the job.*
Standard:	*The Standards describe how and how well performance must be completed by the incumbent in the job.*
Proficiency Level:	*Specifies a level (100-400) which broadly defines and captures the degree of competence or "expertise" to be achieved on the job.*
Reference(s):	*Publications, policies, etc. That are used to carry out the tasks or responsibilities of the job. These are linked to the Standards section.*
Performance Objective #	
Performance Statement:	
Conditions:	
Given:	
Denied:	
Environment:	
Standard:	
Proficiency Level:	
Reference(s):	

Figure J-2-1 – Course Control Document II Template

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ENABLING/LEARNING OBJECTIVES

1. To develop ELOs, the Course Design WG would have progressed through linear, yet iterative steps:

   a. Applied the learning characteristics.

   b. Developed IA scalars, based on the deconstruction of the performance objectives from CCD II into their instructional elements (supporting knowledge, skills and attitudes) and sequenced the scalar in alignment with the envisioned order of instruction.

   c. Wrote the performance, conditions and standards for the ELO.

   d. Designed the ELOs (including TPts, associated instructional strategies, time and references) as they related to the ELO standards and individual lesson subjects.

APPENDICES:

1. Guidance for Creating an Instructional Analysis Scalar.
2. Teaching Points Guidance.
3. Learning Domains.
4. Depth of Knowledge – Performance Proficiency Matrix.
5. Instructional Analysis Scalars – Examples.
6. Methods of Instruction.
7. Method Selection Matrix
8. Media Selection.

APPENDIX 1 TO
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GUIDANCE FOR CREATING AN INSTRUCTIONAL ANALYSIS SCALAR

1. **Overview.** After the performance requirements have been confirmed for E&IT and captured CCD II[391] within the POs, they are deconstructed and organized. Deconstructing through IA will result in the production of an IA scalar, including supporting tasks and supporting elements. The visual diagram will highlight hierarchical and procedural relationships, as well as dependencies, which is useful for guiding the development of ELO conditions and standards. When complete, the IA scalar allows the Design WG members to visualize the E&IT programme as a whole and the instructors to visualize what the students must learn in order to be able to perform on the job.

2. A scalar diagram is recommended for large numbers of knowledge and attitude statements to show the relationships among them. For a few statements, a simple list may be used.

3. Purpose of the IA Scalar:

   a. Facilitate the grouping of supporting elements to the performance requirements and tasks within the POs.

   b. Show relationships including interdependencies.

   c. Eliminate redundancies.

   d. Show relative size of the instructional unit (ELO).

   e. Show sequence of knowledge/skill/attitudinal elements within the groupings (i.e. Identify the order of instruction).

4. The following steps are highlighted for constructing the instructional elements:

   a. Apply the target audience details[392] to the performance and E&IT requirements:

      (1) Assess entry level skills and knowledge[393].

      (2) Identify areas requiring emphasis.

   b. Re-create the PO scalar[394]. The starting point is the PO scalars from the performance analysis activity leading up to CCD II. If a CCD II scalar is available, re-

[391] CCD II is the key output product of the Analysis Phase.
[392] The information gathered about the target audience will allow the WG to make important decisions about instructional strategies and the structure of the course.
[393] The entry level PL of the student is the starting point for determining the content of the instructional programme, i.e. the course. Through discussion, it should be determined what the student already knows, what they are capable of doing, and what needs to or does not need to be emphasized in E&IT.
[394] The question you must ask yourself when you look at the POs is: “In order to do *this*, they must be able to do *this* first, then *this*, and they must know *this information* first, etc…”

produce it on stickies/cards. If no scalar is available, then initiate the IA scalar based on the PO standards paragraph and its components.

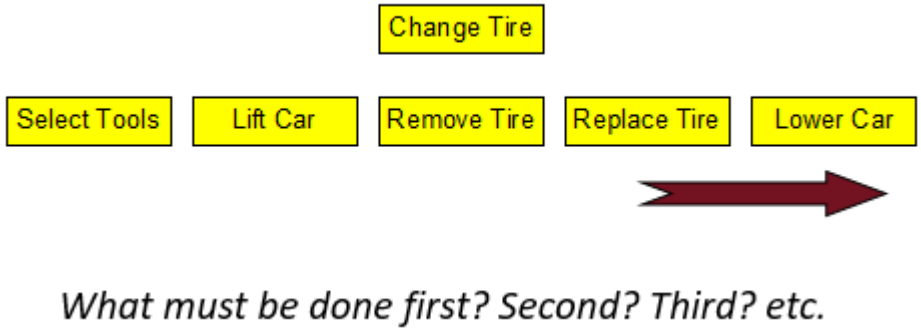

Figure K-1-1 – Instructional Analysis Scalar Initiation

(1) Break the PO internal groupings into manageable instructional chunks (will likely become ELOs). If the tasks are not sufficiently broken down into the smallest components needed, break them down.

(2) Start with the tasks and skills from the PO Standards paragraph. Write them on stickies and place them on the wall where they are linked within the POs. Add the sub-components.

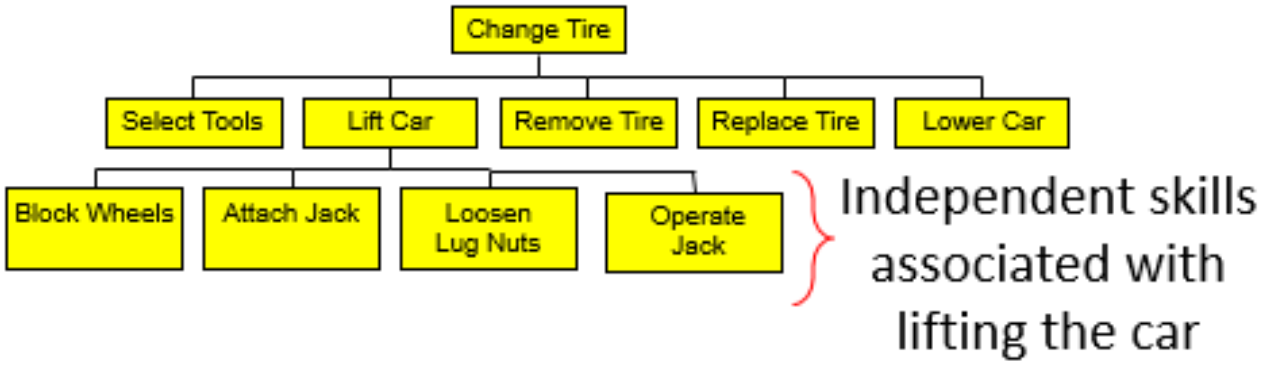

Figure K-1-2 – Instructional Analysis Scalar – Addition of Associated Skills

c. Create initial groupings of ELOs. Sequence supporting elements that will be guide the sequence of instruction[395]. Adjust the sequence as needed.

[395] Typically, the top task, set of tasks or skills form the basis for an ELO performance statement. The ELO numbers guide the ETF to develop the ELO and associated lessons content is the identified sequence. The groupings are developed in the following order which will influence instructional order, left to right and bottom to top.

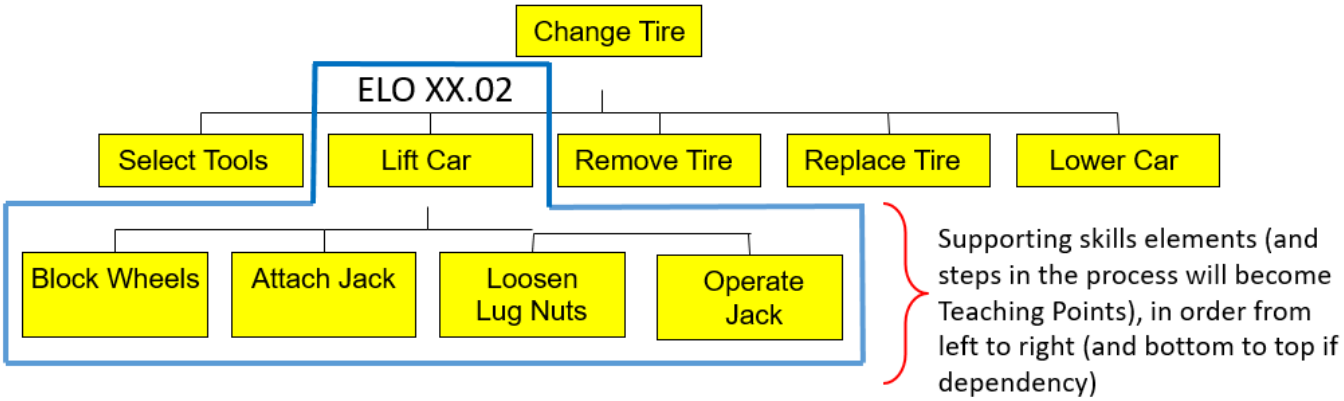

Figure K-1-3 – Instructional Analysis Scalar – ELO Grouping

d. Identify supporting knowledge, skills, and attitudes that will enable the students to execute the performance requirements and the tasks for each PO[396].

(1) If required, break the skills and knowledge into their sub-components. Then stop when the entry level has been reached.

(2) Write each skill, knowledge and attitudinal component (and any sub-components) on a stickie/card. Add the appropriate verb to the statement. See Appendices 3 and 4 to determine the level of learning and the relevant verb. If known, add the reference to the stickies for the supporting elements.

(3) KSAs become the TPts in CCD III. The skills and attitudes may become part of the ELO Standards paragraph. See Appendix 2 to this annex for further information on identifying and sequencing TPts.

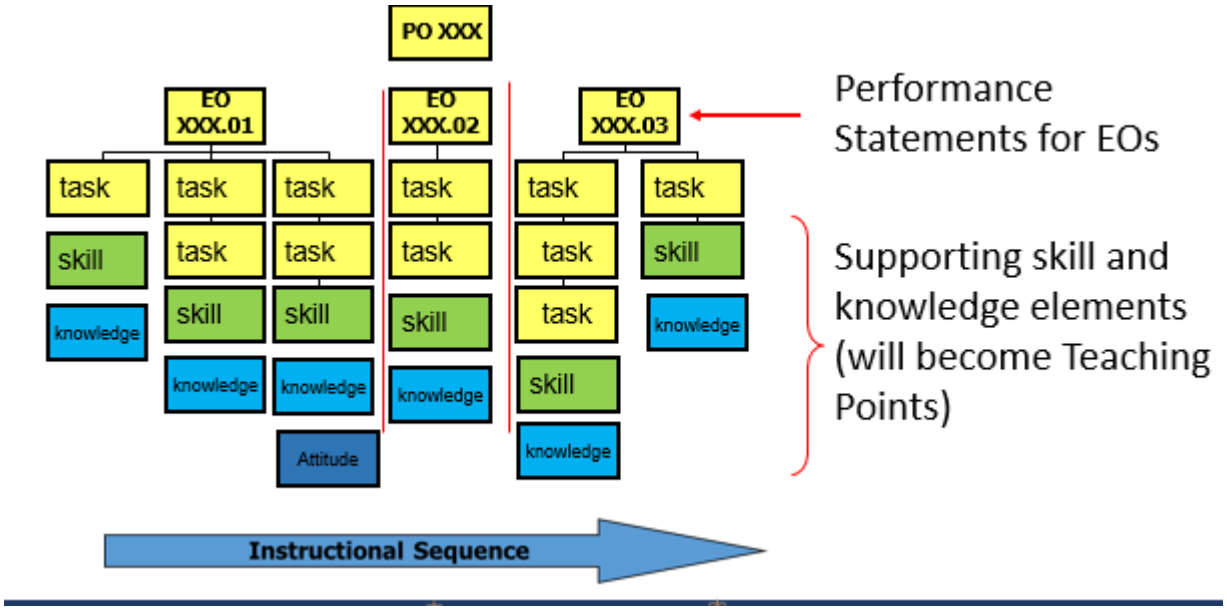

Figure K-1-4 – Instructional Analysis Scalar – Sequencing of Supporting Elements

[396] The question that must be asked is "What skills and knowledge must the student possess in order to accomplish the performance requirement or the task?"

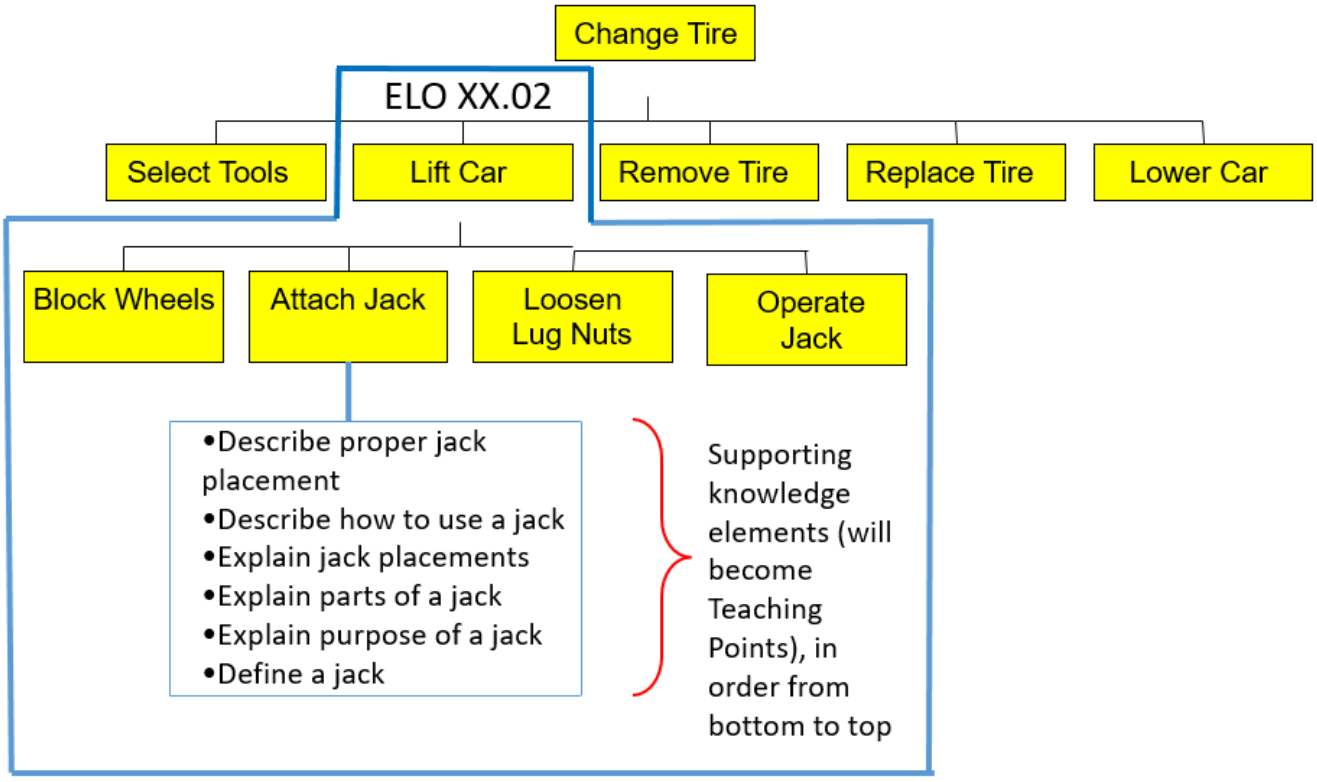

Figure K-1-5 – Instructional Analysis Scalar – Addition of Supporting Knowledge

e. Confirm the groupings. Re-organize as needed until consensus is reached.

