



## Enabling Multi-Domain Operations Through NATO Education and Individual Training

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### JCSP 49 DL

#### Exercise Solo Flight

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#### Exercice Solo Flight

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## ENABLING MULTI-DOMAIN OPERATIONS THROUGH NATO EDUCATION AND INDIVIDUAL TRAINING

In 2024, the North Atlantic Treaty Organization (NATO) will celebrate its 75<sup>th</sup> anniversary. As an international political-military defensive alliance, it was established with the initial purposes<sup>1</sup> to deter Soviet expansionism, avoid the revival of nationalist militarism in Europe, and encourage European political integration. Since its inception, the Alliance has adapted to multiple challenges, which are currently broken into three separate eras<sup>2</sup>: the Birth of NATO and Cold War (1949-1990); the reunification of Europe (1991-2000); NATO since 9/11 (2001-present). The geo-political events of recent years will likely lead future historians to define a new era: the Rise of Authoritarianism. Indeed, authoritarian countries such as Russia, Iran, and China are increasingly challenging NATO and its member countries in their efforts to expand their regional and global influence. Through their strongly centralized systems, adversaries direct their instruments of power to converge towards their long-term national objectives. For example, China and Russia exploit new technologies to “attempt to create stand-off through the integration of diplomatic and economic actions, unconventional and information warfare (social media, false narratives, cyber-attacks)”<sup>3</sup> to create instability within countries and alliances. Further, they seek to “avoid armed conflict by fracturing the U.S.’s alliances, partnerships, and resolve”<sup>4</sup>. As such, NATO has developed the concept of Multi-Domain Operations (MDO), which not only orchestrates military activities across all operating domains and environments, but crucially, synchronizes these military capabilities with nationally integrated Instruments of Power<sup>5</sup>.

Because future coalition warfare will likely be conducted across non-traditional domains and include activities below the threshold of war, successful integration of the MDO Concept will be vital for NATO to adapt to the challenge of this new era. Allied success in MDO is of critical importance to Canada, first because it is a founding member of NATO, and also because it aligns closely to its own Pan-Domain Force Employment Concept<sup>6</sup>.

As MDO develops from Concept to doctrine to be fully implemented in NATO operations, there will be a significant role for NATO Educating and Individual Training (E&IT) to prepare personnel with the necessary knowledge, skills and attitudes (KSA). To that end, this paper will provide an overview of the probable individual training gap and

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<sup>1</sup> North Atlantic Treaty Organization, “A Short History of NATO,” NATO - Declassified: A Short History of NATO, June 3, 2022, [https://www.nato.int/cps/en/natohq/declassified\\_139339.htm](https://www.nato.int/cps/en/natohq/declassified_139339.htm).

<sup>2</sup> North Atlantic Treaty Organization, “What Is NATO?,” n.d., <https://www.nato.int/nato-welcome/index.html>.

<sup>3</sup> Andrew Feickert, “Defense Primer: Army Multi-Domain Operations (MDO),” *Congressional Research Service*, January 2, 2024, <https://crsreports.congress.gov/product/pdf/IF/IF11409>.

<sup>4</sup> Feickert.

<sup>5</sup> Paolo Giordano, “Multi-Domain Operations in NATO - Explained,” NATO’s ACT, October 5, 2023, <https://www.act.nato.int/article/mdo-in-nato-explained/>.

<sup>6</sup> Department of National Defence, *Pan-Domain Force Employment Concept: Prevailing in an Uncertain World* (Ottawa: CJOC, 2022), [https://mars.cfc.forces.gc.ca/CFCLearn/pluginfile.php/23779/mod\\_folder/content/0/Pan-Domain%20Force%20Employment%20Concept.pdf?forcedownload=1](https://mars.cfc.forces.gc.ca/CFCLearn/pluginfile.php/23779/mod_folder/content/0/Pan-Domain%20Force%20Employment%20Concept.pdf?forcedownload=1).

argue that there are significant improvements in NATO's Individual Training System to be ready for this challenge. The analysis will be based on Canadian leadership theories, systems design thinking and adult learning concepts.

