**Collective Training Transformation Programme**

**Collective Training Needs Analysis (CTNA) Methodology**

**Version 4.0 dated 02 September 2024**

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Contents

[Copyright 2](#_Toc199950473)

[COLLECTIVE TRAINING NEEDS ANALYSIS METHODOLOGY 4](#_Toc199950474)

[Context and introduction 4](#_Toc199950475)

[Creating the conditions for collective performance 4](#_Toc199950476)

[The Analysis Gap 5](#_Toc199950477)

[A proposed new approach 5](#_Toc199950478)

[a. Step one - new performance requirements. 5](#_Toc199950479)

[b. Step two - Performance and standards required. 6](#_Toc199950480)

[c. Step three - identification of training gaps. 7](#_Toc199950481)

[d. Step four – final requirements. 7](#_Toc199950482)

[Development and challenge 7](#_Toc199950483)

[Annexes: 8](#_Toc199950484)

[Theme 1. 2](#_Toc199950485)

[Theme 2. 2](#_Toc199950486)

[Theme 3. 4](#_Toc199950487)

[Theme 4. 6](#_Toc199950488)

[Theme 5. 8](#_Toc199950489)

[An Evolved Approach 8](#_Toc199950490)

# COLLECTIVE TRAINING NEEDS ANALYSIS METHODOLOGY

# Context and introduction

1. **Collective training definition.** Collective training is defined as ‘training to improve the ability of teams, units or formations to function as a cohesive entity and so enhance operational capability’.1
2. **Assessing collective performance.** Collective training must be based on specified requirements. Those specified requirements must be based on the collective performance required to enable successful execution of the mission or task to which the force element has been assigned. Analysis of that collective performance then enables the creation of a set of Collective Training Objectives (CTOs) that can be used to design the training required.
3. **The Analysis Gap.** The compendium of CTOs on the British Army’s shelves does not always keep pace with changing operational requirements, to optimise efficient training analysis.
4. **The opportunity for improvement.** The Army Collective Training Service (ACTS) presents a once-in-a-generation opportunity to design and deliver a model that will drive collective performance from first principles.
5. **Purpose.** The purpose of this Strawman2 paper is to:
   1. Explain the relationship between collective performance requirements and collective training.
   2. Explain the absence of collective training needs analysis in the British Army’s current model.
   3. Propose an approach (this paper) to analysing collective training needs.
   4. Invite ACTS Tenderers to develop and challenge the ideas in this Strawman.
   5. Explain how and where Tenderers can contribute thoughts.
   6. Explain where this approach will be applied to latter stages of the ACTS competition.

# Creating the conditions for collective performance

1. **Requirement analysis is the bedrock.** Collective performance can and must be measured through collective training. Before performance can be measured the Army must understand what constitutes a winning collective performance. To establish what wins, the demands of the missions or tasks must be analysed. It is this analysis, as part

1 Joint Service Publication 822 - Defence direction and guidance for training and education.

2 A [brainstormed](https://en.wikipedia.org/wiki/Brainstorming) simple [draft](https://en.wikipedia.org/wiki/Draft_document) proposal intended to generate discussion of its disadvantages and to spur the generation of new and better proposals.

of the Force Generation process, that must provide the bedrock of collective performance.

1. **Setting the conditions.** The ACTS will create the conditions for collective training design, delivery, and assurance. That approach will focus on team competencies and on setting the correct levels of challenge to enable realistic, challenging training. It aims to identify training risk early, informing mitigation of training capability gaps.

# The Analysis Gap

1. **The status quo.** CTOs do not describe through Performance and Standards what is being developed through practice, i.e. the team skills required to achieve a military task.
2. **Consequences.** One of the consequences is that there is little to no reflection of collective performance in the current units of measure – the very set of competencies that the objectives are designed to achieve. The second is that, historically, CTOs have been used to inform the design of training, but reliance on MIMIR for assessment has focussed on conduct of the task not performance in completion of the task or performance against standards in the CTOs.

# A proposed new approach

1. **Policy anchor.** There is little guidance from Defence on how the Army is to govern its collective training. JSP 822, Volume 3, provides what Defence direction there is. It intends to provide coherence but recognises the different character of operations by writing that ‘commands have developed different approaches, processes, and tools’. Any future model must continue to comply with Defence policy, but there are more freedoms than constraints.
2. **Suggested model.** The Programme team has worked with key Defence stakeholders to provide Tenderers with a mature model as a ‘starter for ten’. This suggested model incorporates five key themes for the evolution of CTNA, outlined at Annex A. The model is based on four steps and is developed using six products. It is illustrated at Annex B.

# Step one - new performance requirements.

* + 1. **Question.** The process starts by asking the question ‘are there any new or changed performance requirements that the force element is required to meet?’
    2. **Approach.** This step requires analysis of the gap between the collective competencies of the force element to be trained and the demands to be placed on it by the mission. Importantly, this assumes that the force element is current, competent, and qualified in role. The approach will consider a range of factors including but not exclusive to, the tactical functions3, the operating environment, and risk appetite.

3 At the tactical level, the six tactical functions describe tactical battlefield dimensions, representing the practical expression of the physical component of fighting power. They provide a useful way of organising tactical activity. The tactical functions are: command, information and intelligence, firepower, manoeuvre, protection, and sustainment.

* + 1. **Product 1.** This gap analysis will conclude with an understanding of any new performance requirements. This is captured in Product 1 – The Scoping Study.

# Step two - Performance and standards required.

* + 1. **Question.** The process starts by asking the question ‘what will the force element need to do in its operational role?’
    2. **Approach.** This question is approached by analysing:
       1. **Performance and standards.** The performance and standards expected of the force element in its operational role are analysed in this step. Focus is on real world performance, not on training performance. Performance indicators might include: communication; co-operation; leadership; situational awareness; and decision-making. Annex C provides a suggested table of teamwork competencies. This analysis must build on, and take account of, current MIMIR4 performance indicators.
       2. **Conditions.** Step two further analyses the conditions that will be experienced in the real world. Focus is on the level of challenge and complexity, introduced at Annex D, and through the Cynefin Framework for operating environments explained at Annex E and illustrated in Figure one below.

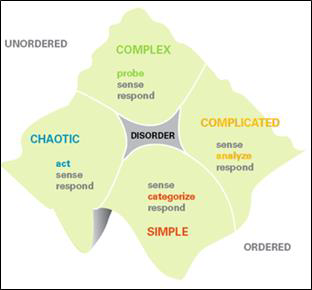


Figure one – An introduction to the Cynefin Framework.

* + 1. **Products.** This step gives rise to two products:

4 MIMIR is an evidence-gathering tool, which sits within EXONAUT. It informs the validation of basic competence of force elements undergoing collective training. MIMIR enables the measurement and validation of the competence of the training audience by using data and observer mentor input. It uses performance indicators grouped by tactical functions as a structure to provide commanders with a means through which competence can be measured against a common standard.

* + - 1. **Product 2.1.** Product 2.1 is a Force Element Performance Statement shown at Annex F.
      2. **Product 2.2.** Product 2.2 is a set of draft CTOs shown at Annex G.

# Step three - identification of training gaps.

* + 1. **Question.** Step three starts by asking the question ‘given existing training solutions, are there any training gaps?’
    2. **Approach.** This step considers whether existing training capabilities can deliver the draft CTOs identified in Step two. This will include consideration of training environment, methods and media, and data capture methods. It will then recommend a training progression to deliver the draft CTOs. This enables an evidence-based justification for resource, innovation, and acquisition.
    3. **Product.** This step concludes with the production of a Product 3 – a Fidelity Statement Requirement. This considers the extent to which the status quo is suitable, accessible, appropriate, and measurable. More detail on the Fidelity Statement Requirement can be found at Annex H.

# Step four – final requirements.

* + 1. **Question.** The final step starts by asking the question ‘what are the final requirements?’
    2. **Approach.** This question is answered by confirming the final CTOs. It also notes any pre-existing CTOs which cannot be delivered, in full or in part. It considers resource requirements, training progression, and any other factors that might affect the training such as supporting UK exports. The process is illustrated in Annexes I (CTOs) and J (Training Needs Report).
    3. **Products.** Step four gives rise to two products:
       1. **Product 4.1.** The final CTOs.
       2. **Product 4.2.** A Training Needs Report.

# Development and challenge

1. Tenderers are invited to develop and challenge the concepts and ideas introduced in this paper.
   1. **Early thoughts.** Early thoughts are invited formally through the Invitation to Negotiate Stage 1 process. Requirement of Response (RoR) 10 includes the ACTS Analysing Service.
   2. **Later.** In addition to RoR 10, Tenderers invited into the latter stages of the competition will be required to develop and employ a model for CTNA as part of the process for Development Task 2.

I A McLeish Major

CTTP - SO2 Training Integration

# Annexes:

1. Evolution of Collective Training Needs Analysis.
2. Collective Training Needs Analysis – The Model.
3. Scoping Study.
4. Teamwork Competencies.
5. Level of Challenge Scale – Worked Example.
6. The Cynefin Framework for the Level of Challenge Scale.
7. Force Element Performance Statement.
8. Draft Collective Training Objectives.
9. Fidelity Requirement Statement.
10. Collective Training Objectives.
11. Training Needs Report.
12. CTNA Product Tables.

**Annex A to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Evolution of Collective Training Needs Analysis**

1. CTTP presents a once-in-a-generation opportunity to evolve the process of collective training needs analysis to produce training requirements that will drive the training system to deliver trained outputs that the Army needs to succeed in the 21st Century.
2. This need to drive the training system is recognised by key Defence stakeholders, including RUSI, CGS, and the Field Army Strategy5, and the advent of the Land Training System and the NATO Force Model underline the imperative for action.
   1. *In the more benign environments in the past, you would be talking about basic… skills with limited equipment capabilities in order to deliver a presence at a relatively low level of security demand. Now you are talking about much more complex requirements for high-intensity warfare.* Comment to the House of Commons Defence Committee by Professor Justin Bronck, RUSI, 6 Jun 23.6
   2. *[It is relatively straightforward] to calculate whether you can switch between regions or whether you can switch up and down the scale… [but] tailoring a force for everything from peacekeeping operations right the way up to warfighting operations requires a level of investment in training.* Comment to the House of Commons Defence Committee by General Patrick Sanders, CGS, 7 Nov 23.7
3. CTTP’s Vision and Benefits articulate how the need to drive a training system fit for the 21st Century can be met. An effective training system is founded on efficient, effective, and risk-focussed training analysis which produces the most appropriate building blocks and units of measure for training design, delivery, and assurance.
4. Existing policies and approaches to collective training requirements are, taken together, necessary but insufficient and incoherent. Existing policy and practise relating to training analysis is currently spread across several sources8. These provide many elements of a successful framework aligned to the Defence Systems Approach to Training (DSAT). However, development is required to cohere and strengthen five key themes.

* Theme 1. Training to the required level of challenge in order to prepare force elements to operate in complex environments.
* Theme 2. Training team competencies9.

5 Field Army Strategy 2023-27.

6 House of Commons Defence Committee (2024) *Ready for War? First Report of Session 2023–24, 30 Jan*

*24* [Ready for War? (parliament.uk).](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcommittees.parliament.uk%2Fpublications%2F43178%2Fdocuments%2F214880%2Fdefault%2F&data=05%7C02%7CIan.McLeish110%40mod.gov.uk%7C311c1a6ddb274a78d20b08dc4f06518b%7Cbe7760ed5953484bae95d0a16dfa09e5%7C0%7C0%7C638472135748336659%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=v4pW707zF%2Fc%2FnbmuVNqb1BzFyoCsoe4vlFGgqCGNgGc%3D&reserved=0)

7 House of Commons Defence Committee, ibid.

8 See: JSP 822; ACSOs 3248 and 3249; FATD; CTOs Compendium; and, MIMIR Performance Indicators.

9 Focussed on the extant Defence definition of collective training: ‘to improve the ability of teams, units or formations to function as a cohesive entity and so enhance operational capability’. Joint Service Publication 822 - Defence direction and guidance for training and education.

* Theme 3. Training using success factors and critical errors.
* Theme 4. Selecting the most appropriate realism for training delivery and measurement of performance.
* Theme 5. Agile, risk-focussed training analysis to enable the training system, protect training delivery, and support training capability acquisition.