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TEACHING POINTS GUIDANCE

1. **Identifying Teaching Points.** When identifying TPts (Chapter 6, Step 8.4.1), note they generally fall in one of five content categories, and these categories affect the sequencing of the TPts and the selection of an instructional method. The five content categories are:

a. **Facts.** Specific and unique data or information. This includes the basic elements students must learn/know to be acquainted with a discipline, and this includes definitions and terminology.

b. **Concepts.** A classification of items, words, or ideas. The interrelationship among the basic elements within a larger structure enables them to function together.

c. **Processes.** A flow of events, actions or activities that detail how things work as opposed to how to do things. There are normally two types: business processes (or workflows) and technical processes that describe how things work in equipment or nature.

d. **Procedures.** A series of step-by-step actions and decisions that range in levels of complexity and result in the achievement of a task. There are two types of procedural actions, and these are linear and branched.

e. **Principles.** Guidelines, rules, and parameters that govern outcomes, decisions. This includes what should be done as well as what should not be done. Principles allow one to make predictions and draw implications. Given an effect, one can infer the cause of phenomena. Principles are the basic building blocks of causal and theoretical models.

2. **Sequencing Teaching Points.** Within Chapter 6, Step 8.4.1 of this directive, TPts are sequenced. This can be completed using the following structures:

a. **Whole to Part.** Present the result or product first, and then present the process for each step.

b. **Part to Whole.** Present the process or steps first, followed by the end result or product.

c. **Simple-to-Complex.** Present concepts that the TA may be familiar with or that are less complicated, then build on these concepts by presenting newer or more difficult ones.

d. **Complex-to-Simple.** Actions are sequenced in terms of decreasing complexity; each associated with the larger complex structure of which it is a part.

e. **Chronological.** Present concepts or ideas in the order they occur over time, such as with historical events.

f. **Sequential.** Present procedures or steps in the order they are performed on the job.

g. **Cause and Effect.** Actions are sequenced to demonstrate cause and effect relationships. This sequencing is appropriate for relationships that individuals must commit to long-term memory.

h. **Known to Unknown.** Present the content by building/scaffolding on what the learner already knows to build context for the new learning. Connections and relevance aid in new learning.

i. **Critical Order.** Actions are sequenced in the order of relative importance, whether from the least important to the most or vice versa. TPts favouring this technique are those that generally require important actions. Example: "*Clear the weapon*" would be sequenced prior to: "*Disassemble the weapon*".

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LEARNING DOMAINS

Levels of Learning

1. Learning domains are classification schemes developed by educational theorists to support the development of instruction and guide student evaluation[397]. The initial work in this area was published in the 1950's and has continued to evolve[398]. There are three specific domains and within each there is a hierarchy, commonly referred to as a taxonomy, which reflects the progressive levels of learning. The learning of the lower levels enables progress into the higher levels of the taxonomy. The learning domains are aligned with the knowledge, skill and attitudinal elements that define a performance gap. The three domains are as follows:

a. **Cognitive Domain (the Knowledge Elements).** The cognitive domain addresses mental skills and intellectual abilities that progress from remembering and the recall or recognition of specific facts through to evaluating and creating new knowledge. The cognitive domain involves the processing of information (storing, recalling and interpreting) and its subsequent application or use. The cognitive domain aligns with the knowledge elements supporting tasks. The knowledge elements include the theoretical and practical understanding of subject matter required to effectively accomplish a step, task, or series of tasks. See Annex K, Appendix 4 for information on levels, key words and examples.

b. **Psychomotor Domain (the Skills elements).** The psychomotor domain addresses coordination, dexterity, manipulation, strength, speed as well as actions which demonstrate fine motor skills, including the use of precision instruments or tools. The levels within the psychomotor domain reflect a progression from observation and imitation through to mastery and adapting of learned skills. The psychomotor domain is aligned with physical skills and addresses the execution of performance requirements and performance of tasks. Skills-based learning consists of an organized and coordinated pattern of mental and/or physical activity that becomes more precise through repetition and practice. See Annex K, Appendix 4 for information on levels and key words.

c. **Affective Domain (the Attitude elements).** The affective domain addresses emotions and in particular beliefs, feelings and convictions which underlie behaviour and motivates action. The affective domain is aligned with attitude and, in general, relates to a pre-disposition to behave in certain ways. Attitude is believed to be developed over time and is shaped by an environment and experiences. Outcomes within the affective domain tend to be the most difficult to articulate. The learning within the affective domain is often integrated with events which support the cognitive and psychomotor domain. See Figure K-3-1 for details.

[397] A complete list of references which are the basis for the learning domains are provided at the end of this section.
[398] More recent research has resulted in the development of alternative versions of the Psychomotor Domain and subtle adjustments to the classification levels within the Cognitive Domain.

Affective Domain		
Domain Level		**Examples and Key Words**
1	**Receiving (Perception):** Aware of an attitude, behaviour, or value. Able to listen and willingness to hear others but not yet ready to act on the situation.	**Examples**: Listen to others' opinions **Key Words**: Accept, acknowledge, ask, attend to, choose, describe, follow, give, hold, identify, locate, name, observe, point to, realize, recognize, select, sit, erect, reply, use.
2	**Responding (Interpreting) [399]:** Active participation in discussion. Asks questions and presents information. Attends and reacts to exposure of a particular value or attitude.	**Examples**: Participates in discussions. **Key Words**: Answer freely, assist, aid, care for, communicate, complete, comply, conform, contribute, cooperate, discuss, examine, follow, greet, help, label, model, obey, perform, practice, present, read, recite, report, respond, select, tell, write.
3	**Valuing:** Worth or value attached to a particular object, phenomenon, or behaviour[400]. Internalisation of a set of specified values, while clues to these values are expressed in the overt behaviour[401].	**Examples**: Propose plans to social improvement and follows through with commitment. Informs management on matters that one feels strongly. **Key Words**: Accept, adapt, adopt, balance, choose, complete, defend, demonstrate, devote, differentiate, explain, express, follow, form, influence, initiate, invite, join, justify, propose, pursue, read, recognize, report, seek, select, share, study, work.
4	**Organization:** Internalisation of values and beliefs[402]. Organizes values into priorities by contrasting different values, resolving conflicts between them, and creating a unique value system.	**Examples**: Recognizes the need for balance between freedom and responsible behaviour. **Key Words**: Adapt, adhere, adjust, alter, arrange, balance, change, classify, codify, combine, compare, complete, conceptualize, defend, develop, discriminate, display, explain, formulate, generalize, identify, improve, integrate, modify, order, organize, prepare, rank, relate, revise.
5	**Internalising Values:** Created own value system that controls behaviour. The behaviour is pervasive, consistent[403] and predictable. The value becomes a characteristic of the person[404].	**Examples**: Cooperates in group activities (displays teamwork). Displays a professional commitment to ethical practice daily. **Key Words**: Act, discriminate, display, influence, internalize, listen, modify, perform, practice, propose, qualifies, question, revise, serve, solve, verify.

Figure K-3-1 - Affective Domain

[399] Learning outcomes may emphasize compliance in responding, willingness to respond, or satisfaction in responding (motivation).
[400] This ranges from simple acceptance to the more complex state of commitment.
[401] Behaviour or actions are displayed through involvement or commitment.
[402] The emphasis is on comparing, relating, and synthesising values.
[403] Consistent, in spite of discomfort.
[404] Instructional objectives are concerned with the student's general patterns of adjustment (personal, social, emotional).

References

2. The following references were used and adapted to produce the learning domain taxonomies as part of this appendix and the next:

a. **Cognitive Domain**:

(1) Bloom, B.S. (Ed.). Engelhart, M.D., Furst, E.J., Hill, W.H., Krathwohl, D.R. (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain.* New York: David McKay Co Inc.

(2) Anderson L.W., & Krathwohl (Eds.). (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman

b. **Psychomotor Domain**:

(1) Simpson E.J. (1972). The Classification of Educational Objectives in the Psychomotor Domain. Washington, DC: Gryphon House.

(2) Dave, R.H. (1970). Psychomotor levels in Developing and Writing Behavioural Objectives, pages 20-21. R.J. Armstrong, ed. Tucson, Arizona: Educational Innovators Press.

c. **Affective Domain**:

(1) Krathwohl, D.R., Bloom, B.S., Masia, B.B. (1973). *Taxonomy of Educational Objectives, the Classification of Educational Goals. Handbook II: Affective Domain.* New York: David McKay Co., Inc.

(2) Brouse, K., (2021). *Understanding the Affective Domain of the Learner. Graduate Programs for Educators.* https://www.graduateprogram.org/2021/05/understanding-the-affective-domain-of-learning/

(3) Red Deer Polytechnic Centre of Teaching, Learning and Scholarship. (n.d.). *Bloom's Taxonomy Affective Domain – Attitudes, Behaviours, and Values.* https://rdpolytech.ca/media/5111/download?inline

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DEPTH OF KNOWLEDGE – PERFORMANCE PROFICIENCY MATRIX

1. Depth of Knowledge (DoK) refers to the level of learning to be achieved based on an E&IT solution. DoK is an inclusive term addressing both the Cognitive Domain (Knowledge elements) and the Psychomotor Domain (skill elements)[405]. The DoK - level of learning is based on job skill proficiency and knowledge competence, and is directly linked the level (s) identified for the performance proficiency required on the job.

2. The DoK – Performance Proficiency Matrix is a tool that supports the design and development of E&IT solutions. It aims to align job performance PLs with DoK levels of learning. See Figure K-3-1. When the DoK identified in an E&IT solution (within CCD III) does not prepare a NCS or NFS person to perform on the job at the expected PL, a non-training solution (s) is to be identified[406]. The matrix is also useful for providing a preliminary assessment of the fit between an existing E&IT solution and a NATO E&IT requirement. During the design and development of E&IT solutions the DoK matrix is used to:

a. Develop ELOs at the appropriate level of learning and in alignment with POs.

b. Identify and select instructional methods.

c. Guide student assessment and preparing an assessment plan.

On-line versus Residential Learning

3. Depending on the mode of delivery of the E&IT solution, the DoK may not align with the average PL of the compilation of performance requirements (or tasks) included in the course from the TRA Training Requirements Matrix, or once the discipline is established, the Requirements Review Matrix (from the discipline's DAP). Most online NATO courses are self-contained, i.e. designed for student to content interaction only, are self-paced, have no interaction with or monitored by an instructor, and typically only provide foundational knowledge. As a result, this type of course would attain a DoK of 100. To reach a DoK 200 or 300, the online course would need to be designed beyond student-to-content, to include student-to-student and student-to-instructor interactions. Likely this level of online learning would include several of the following:

a. Direct instruction.

b. Assessment and feedback on student course work.

c. Instructor responding to student questions.

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[405] The DoK – Performance Proficiency Matrix includes the cognitive and psychomotor learning domains as introduced in the previous appendix. Affective Domain – attitudinal elements are integrated with cognitive and psychomotor learning and as result are part of the criteria and behavioural traits captured within the standards of the applicable ELOs.

[406] The non-training solutions may be identified as early as the TRA process when developing the Training Performance Requirements Annex, or as part of the 'collecting and reviewing the solutions' step leading up to a discipline's ADC.

d. Group discussion, whether synchronous or a-synchronous[407].

When the online course DoK is lower than the expected PL of the performance requirements, two options are open for consideration: a blended E&IT solution or to incorporate a training (online course) and a non-training solution (e.g. on-job experience, job aid(s), coaching on the job, reading, web sites).

4. When an E&IT solution is available both residential and online, providing options for the students and maintaining the online instruction skill set, the same DoK should be assigned. As a result, the same end state would be attained in terms of knowledge, skills and performance of the tasks/performance requirements. If this is not the case, and the outcome is not the same, then the DoK should be different, and consideration should be taken if both are considered pre-requisites for further E&IT.

[407] See Annex A, Appendix 2 for description of terms.