## CONTEXT

In March 2023, NATO's Strategic Commands, Allied Command Operations (ACO) and Allied Command Transformation (ACT) developed the *Alliance Concept for Multi-Domain Operations*<sup>7</sup>. The concept includes:

- Orchestration of the military-Instrument of Power across all domains and effects.
- Synchronisation of all effects-based outcomes with other-Instruments of Power.
- Cross Domain Command and the enablement of data-enabled decision making.
- Digital Transformation as an enabler to MDO.

NATO has clearly recognized the urgency for the ability to conduct Multi-Domain Operations. Indeed, "adversaries are aggressively influencing NATO members in all 5 operational domains. Adapting the Alliance to a Multi-Domain Operations approach enables NATO forces to operate with agility and unity across all domains and environments to successfully address those challenges"<sup>8</sup>. To that end, ACT has identified building an MDO-enabled Alliance as one of its three strategic priorities<sup>9</sup>. Because of the recency of the initial MDO concept, there is still significant work to be done to operationalize the concept. Indeed, the scope of the transformation will affect doctrine, organization, training, materiel, leadership and education, personnel, facilities, and interoperability (DOTMLPFI). To be clear, MDO is currently at the concept stage; "an approved concept is not a policy"<sup>10</sup> and "sometimes concept development may prove that an idea or solution will not work"<sup>11</sup>. While there are many force development activities required before they can be implemented in force generation, waiting for these to occur before acting in the E&IT space would be inconsistent with the operational urgency. Indeed, there are significant concurrent activities required to ensure that NATO is prepared to train its members in accordance with MDO doctrine once it is approved. In other words, it needs to be "MDO-ready".

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<sup>7</sup> NATO, *Alliance Concept for Multi-Domain Operations* (Norfolk, VA: Allied Command Transformation, 2023).

<sup>8</sup> LGen David Julazadeh, "Allied Command Transformation Vision for Developing a Multi-Domain Operations-Enabled Alliance."

<sup>9</sup> NATO Allied Command Transformation, "Ongoing Military Transformation, Leading to NATO 2030 – Multi-Domain Operations, Deterrence and Defence, Improved Understanding," NATO's ACT, March 22, 2023, <https://www.act.nato.int/article/ongoing-military-transformation-leading-to-nato-2030-multi-domain-operations-deterrence-and-defence-improved-understanding/>.

<sup>10</sup> NATO Warfare Development Command, *NATO Concept Development and Experimentation Handbook* (Norfolk, VA: NATO Allied Command Transformation, 2021), [https://www.act.nato.int/wp-content/uploads/2023/05/NATO-ACT-CDE-Handbook\\_A\\_Concept\\_Developers\\_Toolbox-1.pdf](https://www.act.nato.int/wp-content/uploads/2023/05/NATO-ACT-CDE-Handbook_A_Concept_Developers_Toolbox-1.pdf).

<sup>11</sup> NATO Warfare Development Command.

## EDUCATION AND INDIVIDUAL TRAINING GAP

The ways in which operations are fought in the MDO environment will drive how training is conducted to adequately prepare individuals. To that end, the initial MDO concept provides a useful framework to help scope the E&IT training gap. Three meta-themes Capability and Capacity, Mindset and Culture, and Organisation, are linked to key tasks, as shown in the following table:

<i>Meta-Theme</i>	<b>Key Tasks</b>
<i>Capability and Capacity</i>	Data-centric Approach
	Sensor-Shooter Integration
<i>Mindset and Culture</i>	Common Understanding, including Doctrine
	Individual and Collective Training
	Operational Application
<i>Organisation</i>	Authorities
	Command, Control and Collaboration
	External Networks
	Information Sharing
	Organizational Synchronization