## Theme 1.

**Training to the required level of challenge to prepare force elements to operate in complex environments.**

1. The ability of a force element to exploit a relative advantage over its operating environment is key to military success. The British Army’s new capstone doctrine, the Land Operating Concept (LOpC), makes clear that success in war – and in deterring war – will be defined by how it prepares ahead of conflict, including through training10. LOpC communicates a vision for the Army gaining competitive advantage based on a battle- winning framework. Successful application will depend on force elements gaining advantage over complex operating environments, relative to the opposition, to be able to deliver operational requirements.
2. CTOs do not address environmental complexity. Currently, analysis of the operating environment to determine how complex it is does not play a fundamental role as the basis for Conditions in the Army’s CTOs. Without this foundation, training is therefore not optimised for effective realism and challenge. Consequently, assessment of a force element’s performance against training requirements provides a false impression of its readiness to meet operational requirements. In other words, training does not accurately replicate the complexity of the operating environment and make ready force elements for the challenges they are likely to face. Furthermore, because Conditions are not defined it is not possible to manage training capability gaps.
3. Collective training analysis needs to analyse the operating environment to determine the level of challenge presented by the conditions, and within which the force element must be able to perform. Consistent units of measure for complexity must be found and included in the Conditions section to be used as a starting point for decomposition of the operating environment into constituent parts. These decomposed elements can then be used as the principal references to determine the most suitable training environment and media required, thus enabling design, delivery and assurance of effective skills transfer.

## Theme 2.

**Training team competencies.**

1. The definition of collective training is ‘training to improve the ability of teams, units or formations to function as a cohesive entity and so enhance operational capability’11. Given the high level of challenge expected within the contemporary operating environment, force elements must be able to operate and adapt effectively as a team to secure and exploit all advantages relative to any opposition. The more able a force element is at working together as a team to perform its mission and tasks the greater the

10 Army (2023), The Land operating concept: a new way of winning, p.ii.

11 Joint Service Publication 822 - Defence direction and guidance for training and education.

probability of military success. A force element that is not able to perform key teamwork competencies may experience good fortune, leading to positive outcomes, but overall it is more likely to fail.

1. CTOs do not incorporate teamwork competencies. Currently, analysis of the Performance and Standards section of CTOs does not include consistent units of measure for teamwork competencies. As a result, teamwork in a military-task context is not developed distinctly or sufficiently, and its role in enabling successful performance of a mission or tasks is not measured or evaluated effectively. Without a foundation of teamwork competencies, collective training does not meet its primary purpose. Furthermore, reliance on validating task outcomes alone, without objective data on a force element’s teamwork, undermines the Army’s situational awareness. This increases the risk of over-confidence, leading to deployment of forces that will underperform against operational requirements. Worst case, forces will be deployed that will fail to adapt quickly or effectively, leading to unnecessary loss of personnel and equipment, and even strategic failure.
2. Collective training analysis needs to analyse teamwork competencies to determine consistent units of measure for communication, collaboration, leadership, decision- making, and situational awareness. These can then also be used to determine the most suitable training environments and media required, thus enabling delivery and assurance of effective skills transfer. The focus should be on the level of C2 node that requires collective training12.

## Theme 3.

**Training using success factors and critical errors.**

1. Given the definition of collective training, and the links identified between the complexity of the environment and a force element’s ability, it is important to establish a basis to determine success.
2. CTOs do not enable assessment of an FE’s ability as a team. Currently, analysis of the Standards section of the CTOs does not include a breakdown of success factors or critical errors which can be used to establish, by either their presence or absence, a force element’s level of ability to deliver capability as a team. In effect, the more success factors that are present the greater the likelihood of the force element’s success in training and of skills transfer to the operational environment (and, conversely, the opposite can be seen given the prevalence of critical errors). Instead, the Standards section of the CTOs includes largely oblique references to tactical publications which do not provide the factors necessary to validate a force element’s ability as a team.
3. The MIMIR Performance Indicators (MIMIR PIs) dispense with assuring against CTO Standards all together. Instead, they include aspects of what is actually needed, with their focus on ‘checks for evaluators’ set against the Tactical Functions. However, they do not directly link to the CTOs, nor do they explicitly incorporate teamwork competencies or assimilate Combined Arms Manoeuvre (CAM) Fundamentals13.
4. Consequently, training design is not enabled to provide solutions with the necessary opportunities to develop a force element’s ability as a team in training. In addition, training is not delivered with validation against accurate Standards in mind, which

12 This assumes completion of lower-level collective training by subordinate force elements.

13 See Part 2 – Advice for Commanders.

disables the ability to adjust in-flight to address deficiencies or to dial-up or down the level of challenge. External Validation (ExVal) of trained outputs, to determine the validity of the training requirements to meet operational requirements, is not even possible, and this undermines force and training development.

1. Collective training analysis needs to analyse success factors and critical errors for inclusion in the CTO Standards as the basis for determining successful force element performance. These can then be used to optimise data capture methods, support the gathering of valid and reliable data for analysis, assurance, and identification of capability gaps. Without these as a foundational element, the purpose of the CTOs as the basis for delivery and assessment, as well as design, is significantly weakened. This incoherence means that MIMIR PIs are also not analysed and used in a traceable way to design and deliver against training requirements. The CTOs alone need to be based on analysis of operational requirements and the operating environment, and used as the foundation for development and assessment of a force element’s ability in training. This improvement will also strengthen MIMIR PIs.

## Theme 4.

**Selecting the most appropriate capabilities for training delivery and measurement of performance, and to support acquisition.**

1. Training capabilities are required to provide the right training environment, methods and media, and data capture methods. These will enable the appropriate level of realism and challenge needed to deliver and assess training objectives through an optimal training progression. This will increase the probability of training transfer and of the force element’s ability to deliver the capability the Army needs. In a constrained financial environment and challenging strategic context, and the need to train for a wide-range of operating environments, it is critical that resources are acquired and used appropriately to ensure effective development of force elements and reliable and valid assessment of their performance against the CTOs.
2. CTOs do not drive allocation and acquisition of training capabilities. Currently, analysis of what training capabilities are needed is not based on matching the needs of the CTOs, identifying capability gaps, and setting out an optimal training progression. This means that the level of realism and challenge encountered in training will be inappropriate, with inadequate cues, stimuli, and effects being provided. Consequently, as in Theme 1, assessment of a force element’s performance against training requirements provides a false impression of its readiness to meet operational requirements. This also means that training capability gaps and training risks are not effectively identified, and the allocation of resources required to manage them is not well- justified based on training requirements.
3. Training analysis must include a process of analysis which starts from first principles by determining what is needed to deliver and assess performance against the CTOs. This must then be followed by analysis of what options for training exist within current training capabilities, and then by analysis of what gaps exist which need to be managed, and what the optimised training progression needs to look like. This will set the resource parameters for subsequent training design and identify gaps in capability at an early stage, increasing the likelihood that they can be managed to produce a solution in time for incorporating into future training delivery. Lastly, training risk, as an element of Force Preparation risk, will be more effectively articulated with valid and reliable data.

## Theme 5.

**Agile, risk-focused training analysis to enable optimisation and modernisation of the training system and protect training delivery.**

1. Given resource constraints, the complexity of the contemporary operating environment, and the range of demands placed on the Army’s readiness, it is vital that the management of training analysis is completed in an agile and risk-focussed way. This must enable an effective training system, which produces timely, relevant outputs, and which supports effective actions and decisions by the TRA and TDA.
2. CTOs do not enable optimisation and modernisation of the training system. Currently, analysis of collective training requirements through the use of a CTNA which includes these themes is not conducted14. The TRA’s Force Preparation Order currently prescribes CTOs selected against a range of DMTLs, with neither set of data being regularly maintained or adjusted to ensure relevance and effectiveness. Consequently, the use of CTOs as a means of driving the training system is undermined. As a result, decisions on training requirements for inclusion and assessment are made within the stages of training design. Furthermore, decisions on training environments, methods and media, and data capture requirements are made which are not rooted in the training requirements. Furthermore, development of training analysis to produce CTOs that will enable the training system is undermined by lack of resources and a process that is not sufficiently agile and risk-focussed.
3. A mechanism, ideally through the use of improved software, to support rapid, agile production of the outputs from training analysis is required. Focussed CTNA which includes the themes identified here will enable the TRA to issue clearer direction on collective training requirements and set the parameters for subsequent training design, including resource allocation. This will also empower the TDA to select and manage the most appropriate training design and delivery. The outputs from training will also be able to be more effectively assured, for both performance in training and to meet operational requirements, and this will support the Army’s protection of time and resources for training.

## An Evolved Approach

1. Successful evolution of the current approach will see these five themes being successfully incorporated. This paper proposes a CTNA methodology which includes all five themes, covered in the various annexes that follow.

14 There are some limited exceptions for new formation capabilities (e.g., 11 SFA Bde) and for mission- specific training, but the themes identified here have not been incorporated.

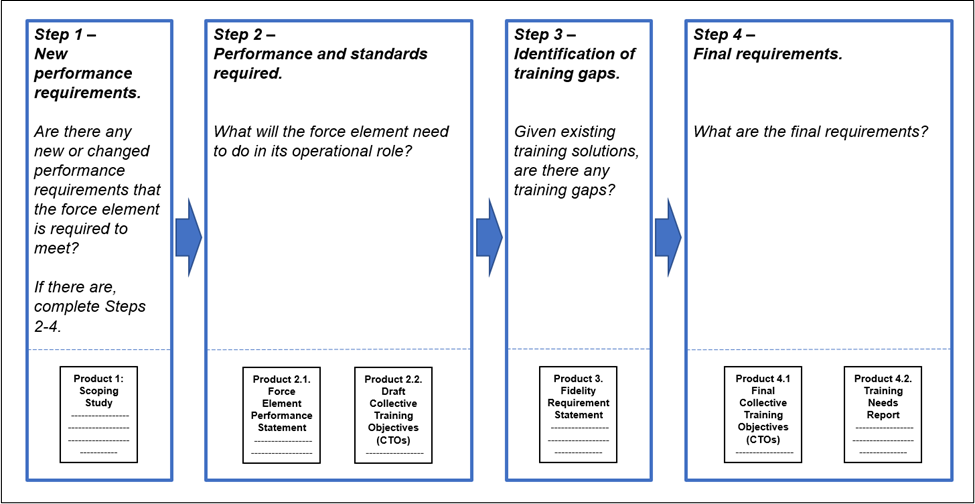
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**Annex B to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Collective Training Needs Analysis – The Model**

1. Figure one provides a diagrammatic overview of the CTNA model. See Annex L for CTNA Product templates and an example of the Product 2.1. (FEPS). See also the CTNA [architectural model](https://sparxea.ahe.r.mil.uk/repositories/Dashboards/View/repId/12ba9c90-1ead-416d-bbdb-2a06c11369ab/9d6399eb-56e8-482c-9a30-0598ecdb515c); links to the model for the processes required for each step are also provided in the annexes which follow.



*Figure one - CTNA – The Model.*

**Annex C to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Scoping Study**

|  |  |
| --- | --- |
| **Step 1** | **Product 1** |
| 1 | **Scoping Study** |
| a. **Purpose** | 1. The Scoping Study process starts by asking the question ‘are there any new or changed performance requirements that the force element is required to meet?’ 2. The Scoping Study enables:    1. Agile use of a Systems Approach to Training, determining whether there is a need for a CTNA;    2. TRA decision-making on the authorisation of collective training requirements; and,    3. Conduct and assurance of the steps of analysis required to answer Questions 2-4. |
| b. **Conduct** | 1. The Scoping Study will conduct a comparative, gap analysis of ‘real world’ and extant FE performance requirements. 2. [Architectural model.](https://sparxea.ahe.r.mil.uk/repositories/Artifacts/View/repId/12ba9c90-1ead-416d-bbdb-2a06c11369ab/%7BF5A23A05-954C-4693-81C0-239C2376B02D%7D) 3. This will analyse the following in sufficient detail to determine whether subsequent in-depth analysis is required. The following headings will be used. An example template can be found at Annex L.   **A** – Capability Statement;  **B** – Operating Environment;  **C** – Representative Characteristics;  **D** – Throughput Requirements;  **E** – Training Capabilities and Resources;  **F** – Capability Gap Statement;  **G** – CTNA Terms of Reference;  **H** – Risks, Assumptions, Issues, Dependencies, and opportunities (RAIDO);  **I** – Lessons from Experience.   1. Wherever possible the use of defined terms (e.g., ‘Opposed’) should be used15. The use of consistent terminology will aid comparative analysis over time, ensuring that the process is agile and rapid. 2. **A – Capability Statement.** Identify what FEs need to be capable of to meet operational requirements.    1. Obtain information from relevant inputs, including:       1. Army Operating Order / relevant Orders – for mission and specified outputs / tasks, and for interoperability requirements; |