Job Performance Outcomes		Enabling/Learning Outcomes		
Job/Function – Proficiency Level		**Level of Learning – Depth of Knowledge (and skills)**		**Learning - Key Verb Indicators & Examples**
100	**Rudimentary Level (Follow, Respond):** Successfully perform a routine task or series of task elements (e.g. a step in a sequence of actions) in a structured environment with direct supervision. Is expected to seek guidance in unexpected conditions. This requires remembering information including facts, terms, concepts, principles as well as the processes and procedures defining job requirements.	100	**Psychomotor:** **Perceptions, Readiness & Guided Response** Readiness to act, observing and imitating (practice)prescribed and defined actions and processes. Includes the use of sensory cues and establishing the mental, physical, and emotional prerequisites to skills development.	adhere, arrange, assemble, build, construct, copy, dismantle, detect, display, fasten, follow, grind, heat, identify, imitate, measure, mend, prepare, recognize, repeat, replicate, reproduce, responds, select, sketch, trace, try.
			Cognitive: **Remembering explicit knowledge** Recall elements and details of structure or process/procedure and recognize or identify specific information (facts, terms, concepts, principles).	arrange, define, duplicate, identify, label, list, mark, match, name, order, recall, recite, reproduce, recognize, reproduce, select, state. **Examples:** Recite a policy. List safety rules.
200	**Novice Level (Assist, Recognize)** Become functional and successfully perform a series of tasks independently with minimal supervision. Uses discretion in resolving problems and may plan and schedule work within short timeframes. This requires interpreting information, constructing meaning and the comprehension of facts, terms, concepts, and principles as well as the processes and procedures essential to enable understanding and accomplishing job requirements. Recognize and understand ways and means to achieve full proficiency.	200	**Psychomotor:** **Mechanism/Manipulation** Learned responses have become habitual and the movements can be performed with some confidence and proficiency.	assemble, build, calibrate, construct, dismantle, fasten, grind, heat, manipulate, measure, mend, mix, organize, shape, sketch.
			Cognitive: **Comprehension/Understanding:** Interpret information, construct meaning, and understand facts, terms, concepts, principles and procedures.	allocate, arrange, categorize, classify, convert, distinguish, estimate, extend, explain, extrapolate, group, illustrate, infer, interpret, label, match, paraphrase, predict, reiterate, report, restate, review, reword, rewrite, select, separate, summarize, theorize, translate. **Examples:** Summarize the principles of MDO. Explain debugging LOGFAS.

Job Performance Outcomes		Enabling/Learning Outcomes		
Job/Function – Proficiency Level		**Level of Learning – Depth of Knowledge (and skills)**		**Learning - Key Verb Indicators & Examples**
300	**Independent Level (Employ, Execute, Incorporate)** Interpret direction and guidance and successfully plan and complete tasks independently. Has potential ability to monitor or supervise the work of others, and able to self-reflect and self-remediate deficiencies in KSAs. Uses discretion to resolve increasingly more complex problems. This requires the application of concepts, principles processes and procedures in both non-routine (new) and concrete situations as well as executing, implementing and carrying out processes and procedures to satisfy job requirements.	300	**Psychomotor:** **Complex Overt Response/Precision:** Perform a skill with a high degree of precision. Performance involves complex action.	assemble, build, calibrate, complete, construct, control, demonstrate, dismantle, display, dissect, execute fasten, fix, grind, heat, manipulate, measure, mend, mix, organize, perfect, sketch, show.
			Cognitive: **Application:** Use concepts, principles and procedures in both new and concrete situations.	Administer, apply, associate, calculate, change, classify, compare, compute, conduct, contrast, control, construct, discover, examine, execute, employ, establish, examine, illustrate, identify, implement, initiate, interpret, manipulate, modify, operate, perform, predict, prepare, produce, relate, respond, show, solve. **Examples:** Calculate the sonar range. Construct a job interview guide.

Job Performance Outcomes		Enabling/Learning Outcomes		
Job/Function – Proficiency Level		**Level of Learning – Depth of Knowledge (and skills)**		**Learning - Key Verb Indicators & Examples**
400	**Expert Level (Advise, Foster, Initiate, Shape, Influence)** Execute a broad range of complex professional and/or technical work activities acquired from leveraging prior E&T and practical experience; this includes maintaining an awareness of developing trends within the wider occupational field, analytical thinking and providing institutional leaders discipline and/or inter-disciplinary related advice. Able to understand the implications of new concepts, technologies and trends and adapt/innovate as a result. Solves non-routine and ill-defined problems that are uncertain, complex and ambiguous.	400	**Psychomotor:** **Adaptation/Articulation:** Well-developed skills can be modified and combined to adapt and integrate to satisfy non-standard tasks and situations.	adapt, adjust, alter, arrange, assault, combine, composes, construct, coordinate, create, design, develop, estimate, formulate, integrate, invent, modify, manage, rearrange, reorganize, revises, solve, troubleshoot, vary.
			Psychomotor: **Originate:** Create new approaches to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills which are second nature and natural, without needing to think much about it.	arrange, build, combine, compose, construct, create, design, initiate, make, originate.
			Cognitive: **Analyze:** Deconstruct concepts, principles and procedures to support analytical thinking and reasoning skills; includes the examination of information, making inferences and finding evidence to support generalizations.	analyze, breakdown, catalogue, compare, condense, contrast, deconstruct, derive, design, determine, diagram, differentiate, discriminate, distinguish, divide, examine, experiment, explain, extrapolate, graph, infer, interpret, modify, measure, outline, plan, plot, predict, produce, project, quantify, resolve, revise, relate, separate, summarize, search, solve, test, troubleshoot. **Examples:** Breakdown a financial balance sheet. Troubleshoot the AWACS AN/APY-1 radar system.
			Cognitive: **Build/Assess/Create:** Rearrange, adapt and integrate concepts, principles, procedures, and ideas to create and build new knowledge, theory and alternative approaches, structures, systems, and models and approaches. Enable higher order thinking and reasoning to formulate solutions.	appraise, assess, build, categorize, compare, conclude, contrast, criticize, critique, decide, defend, derive, describe, diagnose, discriminate, evaluate, explain, formulate, generate, hypothesize, integrate, interpret, invent, investigate, judge, justify, measure, modify, outline, originate, plan, predict, propose, rank, rearrange, recommend, reframe, relate, revise, rewrite, summarize, support, validate, war game, write. **Examples:** Formulate a NATO Op Order. Defend a concept proposal.

Figure K-4-1 - Depth of Knowledge – Performance Proficiency Matrix

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INSTRUCTIONAL ANALYSIS SCALARS – EXAMPLES

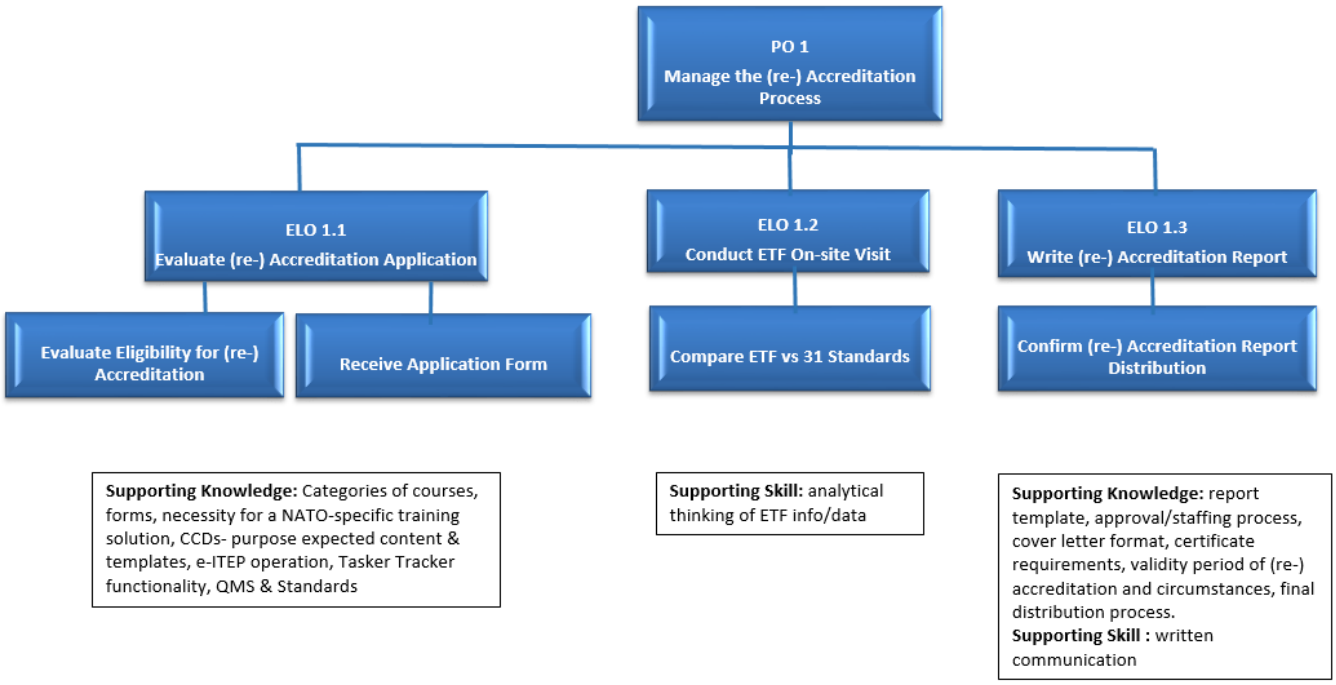

Figure K-5-1 - Quality Assurance Analyst Course – Complete PO 1

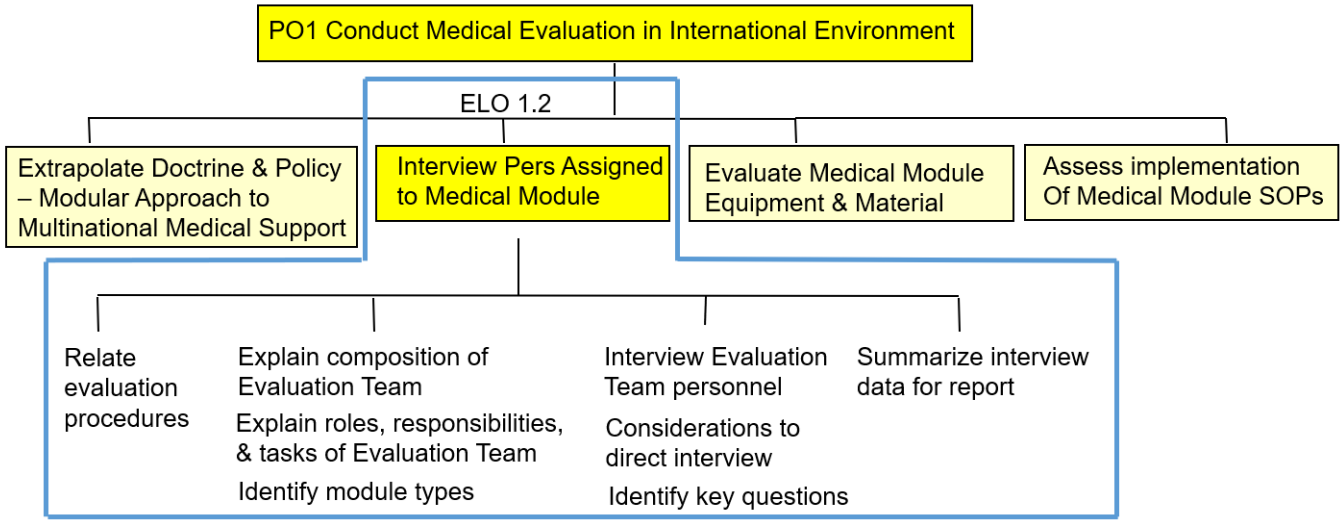

Figure K-5-2 – NATO Medical Evaluation Course – ELO 1.2

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METHODS OF INSTRUCTION

1. Figure K-6-1 describes suggested methods of instruction in terms of their definition, application and suggested techniques for instructors. A summary concerning the use of coaching is also provided at the conclusion of the Annex. The methods of instruction are as follows:

a. Behaviour Modelling.

b. Case Study.

c. Demonstration and Performance.

d. Field Trip.

e. Gaming.

f. Guided Discussion.

g. Interactive Lecture.

h. Panel Discussion.

i. Peer Learning.

j. Problem-based Learning (Small Group – Syndicate Work).

k. Role Play.

l. Self-study.

m. Simulation (including In-basket Exercise, Serious Gaming).

n. Tutorial.

o. War Gaming.