*Table 1. MDO Themes and Tasks*

Based on this framework, an initial assessment<sup>12</sup> identified and prioritized which existing courses will need to be adjusted to be compliant with MDO. Overall, it is assessed that 10% of existing courses will be a high priority because of the close linkage to these MDO themes and tasks, whereas 40% are medium priority with the remaining 50% assessed as low. The training disciplines most affected are: Joint Operational Planning, Joint Targeting and Fires, Intelligence, Digital, and Strategic Communications. However, the level of priority does not necessarily equate to its level of work. Indeed, because MDO can be seen as an evolution of joint warfare, many base concepts are the same. For example, Joint Targeting, in its current design, already incorporates cross-domain capabilities to deliver synchronized, munitions and non-munitions effects, in coordination with non-military capabilities. Additionally, the report<sup>13</sup> concludes that the majority of the changes will be to the context of the operational environment, not the task or performance statements. For example, a joint planner will continue to “develop an Operational Plan

<sup>12</sup> Joint Force Development, “Multi Domain Operations (MDO) Front-End Requirements Analysis,” Requirement Authority Steering Board Report (Norfolk, VA: NATO SACT HQ, October 2023).

<sup>13</sup> Joint Force Development.

(OPLAN) for execution and transition”. The operationalization of MDO into NATO will see OPLANs include MDO elements; it would be inaccurate to create a new “MDO OPLAN” task statement. In other terms, in most of the cases, it is not about creating an “MDO awareness” course, or adding an MDO briefing to a course, but rather ensuring that all topics within the existing training are – where applicable – consistent with MDO. This will be a significant undertaking, and to that end further analysis is being conducted at the training discipline<sup>14</sup> and education and training facility (ETF)<sup>15</sup> levels. Because of the scope of changes, it is prudent to review NATO’s overall training system, to see if it will be able to anticipate, adapt and enable the changes required to train individuals within an MDO construct.

## **NATO’S EDUCATION AND INDIVIDUAL TRAINING SYSTEM**

NATO manages its education and individual training through a process called Global Programming. It defines the system and its processes through two directives:

1. Bi-Strategic Command Directive 075-002 Education and Training Directive<sup>16</sup>, the overarching document for Education and Training (individual, and collective) that provides guidance for the execution and management of Education and Training activities. It aims to “ensure a coordinated approach throughout NATO resulting in individually and collectively trained personnel and ready forces prepared for current and future operations”<sup>17</sup>.
2. Bi-Strategic Command Directive 075-007 Education and Individual Training Directive<sup>18</sup>, which provides additional guidance for *individual* Education and Training activities. It aims to “ensure the right E&IT is provided to the right personnel at the right time and in the right location in the most economical manner possible”<sup>19</sup>. Its programme is categorised through 29 training disciplines, each assigned with a Requirements Authority and a Department Head. NATO performance gaps – the training requirements beyond national responsibilities – are identified by the Requirements Authority. The Department Head then, in close coordination with ETFs, finds or creates a training solution to fulfil this requirement.

The global programming framework is, at its core, based on job requirements. It identifies the minimal job expectations, and trains members to achieve this minimal standard. Quality Assurance (QA) and Systems Approach to Training (SAT) processes are

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<sup>14</sup> SACT JFD ETPP, “Guidelines for MDO Implementation” (Annual Discipline Forum (ADF), Mons, Belgium, February 20, 2024).

<sup>15</sup> Dean of Academics, “Curriculum Review Board (CRB) Action Plan” (NATO School Oberammergau, February 5, 2024).

<sup>16</sup> NATO, “Bi-Strategic Command Directive 075-002 Education and Training Directive,” June 12, 2023, [https://www.coemed.org/files/Branches/DH/075-002\\_Bi-SCD\\_EDUCATION\\_AND\\_TRAINING\\_12Jun2023.pdf](https://www.coemed.org/files/Branches/DH/075-002_Bi-SCD_EDUCATION_AND_TRAINING_12Jun2023.pdf).

<sup>17</sup> NATO.