15 See Annex E.

|  |  |
| --- | --- |
|  | 1. Doctrine (e.g., LOpC, Combined Arms Manoeuvre (CAM) Fundamentals, Planning & Execution Handbook, Threat Handbook, JCN 2/17, Tactical Aide Memoires) – for interoperability and capability requirements; 2. Threat Assessments – for implied outputs / tasks, interoperability and capability requirements; 3. Unit Equipment Tables – for capability requirements; 4. Mission Task Lists – for mission and specified outputs / tasks; 5. Tactical Functions and Actions – for specified and implied outputs / tasks; 6. Capability Concepts of Employment (CONEMPs) – for capability requirements; 7. Subject-Matter Experts (SMEs) advice – for mission, outputs / tasks, interoperability and capability requirements; 8. Field Army Force Preparation Risk Appetite, and component elements (e.g., for risk to trained outputs). 9. Determine the following.    1. Current Mission, tasks and outputs;    2. ORBAT;    3. Requirements for interoperability;    4. Capabilities (x-DLOD) that the FE will need to be able to use to perceive, comprehend, project and act within the environment, stated in terms of:       1. Human; and,       2. Machine.    5. Freedoms and constraints (as a minimum: rules of engagement, time pressure, risk appetite, resources) within which the FE must operate. 10. Create seven statements, with justification, which describe the operational capability that FEs will need to be able to deliver against, including initial confirmation of:     1. What the FE needs to be able to do to Direct the Mission, tasks and outputs;     2. What the FE needs to be able to do to Execute the Mission, tasks and outputs;     3. What the FE needs to be able to do to Enable the Mission, tasks and outputs;     4. What the FE needs to be able to do to Prepare and Project its forces.     5. Who and what the FE needs to be interoperable with, including other FEs;     6. What capabilities the FE will need to be able to use; and,     7. What freedoms and constraints there are, within which the FE will need to operate.   (d) Output: insert statements into heading A of the Scoping Study.   1. **B – Operating Environment.** Identify what the operating environment that FEs need to be able to perform in actually looks like.    1. Obtain information from relevant inputs, including:       1. ADP Land Operations – for definition of operating environments;       2. Land Operating Concept – for definition of operating environments; |

|  |  |
| --- | --- |
|  | 1. Doctrine (as listed for A - Capability Statement) – for specific operating environment requirements; 2. Threat Assessments – for definition of operating environments and relationship of the FE with it; 3. SME advice – for definition of operating environments and relationship of the FE with it; 4. Lessons / External Validation (ExVal) reports / records of decisions from governance meetings (e.g., Military Judgement Panel (MJP) or Force Optimisation Review Board (FORB)) / Defence and Army reports – for definition of operating environments and relationship of the FE with it; and, 5. Wider research and academic papers (e.g., Snowden's Cynefin Framework, think-tank papers) – for definition of operating environments and relationship of the FE with it. 6. Select, with justification, the appropriate definitions for Open, Compressed – constrained physical, Compressed – cluttered, Static, Dynamic, Responsive, Known, Unknown, Unopposed, Opposed, Heavily Opposed, Symmetric, Asymmetric, and Environmental advantage (advantage, neutral, or disadvantage)16 to create statements for each. 7. Output: insert selected definitions, and references, into heading B of the Scoping Study. 8. **C – Representative FE Characteristics.** Identify what the representative, or average, characteristics are.17    1. Obtain information from relevant inputs, including the following.       1. Force Generation Schedule (FGS) / Force Preparation Schedule (FPS) – for information on FE experience, when and where they last trained collectively and / or deployed on operations, attached elements, recent commitments, nights out of bed;       2. OPUS – for information on FE experience, when and where they last trained collectively and / or deployed on operations, recent commitments, nights out of bed;       3. JPA / MUSTER reports – for churn, workforce establishments, trained strength, attached elements;       4. MODUS – for start states for training;       5. EXONAUT and MIMIR PIs – for start start states for training;       6. SME advice – for experience of role, level of ability, and motivation for the role;       7. ORBATs, and Task Orgs – for information on the FE’s organisation; 9. Identify what the representative, or average, characteristics are in order to determine how ready FEs are likely to be to commence collective training. Breakdown the analysis into the following areas:    1. Experience, of required role;    2. Experience of required interoperability (Special-to-Arms (StA) / Combined Arms (CAM) / Joint, Intra-governmental, Inter-agency, Multinational (JIIM));    3. Average start states; |

16 See Annex E.

17 Maps to Training Audience Description in JSP 822, Vol 3: Coll Trg V3.0 (Feb 24). See also, ACSO 1005.

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|  | 1. Average establishments / trained strength; 2. Representative organisation; 3. Representative attachments; 4. Average churn; 5. Average nights out of bed; 6. Average time since last trained / operated; and, 7. Representative recent commitments. 8. Produce a Readiness statement reflecting representative FEs ability and motivation for the role. 9. Output: insert statements into heading C. 10. **D – Throughput Requirements.** Identify how many FEs, over what period, are likely to need to be trained.18     1. Obtain information from relevant inputs, including the following.        1. FGS; and,        2. OPUS.     2. Produce an estimate of how many FEs need to be trained, by when, and over what period.     3. Output: insert a statement into heading D – Throughput Requirements. 11. **E – Training Capabilities and Resources.** Identify whether training capability and resource options are suitaible to deliver and assess the CTOs.     1. Obtain information from relevant inputs, including the following.        1. SME advice – for understanding of emerging capabilities or resources, opportunities for collaboration, and accessibility of training capabilities and resources;        2. Records of decisions from governance meetings (e.g. an MJP, or a FORB) – for emerging capabilities or resources, as well as opportunities for collaboration;        3. Wider research, academic papers, and journals – for emerging capabilities or resources, as well as opportunities for collaboration;        4. ACTS Monitoring Service – for emerging capabilities or resources;        5. Lessons – for opportunities for collaboration; and,        6. OPUS, Churchill, BAMS, FPS – for capacity and availability of training capabilities and resources.     2. Evaluate whether requirements and opportunities for development of training capabilities and resources are sufficiently different compared to previously, considering the following.        1. Whether existing capabilities and resources are likely to be suitable;        2. Whether training capabilities and resources are accessible and available during the time period in which training needs to take place; and,        3. Whether any emerging capabilities or resources are likely to be suitable, and the extent to which they may exceed those currently in-service (consider x-DLOD).     3. Produce a statement of the training capabilities and resources that could be needed to deliver and assess the CTOs. Confirm that: |

18 Maps to Training Throughput in JSP 822, Vol 3: Coll Trg V3.0 (Feb 24).

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|  | 1. Training capabilities and resources are likely to be suitable, accessible and available during the time period in which training needs to take place; or, 2. What additional or alternative options may exist which may improve delivery or assessment.   (d) Output: insert a statement into heading E – Training Capabilities and Resources.  (10)**F – Capability Gap Statement.** Compare current outline requirements with previous requirements to determine if a recommendation for a full CTNA is required.   1. Take the outputs from headings A to E and compare these with past statements, for each heading, in order to identify differences. 2. Evaluate the materiality of any differences, with justification. 3. If material differences are identified for any heading then recommend that the TRA direct completion of a full CTNA (i.e., Steps 2 to 4). 4. If no material differences are identified for any heading then recommend that existing training requirements are sufficient. 5. If material differences are identified for headings A and B, the remaining headings of the Scoping Study may, in extreme circumstances, be dispensed with and a recommendation be made to the TRA to continue directly to Step 2 of the CTNA.   (b) Output: insert a statement into heading F – Capability Gap Statement.  (11) **G – CTNA Terms of Reference.** Propose a plan to complete Steps 2 to 4 of the CTNA, if required.   1. Produce a proposed plan and terms of reference, for agreement with the TRA, to conduct a CTNA, including as a minimum:    1. Estimate of time;    2. Activity required; and,    3. Resources required to meet timings. 2. Output: insert a statement into heading G – CTNA Terms of Reference.   (12) **H – Risks, Assumptions, Issues, Dependencies, and Opportunities (RAIDO).** Record RAIDO, to be added to as required during completion of Steps 2 to 4 of the CTNA.   1. Capture and update RAIDO in a separate document in relation to their real or potential contribution to aiding, or hindering, delivery of trained outputs. 2. Output: insert a copy of the up-to-date RAIDO into heading H – RAIDO.   (13) **I – Lessons from Experience.** Record lessons from completion of the Scoping Study, to inform future practise.   1. Identify lessons from the process of completing a Scoping Study. 2. Output: insert lessons in a statement in heading I – Lessons from Experience. 3. Once all relevant parts of the Scoping Study have been produced, submit the final version to the TRA. 4. The process for conducting a Scoping Study will be assured by both the provider of the activity and the TRA. 5. Access to inputs required by any third parties to conduct the activity will be authorised and enabled by the TRA, including stakeholders and systems. |

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| c. **Outputs** | 1. The overall output of the Scoping Study is a report for presentation to the TRA. This collates the outputs described above for each of the following:   **A** – Capability Statement.  **B** – Operating Environment.  **C** – Representative Characteristics.  **D** – Throughput Requirements.  **E** – Training Capabilities and Resources.  **F** – Capability Gap Statement.  **G** – CTNA Terms of Reference.  **H** – Risks, Assumptions, Issues, Dependencies, and opportunities (RAIDO).  **I** – Lessons from Experience.   1. The Scoping Study must be delivered in a recorded format, usually as a report. By exception (as an equivalent agreed by the TRA), points of analysis may be delivered to the TRA in an appropriate meeting, with a record of the points made and any decisions. |
| d. **Decision Points** | 1. Initiation of the Scoping Study authorised by the TRA. 2. Outputs to be delivered to the TRA by the activity provider. 3. The Scoping Study report can only be authorised by the TRA. |

**Annex D to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Teamwork Competencies**

1. Table one summarises teamwork competencies identified by an Army HQ study.19

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| **Teamwork Competencies** | | | | |
| **Teamwork Process** | | **Teamwork Status** | | |
| **Communication** | **Cooperation** | **Leadership** | **Situational**  **Awareness** | **Decision-Making** |
| **Knowledge**   1. State the appropriate vocabulary. 2. Demonstrate understanding of the appropriate content. 3. State the appropriate format.   **Skills**   1. Communicate clearly. 2. Communicate accurately. 3. Communicate persuasively. 4. Apply brevity in communication. 5. Communicate in a timely manner.   **Attitudes**   1. Demonstrate a willingness to listen and interact when appropriate. 2. Responsibility to ensure that message has been passed. 3. Adjust communication style to audience. | **Knowledge**   1. Demonstrate understanding of psychological safety. 2. State knowledge of the FE.   **Skills**   1. Monitor behaviour. 2. Provide effective and timely feedback. 3. Intervene in situations.   **Attitudes**   1. Apply back-up behaviours. 2. Demonstrate trust in the FE and CoC. 3. Demonstrate FE efficacy. 4. Demonstrate FE orientation. 5. Encourage psychological safety. 6. Demonstrate willingness to act. | **Knowledge**   1. Demonstrate understanding of Army Leadership Doctrine. 2. State knowledge of the FE. 3. State command procedures, in accordance with ADP Land Operations, Pt 3 and tactical doctrine   **Skills**   1. Inspire the FE. 2. Empower the FE. 3. Monitor the FE and task. 4. Evaluate the FE and task. 5. Support the FE.   **Attitudes**   1. Accept responsibility and accountability. 2. Set standards and maintain Army Values. 3. Demonstrate stress resilience. 4. Take appropriate risks. 5. Enable FE climate. 6. Demonstrate a willingness to make decisions. | **Knowledge**   1. State the appropriate vocabulary. 2. Demonstrate understanding of the appropriate content. 3. State the appropriate format.   **Skills**   1. Communicate clearly. 2. Communicate accurately. 3. Communicate persuasively. 4. Apply brevity in communication. 5. Communicate in a timely manner.   **Attitudes**   1. Demonstrate a willingness to listen and interact when appropriate. 2. Responsibility to ensure that message has been passed. 3. Adjust communication style to audience. | **Knowledge**   1. State the appropriate vocabulary. 2. Demonstrate understanding of the appropriate content. 3. State the appropriate format.   **Skills**   1. Communicate clearly. 2. Communicate accurately. 3. Communicate persuasively. 4. Apply brevity in communication. 5. Communicate in a timely manner.   **Attitudes**   1. Demonstrate a willingness to listen and interact when appropriate. 2. Responsibility to ensure that message has been passed. 3. Adjust communication style to audience. |

*Table one - Teamwork Competencies.*

19 Wood, R., Strong, S., Rowlands, M., and Black, S., (2018), *Collective Training (CT) Level 3 to 6 Training Needs Analysis*, DSTL.