Behaviour Modelling	
Definition	Behaviour modelling is a form of demonstration, and it generally captured as part of the Demonstration/Performance method. Behaviour modelling is used during a demonstration to achieve attitudinal elements including the development of interpersonal skills. This method allows the learner to see the desired behaviours or skills first hand. Learners acquire new behaviours by observing live or video models and then rehearsing (practicing) the behaviours. Behaviour modelling is usually employed with smaller groups, as each learner must rehearse the behaviour as part of the learning process.
Application	The instructor introduces the lesson by describing the what, why, when and where of the topic. The instructor describes the skill in question and then models both effective and ineffective behaviours verifying that learners have clearly understood the procedures, before moving on. Next, the instructor provides learners with a video or live presentation that sets the job context and models effective and ineffective behaviour in that setting. Following the modelling session, the instructor discusses the behaviour and what learners should do during their practice session. Learners discuss and practice modelling effective behaviour on their own or with a partner. Then each learner demonstrates the behaviour while the instructor and the remainder of the class observes. The instructor provides feedback to the learners and coaches them on their performance. Learners reflect on the feedback and repeat the exercise. This process continues until learners master the behaviour. Ideally, learners should be videotaped so that they can observe their behaviour and reflect on their performance and the instructor feedback. Instructors should have learners try the behaviour as soon as possible in the lesson. Learners must be provided adequate time to practice allowing them to master the behaviour.
Techniques	Instructors must be able to demonstrate effective and ineffective behaviours to employ this method even when a supporting video is used. It is critical that the correct behaviours are accurately modelled; otherwise, learners may become confused and discouraged. Instructors employing the behaviour modelling method should be able to provide detailed feedback to the learner on his or her performance. Correct behaviours should be positively reinforced, and areas requiring improvement identified.
Case Study	
Definition	In the case study method, the instructor provides learners with the opportunity to deal with a simulated, real-life situation in the classroom. Learners respond to the scenario related to the target performance, by examining the facts and incidents of the case, to critically analyse data and develop solutions.
Application	The case study method is used to challenge learners to apply what they know to a realistic situation. It allows learners to actively participate with the instructor in applying the concepts or principles under study and to foster problem solving, higher-level learning and respect of other opinions. This method of instruction should be employed with smaller groups of relatively mature learners. The primary objective is not to find a correct solution to the problem posed, but to understand the principles involved. To employ the case study method, prior to the lesson, the instructor should verify that the case matches the experience level of the learners and select a logical sequence in which to analyse the case. Adequate time must be allowed to ensure that learners fully understand the case problem and scenario. Learners can read the case in class or ahead of time. To begin the lesson, the instructor should introduce the case and relate it to the learners' past experiences. The instructor should indicate how the lesson fits into the course overall and how it will proceed. Learners should be advised of the lesson objective and the approach that they are expected to use to analyse the case. Learners should clearly understand whether there is a specific view that they are expected to adopt when examining the case. During the lesson, the instructor elaborates on each main point through well-formed, pre-planned questions. For example, what are the facts, assumptions, and problems of the

	case, what is the cause of the problem, what are the consequences? The instructor guides the class from issue to issue and leads them to discuss critical points. When required, the class can be split into smaller groups for discussion. In this situation the instructor must rotate from group to group to verify that they understand the issues and to answer learner questions. To debrief the case, the instructor addresses the facts of the case. Where small groups were formed the instructor asks each group to provide one or two points relevant to the course. The instructor asks learners to provide the points learned from the case. The instructor concludes by summarizing the case, relating it to the principle to be illustrated and suggesting how the principle applies in other situations.
Techniques	There are several techniques the instructor can use to facilitate analysis of the case study. They include: • monitor learners who are not participating and try to draw them into the discussion, starting with closed questions and then asking for an opinion or comment on an issue. • ask stimulating questions when needed to promote thinking or guide the discussion, e.g. What is the importance of that fact? Do we need to look at additional facts or information? Is there another way of looking at it? • ask learners to respond to a question instead of responding yourself, when possible. • record learners' points on a chalk board (also give each group a flipchart for group work). • summarize the discussion to assist learners to refocus and progress when necessary.
Demonstration and Performance	
Definition	Demonstration is a method of instruction where the instructor, performs a sequence of actions (steps) to complete a specific task or tasks. The demonstration shows the learner what to do, how to do it and through explanations brings out the why, where and when it is done. This method incorporates behaviour modelling. Learners acquire new behaviours by observing models and then applying in practice. The method is used to: • teach manipulative operations or procedures. • teach trouble-shooting. • illustrate principles. • teach operation or function of equipment or tools. • teach teamwork. • set standards of quality. • teach safety procedures. Performance. Performance is a method in which the course member learns by doing, i.e., is required to perform under controlled conditions the operation, skill or movement being taught. An instructor assumes the role of coach. It is used to: • teach manipulative operations or procedures. • teach operation or function of equipment. • teach team skills. • teach safety procedures.
Application	In practice, the Demonstration and Performance methods are used together when teaching skills. Learners observe the performance of the target task and rehearse it under controlled conditions.
Techniques	**Techniques.** Instructors using the demonstration and performance method must be highly skilled in the procedures to be demonstrated. Learners must be shown the correct procedures. Providing an effective demonstration requires careful planning. Prior to the lesson, the instructor ensures that the task has been broken down into small sequential steps. If necessary, the instructor should rehearse the lesson prior to delivery to ensure the procedures are accurate and clear. The instructor also prepares all materials in advance and organizes the class so all can see.

	The instructor begins by introducing the lesson, identifying what learners will be able to do at the end, where this skill can be applied and why it is important to learn. During the lesson, the instructor explains each step and then demonstrates each step reiterating the critical components. In larger groups it may be helpful to provide a hand-out outlining the steps for learners to follow. Learners practice the task step by step under supervision. The instructor provides assistance or re-demonstrates as necessary. The instructor may also pose questions to the learners throughout the demonstration to ensure they understand the steps. Practice under supervision continues until the learner masters the skill. Mastery may require practice beyond class time depending on the complexity of the task and the level of the learner. Allowing learners to practice as early as possible and positively reinforcing everything learners do correctly enhances learning. The Demonstration and Performance method can also be used to support an explanation of a theory or concept (e.g. physics — heavier objects fall faster than lighter objects).
Field Trip	
Definition	The field trip is a planned learning experience in which learners observe "real life" operations that illustrate what was discussed or learned in the classroom. It is realistic and brings relevance to instruction. The field trip is used to: • reinforce and clarify classroom learning. • inject variety into the training situation. • permit learners to view operations or equipment which cannot easily be shown in the classroom. • set a realistic context for learning.
Application	The field trip requires careful planning to ensure it enhances classroom learning. Prior to the trip, the exact operation or equipment that learners will observe must be specified. Details such as transportation, safety or security considerations and whether members of the field unit will be available to demonstrate the use of equipment should be pre-arranged.
Techniques	If learners will be allowed to manipulate equipment, appropriate procedures should be pre-arranged and presented to the learners. During the presentation, learners can rotate through the demonstration, while others observe or look at other materials. Learners may be grouped and given access to equipment if careful supervision is not warranted or if additional personnel are available to supervise them on the job site. Planning the field trip will ensure instructional goals are achieved and that control of the learning situation are maintained. The Field Trip can be valuable to enhance motivation, demonstrate the relevance of material being taught and facilitate transfer to the workplace.
Gaming	
Definition	Gaming is a method employed to allow learners to practice behaviours under the conditions of the game. Games include conflict, rules and in some cases teams and this leads to competition: "winners" and "losers". Games are motivating for learners and can transfer well to the job but can have negative implications. Games are used with one or more individuals to practice skills associated with a social system or human interaction. The game must instruct some type of skill such as applying strategies or principles. Normally steps or procedures are repeated allowing learners to develop skills.
Application	Before employing this method, the instructor must explain the game and rules. During the game instructors should ensure that the game is played in the manner expected.
Techniques	Games can inject variety into the classroom, but it is critical that the game support learning of course material, for example, games allowing learners to practice language, recall terms, recognize equipment parts, and use strategies in games of tactics.
Guided Discussion	
Definition	Guided Discussion is a method in which learners are guided in steps to reach instructional objectives by drawing out their opinions, knowledge, experience and capabilities and by building on these to explore and develop new material. Learners discuss issues to expand their knowledge of the subject. It is used to: • develop imaginative solutions to problems (e.g. through brainstorming).

	• stimulate thinking and interest and secure learner participation. • encourage reflection. • supplement lectures, reading or laboratory exercises. • determine how well learners understand concepts and principles. • prepare learners to apply theory or procedure. • clarify or review points. • determine learner progress and the effectiveness of prior instruction. • foster attitudinal change.
Application	This method of instruction is employed with a small group of 4 -12 persons normally seated in a circular or horseshoe fashion to facilitate discussion. Reading material should be provided to learners in advance so that learners are familiar with the concepts that will be discussed.
Techniques	To conduct a guided discussion, an instructor should introduce the topic and scenario, outline the main discussion points, state the what, where and why of the lesson and create an open environment. During the body of the lesson the instructor poses open lead-off questions to guide the discussion towards the aim. Conducting a guided discussion requires skills in order to recognize digression and tactfully redirect discussion using rephrased questions, comments or summaries. Encouragement of learner discussion is essential by inviting members to talk, using follow-on questions and resolving conflict. The instructor concludes the lesson by reviewing all the main points contributed by both the learner and instructor and relating points back to the lesson aim. The guided discussion is relevant and meaningful to the learner if it is designed to meet their needs. It stimulates thinking and can result in higher levels of retention due to extensive learner participation.
Interactive Lecture	
Definition	The interactive lecture is a formal or semi-formal presentation in which the instructor presents a series of events, facts, principles, etc. and learners listen and participate by asking or responding to questions and commenting. It is efficient and standardized. It is used to: • orient learners and generate interest. • introduce a subject or give an overview. • give direction on procedures. • present basic or background material. • introduce a demonstration, discussion or performance. • illustrate application of rules, principles, or concepts. • review, clarify, emphasize or summarize.
Application	The interactive lecture can be employed with groups as large as forty. However, the larger the group the more difficult to build in lecture interactivity. Prior to the lesson, the instructor considers issues that could arise and prepares examples and explanations to deal with them. The instructor practices lecture delivery and prepares material.
Techniques	During the lecture, the instructor pays attention to learner feedback such as facial expressions, body language and alertness. If learners appear unsure it is best to deal with the problem before moving forward by asking if anyone has questions or posing questions to the class. Learner involvement can be promoted by providing an outline of the lecture's main points; citing relevant comparisons, reasons, examples, statistics and testimonials (CREST); mixing surprising or interesting points with dryer material to stimulate learners; identifying problems the material is relevant to; and incorporating other methods after 20 minutes of lecture such as a video. Discussion or hand-out completion can improve learner attention during the second part of the lecture. The instructor concludes by summarizing key points and re-motivating learners.
Panel Discussion	
Definition	A panel discussion is designed to provide an opportunity for a group to hear several (3-5) people knowledgeable about a specific issue or topic, present information and discuss their views. A panel discussion may help the audience further clarify and evaluate their

	positions regarding the specific issues or topics being discussed and increase their understanding of the positions of others. Panel discussions offer insight and potential lessons learned and may also be used to provide differing perspectives on a topic or issue.
Application	The moderator introduces a topic/issue which stems from specific desired learning outcomes and the members of the panel present their views and opinions regarding the issue or topic for a set amount of time. The panel should be aware of the intent of the session to provide time to prepare. The panel discusses the issue or topic with each other by asking questions or reacting to the views and opinions of other panel members. A specific amount of time should be established. As necessary the moderator directs the discussion and presents questions. The moderator closes the discussion and provides a summary of main points discussed. The moderator opens for questions from observers before moving on to the next topic or issue. Panel discussions are well suited to online forums, video-teleconferences and teleconferences. Often this is the best way to attract leading experts.
Techniques	The moderator is critical to the success of the panel. The moderator controls the discussions, ensuring the objectives are being achieved: • Clearly state the objective at the outset as part of the introduction. It reminds the panellists why they are there and informs participants of the intended outcome. • The moderator introduces the panellists. Keep it focused on the background relevant to the issue. The intent is to inform the audience so they can form appropriate questions. • Moderators are not panellists; the answers and discussions should flow among the participants and include opportunities for engagement with the audience. • Let the panellists talk to each other; however, ensure the discussion and debate is addressing the intended outcomes. Ideally the discussions can move online forums at a later date providing the opportunity for participants to interact further with the members of the panel.
Peer Learning	
Definition	During peer learning, structured materials are provided to learners who then teach their peers. This method is motivational and is used to facilitate: • team building. • recall of facts. • comprehension of concepts.
Application	Peer learning results in increased learning and retention rates for both learners receiving and providing instruction. Those acting as learners benefit from the individual instruction and those acting as instructors benefit from preparing and developing instruction.
Techniques	Peer learning can consist of advanced learners assisting individual learners, learners leading group discussions and learners having the opportunity to play both the learner and the instructor. It is most valuable to have learners play both roles if possible. Instructors should pair stronger and slower learners allowing the stronger learner to instruct or coach skills first. Then they can switch allowing both to have the benefit of extra practice and providing instruction. Peer learning increases learner participation and motivation. The quality of instruction must be assured.
Problem-based Learning (Small Group - Syndicate)	
Definition	Problem-based learning is a method that facilitates the learning of principles and concepts by having learners work on solving a problem drawn from the work environment. It is often used to develop critical thinking skills and problem solving.
Application	This method is usually conducted with small groups of 5 to 7 learners or with pre-established teams. Instructors prepare carefully constructed problems that will serve as

	the learning stimulus. Problems must be as realistic as possible so that learners can relate it to their work.
Techniques	During the lesson, learners analyse the problem and work towards solving it. Instructors facilitate learning by posing questions to get learners thinking and talking (e.g. What are the clues, facts and any guesses about the problem and the causes? What other information is needed?). The instructor should ensure that all learners participate, because discussion is key to learning, but they should try not to influence decisions. Instructors may also challenge learners thinking by questioning learners without leading them to the correct answer (e.g. What does this mean? What are the implications?). Instructors using this method must be experienced in facilitating learning and coaching learners. Instructors should refer to the coaching section in this manual for detailed information on the coaching process.
Role Play	
Definition	In this method, learners play defined roles in a scenario designed to reflect the conditions of the target performance. It allows learners to: • learn through practicing what they will have to do on the job. • learn by imitating others' behaviour. • learn from the feedback of others. • learn through practice and reflection on each role play they participate in. Role-playing exercises are methods of interaction in which learners play out and practice realistic behaviours by assuming specific roles and circumstances. They are used to represent a social system or interpersonal process in miniature so that the learner can practice making the responses to various situations that are similar to those he or she will encounter on the job. Role play is often used for language training, attitudinal objectives and to develop human interaction skills. It is realistic and promotes cooperative learning. The instructor begins the lesson by clearly explaining the objective of the lesson (what, where, when and why). It is critical to explain that role-playing is a learning process, and learners are not expected to play their roles perfectly from the start. This will help to put learners at ease. The instructor must clearly explain each role the learners will play. This is followed by a demonstration of the role-play either on video or through a live performance by instructional staff. Learners are paired or grouped together, and the role-plays are cycled through. The instructor does not interfere during the role-play unless learners require cues or assistance, or a safety issue arises.
Application	Following each role-play, the instructor debriefs the learner on his or her performance. Correct behaviours should be positively reinforced, and areas requiring improvement identified. Ideally, the role-play will have been videotaped so that learners can watch their performance and reflect on it and the constructive feedback provided by the instructor to improve performance.
Techniques	Instructors should be able to accurately demonstrate the skills being acquired during the role-play to assist learners if necessary. Instructors employing role-play should be able to coach learners and provide them with detailed feedback on their performance.
Self-Study	
Definition	Self-study is a method of self-instruction using printed and/or audio-visual or computer-based media, often presented through e-Learning or programmed instructional packages (PIPs) to be completed prior to, during, or following a course. Learners receive instructional materials containing built in feedback and work through them independently. It is used to: • provide remedial or make-up instruction for late arrivals, absentees or transients. • maintain previously learned skills which are not performed frequently enough. • accelerate or enrich learning of advanced learners. • provide common knowledge and skill background for learners prior to onset of course. • provide review and practice of knowledge and skills.