<sup>18</sup> NATO, “Bi-Strategic Command Directive 075-007 Education and Training Directive,” September 10, 2015, [https://www.coemed.org/files/Branches/DH/Files\\_01/Bi-SC\\_75-7\\_NEW.pdf](https://www.coemed.org/files/Branches/DH/Files_01/Bi-SC_75-7_NEW.pdf).

<sup>19</sup> NATO.

used to ensure alignment and to provide the KSAs to meet the difference between national-level jobs and NATO jobs. It is structured so that the outcome is standardized, and consistent across time and space. Overall, these directives produce a good framework for managing the E&IT within NATO. However, there exist systemic misalignment within policies that will jeopardize the success of MDO implementation. Specifically, there are clear opportunities to improve the training audience, responsibilities and to streamline processes.

### **Training Audience**

The first step in training development is identifying the target audience. NATO defines and develops training solutions based on the “tasks performed by individuals as part of their principal duties during operations or while occupying specific NATO Force Structure (NFS) or NATO Command Structure (NCS) positions”<sup>20</sup>, as captured by essential or desirable qualifications within NATO Job Description. While this audience is indeed a core audience, limiting NATO E&IT to this scope leads to significant blind spots. In accordance with Operational Planning principles, a Commander plans for both the fighting echelon and the forces providing combat support. Within Global Programming, the majority of NATO ETFs are outside the NFS/NCS framework. Therefore, applying this same principle to expand the scope of the training audience would better ensure that NATO’s training system is sustainable and would lead to more logical consistency between policies. For example, for an ETF to be NATO Accredited, NATO ACT mandates specific staff and instructor development programmes<sup>21</sup>. Within the current policy, the individual training for a member to complete this NATO-mandated training to become a NATO-certified Instructor with a view of teaching NATO members in a NATO-accredited institution, is *not* a “NATO requirement”. This is even more flagrant when considering some institutions, such NATO School Oberammergau who has been assigned Department Head duties for the Education, Training, Exercise and Evaluation (ETEE) discipline by ACT, would have no training requirements. To be clear, while these members do in fact attend such courses, there is a risk in capturing an incomplete training requirement because it does not recognize the full training audience. This risk is further amplified within an MDO context. Indeed, if MDO envisions collaboration with external stakeholders such as academia, private industry, and other international partners “that goes deeper than client-customer interactions and instead fosters full integration across domains and capabilities”<sup>22</sup>, then these fully integrated teams should be the training audience. The MDO mindset “must go beyond [joint coordination] to include military and non-military assets”<sup>23</sup>, and accurately capturing the true training audience will enable this mindset.

NATO’s E&IT recognizes that “E&IT is a key element of NATO’s military cooperation with partners”<sup>24</sup>. However, E&IT prioritization rules<sup>25</sup> do not reflect the strategic importance of some partners. Therefore, the current prioritization can be

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<sup>20</sup> NATO.

<sup>21</sup> NATO.

<sup>22</sup> Giordano, “Multi-Domain Operations in NATO - Explained.”

<sup>23</sup> Giordano.

<sup>24</sup> NATO, “Bi-Strategic Command Directive 075-007 Education and Training Directive.”

<sup>25</sup> NATO, “Bi-Strategic Command Directive 075-002 Education and Training Directive.”