**Annex E to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Level of Challenge Scale – Worked Example**

1. Table one, below, provides a worked example as an illustration of how the Level of Challenge Scale produces a numerical value and summary statements to indicate a quantifiable definition of the level of difficulty and complexity as part of the Conditions within which an FE must be able to perform a military task. This is applicable to both the Force Element Performance Statement and the Collective Training Objectives. Complexity levels can be related to the Cynefin Framework explained in Annex F.
2. The overall numerical value can be found in Row 2, in the top left of the table (i.e., 6.2 is the Level of Challenge for this worked example). Individual statements and values are provided in the same row for each category of difficulty and complexity, weighted according to the numerical values in Row 1. A summary of the relevant individual statements as well as the overall value is to be recorded in the Conditions Table.
3. The overall value and individual statements are produced by considering each factor in turn and determining which of the various statements best apply (Rows 3 to 11, as applicable). Once the appropriate statement has been chosen, this is then selected from a drop-down list in Row 2, under each factor, which then provides a corresponding numerical value. In the worked example below, the following statements were selected for each factor (with the corresponding numerical value for the example stated in brackets – see paragraph 4 below for full definitions):
   1. Force Element: *Forming, Combined Arms* (6);
   2. Constraints: *Significant time pressure, flexible resource availability or constrained RoE, and low risk appetite* (6);
   3. Opposition: *Heavily opposed, symmetric* (7);
   4. Environment change / understanding: *Dynamic, unknown, open* (7);
   5. Environmental advantage: *Environmental neutral advantage relative to opposition* (5);
   6. Fatigue / Morale: *Short duration activity during mission, or average morale before mission* (5).
4. The overall value for the Level of Challenge is then obtained by multiplying each individual value by their weighting (in Row 1) and then adding all of the weighted values together. For example: (6 x 0.1) + (6 x 0.1) + (7 x 0.2) + (7 x 0.3) + (5 x 0.2) + (5 x 0.1) =

6.2.

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| **Row** | **Level of Challenge** | | **Difficulty** | |  | **Complexity** | | | | | | | | | | | | | |
| 1 | Factor | | *Force Element (FE)* | 0.1 | *Constraints* | 0.  1 |  | *Opposition* | 0.  2 |  | *Environment change / understanding* | 0.  3 |  | *Environmental advantage* | 0.  2 |  | *Fatigue / Morale* | 0.  1 |
| 2 | **Value** | **6.2** | Forming, Combined Arms | **6** |  | Significant time pressure, flexible resource availability or constrained RoE, and low risk appetite | **6** |  | Heavily opposed, mixed | **8** |  | Dynamic, unknown, compressed (constrained physical and  cluttered) | **8** |  | Environmental neutral advantage relative to opposition | **5** |  | Short duration activity during mission, or average morale before mission | **5** |
|  | **Level of Challenge:**  a quantifiable definition of the level of difficulty and complexity. | |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Well-formed / experienced, Special- to- Arm | 1 | No significant time pressure, flexible resource availability and permissive RoE, and  high risk appetite | 1 | Unopposed | 1 | Static, known, open | 1 | Environmental advantage relative to opposition | 1 | Peak of activity during mission, *or* high morale before mission | 1 |
| 4 | Forming, Special-to- Arm | 2 | Medium time pressure, flexible resource availability or constrained RoE, and medium risk appetite | 5 | Opposed, symmetric | 4 | Static, unknown, open, *or* static, known, compressed (constrained physical) | 3 | Environmental neutral advantage relative to opposition | 5 | Short duration activity during mission, *or* average morale before mission | 5 |
| 5 | Churned, Special-to- Arm | 3 | Significant time pressure, flexible resource availability or constrained RoE, and low risk appetite | 6 | Opposed, mixed | 5 | Static, unknown, compressed (constrained physical and cluttered) | 4 | Environmental disadvantage relative to opposition | 10 | Long duration activity during mission, *or* low morale before mission | 1  0 |
| 6 | Well-formed / experienced, Combined Arms | 5 | Significant time pressure, constrained resource availability, constrained ROE, and low risk appetite | 10 | Opposed, asymmetric | 6 | Dynamic, known, open | 5 |  |  |  |  |
| 7 | Forming, Combined Arms | 6 |  |  | Heavily opposed, symmetric | 7 | Dynamic, unknown, open, *or* dynamic, known, compressed (constrained  physical) | 7 |  |  |  |  |
| 8 | Churned, Combined Arms | 7 |  |  | Heavily opposed, mixed | 8 | Dynamic, unknown, compressed (constrained physical and  cluttered) | 8 |  |  |  |  |
| 9 | Well-formed / experienced, JIIM | 8 |  |  | Heavily opposed, asymmetric | 10 | Dynamic, unknown, compressed (constrained physical and  cluttered), responsive | 10 |  |  |  |  |
| 10 | Forming, JIIM | 9 |  |  |  |  |  |  |  |  |  |  |
| 11 | Churned / new, JIIM | 10 |  |  |  |  |  |  |  |  |  |  |

*Table one - Level of Challenge Scale – Worked Example.*

1. The Level of Challenge applies the following definitions of difficulty and complexity and the various underpinning factors. Considerations underneath each listed factor reflect increasing challenge, although considerations are combined to provide the weighted score for each factor.
2. **Difficulty.** This is defined as the extent to which something is hard to accomplish. The main difficulty factor in the Level of Challenge Scale is the FE itself, the significance of characteristics which affect cohesion, and the demands of its missions and tasks.
   1. FE.
      1. Churned: 1/3 personnel or more substituted or transferred in / out in last month, and with no experience of having worked together as part of a similar FE previously.
      2. Forming: up to 1/3 of FE substituted or transferred in / out in last 6 months, but not as recently as one month, and who have no experience of having worked together as part of a similar FE previously.
      3. Well-formed: less than 1/3 FE substituted or transferred in / out in last 6 months change in last six months and who have no experience of having worked together as part of a similar FE previously.
      4. Experienced: all members of the FE have conducted at least one similar mission or task before.
      5. StA: Special-to-Arms level.
      6. CA: Combined Arms level.
      7. JIIM: Joint, Intra-governmental, Inter-agency, Multinational level.
3. **Complexity.** This is defined by the degree of inherent uncertainty within the operating environment, and within that context the nature of the relationship between cause and effect, and the ability of the FE to perceive, comprehend, and respond. (See also Appendix 2 to Annex A). Operating environments will be one of the following:
   1. Ordered (where there are: high levels of constraints are imposed by the system on the agents operating within it; high levels of predictability are attainable); or,
   2. Complex, or Unordered, (where: some constraints are imposed by the system on agents operating in it; everything is connected; we can assess probability, but predictability is not possible); or,
   3. Chaotic, or Disordered (where there are: no constraints; no predictability).
4. Factors of complexity included in the Level of Challenge Scale include:
   1. Constraints.
      1. Flexible: command able to choose from multiple effective Courses of Action (CoAs).
      2. Constrained: limited CoAs exist, none may be deemed effective.
      3. Resources: attachments and detachments, reserve forces, command team, critical FE members, access to relevant advisors, equipment, vehicles, intelligence, information, fires, protection, and sustainment to enable multiple CoAs and combat effectiveness.
      4. Permissive Rules of Engagement (RoE): enable multiple CoAs.
      5. Time Pressure: degree to which time available to achieve the objective is limited/reduced, the number of concurrent objectives, the degree of ambiguity in the objective.
      6. Risk Appetite: how much risk is willing to be taken with the Force and/or life to achieve the mission, thus enabling multiple CoAs.
   2. Opposition.
      1. Opposed: either a capable enemy that lacks determination, or a determined enemy that is overmatched by Friendly Forces.
      2. Heavily Opposed: coherent and capable, determined with understanding of the environment with some of Electro-Magnetic (EM) denial, EM intercept (driving Force EMCON), CBRN, Air / littoral threat, strategic cyber, space, remote and autonomous systems.
      3. Symmetric Force: use of similar tactics, techniques, and procedures.
      4. Asymmetric Force: use of dissimilar tactics, techniques, and procedures.
   3. Environmental Change / Understanding. These play a significant role in describing the Level of Challenge that the FE will be required to withstand. Appendix 2 to Annex A includes a note which expands on the origin of this factor, drawing on David Snowden’s Cynefin Framework.20
      1. Open: a rural environment that lacks features which can be exploited for combat advantage.
      2. Compressed - constrained physical: presence of woods and forests, NATO urban zones, sub-terranean systems and features which affect perception and which can be exploited for combat advantage.
      3. Compressed - cluttered: presence of entities, items, information, or events affecting perception and comprehension.
      4. Static: an environment that is consistently similar for the duration of the mission/activity.
      5. Dynamic: an environment with a changing character over the duration of the mission/activity.

20 Snowden, D (2007), [Leader's Framework for Decision Making,](https://hbr.org/2007/11/a-leaders-framework-for-decision-making#%3A~%3Atext%3DThe%20framework%20sorts%20the%20issues%20facing%20leaders%20into%2Csituations%20and%20to%20act%20in%20contextually%20appropriate%20ways) Harvard Business Review, November 2007 *Cynefin* – Welsh, pronounced ‘*kuh-nev-in*’.

* + 1. Known: a Political, Military, Economic, Social, Information, Infrastructure, Physical Environment, and Time21 (PMESII-PT) environment that is familiar or uncluttered, predictable, and well understood.
    2. Unknown: a PMESII-PT environment that is unfamiliar, cluttered, unpredictable, or not well understood.
    3. Responsive: a complex or chaotic PMESII-PT environment that adapts as the FE senses it and acts, is unpredictable and may appear to be random.
  1. Environmental Advantage. Note that environment, in this context, includes physical, information and human environments.
     1. Environmental Advantage: a technical advantage that enables exploitation of the environment, diurnal change, meteorological, aeronautical conditions, and terrain. Relative to the opposition.
     2. Environmental Neutral: no technical advantage that enables exploitation of the environment, diurnal change, meteorological, aeronautical conditions, and terrain. Relative to the opposition.
     3. Environmental Disadvantage: a technical disadvantage where the environment limits activity, diurnal change, meteorological, aeronautical conditions, and terrain. Relative to the opposition.
  2. Fatigue / Morale.
     1. Peak of Activity: intense activity for less than 1 day during mission.
     2. Short Duration: intense activity for more than one day and less than 7 days during mission.
     3. Long Duration: intense activity for more than 7 days during mission.
     4. Morale: the will of the force and its soldiers to fight.
     5. Intense: demanding highly concentrated effort.

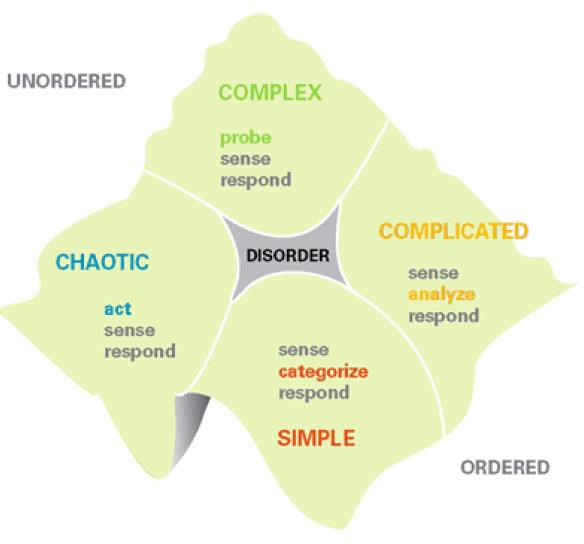
21 ‘Time’ is included here to refer to the timing and duration of the mission/task and how this context affects the operating environment. It is distinct from time pressure during the mission/task, which is included in Constraints.

**Annex F to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**The Cynefin Framework for the Level of Challenge Scale**

1. Environmental Change / Understanding factors are found in both Initial and Emergent Conditions in the Force Element Performance Statement and Collective Training Objectives, and play a significant part in describing the scale of the Level of Challenge that the FE will face.
2. These factors are based on David Snowden’s Cynefin Framework for operating environments. This provides a framework which sorts issues facing FEs into five contexts defined by the nature of the relationship between cause and effect, and the ability of the FE to perceive, comprehend, and respond. Four of these contexts – clear, complicated, complex, and chaotic - are either ordered or disordered.
3. Clear (also known as ‘Simple’) and Complicated environments are ‘ordered’ where the relationship between cause and effect can be understood and predicted, and a suitable response may then be applied.
4. Complex and Chaotic environments are ‘unordered’, where the relationship between cause and effect is not possible to understand or predict, and there is no ‘right’ response; in complex environments FEs must probe to see what works more or less effectively, and in chaotic environments FEs must act to ‘stop the bleeding’.
5. The fifth context – Disorder - applies when it is unclear which of the other four contexts is predominant and recognition of this is required for the FE to attempt to move the situation into one or more of the other contexts.
6. The FE’s perception and comprehension of the situation determines their response. If the FE diagnoses the situation appropriately, by accurately observing and assessing data received from cues, stimuli, and effects (feedback) and assimilating the derived information into their decision-making and situational awareness, the FE’s response will work to manage, reduce, or even neutralise the challenge. Consequently, the context may become ‘clearer’, and what was a Complicated context may now have been managed so successfully that it has become a Clear context.
7. If the FE’s response is not appropriate, because it does not observe and assess data accurately, leading to a failure to assimilate information and erosion of effective decision-making and situational awareness, the situation is likely to deteriorate further. In this way, the FE’s context may have been Clear at the outset, but because of their action (or inaction) may now have become Complicated or even Chaotic.
8. Figure 1 below provides an illustration of Cynefin Framework and the operating environment contexts it identifies. It shows the relationship between contexts, and the primary response required by the FE in each ‘ordered’ and ‘unordered’ context.
9. The framework is multi-layered, and FEs and leaders may find themselves required to operate across more than one operational context concurrently, requiring a variety of approaches. Table 1 expands on considerations for each type of operating environment.
10. An understanding of the significance of the Cynefin Framework is needed to help analyse a range of operating environments which are more or less challenging for FEs. This will help identify the range of cues, stimuli, and effects (feedback) experienced by the FE in these contexts and enable more effective selection of training environments, methods, and media as part of the FRS. It will, later, enable effective design, planning, and delivery, and inform assurance. A useful primer to help understand this model can be accessed at the link in the footnote. Figure one is from the same source.22