	• permit learning by those who cannot attend a course. Self-study can provide staff with needed time to prepare for instruction while learners complete individual activities. However, this method does require considerable lead-time to prepare material especially if they are technology-based.
Application	Prior to the self-study session, the instructor should confirm that required materials and resources are available and prepare any additional hand-outs or instructions.
Techniques	The instructor must provide clear direction to the learner on what they must do and allow them the opportunity to pose questions or raise concerns. Depending on the complexity of the activities and the maturity of the learners, an instructor should check in with learners to ensure they are progressing and assist as necessary. Some self-study materials enable learners to skip material they already know and progress at their own pace.
Simulation (including In-basket Exercise, Serious Gaming)	
Definition	Simulations are used to provide instruction of complex skills using a dynamic representation of a system or the actual equipment and the job environment. A simulator is an apparatus built to run the simulation. Simulations are context specific and realistic and facilitate transfer of learning to the job and do not necessarily require simulators to create the environment. Role players are often used in parallel as part of the method to create the require context. Simulation provides learners with situated learning and practice. The simulation may not exactly duplicate actual physical skills but should effectively duplicate conceptual tasks. Instructors should employ simulations so that learners learn how a system or device works while avoiding danger or other limitations of the real environment (e.g. access to equipment, weather, and operations).
	Complex skills must be progressively developed. Instructors should provide learners with simple scenarios or problems at the beginning and gradually build up to more complex situations as the learners' skills advance. Instructors may be able to stop simulations to provide direction or explanations and slow down or speed up the process to facilitate learning. It is through specific, constructive feedback and coaching from instructors that learners' skill will develop.
Application	Simulations can be developed in a variety of forms. For example, the in-basket exercise is a type of simulation in which learners respond to a variety of memorandums, directives, and messages that recreate a job specific scenario. Interruptions, emergencies, and random events are usually factored into the exercise. The in-basket method is effective for developing decision-making and prioritizing skills. War gamming is an example of serious games. Serious games are not a simulation alone. It may be a simulation combined with elements of game-play. Serious games have evolved significantly as a means of computer-generated environments, micro-worlds and role plays.
Techniques	Instructors must provide coaching, guidance and constructive feedback to learners on their performance during simulation. Instructors are referred to the section titled Coaching in this manual for detailed guidance on the coaching process that should be employed to enhance learning during a simulation.
Study Assignment	
Definition	Study assignment entails the assignment of the study of books, periodicals, manuals or hand-outs, and/or the review of audio-visual materials; the completion of a project or research paper, or prescribes problems and exercises for the practice of a skill. It can: • orient learners to a topic prior to classroom or laboratory work. • set the stage for a lecture, demonstration or discussion. • provide for or capitalize on individual differences in ability, background or experience through differentiated assignments. • provide for the review of material covered in class or to give practice. • provide enriching material.
Application	Providing learners with study assignments facilitates learning by covering concepts in greater detail and by allowing instructors to assess individual learner progress. Study assignments are helpful to all learners and especially those having trouble.

Techniques	Study assignments require instructor preparation time in advance for development of materials and instructions. To ensure out of class assignments are effective the instructor must provide clear direction, verify that work is completed and provide detailed feedback to the learner.
Tutorial	
Definition	Tutorial is a method of instruction in which an instructor works directly with an individual to ensure the successful completion of activities. It may be customized to meet the learner's needs. It is used to: • teach highly complex skills and operations, or operations involving danger or expensive equipment – within this context this is closely aligned with coaching. • provide individualized often remedial assistance/instruction. The tutorial is a highly motivating method of instruction as it provides one on one individualized instruction. There is much more time for one-on-one interaction as the learner absorbs the material. During the tutorial the instructor can adapt to the learner and use instructional strategies that will meet the learner's needs. For example, some learners respond more quickly to visual representation and diagrams than written text. Others may catch on quicker by discussing how something works to fully understand it. Often a tutorial will involve several strategies depending on the complexity of the topic and the needs of the learner and will focus on the areas of difficulty.
Application	Tutorials are ideal for providing remedial help or instructing complicated or dangerous procedures and techniques are described as part of coaching. This method of instruction does require extensive time to conduct depending on the number of learners.
Techniques	To effectively use the tutorial method instructors should be able to determine any difficulties that the learner is experiencing and respond to them. Instructors should be able to recognize whether the learner responds better to hands on experiences, discussions, visual or text materials and use this to provide them with the appropriate learning experience if they are experiencing difficulty. Knowledge of a variety of instructional methods and strategies will assist the instructor using the tutorial method. **Note**: OJT is an instructional method; however, it is addressed separately because it is implemented in the unit versus the training establishment or learning centre.
Coaching	
Definition	Coaching consists of aspects of the performance and demonstration method of instruction but is more learner centred and developmental. The instructor's role as a coach is to draw the learner's attention to critical elements of the task execution. The instructor, based on his or her knowledge of the individual learner, asks the learner questions which will lead them to take the next appropriate step in the procedure or take a different direction altogether. This is especially important when learners lose their train of thought or focus. The instructor must assist the learner to get back on track and continue with the task. Questions to the learner to assess his or her thinking and situational awareness under these conditions should be clear, concise and require short responses so that the flow of the task or operation is not disrupted. Instructors must be constantly monitoring the learners' performance to determine what they are doing correctly, as well as areas requiring improvement and how to correct them. The coaching sessions require a thorough debrief to complete the experiential learning cycle.
Application	**Simulators**. Simulators are employed for the development of complex skills such as piloting aircraft, ships, submarines and operating combat vehicles. The coaching method is employed to assist learners to develop skills in simulators. Coaching in this context is situated in the environment and is normally one to one or one to small group.
Techniques	Coaching is typically one-on-one or small group and the instructor role can be conducted in three stages consisting of briefing, monitoring and debriefing. BRIEFING • The learner should initially be put at ease and advised of the aim of the simulation session and any relevant background. This step serves to engage the appropriate mental model of the task under development.

	• The instructor should then explain and demonstrate each component of the task emphasizing the critical elements. Large tasks should be broken down into smaller tasks so that it can be taught in smaller chunks. Exactly what is being done at each component of the task should be demonstrated and described as well as why it is performed that way. Questions from the learner are encouraged to ensure they understand what to do. • Immediately prior to the simulation session the instructor reviews the main points of the task and confirms that the learner is ready. MONITORING • This stage consists of performance and observation, preferably using a standard checklist. The learner performs the task while the instructor closely monitors to see that it is carried out correctly and to note corrections the learner must make. The learner should be allowed to carry out the task. The instructor must keep track of what the learner is doing and use brief questions to assess his or her thinking or keywords to cue or help the learner to proceed to the next component. DEBRIEFING • Before providing feedback, the instructor examines the learner's performance to determine what was done properly and what areas are weak, and to determine why the problem is occurring. Then the instructor can provide precise constructive feedback on strengths and the weaknesses and advise the learner how to correct the problems using explanation and demonstration. It is preferable to focus on correcting two to three major problems in each run rather than every minor error because too much feedback will overwhelm and de-motivate the learner. • The debrief must be a positive learning experience, so the instructor should put the learner at ease and present a positive, supportive attitude. The instructor should begin by summarizing the learner's overall performance. • Instructors should take the time to address the components of the task that were performed well to reinforce the correct behaviour, instil confidence and motivate the learner. As the session continues the instructor identifies and analyses two to three problem areas providing clear explanations of what was done incorrectly. The instructor should encourage the learner to participate in analysing his or her performance of the task by posing guiding questions. The instructor provides guidance on how to correct deficiencies and suggestions to improve performance. • The instructor concludes by summarizing strong points, reconfirming what will be done to correct the two to three major problems addressed and by re-motivating the learner.

Figure K-6-1 - Methods of Instruction

APPENDIX 7 TO
ANNEX K
Bi-SCD 075-007
DATED 24 MAR 25

METHOD SECTION MATRIX

1. The following method selection matrix identifies methods based on the classification of an ELO (Cognitive versus Psychomotor) and the intended level of learning to be achieved, as indicated by DoK and skill key word indicators. The following considerations should also be factored into method selection:

a. What will interest, engage and motivate students?

b. Does the target audience have prior learning (knowledge, skill and/or experiences) which could be leveraged?

c. Are there operational scenarios, lessons learned, incident reports or stories which could be leveraged and used to promote higher levels of learning through more active engagement? This, in turn, could influence decisions to use specific imagery and video.

d. Are there time constraints affecting the duration of the course?

Method Selection			
	Type of Learning	**Depth of Knowledge (and skill) Key Word Indicators**	**Method of Instruction**
100	**Psychomotor** **Perceptions, Readiness & Guided Response**	adhere, arrange, assemble, dismantle, detect, display, fasten, follow, grind, heat, identify, imitate, measure, mend, prepare, recognize, repeat, replicate, reproduce, responds, select, sketch, trace,	• Demonstration / performance • Role play
	Cognitive **Remembering explicit knowledge**	arrange, define, duplicate, identify, label, list, mark, match, name, order, recall, recite, reproduce, recognize, reproduce, select, state.	• Lecture • Self-Study • Tutorial
200	**Psychomotor** **Mechanism/Manipulation**	assemble, build, calibrate, construct, dismantle, fasten, grind, heat, manipulate, measure, mend, mix, organize, shape, sketch.	• Demonstration / performance • Role play • Simulation • OJT
	Cognitive **Comprehending/ Understanding**	arrange, categorize, classify, convert, distinguish, estimate, explain, extrapolate, group, illustrate, label, match, paraphrase, predict, reiterate, restate, reword, rewrite, report, select, separate, summarize, translate.	• Lecture • Self-Study • Tutorial • Field trip • Small Group • Gaming
300	**Psychomotor** **Complex response/Precision**	assemble, build, calibrate, construct, control, dismantle, display, dissect, execute fasten, fix, grind, heat, manipulate, measure, mend, mix, organize, perfect, sketch.	• Demonstration/ Performance • Gaming • Simulation • Role play • OJT
	Cognitive **Applying**	administer, apply, calculate, change, compute, construct, examine, execute, employ, identify, implement, manipulate, modify, operate, perform, predict, prepare, produce, relate, respond, show, solve.	• Lecture • Guided Discussion • Study assignment • Self-study • Gaming • Simulation • Panel Discussion • Peer learning • Small Group • Role play • Case study

400	**Psychomotor** **Adaptation**	adapt, adjust, alter, arrange, assault, combine, composes, construct, coordinate, create, design, develop, estimate, formulate, integrate, invent, modify, rearrange, reorganize, revises, solve, troubleshoot,	• Performance • Gaming	• Role play • Simulation • OJT
	Cognitive **Analysing**	analyse, break down, compare, condense, contrast, deconstruct, design, diagram, differentiate, discriminate, distinguish, divide, experiment, extrapolate, graph, infer, interpret, modify, measure, plan, plot, predict, produce, project, quantify, resolve, revise, search, solve, test, troubleshoot.	• Lecture • Guided Discussion • Self-study • Gaming • Peer learning	• Panel Discussion • Small Group • Simulation • Role play • Case study
	Psychomotor **Originate**	arrange, build, combine, compose, construct, create, design, initiate, make, originate.	• Performance • Gaming	• Simulation • Role play
	Cognitive **Assessing/Building/ Creating:**	appraise, assemble, assess, build, categorize, combine, compile, compose, conclude, construct, contrast, create, critique, defend, design, derive develop, devise, diagnose, discriminate, encrypt, estimate, evaluate, formulate generate, hypothesize, integrate, interpret, invent, investigate, judge, justify, measure, modify, outline, originate, organize, plan, predict, propose, rank, rearrange, recommend, reconstruct, reframe, revise, rewrite, summarize, validate, war game, write.	• Self-Study • Gaming • Simulation • Role play • Case study	• Peer learning • Panel Discussion • Small Group • Field Trip

Figure K-7-1 - Method Selection

APPENDIX 8 TO
ANNEX K TO
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MEDIA SELECTION

1. Subject matter influences media selection when key aspects of the performance favour a specific type of delivery taking into consideration the method(s) of delivery and the environment identified for learning. Instructor-led learning may be preferred when the content involves interaction with a group, one-on-one interaction or physical skills.

2. Examples[408] of media are captured in Figure K-8-1.

Medium	Description
Instructor	Led by a person, usually in the classroom or similar type location
Print	Textual and/or graphical material used for learning or initiating learning activities
Real equipment	As issued to the unit/individual
(Pre-recorded) Videos	Sound and moving images of relative short duration and of high quality
Web-based training	Instructional materials are accessed through the internet, e-Learning/online courses on JADL
Audio/Tele conference	Voice-based communication, linked by phone or audio equipment
Video conference	Video and voice-based one-way or two-way communication
Simulator	Device allowing the learner to interact with a representation for a system/piece of equipment
Models	Three-dimensional device representative of the real equipment

Figure K-8-1 - Media Examples

[408] Modified from Reference K, Annex E.