misaligned with NATO political intent and assurances, particularly when E&IT is embedded within partner's Country Specific Plans and Roadmaps. Because there is a finite training capacity within NATO, there is therefore a risk that partner students be excluded from training, which overtime will create frustration and erode their trust towards NATO. The CAF formally recognized the importance of trust towards a professional military through *The Canadian Armed Forces Ethos: Trusted to Serve*, calling it the “most essential doctrine” for the CAF<sup>26</sup>. It rightfully observes that “trust is fragile and can quickly erode through [...] an inability to deliver results”<sup>27</sup>. This is even more true at the supranational level, where adversaries are deliberately trying to weaken collective resolve. Indeed, a failure of the E&IT system to deliver expected results through a strict adherence to their policies would create clear vulnerabilities to be exploited and amplified through hostile information campaigns. Further, in its existing doctrinal framework, NATO recognizes the importance of information as a critical element of modern conflict and security. It achieves this primarily through Strategic Communications<sup>28</sup> (STRATCOM) and Public Diplomacy<sup>29</sup> efforts. Therefore, the misalignment between the political intent and application in E&IT systems will reduce NATO power in the Information space, which is contrary to the MDO vision of better integration between instruments of power. Crucially, real or perceived hesitance of Alliance support and follow-through on their commitments undermines NATO's deterrence and defense policy. Indeed, “effective deterrence and defense—the essence of NATO—depend not only on capability, but also on adversaries' perception of allies' collective political will.”<sup>30</sup>

## Responsibilities

In accordance with NATO<sup>31</sup> and CAF doctrine<sup>32</sup>, effective command and control (C2) fundamentally based on clear structures, defined authorities, and the flow of information. Indeed, C2 structure “should be defined and understood by all levels of command, to ensure a complete understanding of command responsibilities”<sup>33</sup>, and “through mission command, commanders generate the freedom of action for subordinates to act purposefully when unforeseen developments arise, and exploit opportunities.

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<sup>26</sup> Canadian Armed Forces, *Canadian Armed Forces Ethos - Trusted to Serve* (Ottawa, Ontario: Canadian Defence Academy - Professional Concepts and Leader Development, 2022), <http://www.canada.ca/en/departement-national-defence/corporate/reports-publications/canadian-armed-forces-ethos-trusted-to-serve.html>.

<sup>27</sup> Canadian Armed Forces.

<sup>28</sup> Pia Hansen, Monika Gill., *Strategic Communications Hybrid Threats Toolkit - Applying the Principles of NATO Strategic Communications to Understand and Counter Grey Zone Threats*. (NATO StratCom COE, n.d.).

<sup>29</sup> North Atlantic Treaty Organization, “PDD - Home,” n.d., <https://nas.hq.nato.int/PDD/SitePages/Home.aspx>.

<sup>30</sup> “NATO at Seventy: An Alliance in Crisis,” Belfer Center for Science and International Affairs, n.d., <https://www.belfercenter.org/publication/nato-seventy-alliance-crisis>.

<sup>31</sup> NATO, *Allied Joint Doctrine for the Conduct of Operations*, C, AJP 3 (NATO Standardization Office, 2019), [https://www.coemed.org/files/stanags/01\\_AJP/AJP-3\\_EDC\\_V1\\_E\\_2490.pdf](https://www.coemed.org/files/stanags/01_AJP/AJP-3_EDC_V1_E_2490.pdf).

<sup>32</sup> Department of National Defence, *Canadian Forces Joint Publication. CFJP 01, Canadian Military Doctrine* (Ottawa: National Defence, 2009), [https://publications.gc.ca/collections/collection\\_2010/forces/D2-252-2009-eng.pdf](https://publications.gc.ca/collections/collection_2010/forces/D2-252-2009-eng.pdf).

<sup>33</sup> NATO, *Allied Joint Doctrine for the Conduct of Operations*.

Mission command encourages the use of initiative and decentralized decision-making<sup>34</sup>. In accordance with leadership principles, delegating tasks to the lowest level possible and at the point of friction, mission command develops a sense of responsibility amongst stakeholders<sup>35</sup>. There are opportunities within the NATO IT&E system to be more aligned with these principles.

NATO SAT uses an Assignments Matrix, based on the Responsible, Accountable, Consulted, Informed (RACI) model. This matrix is shown in Figure 1.