*Figure one - Cynefin Framework Diagram.*

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| **Cynefin Framework for Operating Environments** | **Ordered Operating Environments** | | **Unordered Operating Environments** | |
| **CLEAR** (or  ‘Simple’) | **COMPLICATED** | **COMPLEX** | **CHAOTIC** |
| *(A fifth environment exists - DISORDER -*  *an operating environment which is difficult to recognise even when in it exists and where multiple perspectives compete for prominence)* | - Repeating patterns and consistent events  - Clear cause-and- effect relationships evident to everyone; the right answer exists  - Known knowns  - Fact-based management  Decision-making process:  SENSE - CATEGORISE - RESPOND | * Expert diagnosis required * Cause-and-effect relationships discoverable but not immediately apparent to everyone more than one right answer possible * Known unknowns   - Fact-based management  Decision-making process:  SENSE - ANALYSE – RESPOND | - Flux and unpredictability   * No right answers; emergent instructive patterns   + Unknown unknowns * Many competing ideas   + A need for creative and innovative approaches   - Pattern-based leadership  Decision-making process:  PROBE - SENSE - RESPOND | * High turbulence * No clear cause- and-effect relationships, so no point in looking for right answers   - Unknowables   * Many decisions to make and no time to think   + High tension   + Pattern-based leadership   Decision-making process:  ACT - SENSE - RESPOND |

*Table one - Cynefin Framework.*

22 Snowden, D., (2007) [A Leader's Framework for Decision Making, *Harvard Business Review*, November](https://hbr.org/2007/11/a-leaders-framework-for-decision-making) [2007.](https://hbr.org/2007/11/a-leaders-framework-for-decision-making)

**Annex G to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Force Element Performance Statement**

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| **Step 2** | **Product 2.1** |
| 1 | **Force Element Performance Statement (FEPS)** |
| a. **Question** | 1. The FEPS process starts by asking the question ‘what will the force element need to do in its operational role?’ 2. The main sub-questions which the analysis conducted to produce the FEPS will answer are:    1. What does the FE need to be able to do, as a cohesive entity, in their ‘real world’ operational role (i.e., at readiness or on operations); what Performance and Standards will be required of them?    2. What FE Stressors (Conditions and Interfaces) and Level of Challenge will be experienced by the FE in the ‘real world’?    3. What could be measured to indicate success (and failure) of the FE in the ‘real world’? |
| b. **Purpose** | 1. The FEPS articulates the readiness or operational performance requirements of the FE. 2. It details23:    1. FE Performance and Standards, which define competency at performing military tasks as a cohesive entity in the FE’s operational role.    2. Conditions, which convey how challenging the context and environment are within which the FE would be required to perform its operational role.    3. Metrics which outline what could be measured to indicate FE errors and confirm its success. 3. Completion of the FEPS enables subsequent steps of the CTNA process. |
| c. **Conduct** | (1) The FEPS will analyse the following in sufficient detail to enable the production of CTOs (see Steps 2 and 4) and determine the Fidelity Requirement Statement (FRS – see Step 3). An example template, and a worked example for one military task, can be found at Annex L.  **A** – Capability Statement.  **B** – Performance - List.  **C** – Performance - Task.  **D** – Performance - Action.  **E** – Performance - Outcome.  **F** – Performance – Status.  **G** – Standards – Action.  **H** – Standards – Outcome. |

23 With the exception of the Metrics section, this aligns to JSP 822, Vol 3: Coll Trg V3.0 (Feb 24).

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|  | **I** – Standards – Status.  **J** – Conditions – General Conditions.  **K** – Conditions - Level of Challenge.  **L** – Conditions – Initial Conditions.  **M** – Conditions – Emergent Conditions.  **N** – Conditions – Interfaces.  **O** – Metrics – Actions.  **P** – Metrics – Outcomes.  **Q** – Metrics – Status.  **R** – Metrics – Conditions.   1. Once a CTNA has been directed as a result of Step 1 – Scoping Study, completion of the FEPS is the next step. 2. The FEPS Methodology is outlined at Appendix 1 and provides a detailed explanation of each component of the process. 3. The minimum standard will be a FEPS which includes sufficient analytical detail in order to complete the remainder of Step 2 and Steps 3-4 of the CTNA process. 4. It will be informed by the Terms of Reference (ToRs) agreed between the TRA and the CTNA provider following the recommendations of the Scoping Study, and will be assured by the TRA. 5. [Architectural model.](https://sparxea.ahe.r.mil.uk/repositories/Artifacts/View/repId/12ba9c90-1ead-416d-bbdb-2a06c11369ab/%7B028C7942-62C6-4c0d-8CA0-FFACD879BA8E%7D) 6. **Performance.** The Performance section is based on the operational requirement for the capability that the FE needs to deliver. It must include definition of military tasks within a training taxonomy derived from the Directed Tasks (e.g., Mission Task Lists (MTLs)) and based on the Tactical Functions. Analysis of each military task must consider the FE’s Actions, Outcomes, and Status at the various stages of its conduct of the task.24 7. **Standards.** The Standards section must include analysis of the Success Factors and Critical Errors for the FE’s Actions, Outcomes, and Status. Success Factors and Critical Errors describe what the FE might do to contribute to success or failure of a military task. In short, these describe what ‘good’ looks like in an operational environment. Success Factors focus on ‘doing things right’, whereas Critical Errors focus on ‘doing the right thing’. These build on current MIMIR Performance Indicators (PIs) and the Fundamentals of Combined Arms Manoeuvre25. Standards must include those for teamwork competencies (Annex C) as well as those for the planning and execution of a military task that the FE would be required to perform in their operational role. Without a focus on FE teamwork competencies and training Success Factors and Critical Errors it will not be possible to accurately determine26:    1. The root cause of FE failure as a factor in performing a military task; we would only know that the FE could or could not perform the task (the symptom), not *why* they could or could not (the cause).    2. The cohesiveness of the FE, and its ability to work together to adapt to meet its various challenges (to meet the purpose of collective training). |

24 Maps to Team / Collective Task Analysis and Hierarchical Task Analysis in JSP 822, Vol 3: Coll Trg V3.0 (Feb 24).

25 See *Field Army Training Directive* (FATD) 2023, MIMIR PIs, and *Fundamentals of Combined Arms Manoeuvre* (2023).

26 See also Annex A.

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|  | 1. FE teamwork competencies included are aligned to recent research. An applied taxonomy is used based on one produced as part of a detailed Training Needs Analysis produced for the Army’s Collective Training Transformation Programme (CTTP) (Annex C). 2. **Conditions.** The Conditions section must include analysis of General Conditions (prevailing *throughout* the military task), Initial Conditions (present *at the outset* of an FE’s military task in an operational environment), Emergent Conditions (occurring *during* an FE’s military task in an operational environment), and Interfaces (the means – human or machine systems – by which the FE perceives and projects its actions within its environment). There is an emphasis on analysis of the Level of Challenge, and application of the Cynefin Framework27, to enable an understanding of layers of difficulty and complexity encountered by FEs operating in the operating environments in the 21st Century (Annexes D and E) 3. **Metrics.** The Metrics section records the Data Capture Requirements for:    1. Success Factors and Critical Errors identified in the Standards section. The Data Capture Requirements describe what can be:       1. measured for Action performance within the Task;       2. assessed for Outcome performance of the Task; and,       3. evaluated for Status performance of the FE as a team within the Task; and,    2. Conditions. The Data Capture Requirements describe what can be measured to provide data to situate Task performance in the context of environmental conditions and the Level of Challenge. 4. Upon completion of the FEPS, the RAIDO and Lessons from Experience logs must be updated. |
| d. **Inputs** | 1. The following lists examples of inputs which would be relevant for analysis to produce a FEPS. Specific guidance is provided in the FEPS Methodology at Appendix 1.    1. Scoping Study.    2. Directed tasks (e.g., Mission Task Lists (MTLs) or Operational Orders).    3. FE ‘teamwork’ competencies (e.g., see Annex C).    4. Threat assessments (e.g., Field Army Threat Handbook).    5. Relevant doctrine, policy, CONEMPs, Orders (including the Army Operating Order).    6. Changes in other capability lines of development.    7. Lessons Identified (e.g., from Post Operational Reports (PORs), Training Analysis Reports (TARs), Post Exercise Reports (PXRs).    8. Reports (e.g., evaluation (External Validation) reports).    9. Stakeholders (e.g., questionnaires/interviews conducted with specialists or those who have recently undertaken Force Preparation or conducted the Operational role).    10. Systems (e.g., data from systems such as MODUS, which records BCS completion). |

27 Snowden, D. (2007), [Leader's Framework for Decision Making,](https://hbr.org/2007/11/a-leaders-framework-for-decision-making#%3A~%3Atext%3DThe%20framework%20sorts%20the%20issues%20facing%20leaders%20into%2Csituations%20and%20to%20act%20in%20contextually%20appropriate%20ways) *Harvard University Press,* November 2007. Cynefin is a Welsh word and is pronounced ‘kuh-nev-in’. Also maps to MOD (2017), [JCN 2/17,](https://www.gov.uk/government/publications/future-of-command-and-control-jcn-217) [Future of Command and Control.](https://www.gov.uk/government/publications/future-of-command-and-control-jcn-217)

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| e. **Outputs** | 1. FEPS. 2. Updated RAIDO and Lessons from Experience. |
| f. **Decision Points** | 1. Initiation of the FEPS authorised by the TRA, following acceptance of the Scoping Study. 2. FEPS output to be delivered to the TRA by the activity provider as part of a Training Needs Report (TNR). 3. FEPS output to be assured and approved by the TRA. 4. Once authorised by the TRA, the FEPS informs and supports the TRA’s Force Preparation Order (FPO). 5. RAIDO and Lessons from Experience logs to be used to control and improve the process of training analysis. |
| g. **Additional Information** | 1. References:    1. Army (2023), *Field Army Threat Handbook.*    2. Army (2023), *Fundamentals of Combined Arms Manoeuvre.*    3. Army (2023), *How We Fight 2026.*    4. Army (2023), *Land Operating Concept.*    5. Army (2023), *Planning and Execution Handbook.*    6. Army (2022), *ADP Land Operations.*    7. Army (2022), *ADP Training.*    8. Army (Various), *Field Army Training Directives.*    9. Army (Various), *MIMIR Performance Indicators.*    10. Army (Various), *MTLs and CTOs.*    11. Crilly, M., and Mears, A., (2022), Multi-dimensional and domain operations (MDDO), *Wavell Room*.    12. DSTL Technical Information Notes (TINs):        1. TIN 2.056, *Team and Collective Training Needs Analysis method evaluation: implications and recommendations for JSP 822*, 2016.        2. TIN 2.110 *Collective Knowledge, Skills, and Attitudes (KSA) exploitation guidance for teamwork KSA and Collective Training Objective (CTO) description*, 2018.        3. TIN 2.091 *Assessing the value of collective training,* 2016.    13. Endsley, M.R., (1995), Toward a theory of situation awareness in dynamic systems, *Human Factors*, Vol. 37:1.    14. Huddlestone, J. and Pike, J., (2015), *Team and Collective Training Needs Analysis: defining requirements and specifying training systems* (Human Factors in Defence), London: CRC Press.    15. Kopsch, T., and Fox, A. (2016), Embracing complexity: adjusting processes to meet the challenges of the contemporary operating environment, *Army Press Online Journal*, Vol. 16:34.    16. MOD (2011), *Review of recent concepts, theories and emerging principles for training design: final report.*    17. MOD (2019), *VRLT final report*. |

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|  | 1. MOD (2017), [JCN 2/17, *Future of Command and Control*.](https://www.gov.uk/government/publications/future-of-command-and-control-jcn-217) 2. Snowden, D., (2007), [Leader's framework for decision making,](https://hbr.org/2007/11/a-leaders-framework-for-decision-making#%3A~%3Atext%3DThe%20framework%20sorts%20the%20issues%20facing%20leaders%20into%2Csituations%20and%20to%20act%20in%20contextually%20appropriate%20ways) *Harvard Business Review*, November 2007. 3. Wood, R., Strong, S., Rowlands, M., and Black, S., (2018), *Collective Training (CT) Level 3 to 6 Training Needs Analysis*, DSTL. |

**Appendix 1 to Annex G**

**Force Element Performance Statement 02 September 2024**

**Force Element Performance Statement Methodology28**

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| 1 | **Force Element Performance Statement (FEPS) Methodology** |
| a. **Overall Structure** | |
| 1. Administration. 2. Performance. 3. Standards. 4. Conditions. 5. Metrics. | |
| b. **Administration** | |
| 1. The FEPS must capture the following administrative information:    1. Date authorised;    2. Security classification (e.g., OFFICIAL);    3. Status (e.g., DRAFT); and,    4. Version (e.g., V1.0). | |
| c. **Performance** | |
| 1. This section is needed to analyse and record the Tasks that the FE are required to perform, and the Actions (activities and processes conducted), Outcomes (decisive results of actions), and Status (the position of the FE’s leadership, situational awareness, and decision-making) relevant to each Task. 2. Headings.   **A** – Capability Statement.  **B** – Performance - List.  **C** – Performance - Task.  **D** – Performance - Action.  **E** – Performance - Outcome.  **F** – Performance – Status. | |
| 1. **A - Capability Statement.** This is needed to enable focus on the scale and scope of the operational role and requirements. It is derived from the Capability Statement produced for heading A of the Scoping Study and further refined. It must include seven statements:    1. What the FE needs to be able to do to Direct the Mission, tasks and outputs;    2. What the FE needs to be able to do to Execute the Mission, tasks and outputs;    3. What the FE needs to be able to do to Enable the Mission, tasks and outputs;    4. What the FE needs to be able to do to Prepare and Project its forces.    5. Who and what the FE needs to be interoperable with, including other FEs; | |

28 The process described in this methodology will also be followed to produce CTOs, with the only difference being that CTOs will focus on performance in the training environment.