ANNEX L TO
Bi-SCD 075-007
DATED 24 MAR 25

COURSE CONTROL DOCUMENT III – PROGRAMME OF CLASSES

1. The Programme of Classes, CCD III, is developed to define a NATO E&IT solution[409]. The ETF generates the Programme of Classes. Designed with the training audience in mind, this CCD includes the ELO(s) and provides the details supporting the overall instructional strategy including the final structure of the content, the instructional method as well as the time allocated to complete the ELO. CCD III also includes student assessment details.

2. The CCD III - Programme of Classes is uploaded to the ETOC by the ETF and subsequently verified with the DH as an appropriate solution to meet the previously identified POs in CCD II. Example formats for CCD III are enclosed. ETOC Technical support is available through the 'contact us' button in the top tool bar.

APPENDICES:

1. Creating and Maintaining Course Control Document III.
2. Course Control Document III Programme of Classes - Template.
3. Enabling/Learning Objective – Example.

[409] CCDs are the output products for the NATO SAT Definition Stage. The CCD define a NATO E&IT solution. ETFs may use other forms and formats to describe their respective plan to satisfy an E&IT requirement. The alternative formats include Training Plan, Programme of Learning, Course Curriculum, Programme of Instruction and Course Syllabus. The essential elements to be addressed are outlined in Chapters 5 and 6.

APPENDIX 1 TO
ANNEX L TO
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CREATING AND MAINTAINING COURSE CONTROL DOCUMENT III

Initial Creation of CCD III

1. CCD III is the output product of the Design Phase of NATO's SAT process. When the DH has completed drafting the CCD II and it has been endorsed by the RA and External OPR (if one is assigned), the ETF can begin the Development Phases. Although the DH is accountable for the development of CCD III, it is the ETF and the External OPR who are responsible[410] to develop it. Refer to Figure 9 (SAT Assignments Matrix).

2. The CCD III template is available in Appendix 2 to this annex; however, the formal creation[411] of the document to seek course certification status is completed digitally in the ETOC component of NDTMS. Within the ETF, the assigned and approved individual will perform the role of Institution Manager.

Continuous Improvement of E&IT

3. It is expected that continuous improvements will occur to an E&IT programme over its lifetime, including responding to changes to existing requirements or the addition of emerging requirements. These are identified by the RA and captured in updates to the CCD II. When the changes to CCD II have been completed, the ETF is informed. The ETF would then initiate updates to CCD III and the associated courseware. This may be completed as a WG or completed individually with feedback sought by the DH, external OPR, if assigned, and potentially SMEs. Overall, the DH is accountable for alignment of CCD III to CCD II. All changes are to be reviewed/endorsed by the DH and inputted in NDTMS (using the digital template) by the ETF Institution Manager.

4. At a minimum, the CCDs II and III must be reviewed once every three years as per the course certification guidelines (refer to Chapter 2 of this document)[412] and to confirm to the Global Programming governance bodies and MDFD's Quality Assurance Section that the courses remain in alignment with the requirements. Even when there are no changes to CCD II, an ETF may initiate changes to CCD III and the courseware. This may involve major and minor changes to assessment, instructional strategies[413], references or resources. If the content in CCD III changes, the DH is involved as per the above paragraph.

[410] Depending on expertise within the ETF, the External OPR is and SMEs may be required to provide input to or help develop the CCD III.
[411] An ETF must have an approved (by HQ SACT / JFD) Institution Manager (or designate). This assigned role would enable the ETF to initiate a course in ETOC and then later, if planning to seek course certification, upload the three CCDs in e-ITEP.
[412] Courses will be valid in ETOC for a maximum of three years without completing any review and updates as needed to ensure alignment of CCD III to CCD II.
[413] Refer to Chapter 6, Step 8.4.3, Determine Instructional Strategies, and Annex B for description.

APPENDIX 2 TO
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COURSE CONTROL DOCUMENT III PROGRAMME OF CLASSES – TEMPLATE

COURSE CONTROL DOCUMENT III - PROGRAMME OF CLASSES				
ETOC Code:	**Title:**			
PO # :	*Insert the performance statement describing what a learner will be able to do upon completion of a specified Performance Objective (PO).*			
ELO # :	*Insert the Enabling/Learning Objective (ELO) title.*			
PERFORMANCE	*The statement clear, concise and precise statement representing a logical and complete segment of what is to be learned to achieve a PO.*			
CONDITIONS	*A list of the conditions which describe the situation in which learning will occur.*			
Given	*What the student is given during learning and practice.*			
Denied	*What the student is denied during learning and practice.*			
Environment	*Learning environment location*			
STANDARDS	*Defines what the student or trainee will be able to do, related to the level of proficiency that determines if the required level of learning is achieved.* The student shall/will:			
ASSESSMENT	*A summary is provided here. This content should be captured within the plan of assessment. Practical or Written. Group or Individual. On own or combined with other Enabling/Learning Objectives (ELO). Also indicates how the results are used to determine disposition on final status of course completion.*			
INSTRUCTIONAL STRATEGY	*Indicate the methods of instruction and various environments when more than one.*			
Content	**Method**	**Environment**	**Time *(min)***	**References**
Lesson #1 – *A label assigned the 1st grouping of teaching points (TPts)*	*Identify methods*	*Identify physical location of E&IT*	*Estimate of the time*	*Links content to a source*
TPt1				
TPt2				
TPt3				
Lesson #2 – *A label assigned to a 2nd grouping of TPts*				
TPt1				
TPt2				
Lesson #3 – *A label assigned to a 3rd grouping of TPts*				
TPt1				
TPt2				
TPt 3				

Total minutes of learning					
Test					
Test debrief					
Total time					
PROFICIENCY LEVEL / DEPTH OF KNOWLEDGE	*Specifies a level (100-400) which identifies the level of learning. Proficiency level of performance / level of knowledge and skills.*				
REFERENCES	*A list of reference used in the instructing and learning for the ELO.*				
LIMITATIONS	*A description of limitations which prevent the completion of Enabling/Learning Objective.*				
SPECIAL RESOURCES	*Ones to note of importance or difficulty to obtain for E&IT iteration. Do not repeat all from the Given. Comments that further clarify the design intent captured within the Enabling/Learning Objective.*				

Figure L-2-1 – CCD III Template with Notes

Note: Instructional Strategies. When the Training Strategy for a course involves a blended solution, the Instructional Strategy component of the template must contain the environment for learning. This would indicate whether classroom, or otherwise, that is related to the ETF residential location, or at home for the self-study portion of the course.

3. **Guidance for data entry into ETOC.** When clicking Edit in the ELO area of CCD III, you will see several windows. Refer to Figure L-2-2. Within each window is where the ELO information is inserted by the ETOC Institution Manage or designate. Refer to Figure L-2-3 for an example.

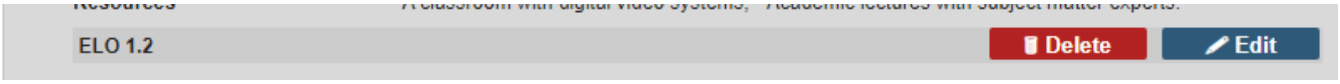

Figure L-2-2 – ETOC ELO Edit Button

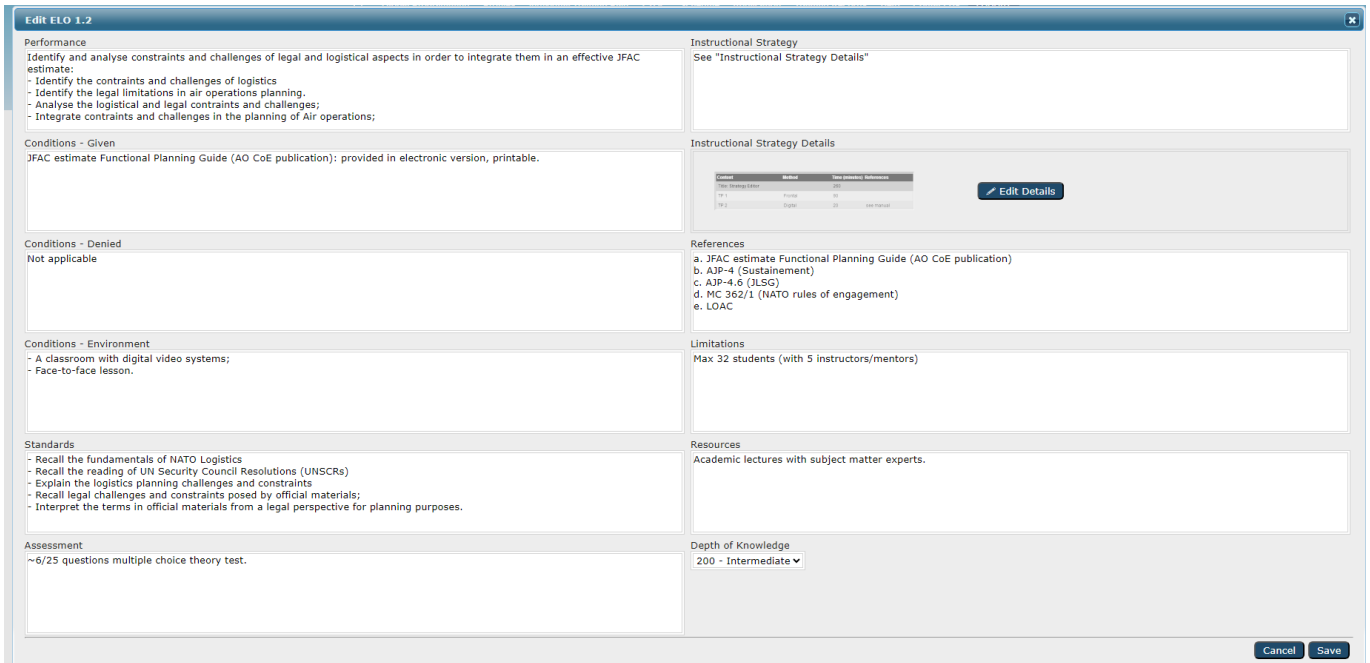

Figure L-2-3 – ETOC ELO Data Entry View

APPENDIX 3 TO
ANNEX L TO
Bi-SCD 075-007
DATED 24 MAR 25

ENABLING / LEARNING OBJECTIVES – EXAMPLES

COURSE CONTROL DOCUMENT III - PROGRAMME OF CLASSES	
ETOC Code: INT-XX-2XXX	**Title:** Geo-Spatial Intelligence Analyst
	PO 12: Interpret Object-Oriented GPS data files.
	ELO 12.01[414]:
PERFORMANCE	Describe general geodesy principles
CONDITIONS	
Given	1. Orders. 2. Student Handout – Geodesy Backgrounder – Handout per student. 3. ADP and ancillary equipment. 4. Current software and GIS extensions. 5. GPS data sets. 6. Markus2 GPS.
Denied	Nil.
Environment	Classroom
STANDARDS	The student will explain general geodesy by: 1. Identifying the basic terms and concepts for geodesy. 2. Explaining the earth's dimensions. 3. Describing positioning techniques. 4. Explaining projections.
ASSESSMENT	Knowledge-based assessment: 30 question multiple choice theory test. To be completed in 50 mins plus a 25 min period for debriefing test to class
INSTRUCTIONAL STRATEGY	Interactive Lecture (IL)

CONTENT	**METHOD & TIME *(min)***		**Environ-ment**	**REFERENCES**
Lesson 1[415]: Identify geodesy terms and concepts	IL	50	classroom	A: Chap 1, Page 5-7
TP1 Recognize the concept of geodesy				
TP2 Define of Geodesy;				
TP3 Explain Pythagoras theory and the use to measure the circumference of the earth				
TP4 Explain Eratosthenes theory used to measure the circumference of the earth.				
Lesson 2: Explain the earth's dimensions	IL	100	classroom	A: Chap 2, Page 29-35
TP1 Explain the shape of the earth;				
TP2 Explain Measurement Parameters				
TP3 Define Ellipsoids, Geoids and Spheroids.				
Lesson 3: Describe horizontal positioning techniques	IL	100	classroom	A: Chap 4, Page 49-71

[414] This example is a knowledge-based ELO.
[415] Lesson titles may or may not include a verb. Without a verb, the title will summarize the subject to be learned by the students.

TP 1 Outline horizontal and vertical Positioning on the Earth's surface;				
TP2 Contrast 2D and 3D Cartesian Coordinate System				
TP3 Identify types of Horizontal Positioning;				
TP4 Recall Polar coordinates, Azimuth, and Bearing Direction Coordinates;				
TP5 Compare True, Grid, and Magnetic North;				
TP6 Summarize Curvilinear Coordinate System				
TP7 Explain how to determine time (hours-min-sec)				
TP8 Contrast Triangulation, Trilateration, and Traversing; and.				
TP9 Explain the earth's dimensions				
Lesson 4: Describe vertical positioning	IL	100	classroom	A: Chap 5, Page 36-45
TP1 Explain Vertical Positioning on the earth's surface				
TP2 Identify 4 Types of Vertical Positioning				
TP3 Describe precise levelling, trigonometric measurement, barometric and echo sounding				
TP4 Outline Trigonometric Height Measurement				
TP5 Contrast 2D and 3D Cartesian Coordinate System				
Lesson 5: Explain projections	IL	100	classroom	A: Chap 4, Page 49-71
TP1 Identify projection characteristics: area, shape, direction, scale;				
TP2 Differentiate projection characteristics: area, shape, direction, scale;				
TP3 Identify types of projections azimuthal, conic, cylindrical;				
TP4 Differentiate projection characteristics: azimuthal, conic, cylindrical;				
TP5 Explain Point of Light Origin (orthographic, stereographic, sinusoidal, mercator, globular).				
Learning Time		450		
Geodesy Test	Test	50		
Geodesy Test Debrief	Debrief	25		
Total Time:		**525**		

Proficiency Level / Depth of Knowledge:	**200**
References:	A. Kaula, M. (2000). Theory of Satellite Geodesy: Applications of Satellites to Geodesy.