NATO Systems Approach to Training (SAT) Assignments Matrix							
Stage	SAT Phases	Stakeholders				SAT Products <sup>2</sup>	Approval
		RA	DH	ETF	OPR <sup>1</sup>		
Definition	Analysis	C	A & R	C	C	Course Control Document I & II	JFT
	Design	C	A	R	R	Course Control Document III	JFT
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
<b>Assignments:</b> 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.							
<sup>1</sup> . An external Course Officer of Primary Responsibility (OPR) is required when an ETF does not have internal expertise or the capacity to dedicate to the delivery of a specific NATO E&IT solution. 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 within the ETOC.							
<sup>2</sup> . Course Control Documents (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.							

Figure 1 - NATO SAT Assignment Matrix, source: Bi-SC 075-007<sup>36</sup>

The use of this matrix does not support effective C2 because it has the following weaknesses:

1. RACI originates from civilian project management but is not used in CAF or Allied doctrine. Stakeholders are less familiar with this model than Task Organization matrixes, and, further, it provides less clarity in the specific tasks.
2. The “Approval” column is inconsistent with the RACI model, which states that the “accountable person has the final sign-off, ensuring the task is completed

<sup>34</sup> NATO.

<sup>35</sup> “Leadership during Large-Scale Combat Operations,” Army University Press, accessed May 21, 2024, <https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/January-February-2020/Smith-Leader-LSCO/>.

<sup>36</sup> NATO, “Bi-Strategic Command Directive 075-007 Education and Training Directive.”

correctly”<sup>37</sup>. Therefore, in three instances, the DH is not “accountable” because the approval authority is held elsewhere.

- 3. There are multiple instances where there are overlapping responsibilities, or stakeholders hold more than one assignment. Figure 2, organized hierarchically (A>R>C>I), shows these interactions more clearly over the SAT cycle.



Figure 2 - SAT Assignments

Overall, the existing policy leads to ineffective Command and Control, and is misaligned with Command principles. Indeed, confusion within assignment of roles and responsibilities can cause friction between stakeholders, as they may progress in one direction, based on assumed freedom of action which conflicts with another’s vision. The misapplication of Delegation of Authority erodes Unity of Command and Freedom of Action. To improve, the NATO SAT policy should clearly articulate the delegation of authorities and assignment of tasks, aligned with NATO doctrine.

**Ineffective Processes**

NATO utilizes a QA framework to ensure alignment between the original training requirement and the developed E&IT solution. The steps to creating a new NATO certified course are summarized below:

<sup>37</sup> “DACI vs RACI: Choosing The Best Framework For Your Project,” April 3, 2023, <https://deeprojectmanager.com/daci-vs-raci/>.

1. The RA identifies a new requirement. The DH confirms there is no existing E&IT solution and asks for an ETF to support and implement a course<sup>38</sup>.
2. The DH, supported by the ETF, develops the Curriculum Control Document (CCD) 2, which specify the performance objectives to be achieved on the job<sup>39</sup>.
3. The CCD2 is approved through a CCD1, which capture the following:
  - a. “ETF Officer of Primary Responsibility (OPR): Responsible for the E&IT solution within the ETF. Enclose: CCD II – Course Proposal (or an equivalent).
  - b. ETF Command - Endorsement. ETF leadership intent to support NATO and implement a proposed or modified E&IT solution.
  - c. External Course OPR. This endorsement is ONLY included when the ETF responsible for the SAT Delivery Stage requires support from the NCS during the Implementation Phase.
  - d. Department Head. Acknowledges the proposed E&IT solution is in alignment with the discipline TRA Report.”<sup>40</sup>
4. The CCD3 is developed by ETF/OPR and reviewed by the DH. The CCD3 is the training plan to meet the performance objectives from CCD2<sup>41</sup>.
5. The ETF develops the training material and runs a pilot course until it is deemed suitable for steady-state training.
6. The ETF inputs the CCD1, 2 and 3 information into NATO’s education and training systems of record (e-ITEP).
7. ETF seeks NATO course certification through ACT QA and includes an emailed endorsement by the DH that the solution meets a NATO requirement. ACT staff review the completeness and accuracy of the information, and certify NATO Approved, or send it back for corrections.