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| 1. What capabilities the FE will need to be able to use; and, 2. What freedoms and constraints there are, within which the FE will need to operate.   (4) Output: insert statement into heading A of the FEPS. |
| 1. **B – Performance - List.** This is needed to situate FE task performance within the operational requirements outlined in A – Capability Statement. It is framed by:    1. MTLs; and,    2. Tactical Functions. 2. MTLs and Directed MTLs (DMTLs) are included to align with Army strategic direction and the Army’s outputs for Defence. MTLs and DMTLs provide lists of missions and tasks which may be directed for FEs to be capable of delivering. Performance must be mapped against appropriately directed/selected missions and tasks from these lists. 3. Tactical Functions provide a universal framework that provides a simple, scalable framework for operational outcomes that can be related to any Mission and context, and any level of collective training. This offers sufficient detail to focus FE Tasks and the Actions, Outcomes, and Status which contribute to their successful performance. 4. The FEPS template provided shows the use of MTLs and both high-level and decomposed tactical functions to situate the tasks. The following column headings are used, with the origin of the derived information also indicated:    1. MTL / Directed MTL (DMTL) – derived from Fd Army direction;    2. High-Level Tactical Function – derived from ADP Land Operations, Part 2; and,    3. Tactical Function – derived from ADP Land Operations, Part 2. 5. Output: insert MTLs and Tactical Functions into the relevant columns in heading B of the FEPs. |
| 1. **C – Performance – Task.** This is needed to focus on a specific task that the FE must do to enable delivery of the relevant Tactical Function, and enable analysis of the Actions, Outcomes, and Status involved in delivery of the task. 2. Task requirements are derived from analysis of headings A and B. 3. Tasks must be written as a single sentence with a clear and appropriate verb (based on Bloom’s taxonomy) and subject. One simple, concise sentence (maximum) and only one verb should be used. 4. Each Task must be allocated a unique number for reference and tracking purposes (e.g., ‘1’). 5. Output: insert Task statement into heading C of the FEPs. |
| 1. **D – Performance - Action.** This is needed to focus on the activities and processes conducted by the FE to achieve the task.    1. Activities state what the FE must do to achieve the Task in terms of planning and execution.    2. Processes state that the FE must communicate and cooperate to achieve the Task. 2. Action performance requirements are derived from analysis of headings C. 3. Each Action statement must be written as a separate sentence with a clear and appropriate verb (based on Bloom’s taxonomy) and subject. One simple, concise sentence (maximum) and only one verb should be used for each separate sentence. 4. Each separate Action statement must be given a unique number for reference and tracking purposes, following the numbering of the task (e.g., ‘1.1’). 5. Output: insert Action performance statements for each Task into heading D of the FEPS. |
| (20) **E – Performance – Outcome.** This is needed to focus on the decisive results of FE Actions, and include outcomes for both activities and processes carried out by the FE in pursuit of achieving the Task. |

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| 1. Outcome performance requirements are derived from analysis of headings C and D. 2. Each Outcome statement must be written as a separate sentence with a clear and appropriate verb (based on Bloom’s taxonomy) and subject. One simple, concise sentence (maximum) and only one verb should be used for each separate sentence. 3. Each separate Outcome statement must be given a unique number for reference and tracking purposes, following the numbering of the task and action (e.g., ‘1.2’). 4. Output: insert Outcome performance statements for each Task into heading E of the FEPS. |
| 1. **F – Performance – Status.** This is needed to focus on the position of the FE’s leadership, situational awareness, and decision-making during the conduct of the Task, how it has emerged or changed over time, and how FE Status has contributed to achieving Task Actions and Outcomes. 2. Status performance requirements are derived from analysis of headings C, D, and E. 3. Each Status statement must be written as a separate sentence with a clear and appropriate verb (based on Bloom’s taxonomy) and subject. One simple, concise sentence (maximum) and only one verb should be used for each separate sentence. 4. Each separate Status statement must be given a unique number for reference and tracking purposes, following the numbering of the task, action, and outcome (e.g., ‘1.3’). 5. Output: insert Status performance statements for each Task into heading F of the FEPS. |
| b. **Standards** |
| (1) Headings.  **G** – Standards – Action.  **H** – Standards – Outcome.  **I** – Standards – Status. |
| 1. **Standards.** This section is needed to identify how good the FE is at the Actions required to perform a Task, the standard of the Outcomes it achieves, and the standard of the FE’s Status with regards to leadership, situational awareness, and decision-making. 2. Crucially, Standards enable structured analysis, around defined terms, to explore how an FE’s teamwork contributes to the FE’s success or failure at a task. This approach builds on wider research. Specifically, good practice was identified in ‘KSA in CT Level 3 to 6 TNA' (2018) (see Annex C). This Training Needs Analysis (TNA) produced for the Collective Training Transformation Programme (CTTP), provides a teamwork competency framework which can be readily applied to Army Collective Training. ‘CT Level 3 to 6’ equates to training delivered to audiences ranging from a sub-unit in a BG context to a Division in a Corps context (Training Levels ECHO – HOTEL). However, the principles of this framework render it scalable across all levels of Collective Training. 3. The TNA’s teamwork competency framework is outlined in Annex C. The framework breaks down competencies into Knowledge, Skills, and Attitudes (KSA) as follows.    1. Communication;    2. Cooperation;    3. Leadership;    4. Situational Awareness; and,    5. Decision-Making. 4. **Success Factors and Critical Errors.** Standards are expressed as Success Factors or Critical Errors.    1. **Success Factors.** These describe what ‘good’ looks like for FE Actions, Outcomes, and Status. They are needed as they provide indicators for FE successful performance. In the FEPS, these are focussed on:       1. what these look like in an operational environment; and, |

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| ii. ‘doing things right’, such that Actions are conducted in the right way, Outcomes achieve set standards, and FE Status is sustained by appropriate approaches.   1. **Critical Errors.** These describe the most important things which can go wrong, in performance terms, for FE Actions, Outcomes, and Status, in an operational environment. They are needed as they provide indicators for FE failure, which should then be used as a basis for experiential, error-based learning. In the FEPS, these are focussed on:    1. what these look like in an operational environment; and,    2. ‘doing the right things’, such as recognising the need for Actions, and achieving set standards for Outcomes, and for appropriate approaches to sustain FE Status. 2. Each Success Factor or Critical Error statement must be written as a separate sentence with a clear and appropriate verb (based on Bloom’s taxonomy) and subject. One simple, concise sentence (maximum) and only one verb should be used for each separate sentence. Examples of performance indicators may then be included. 3. These are appropriately referenced. References may include (but are not limited to) relevant doctrine, policy, CONEMPs, Orders, threat assessments, and mission/theatre-specific direction. |
| 1. **G – Standards – Action.** These are needed to identify how good the FE is at conducting activities (planning and execution) and processes (communication and cooperation) to support achievement of the Task. 2. Action Standards are derived from a combined analysis of the Action performance requirements (heading D of the FEPS) as well as relevant references (e.g., relevant doctrine for planning and execution and the teamwork competencies framework at Annex C). 3. Output: insert Action Standards for each Task, as Success Factors and Critical Errors, into heading G of the FEPS. |
| 1. **H – Standards – Outcome.** These are needed to identify the quality of the decisive results of the FE’s Actions. 2. Outcome Standards are derived from a combined analysis of the Outcome performance requirements (heading E of the FEPS) as well as relevant references (e.g., relevant doctrine for the outcomes of an effective plan in the context of the military task, and the teamwork competencies framework at Annex C). 3. Output: insert Outcome Standards for each Task, as Success Factors and Critical Errors, into heading H of the FEPS. |
| 1. **I – Standards – Status.** These are needed to identify the quality of the FE’s position with regards to leadership, situational awareness, and decision-making. 2. Status Standards are derived from a combined analysis of the Status performance requirements (heading F of the FEPS) as well as relevant references (e.g., relevant doctrine for leadership in the context of the military task, and the teamwork competencies framework at Annex C). 3. Output: insert Status Standards for each Task, as Success Factors and Critical Errors, into heading I of the FEPS. |
| c. **Conditions** |
| (1) Headings.  **J** – Conditions – General Conditions.  **K** – Conditions - Level of Challenge.  **L** – Conditions – Initial Conditions.  **M** – Conditions – Emergent Conditions.  **N** – Conditions – Interfaces. |
| (2) **Conditions.** This section is needed to define the environment in which the FE must perform its military Task. In the FEPS, this is focussed on what Conditions look like in an operational |

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| environment, and describe the level of challenge (difficulty and complexity) of the Initial and Emergent Conditions that an FE will encounter. In addition, Conditions describe the Interfaces (human and machine) which the FE will use to sense, comprehend, and project actions with in that environment.   1. Each identified Condition statement must be written as a separate, clear and concise sentence. 2. References may be included where appropriate (e.g., with reference to specific doctrine for operating environments). |
| 1. **J – Conditions – General Conditions.** These are needed to articulate Conditions which endure for the duration of the Task. For example, this may include statements on:    1. Degree of daylight;    2. Meterology;    3. Climate; and,    4. Entry Standards. 2. General Conditions are derived from analysis of heading B of the Scoping Study, which analysed the Operating Environment. That analysis is further developed and refined at this stage. 3. Output: insert statements for General Conditions into heading J of the FEPS. |
| 1. **K – Level of Challenge.** This describes a quantifiable definition of the level of difficulty and complexity. An overall score to reflect the level of challenge (1: low; 10: high) is produced by determining the level for weighted factors of difficulty and complexity in a Level of Challenge Scale (see Annex E). Weightings can be altered, but will usually be most heavily weighted towards complexity and, within that, factors relating to the FE’s ability to perceive and understand the operating environment and maintain its advantage. 2. This is needed to provide a value for the difficulty and complexity of the environment within which the FE must perform its military Task. 3. The Level of Challenge is derived from analysis using the Level of Challenge scale (see Annex E).   The maximum value, based on Emergent Conditions, is used, because this sets an upper limit for the Level of Challenge, within which FEs must be able to perform.   1. Output: insert the maximum value derived from the Level of Challenge scale into heading K of the FEPS. |
| 1. **L – Initial Conditions.** This is needed to provide statements of the Conditions encountered by an FE at the outset of its conduct of a military Task. Analysis also contributes to defining a lower limit for the Level of Challenge encountered by an FE when conducting its Task. 2. The statements are derived from the Level of Challenge scale by selecting pre-defined terms for each factor. 3. Output: insert the derived statements for Initial Conditions each factor of difficulty and complexity into heading L of the FEPS. |
| 1. **M – Emergent Conditions.** This is needed to provide statements of the Conditions encountered by an FE during the conduct of a military Task. Analysis also contributes to defining the maximum value for the Level of Challenge, within which FEs must be able to perform the military Task. 2. The statements are derived from the Level of Challenge scale by selecting pre-defined terms for each factor. 3. Output: insert the derived statements for Emergent Conditions each factor of difficulty and complexity into heading M of the FEPS. |
| (18) **N – Interfaces.** These are needed to describe the means through which the FE interacts with cues, stimuli and effects (feedback) manifested in its environment. Interfaces are important as they affect the ability of the FE to perceive, comprehend, and respond to their environment. They are sub- divided into two types: |