Limitations:	Knowledge-based introductory to PO. Due to security classification of content and the course being UNCLASS, the instructor will use fictitious scenario as part of ILs. Later, the student will be unable to pull real data IOT interpret.
Special Resources:	1 x Markus2 GPS per five students.

Figure L-3-1 - Course Control Document III Example 1

	COURSE CONTROL DOCUMENT III - PROGRAMME OF CLASSES			
ETOC Code: MED-MS-27XX	**Title:** NATO MEDICAL EVALUTION Course (MEDEVAL)			
PO 1: Conduct a medical evaluation in an international environment				
ELO 1.4[416]:				
PERFORMANCE	Assess implementation and updates to NATO medical module SOPs			
CONDITIONS				
Given	1. A medical module. 2. Scenario - orders for deployment. 3. NATO medical SOPs. 4. Tailored MEM. 5. Computer, projection screen. 6. White board and markers.			
Denied	Nil.			
Environment	1. Classroom and syndicate rooms. 2. Field area.			
STANDARDS	The student shall: 1. Read and interpret SOPs. 2. Check responsibilities for completing specific tasks as per SOPs. 3. Assess that SOPs are clearly worded and easily understood. 4. Assess the implementation and updates of SOPs.			
ASSESSMENT	Formative Assessment: Practical, problem-based exercise in syndicates. Students to execute live evaluation and provide feedback based on info collected in SOP analysis.			
INSTRUCTIONAL STRATEGY	Interactive Lecture (IL), problem-based learning (PBL, in syndicates).			
CONTENT	**METHOD & TIME *(min)***		**Environ-ment**	**REFERENCES**
Lesson[417] #1: First Evaluation Report (FIR) and Final Evaluation Report (FER)		50	classroom	
TP1 Integrate Evaluation timeline	IL	10		C, E
TP2 Utilize DOTMLPFI mnemonic	IL	10		C, E
TP3 Compile FIR	IL	15		C, E
TP4 Compile FER	IL	15		C, E
Lesson #2: Syndicate Work		180	Field area or syndicate room	
TP1 Task I - Morgue	PBL	*60*		*E, F, G*
TP2 Task II - Ward	PBL	*60*		*E, F, G*

[416] This example is a performance-based ELO.

[417] Lesson titles may or may not include a verb. Without a verb, the title will summarize the subject/content to be learned by the students.

TP3 Task III – Command Control Communications Computers and Information Module (C4)	PBL	*60*		*E, F, G*
Total minutes of learning		**230 min**		
Test - EC		45		
Test debrief		15		
Total time		**330 min**		

Proficiency Level / Depth of Knowledge:	300
REFERENCES:	C: Allied Joint Publication 4.10, Allied Joint Medical Support Doctrine. D: STANAG 2560 Evaluation of NATO Medical Treatment Facilities. E. Allied Medical Publication 1.6, Medical Evaluation Manual. F. Allied Medical Publication 1.7, Capability Matrix. G. Allied Medical Publication, 1.8, Skills Matrix.
Limitations:	There is insufficient time for the performance to be completed individually; performance-based will be completed by the students in small groups of eight people (optimal number). If field area is not available then activities will be completed in the syndicate rooms.
Special Resources:	NS computers and classroom

Figure L-3-2 - Course Control Document III Example 2

ANNEX M TO
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COURSE CONTROL DOCUMENT I – CONTROL FORM

1. The Control Form, CCD I, is a coversheet to a Course Proposal. This is the basis of agreement for moving forward and formalizing an E&IT solution within a specific ETF. The coversheet is specific to a course, and along with the Course Proposal initiates a course within the NATO Education Training Opportunities Catalogue (ETOC).

2. The standardized Control Form identifies the specific stakeholders concerned with managing a discipline and the definition and delivery of E&IT solutions. When applicable, the supporting area (a sub-category within a discipline) is identified. Areas are captured within the ETOC. The sign offs may include an External Course OPR, should the ETF require expert support which is external to the ETF. An ETF may produce its own internal control form as part of its internal course sign off process. Locally produced control forms are not acceptable by HQ SACT DCOS MDFD as a substitute for the Global Programming CCD I. All NATO-Approved and NATO-Selected E&IT solutions, including those which are already developed and in place, require a Control Form. An example Control Form is enclosed. ETOC Technical support is available through the ‘contact us’ button in the top tool bar.

APPENDICES:

1. Course Control Document I Template.
2. NATO Course Certification Approval Process.

APPENDIX 1 TO
ANNEX M TO
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COURSE CONTROL DOCUMENT I CONTROL FORM - TEMPLATE

1. CCD I is initiated and finalized by the DH. The DH may initiate CCD I upon completion of CCD II or later at the end of CCD III. The form will be finalized after the completion of a pilot course is conducted.

2. Amplification on the sign offs as part of the template is as follows:

a. **Command.** ETF leadership. Formalizes the intent and commitment of the institution to move forward with a proposed NATO E&IT solution[418]. Identifies who is responsible for an existing or proposed E&IT solution within the ETF and may or may not be a content SME. The Course OPR could be the TNA WG Chair or have a different title (e.g. Course Director[419]).

b. **Requirements Authority.** As determined by the RA Representative, an External Course OPR may or may not be required by the ETF for the conduct of the E&IT solution[420]. HQ SACT / MDFD will coordinate with the RA if the External Course OPR is not known.

c. **Department Head.** Verifies and acknowledges with a signature that the proposed E&IT solution is in alignment with the requirement(s) that are captured in a discipline's TRA Report[421] or the DAP Annex C.

[418] The internal quality controls and sign offs within the chain of command of the ETF leads to institutionalizing an E&IT solution.
[419] A Course Director, who is not a SME and may or may not be involved in the execution of E&IT, would be responsible to carry out administrative functions related to the implementation phase of SAT.
[420] The RA may require NCS support to ensure their requirements are taught through E&IT. If no internal ETF content SME is available to act as Course OPR, then an external course OPR needs to be sought/assigned. HQ SACT may be requested to assist. When expertise resides in an ETF, an external OPR does not need to be annotated.
[421] The DH is in the lead for the TNA; however, a specific ETF may execute the task on behalf of a DH and seek concurrence of the DH and potentially outside SMEs on the content. Once the Control Form is uploaded within the ETOC, HQ SACT staff will verify with the DH if the DH endorsement is not provided.

COURSE CONTROL DOCUMENT I – CONTROL FORM				
☐ *New Course* ☐ *Revision*	*COURSE TITLE:* *Brief Description:*			
Discipline	*Functional Area (if applicable)*	*ETOC Course Code*		
#	Activity	Unit Name	Acknowledgement	Date
1	**ETF Command.** ETF leadership intend to support NATO and implement a proposed or modified E&IT solution. *Digitally Uploaded :* *CCD II – Course Proposal.* *CCD III – Programme of Classes.* ☐ *ETF OPR is assigned yet acts as Course Director only* ☐ *ETF OPR is assigned and is an ETF internal SME on the course content.* *Note: The ETF is responsible for producing CCD III and ensuring the DH endorses its alignment to CCD II prior to submission for course certification.*	ETF	*Signature* *Name* *Rank* *Position*	*DD/MM/YY*
2	**External Course OPR.** The ETF responsible for the SAT Delivery Stage requires support from the NCS* during the Implementation Phase. ☐ *Required*** ☐ *Not Required**** ** May come from outside NCS as necessary* ***RA Representative is to sign to acknowledge and accept the support requirement from the NCS. ETF Command was consulted and acknowledged internal SME <u>not</u> available.* **** ETF Command was consulted and acknowledged instructors will be allocated to delivering the course.*	RA Representative	*Signature* *Name* *Rank* *Position*	*DD/MM/YY*

3	**Department Head.** Acknowledges the proposed E&IT solution is in alignment with NATO's education and training requirement(s). ☐ *Solution aligns to requirement(s)* ☐ *Pilot course conducted* ☐ *Pilot course not necessary for re-certification* *Notes: 1. The new E&IT solution will be activated as "Listed" within the ETOC until CCD III is uploaded and course approved.* *2. The DH is responsible and accountable for ensuring CCD I is produced; however, this is completed in coordination with an ETF and RA/RA Rep.*	DH	*Signature* *Name* *Rank* *Position*	*DD/MM/YY*

Figure M-1-1 - Course Control Document I Template

APPENDIX 2 TO
ANNEX M TO
Bi-SCD 075-007
DATED 24 MAR 25

NATO COURSE CERTIFICATION WORKFLOW AND APPROVAL PROCESS

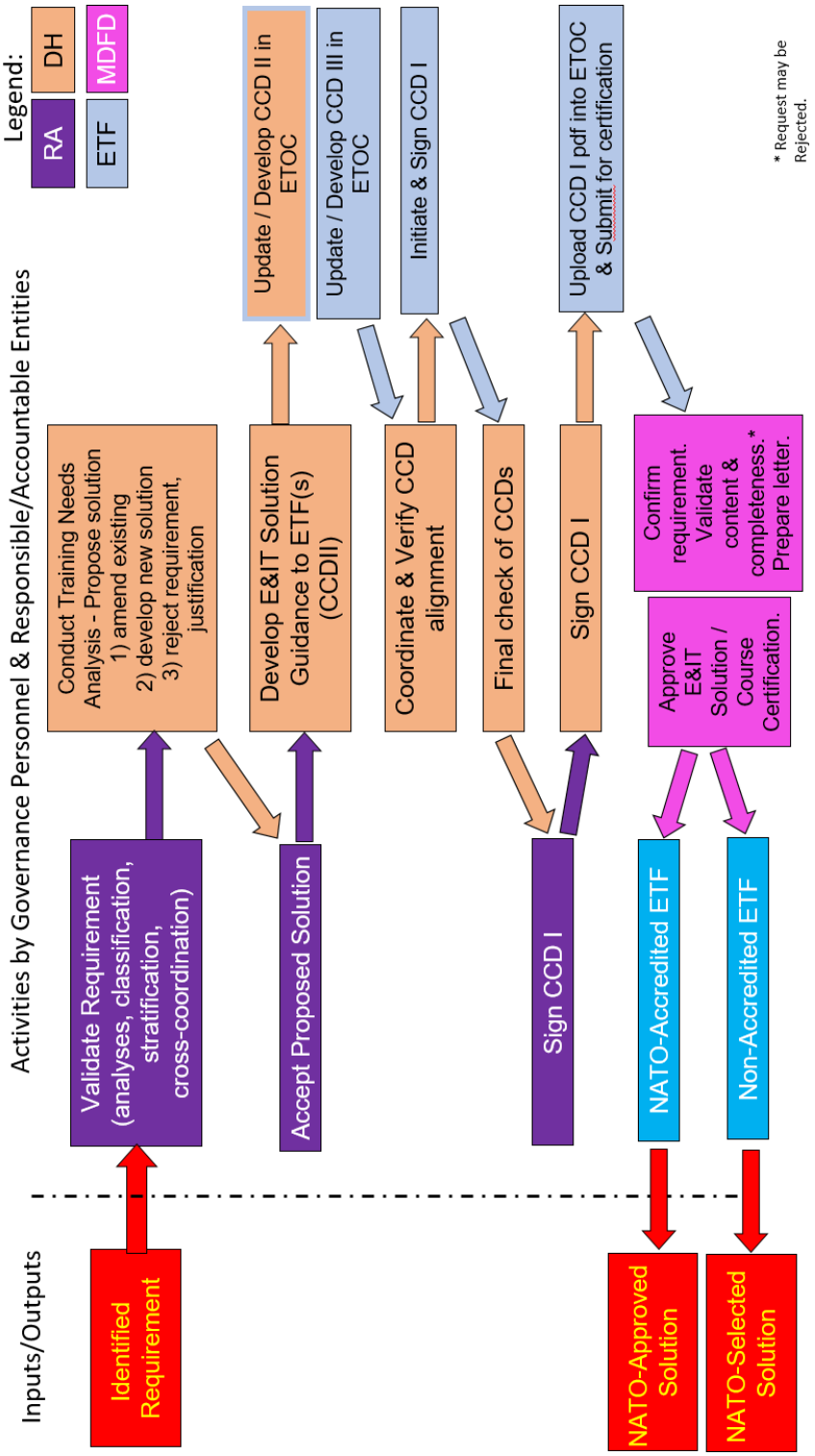

Figure M-2-1 – NATO Course Certification Workflow and Approval Process

ANNEX N TO
Bi-SCD 075-007
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DEVELOPMENT PHASE

KNOWLEDGE-BASED (THEORY) ASSESSMENT

1. Knowledge tests are typically conducted as ELO checks (formative assessment) or in support to performance checks (summative assessment), and constructed of the follow types of items:

a. Multiple-choice.

b. Matching.

c. True-false.

d. Essay.

e. Short answer.

f. Completion (fill in the blank).

2. There are many variations to knowledge-based assessment instruments which can provide authentic assessment, including:

a. **Out of Class (Take-home) Assignment.** This less formalized form of assessment allows individuals to use references and other resources.

b. **Open-book Test.** This type of assessment can reduce stress but may decrease the student's motivation to study or internalize information.

c. **Paired/Group Test.** This allows students to work in pairs or at a syndicate / group level. This is a collaborative form of assessment.

d. **Individual Portfolio.** This allows students to demonstrate how they have achieved the objectives through submission of work products.