Analysis of these steps display the following inefficiencies:

1. The CCD1 is unnecessary, because the signatures reflect past of future approvals. Indeed:

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<sup>38</sup> This is equivalent to National Qualification Specifications within the CAF.

<sup>39</sup> This is equivalent to the Qualification Standards within the CAF.

<sup>40</sup> NATO, “Bi-Strategic Command Directive 075-007 Education and Training Directive.”

<sup>41</sup> This is equivalent to the Training Plan within the CAF.

- a. ETF Command endorsement was achieved through Step 1, and implied by the fact that the ETF has already assigned an ETF OPR and supported the development of a CCD2.
  - b. The External OPR section is frequently confused by users, who believe the section is signed by the OPR. Rather, this section needs to be signed by the RA, because a course OPR is a principal duty which needs to be captured in NATO Job Descriptions. Changes to Job Descriptions are done through separate HR processes. Additionally, External OPRs do not necessarily come from NCS/NFS, for which the RA would not have tasking authority.
  - c. It is pre-emptive for the DH to endorse the solution, because it has not yet been developed by the ETF.
2. CCD data cannot be produced directly in e-ITEP because of the iterative review process, as well as systems limitations. Therefore, entering the CCD data into e-ITEP is a manual process where fields are copied and pasted from MS Word, and users manually add HTML code because the e-ITEP does not recognize rich text format. This forces duplication of effort and is in direct contrast with MDO's vision of Digital Transformation through data-centric and fused information to out-pace and out-think its adversaries<sup>42</sup>. There is a clear opportunity to leverage existing technology to automate these processes.
  3. A "NATO Approved" course reflects that "the proposed course meets a NATO E&IT requirement". There is no doubt that QA is an important step, but having it occur after DH endorsement undermines the positional authority of the DH. A Quality Assurance review prior to DH endorsement is more aligned with CAF and NATO staffing practices and provides the opportunity to correct issues before DH endorsement.

When considering the scope of changes to the E&IT portfolio to institutionalize MDO, NATO cannot afford to have cumbersome and inefficient processes. To that end, a streamlined process is proposed at Annex A, which would improve NATO's ability to adapt to new and updated training requirements while maintaining the integrity of QA.

## **CONCLUSION**

In conclusion, as NATO faces the rise of authoritarianism on the global stage, the successful implementation of the Multi-Domain Operations (MDO) concept will be critical to the alliance's continued relevance and effectiveness. As courses are reviewed and new training solutions created, there will be a significant impact to the overall NATO E&IT system. For NATO to anticipate, adapt and enable the changes required to train individuals within an MDO construct, it is crucial that its training system recognize the real training

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<sup>42</sup> NATO Allied Command Transformation, "Multi-Domain Operations: Enabling NATO to Out-Pace and Out-Think Its Adversaries," NATO's ACT, July 29, 2022, <https://www.act.nato.int/article/multi-domain-operations-enabling-nato-to-out-pace-and-out-think-its-adversaries/>.

audience, assigns clear responsibilities based on military leadership and command principles and optimizes its processes. As NATO celebrates its 75<sup>th</sup> anniversary, it must optimize its individual training system through a warfighting mindset to prevail against the challenges of this new era.

## **Annex A – Proposed Changes to NATO Course Certification Steps**

1. The RA identifies a new requirement. (No change)
2. The DH, supported by the ETF, develops the Curriculum Control Document CCD2. (No change)
3. The DH uploads CCD2 into a digital repository, which automatically parses the information into a database.
4. The CCD3 is developed by ETF/OPR and reviewed by the DH. (No change)
5. The ETF develops the training material and runs a pilot course until it is deemed suitable for steady-state training. (No Change)
6. The ETF uploads the CCD3 into the digital repository, which automatically parses information into a database. The database provides an initial assessment on alignment between CCD3 and CCD2.
7. ETF seeks NATO course certification through ACT Quality Assurance, who reviews the initial assessment and provides additional feedback as required.
8. DH reviews feedback/corrections and certifies the course within the system of record.

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