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| 1. Human Interfaces. The means by which the FE interacts with the environment using human characteristics; and, 2. Machine Interfaces. The means by which the FE interfaces with the environment using machine characteristics. 3. The statements are derived from heading A of the Scoping Study – Capability Statement, and analysed and refined further as necessary. 4. Output: insert the derived statements for human and machine Interfaces into heading N of the FEPS. |
| d. **Metrics** |
| (1) Headings.  **O** – Metrics – Action.  **P** – Metrics – Outcome.  **Q** – Metrics – Status.  **R** – Metrics – Conditions. |
| 1. **Metrics.** This section is needed to describe the Data Capture Requirements for:    1. Success Factors and Critical Errors identified in the Standards section. The Data Capture Requirements describe what can be:       1. measured for Action performance within the Task;       2. assessed for Outcome performance of the Task; and,       3. evaluated for Status performance of the FE as a team within the Task; and,    2. Conditions. The Data Capture Requirements describe what can be measured to provide data to situate Task performance in the context of environmental conditions and the Level of Challenge. |
| 1. **O – Action.** These are needed to identify data which, if captured, would provide the basis for evidence to support assessment of FE Actions conducted in completion of a military Task. 2. The focus is on what can be measured for Action performance within the Task. 3. Action Metrics are derived from analysis of the Action Standards (Success Factors and Critical Errors) in heading G of the FEPS. 4. Output: insert Action Metrics for each Task into heading O of the FEPS. |
| 1. **P – Outcome.** These are needed to identify data which, if captured, would provide the basis for evidence to support assessment of the quality of the decisive results of the FE’s Actions in performing the military Task. 2. The focus is on what can be assessed for Outcome performance of the Task. 3. Outcome Metrics are derived from analysis of the Outcome Standards (Success Factors and Critical Errors) in heading H of the FEPS. 4. Output: insert Outcome Metrics for each Task into heading P of the FEPS. |
| 1. **Q – Status.** These are needed to identify data which, if captured, would provide the basis for evidence to support assessment of the quality of the FE’s position with regards to leadership, situational awareness, and decision-making in performing the military Task. 2. The focus is on what can be evaluated for Status performance of the FE as a team within the Task. 3. Status Metrics are derived from analysis of the Status Standards (Success Factors and Critical Errors) in heading I of the FEPS. 4. Output: insert Status Metrics for each Task into heading Q of the FEPS. |

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| 1. **R – Conditions.** These are needed to identify data which, if captured, would provide the basis for evidence to support assessment of the FE’s performance within the context of defined Conditions, including those for Level of Challenge and Interfaces. This would enable confirmation of whether the FE has been able to perform the military Task against defined Conditions, or if they performed in the context of more or less challenging Conditions. 2. The focus is on what can be measured to provide data to situate Task performance in the context of environmental conditions and the Level of Challenge. 3. Conditions Metrics are derived from analysis of the Conditions section (headings J to N) of the FEPS. (18)Output: insert Conditions Metrics for each Task into heading R of the FEPS. |

**Annex H to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Draft Collective Training Objectives**

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| **Step 2** | **Product 2.2** |
| 1 | **Draft Collective Training Objectives**29 |
| a. **Question** | 1. Building on the FEPS, the draft Collective Training Objectives (CTOs) focus on what the force element will need to be able to do at the end of training. 2. The main sub-questions which the analysis conducted to produce the draft CTOs will answer are:    1. What will the Army train the FE to be able to do at the end of training?    2. What Performance and Standards will be required of the FE in training?    3. What Conditions will the FE be expected to demonstrate Performance and Standards in, in training?    4. What will be measured, in training, to indicate success (and failure) of the FE against the Performance and Standards?    5. What will be measured, in training, to measure the Conditions that the FE has demonstrated Performance and Standards in? |
| b. **Purpose** | 1. CTOs provide a clear articulation of the training objectives required in terms of Performance, Standards, Conditions, and Metrics to provide a baseline for assessment and assurance of collective training outputs. 2. [Architectural model.](https://sparxea.ahe.r.mil.uk/repositories/Artifacts/View/repId/12ba9c90-1ead-416d-bbdb-2a06c11369ab/%7B13C7DA86-147A-4390-A93B-3B9DAB97566E%7D) 3. CTOs:    1. Identify key aspects of Performance, Standards, Conditions, and Metrics for an FE to be able to demonstrate within a training environment;    2. Capture key training risks at an early stage of training development, such as the inability to deliver certain requirements;    3. Enable analysis of the FRS, helping to determine outline requirements for training capabilities and the allocation / acquisition of resources;    4. Provide a stable framework of endorsed, tailored training objectives for exercise design and planning; and,    5. Provide a clear framework for training delivery, assessment, and assurance. |
| c. **Conduct** | 1. CTOs are comprised of Performance, Standards, Conditions, and Metrics components30. 2. [Step 3 architectural model.](https://sparxea.ahe.r.mil.uk/repositories/Artifacts/View/repId/12ba9c90-1ead-416d-bbdb-2a06c11369ab/%7B13C7DA86-147A-4390-A93B-3B9DAB97566E%7D) 3. The minimum standard will be a set of CTOs which includes sufficient analytical detail in order to provide clear and complete statements of:    1. What FEs must be able to do by the end of training (Performance section);    2. How well (Standards section); |

29 Maps to Collective Training Objectives in JSP 822, Vol 3: Coll Trg V3.0 (Feb 24).

30 With the exception of the Metrics section, this structure aligns to JSP 822, Vol 3: Coll Trg V3.0 (Feb 24).

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|  | 1. Under what Conditions; 2. How data will be captured to confirm the FE’s demonstration of Performance and Standards; 3. How data will be captured to measure the Conditions that the FE has demonstrated Performance and Standards in; and, 4. What training gaps there will be, compared with the full operational requirement outlined in the FEPS (Residual CTOs). 5. Draft CTOs are derived from the FEPS, and will be as close to its operational focus as possible in terms of Performance, Standards, Conditions, and Metrics31. The key difference is that the focus now shifts to the training, rather than operational, environment. Changes may be needed to frame the training focus that is the purpose of the draft CTOs, but these are expected to be minimal. The principal reasons for change will be for the following purposes:    1. Refinement of verbs, using Bloom’s taxonomy, to define the appropriate focus of Performance statements;    2. Identification of any parts of the FEPS that will not be transferred into the final CTOs (e.g., for reasons of safety), and which will need to be captured as Residual CTOs32; and,    3. Refinement of what will be measured in the Metrics section. 6. Draft CTOs are comprised of Performance, Standards, Conditions, and Metrics sections.    1. **Performance.** This section of the CTOs must include definition of military tasks, considering the FE’s Actions, Outcomes, and Status at the various stages of its conduct of the task in training.    2. **Standards.** This section of the CTOs must include analysis of the Success Factors and Critical Errors for the FE’s Actions, Outcomes, and Status.    3. **Conditions.** This section of the CTOs must include analysis of General Conditions (prevailing *throughout* the military task in training), Initial Conditions (present *at the outset* of an FE’s military task in training), Emergent Conditions (occurring *during* an FE’s military task in training), and Interfaces (the means – human or machine – by which the FE perceives and projects its actions within the training environment). The emphasis on analysis of levels of challenge through use of the Cynefin Framework33, present in the FEPS, is also included here (see also Annexes D and E).    4. **Metrics.** The Metrics section records the Data Capture Requirements for the Success Factors and Critical Errors identified in the Standards section, in training. The Data Capture Requirements in the CTOs describe what will be measured, assessed, and evaluated for Task performance, at a level of challenge, in training. 7. The process for analysis of each section mirrors that used to produce the FEPS, as outlined in the FEPS Methodology at Appendix 1 to Annex G. The outputs described, amended for to meet the purpose of the draft CTOs, are inserted into the corresponding heading within each section. For example, the output from the analysis conducted under heading ‘C – Performance – Task’ will be inserted into heading C of the CTOs. 8. **Draft Residual CTOs.** During analysis of each section of the CTOs (Performance, Standards, Conditions, and Metrics) gaps which emerge when compared with the analysis conducted in the FEPS must be recorded. These gaps must then be collated into the draft Residual CTOs, including justification. |

31 Maps to JSP 822, Vol 3: Coll Trg V3.0 (Feb 24).

32 These are CTOs (or parts therefof) which will not be trained.

33 Snowden, D. (2007), [Leader's Framework for Decision Making,](https://hbr.org/2007/11/a-leaders-framework-for-decision-making#%3A~%3Atext%3DThe%20framework%20sorts%20the%20issues%20facing%20leaders%20into%2Csituations%20and%20to%20act%20in%20contextually%20appropriate%20ways) Harvard Business Review, November 2007. Also maps to MOD (2017), [JCN 2/17, Future of Command and Control.](https://www.gov.uk/government/publications/future-of-command-and-control-jcn-217)

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|  | 1. **Link to Final CTOs.** Further adjustments to the draft CTOs will take place following completion of Step 4 - Fidelity Requirement Statement, when the final CTOs (and final Residual CTOs) will be produced. 2. Upon completion of the draft CTOs, the RAIDO and Lessons from Experience logs must be updated. |
| d. **Inputs** | 1. FEPS. 2. SME advice and guidance. |
| e. **Outputs** | 1. Draft CTOs. 2. Draft Residual CTOs. 3. Updated RAIDO and Lessons from Experience logs. |
| f. **Decision Points** | 1. Initiation authorised by the TRA. 2. Outputs authorised by the TRA as part of a Training Needs Report (TNR). 3. Informs/supports the TRA’s Force Preparation Order (FPO). |

**Annex I to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Fidelity Requirement Statement**

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| **Step 3** | **Product 3** |
| 1 | **Fidelity Requirement Statement**34 |
| a. **Question** | 1. The Fidelity Requirement Statement (FRS) starts by asking the question ‘given existing training solutions, are there any training gaps?’ 2. The main sub-questions which the analysis conducted to produce the FRS will answer are:    1. *What training capability and realism requirements are needed to deliver the CTOs?*       1. *For the following, what would best enable training, learning, and assessment of the CTOs:*          1. *Training environment/s (Live, Virtual, Constructive (LVC), or a blend of these);*          2. *Training media;*          3. *Training methods; and,*          4. *Data capture methods?*    2. *Given existing solutions, what options are available to ensure the training capability and realism requirements that are required to deliver the CTOs?*       1. *For the following, what options are available for delivery of the CTOs:*          1. *Training environment/s (Live, Virtual, Constructive (LVC), or a blend of these);*          2. *Training media;*          3. *Training methods; and,*          4. *Data capture methods?* 3. *What gaps in training capability and realism requirements remain which cannot be filled?*    1. *For the following, what gaps remain for delivery of the CTOs:*       1. *Training environment/s (Live, Virtual, Constructive (LVC), or a blend of these);*       2. *Training media;*       3. *Training methods; and,*       4. *Data capture methods?* 4. *What is the recommended training progression to deliver the CTOs, bringing together training environment, methods, and media requirements, and data capture methods requirements?* 5. *What are the final training capability and realism requirement gaps, and what evidence is available to justify further resource, innovation, and acquisition requirements?* |

34 Maps to Environment Analysis in JSP 822, Vol 3: Coll Trg V3.0 (Feb 24).

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|  | 1. *What gaps remain, and how significant are they?* 2. *What risks and issues are there associated with these gaps, including what CTOs, in full or in part, cannot be delivered?* 3. *What recommendations could be made to fill the gaps?* | | | | | | |
| b. **Purpose** | 1. The FRS provides:    1. A framework for the training capability and realism necessary to deliver the CTOs; and,    2. Identifies and makes recommendations for any gaps. | | | | | | |
| c. **Conduct** | 1. [Architectural model.](https://sparxea.ahe.r.mil.uk/repositories/Artifacts/View/repId/12ba9c90-1ead-416d-bbdb-2a06c11369ab/%7BDB59942C-6D9B-485e-84D7-844A1698795B%7D) 2. The FRS is produced in 2 stages.    1. **Stage 1.** Produces a Fidelity Requirements Statement Table.    2. **Stage 2.** Produces a Residual Training Capability Gap Statement. 3. **Stage 1.** This has four sections, each analysing the following:    1. **Section 1 - Fidelity Needs.** Produces a need statement on the training capability and realism required to deliver the CTOs.    2. **Section 2 - Fidelity Options.** Analyses the options for training, including existing solutions, that are suitable to ensure the necessary training capability and realism to deliver the CTOs.    3. **Section 3 - Fidelity Gap.** Produces a gap statement on the availability and accessibility of suitable training capability and realism required to deliver the CTOs, and on any gaps in suitable options.    4. **Section 4 - Training Progression.** Completed after all elements of sections one to three have been completed. This considers the optimal, coherent set of environment, media, training methods, and data capture methods necessary to enable delivery of the CTOs, given suitable, available, and accessible options and resources. This produces a recommended Collective Training Pathway (CTP). 4. Sections one to three each analyse the following headings.    1. **Training Environment** (i.e., how the operating environment will be substituted);    2. **Training Media** (i.e., what tools will be used to enable the FE to experience the training);    3. **Training Methods** (i.e., how training will be experienced by the FE, and how FE learning and assessment will be facilitated by trainers); and,    4. **Data Capture Methods** (i.e., how training data will be captured). 5. Table one illustrates how the FRS works as a matrix. For sections one to three, each heading is considered in turn and in full before the next. Once all sections are completed, the Training Progression requirements are considered. For example, analysis of the Training Environment will produce needs, options, and gap statements before analysis moves on to produce the same for Training Media, and continue until all information is complete. Once sections one to three have been completed, section four will be addressed. | | | | | | |
|  |  | **Section 1 - Fidelity Needs** | **Section 2 - Fidelity Options** | **Section 3 - Fidelity Gap** | **Section 4 - Training Progression** |  |
| **Training Environment** | A – Training Environment | B – Training Environment | C – Training Environment |  |