GUIDANCE FOR DEVELOPING AN OPTIMAL SCHEDULE / TIMETABLE

1. In support of Step 15, a well thought and planned schedule has the following considerations:

a. **Progression.** The schedule brings students to the required standard through a logical sequence of events and activities, this requires pre-requisite knowledge prior to skills development and, where it is applicable, a step-by-step flow based on the performance sequence.

b. **Variety.** Wherever possible, without being at cross-purposes, POs and ELOs should be presented in a variety of sequences and using a variety in instructional methods in order to maintain interest and avoid fatigue.

c. **Tempo.** The tempo of instruction should build through periods of intense activity and be followed by periods of relative relaxation while taking into consideration a balance of the natural energy rhythms impacting fatigue and effectiveness as well as opportunities for reflection.

d. **Efficiency.** An efficient schedule is one which makes optimum use of facilities, resources and opportunities in both the support and the conduct of an E&IT solution. Examples include leveraging a guest speaker across multiple courses simultaneously, having a leading expert address different courses during a single visit to an ETF, and lead a question-and-answer activity after students watch a video.

e. **Flexibility.** The provision of spare periods addresses unforeseen circumstances. Without this reserve a course may run into difficulty. The addition of one spare training day for every thirty scheduled training days or one or two spare periods for a 1-week course are reasonable planning estimates.

2. There are additional factors to be considered when sequencing activities for optimum effect. The influence of these additional factors will vary depending on the broader intent of the E&IT solution; however, in general, the considerations are as follows:

a. **Saturation.** The point reached when the rate of instruction is such that what is to be learned is neither internalized nor retained[422].

b. **Fatigue and Effectiveness.** Scheduling activity in accordance with the natural physical, mental and behavioural rhythms which can affect the body. Known as the circadian rhythms, these are changes that generally follow a 24-hour cycle, responding primarily to light and darkness and the influence of energy levels and wakefulness. Suggested guidelines to address fatigue and effectiveness are as follows:

(1) Schedule the more mentally challenging work in the morning.

(2) Schedule the more interesting work, along with opportunities for active engagement (or performance), in the afternoon.

(3) Avoid excessing passive learning after meals.

c. **Administration.** Activities must be scheduled to ensure they occur and that learning activities can happen. This may include issuing and returning of supplies, issuing of laptops, confirm access to ETF LMS, transport or movement from one location to another.

d. **ETF Training Day.** The course schedule should be planned considering the ETF's length of a period of instruction, daily instructional time, rules pertaining to homework or evening instruction, maximum training day, and the instructional week[423,424].

[422] It may result from excessive sequential passive learning and no application or practice of the content learned.
[423] It is important to consider that students may have caretaker or other responsibilities to attend to after training or workday.
[424] The instructional week may be impacted by a Statutory Holiday or the requirement for a +1 week course.

PREPARE INSTRUCTIONAL STAFF / FACULTY

1. In support of Step 16, the following guidance is provided for an ETF instructor development programme; however, the specifics will need to be adapted to suit each entity:

a. Confirm instructors have the subject matter expertise.

b. Confirm instructors can use the technology associated with virtual, distributed or instructor-supported online learning.

c. Confirm instructors have the teaching, coaching and facilitating competence.

d. Arrange opportunities to develop individual instructor's competence in teaching, coaching, and facilitating e-learning as well as how to manage the instructional setting.

e. Provide new instructors with initial induction[425] (or on-boarding) and a transition period to understand the administrative functions of an instructor as well as understand how best to function within the instructional environment. Where appropriate, provide opportunities for observing the instructional environment prior to delivering E&IT for the first time.

f. Provide instructors sufficient time to personally prepare their own[426] detailed lesson plans for a course based on MLPs.

g. Encourage instructor self-reflection on their performance and continuing to have opportunities to observe others.

h. Monitor instructors, providing constructive feedback concerning instructor lesson delivery techniques and how to improve learning conditions. Monitoring involves formalized periods of observation[427].

i. Review other feedback. Encourage instructors to receive feedback from peers and review the responses provided by students during a course.

j. Promote a diverse representation of instructors, for example, in relation to gender, age and nationality.

GUIDANCE FOR MANAGEMENT OF COURSE PILOT ITERATIONS

1. In support of Step 17, it is important for an ETF to consider pilot iteration planning and data collection as well as the students who partake in the iteration.

[425] Instructor induction/on-boarding may include the following topics: Global Programming, NATO's Systems Approach to Training, training documentation, course reporting procedures, training record and student file management, and procedures for requesting access to courseware.
[426] Personalized or tailored lesson plans do not deviate from the aim of the learning outcome of lesson objective(s). Instructors could tailor their examples to their experiences.
[427] Course staff may benefit from continued instructor competence development between course iterations.

2. **Pilot Iteration Planning.** As the RA and the DH will be required to sign the CCD I to request course certification status, the ETF is to inform the DH who in turn will inform the RA. Planning the pilot should consider[428]:

a. When can it be conducted?

b. Which students and how many will be in attendance?

c. Which instructors will be required?

d. How much time is required?

e. Are all the resources available and allocated?

f. What revisions can be made during the pilot?

g. Will the DH or the External OPR be supporting the pilot by assessing if the course delivered the correct content and competences / POs it had been created to produce?[429]

3. **Pilot Iteration Students.** While piloting a course, it is important to safeguard the interests of the students. They should not be disadvantages because they attend a pilot. Therefore, the following actions should be considered[430]:

a. Trialling parts of the materials before the pilot (i.e. ensure it works and time required).

b. Allocating additional time to the pilot to allow for changes and revisions during execution.

c. Ensuring that students who fail part of or the whole pilot can be retrained and/or tested.

4. **Pilot Iteration Data Collection.** A major activity during the pilot is data collection. A comprehensive approach of obtaining feedback will enable a more accurate means of interpreting what is happening. The data collection and analysis for a pilot should consider[431]:

a. How and how often the data will be analyzed.

b. How the data is presented (e.g. bar charts, summary tables, observation table, etc.).

c. Who will be involved in the analysis and final recommendations. This should include the main instructors and the DH.

[428] Refer to Reference G, Section 5.8.
[429] The DH or the External OPR will need to be informed in advance to submit a TDY / funding request and be approved for this activity when not conducted at their respective ETF / unit.
[430] Refer to Reference G, section 5.8.
[431] Refer to Reference G, section 5.8.

d. A variety of topics such as assessment results as well as iteration pre- and post- tests, instructional strategies, learning time, courseware, and directions for exercise / syndicate work[432].

5. **Converting Content to Online Learning.** When converting content from residential to online learning or contemplating online learning as the E&IT solution, the following should be considered:

a. Cost.

b. Number of students per year.

c. Content quality, stability over time, and complexity.

d. Classification level.

e. Amount of interactivity needed between students.

f. The course will still meet the NATO-specific requirement at the identified PL[433].

g. E-learning product remains grounded in Global Programming fundamentals.

[432] Refer to Reference O, Chapter 11.
[433] If not a blended learning solution may be a better choice or the addition of non-training solutions to supplement the online learning.

ANNEX O TO
Bi-SCD 075-007
DATED 24 MAR 25

EVALUATION PHASE

1. Evaluation is a key component of the instructional design model. It provides feedback to all other SAT phases informing effectiveness, efficiency and affordability of the E&IT programme.

2. During Evaluation, both the instructional components and the resulting outcomes of instruction are reviewed to determine whether instruction achieved the intended learning outcomes/goals. In addition, evaluation helps the ETF determine whether learners should be able to transfer the skills and knowledge learned to the job.

3. When collecting data throughout and at the end of the course, it is important to look out for gaps and misunderstandings. Questions posed to the students and instructors inform the degree to which:

a. The training audience assumptions were accurate.

b. Content was grouped/chunked effectively.

c. The courseware was aligned with the learning needs, i.e. the confirmation of what and to what extent the student is learning.

d. Whether assessment was clear and relevant to the POs/ELOs.

e. Student needs were met and necessary adjustments made during the course.

f. Students obtained the knowledge and skills presented, and objectives were achieved.

4. Overall, the ETF evaluates if any changes to the development and implementation are necessary to improve the effectiveness and overall satisfaction of the E&IT.

APPENDICES:

1. Test Item Analysis.
2. Course Monitoring.

APPENDIX 1 TO
ANNEX O TO
Bi-SCD 075-007
DATED 24 MAR 25

TEST ITEM ANALYSIS

1. Test item analysis can be performed so that relationships and trends can be identified and interpreted. Trends can reveal strengths and weaknesses within a course. Test item analysis is the process of evaluating individual questions (or items) on a test to understand how well students are performing and where they have not acquired the knowledge from the enabling learning objectives. The goal is to improve the quality of the test, ensuring it is both reliable and valid. It helps to determine if the questions are fair, clear, and effective in measuring what they are supposed to.

2. Item analysis provides information about the reliability and validity of test items. Item analysis can be performed in terms of the following:

a. Test Item Difficulty – how hard or easy the question is for the test takers.

b. Test Item Discrimination – how well the question differentiates between students who know the material and those who do not.

c. Distractor Analysis – checking if the incorrect answer choices are functioning well and attracting students who don't know the correct answer.

TEST ITEM DIFFICULTY

3. Test item difficulty refers to how hard or easy a question is for the people taking the test. It's usually measured by looking at how many students answer the question correctly. The frequency of students answering a test item correctly determines the level of difficulty. For example, if 45 of 50 students answer an item correctly, then the question is easy, and the difficulty level is low since most were able to answer correctly. However, if 10 out of 50 students answer correctly, then the question was hard, and the level of difficulty is high since hew students got it right. Tests should appear to have a low level of difficulty given the intent this indicates higher levels of knowledge proficiency. Item difficulty should be considered along with test item discrimination when assessing the effectiveness of a test item.

4. In general, if a question is too easy or too hard, it might not be very helpful in assessing students' knowledge. The goal is to have a mix of questions that are neither too easy nor too hard, helping to get a better sense of how well students understand the material.

TEST ITEM DISCRIMINATION

5. Test item discrimination is an index of an item's effectiveness at discriminating those who appear to have learned/understood the content from those who have not. It is the degree to which students with high overall scores on a particular test get a test item correct. Good discrimination identifies students who perform well on the test and generally get the question right, while those who struggle with the test get the question wrong. Poor discrimination identifies students with different levels of knowledge who all answer the question, similarly, revealing that the question does not help to separate strong students from weak ones. Overall, a question with good discrimination helps identify which students truly know the content and which do not.

APPENDIX 2 TO
ANNEX O TO
Bi-SCD 075-007
DATED 24 MAR 25

COURSE MONITORING

1. Course Monitoring is an additional element supporting the Post Course Review - Internal Evaluation. Course Monitoring concentrates on the delivery of instruction and gathers observation data. The focus is on the performance of individual instructors (Instructional Effectiveness) during the delivery of E&IT and assesses many elements that may affect course quality, including a confirmation of the alignment of the objectives with what is delivered, appropriateness of the instructional methods, quality of instructional materials, and time allocation. Observations for improving student evaluation may also be included. Course monitoring by the DH, External OPR or qualified staff is completed to support the evaluation of a pilot course. Course Monitoring also provides an opportunity to verify that instructors have the prerequisite qualifications and training is satisfied. ETFs may use the completed course monitoring forms as information to consider when writing an internal instructor's annual performance evaluation. An example observation sheet to support Course Monitoring is provided below.

Lesson Observation Checklist

Monitor Name:		**Instructor/Facilitator:**	
Date & Start Time:		**End Time:**	
Course Number:		**Course Name:**	
Lesson Title:			

Supporting Documentation	**Yes**	**Somewhat**	**No**	**N/A**	**Notes**
Lesson Plan for the period of instruction was available.					
Written guidance to students for syndicate work was provided.					
The lesson title is clearly identified in Course Critique.					
The Lesson is clearly identified in the Course Schedule.					
Lesson Alignment	**Yes**	**Somewhat**	**No**	**N/A**	**Notes**
The aim of the Lesson is clearly stated.					
The teaching points (TPts) presented align with the LO stated in the CCD III.					
The references for the lesson are stated and are consistent with the CCD III.					
The timing for the lesson is consistent with the CCD III and the Course Schedule.					
The syndicate work was aligned with the objectives outlined in the CCD III.					
The instructional strategy used was aligned with the instructional strategy listed in the CCD III.					
The DoK was consistent with the level identified in the CCD III.					
The assessment strategy is consistent with the CCD III.					
The ELOs satisfy the POs as per CCD II					
Instructional Effectiveness	**Yes**	**Somewhat**	**No**	**N/A**	**Notes**
The training facility was adequately prepared to deliver instruction.					
Supporting materials were readily available.					
The facilitator gained and maintained the attention of the class.					
The facilitator established the relevance of what was being presented to the students.					
The TPts were presented in a logical sequence.					
The facilitator provided relative verbal support (examples / explanations / statistics).					
The visual aids used were clear and supported the TPts.					

Media used during the lesson were of appropriate number, duration and quality.					
The facilitator engaged the students during the lesson using effective questioning techniques.					
The facilitator emphasized important points / issues.					
The facilitator periodically checked for student understanding.					
The facilitator provided a summary of the main TPts at the end of the lesson.					
Student Assessment	**Yes**	**Somewhat**	**No**	**N/A**	**Notes**
Assessment details / test Instructions provided to the student.					
The assessment is at the proper DoK for the course.					
An answer key or assessment checklist for syndicate presentations is available.					
The assessment is aligned with the course lesson objectives and CCD III.					
The DoK being assessed is consistent with the LO(s) in the CCD III.					
The content assessed aligns with the content presented during the course.					
Students are provided with the results of the assessment as well as facilitator feedback.					

Other Comments and Best Practice Observations

Monitor's name and role (i.e. within Global Programming Governance, ETF, External OPR):

_____

Monitor's Signature: _____

Instructor's Name and Signature: _____