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|  |  |  | Needs Statement | Options Statement | Gap Statement | M - Collective Training Pathway |  | |
| **Training Media** | D – Training Media Needs Statement | E – Training Media Options Statement | F – Training Media Gap Statement |
| **Training Methods** | G – Training Methods Needs Statement | H – Training Methods Options Statement | I – Training Methods Gap Statement |  |
| **Data Capture Methods** | J – Data Capture Methods Needs Statement | K – Data Capture Methods Options Statement | L – Data Capture Methods Gap Statement |  |
| *Table one - FRS model, illustrating matrix approach.* | | | | | | | |
| (6) **Level of Realism.** This is needed to provide a scale to represent the different levels of realism required for delivery of the various CTOs. Table two outlines the relationship between the Level of realism and the Level of Challenge factors for Opposition, Environmental Change / Understanding, and Environmental Advantage. Analysis of the level of realism required for these factors will determine the level of realism needed for both training environment and training media, as part of Section1 - Fidelity Needs. The maximum level described in the Emergent Conditions, which must be used for Validation of an FE to meet the CTO requirements, is the basis for determining the Level of Realism required. | | | | | | | |
|  | **Level of Challenge** | |  | | | |  |
| **Relevant Factors** | **Pre-defined Conditions Terms** | **Level of Realism** | | | |
| Opposition | Unopposed**35** | Presence or absence of features36 with interpretation | | | |  |
| Environmental Change / Understanding | Static**37**; or,  Environmental Advantage38 | Representative39 main features | | | |  |
| Environmental Advantage |  |  | | | |
| Environmental Change / Understanding | Known40 or Open**41**; or, | Representative features | | | |  |

35 The absence of a capable or determined enemy.

36 Feature: a distinctive attribute of an element or entity’s appearance.

37 An environment that is consistently similar for the duration of the mission/activity.

38 A technical advantage that enables exploitation of the environment, relative to the opposition.

39 Representative: Having features which sufficiently represent the real object or system. (Note: this is adapted from the ACTS SvRD).

40 A Political, Military, Economic, Social, Information, Infrastructure, Physical Environment, and Time (PMESII-PT) environment that is familiar, predictable, and well understood.

41 A rural environment that lacks features which can be exploited for combat advantage.

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|  |  |  | Compressed |  |  |
| – constrained |
| physical42 |
| Environmental | Compressed - | Representative main features and |  |
| Change / | cluttered**43** | characteristics44 |
| Understanding |  |  |
| Opposition | Opposed**45** / | Representative features and timely reactions |  |
| Environmental Advantage | Heavily Opposed**46**; or, |  |
|  | Neutral |  |
|  | Environmental |  |
|  | Advantage47 / |  |
|  | Environmental |  |
|  | Disadvantage |  |
|  | 48 |  |
| Environmental | Unknown**49** | Realistic50 features and characteristics |  |
| Change / |  |  |
| Understanding |  |  |
| Environmental | Dynamic**51**; or, | Realistic features and characteristics and timely |  |
| Change / Understanding | Responsive52 | reactions |
| *Table Two - Level of Realism.* | | | | |
| (1) For example, noting that the elements for representation in the environment have been identified above, the Level of Realism Table enables analysis to determine that any Opposed or Heavily Opposed conditions requires ‘Representative features and timely reactions’ of opposition elements, because this is necessary and sufficient to prompt the teamwork competencies required for the FE to be able to accurately perceive and comprehend the status, attributes, and dynamics of Adversaries and Enemies, and to project its actions in relation to them successfully in order to achieve the task Performance and Standards required in the CTOs. | | | | |
| (2) **Stage 2.** Produces a Residual Training Capability Gap Statement (RTCGS) which provides evidence-based justification for the application of further resource, innovation, and/or acquisition, by: | | | | |

42 Presence of woods and forests, NATO urban zones, sub-terranean systems and features which affect perception and which can be exploited for combat advantage.

43 Presence of entities, items, information, or events affecting perception.

44 Characteristic: a distinctive attribute of an element or entity’s behaviour.

45 Either a capable enemy that lacks determination, or a determined enemy that is overmatched by Friendly Forces.

46 Coherent, capable, and determined, with understanding of the environment with some of Electro- Magnetic (EM) denial, EM intercept (driving Force EMCON), CBRN, Air / littoral threat, strategic cyber, space, remote and autonomous systems.

47 No technical advantage that enables exploitation of the environment, relative to the opposition.

48 A technical dis-advantage where the environment limits activity, relative to the opposition.

49 A PMESII-PT environment that is unfamiliar, unpredictable, or not well understood.

50 Realistic: Having the features and/or characetristics of the real object or system that are as real as possible. (Note: this definition is adapted from the ACTS SvRD).

51 An environment with a changing character over the duration of the mission/activity.

52 A complex or chaotic PMESII-PT environment that adapts as the team senses it and acts, is unpredictable and may appear to be random.

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|  | 1. Analysing and capturing risks and issues, including which CTOs, in full or in part, cannot be delivered; and, 2. Identifying options and making recommendations for training capability that would fill the residual gap. 3. Appendix 1 details the FRS and RTCGS methodology. 4. See Annex L for FRS and RTCGS templates. 5. Upon completion of the FRS and RTCGS, the RAIDO and Lessons from Experience logs must be updated. |
| c. **Inputs** | 1. Draft CTOS. 2. SME advice and guidance. |
| d. **Outputs** | 1. FRS, including sections one to four. 2. RTCGS. 3. Updated RAIDO and Lessons from Experience logs. |
| e. **Decision Points** | 1. Initiation authorised by the TRA. 2. Outputs authorised by the TRA as part of approval of a Training Needs Report (TNR). 3. Informs/supports the TRA’s Force Preparation Order (FPO). |

**Appendix 1 to Annex I**

**Fidelity Requirement Statement 02 September 2024**

**Fidelity Requirement Statement (FRS) Methodology**

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| 1 | **FRS Methodology** |
| a. **Overall Structure** | |
| 1. **FRS.** Note that the methodology describes the statements produced for each heading. Analysis of each heading is conducted sequentially. The statements will, however, automatically populate the relevant sections of the FRS table as follows to produce holistic fidelity statements for needs, options, and gaps:    1. Section 1 - Fidelity Needs: A, D, G, and J.    2. Section2 - Fidelity Options: B, E, H, and K.    3. Section 3 - Fidelity Gaps: C, F, I, and L.    4. Section 4 - Training Progression: M.   **A** - Training Environment Needs Statement.  **B** - Training Environment Options Statement.  **C** - Training Environment Gap Statement.  **D** - Training Media Needs Statement.  **E** - Training Media Options Statement.  **F** - Training Media Gap Statement.  **G** - Training Methods Needs Statement.  **H** - Training Methods Options Statement.  **I** - Training Methods Gap Statement.  **J** - Data Capture Methods Needs Statement.  **K** - Data Capture Methods Options Statement.  **L** - Data Capture Methods Gap Statement.  **M** - Collective Training Pathway.   1. **Residual Training Capability Gap Statement.** This will be produced as a separate document. The lettering in the methodology is continued here for reasons of simplicity.   **N** - Statement of Requirement.  **O** - Impact of Failure.  **P** - Recommendations.   1. See Annex L for FRS and RTCGS templates. | |
| b. **Administration** | |
| 1. The FRS must capture the following administrative information:    1. Date authorised;    2. Security classification (e.g., OFFICIAL);    3. Status (e.g., DRAFT); and,    4. Version (e.g., V1.0). | |

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| c. **A - Training Environment Needs Statement** |
| 1. This heading relates to Section 1 (Fidelity Needs) of the FRS. 2. This statement is needed to identify what elements are required, and to what Level of Realism. This is in order to enable delivery of a training environment (i.e., the substitution for the operating environment) that will allow FEs the opportunity to conduct military tasks to the standards and in the conditions required in the CTOs. 3. **Inputs.** Training environment needs are derived from analysis of the Performance, Standards, and Conditions sections of the CTOs. 4. **Process.** Identification of training environment needs is based on analysis of the impact of the environment on the FE’s powers of perception, comprehension, projection, and action. Analysis produces a statement in two parts. The first part identifies the elements required. The second part of the statement determines the level of realism required. 5. The first part of the training environment needs statement identifies the status, attributes, and dynamics of the environmental elements that are needed to deliver the:    1. CTO Conditions, because they will affect the FE’s perception, comprehension, and projection within the environment; and,    2. CTO Performance and Standards, because they determine the task and success criteria that the FE must be able to demonstrate within the environment and which must be enabled in training. 6. **CTO Conditions.** Analysis determines the elements of the environment that are required to deliver the CTO Conditions and the environmental impact on the FE that is needed. The statement includes detail for each of the items in the General Conditions and for each Level of Challenge factor in the Initial and Emergent Conditions**53**.    1. **General Conditions.** Identifies needs based on the elements which need to be represented for the duration of the task. For example, information that states: 'By day or night in prevailing meteorological conditions for south-east Europe' and 'In a continental climate with cold winters and hot summers' means that the statement needs to include detail on what elements must be represented in the training environment for these conditions, regardless of possible training options and solutions at this stage. For example, ‘day or night’ conditions means that the training environment must include elements with the ability to represent diurnal changes in light conditions. In addition, ‘prevailing meteorological’ conditions means that the training environment must be able to represent a range of weather and climate conditions. For example, to constrain the sensory capabilities of personnel or equipment due to poor visibility (e.g., fog) or extreme cold or heat.    2. **Initial Conditions.** Identifies needs based on the elements which need to be represented as a minimum at the outset of the task, and available as required during the task. This is done for each relevant factor in the Level of Challenge scale. Minimum levels are identified to determine the elements of the training environment required to enable the lower levels of any training progression and to provide a baseline for delivery of the Level of Challenge in training.       1. **Force Element.** State the training environment elements required, as a minimum, to enable Performance at the right level of Combined Arms complexity. For example, FEs may require a training environment which includes sufficient and specific elements of Combined Arms and JIIM54 Friendly Forces, and their interactions with the FE.       2. **Constraints.** State the elements necessary, as a minimum, to enable Performance in environments with constraints. For example, FEs will require a training environment which includes elements that can contribute to the level of constraints for options available for planning and execution, manipulation of time pressure, resource allocation, and changes in the rules of engagement and risk appetite. |

53 Interfaces are considered in the FRS under the Training Media heading.

54 Joint, Intra-governmental, Inter-agency, Multinational.

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| 1. **Opposition.** State the elements necessary, as a minimum, to enable Performance relative to opposition encountered in the environment. For example, FEs may require a training environment which includes representation of sufficient and specific elements of Adversaries and Enemies, and their interactions with the FE. 2. **Environmental Change / Understanding.** State the elements necessary, as a minimum, to enable Performance relative to the extent to which the environment may change and be understood by the FE over time. For example, FEs will require a training environment which includes elements which can represent the extent to which the environment55:    1. is compressed by elements;    2. may see elements change over time;    3. includes elements which are familiar, predictable, and well understood; and, either,    4. includes elements which are responsive and adapt to the FE as it senses and acts; or,    5. includes elements which are unpredictable and may appear to be random. 3. **Environmental Advantage.** State the elements necessary, as a minimum, to enable Performance relative to the extent to which the FE possesses technical advantage that enables exploitation of the environment, relative to the opposition. For example, FEs will require a training environment which includes elements that can contribute to enabling the level of environmental advantage required, such as specific capabilities (e.g., enabling advantage through the use of night-vision or thermal-imaging capabilities). 4. **Fatigue / Morale.** State the elements necessary, as a minimum, to enable Performance relative to the duration of intense activity and FE morale. For example, FEs will require a training environment which includes elements that can contribute to degrading FE capability through either fatigue (due to intense activity taking place over a longer period) or lower morale (due to the presence of elements that frustrate or aggravate the FE).   (c) **Emergent Conditions.** Identifies needs based on the elements which need to be represented for the most challenging conditions occurring during an FE’s military task, and available as required. This is done for each relevant factor in the Level of Challenge scale. Statements follow the guidance provided above for Initial Conditions, with the only difference being that the maximum level, representing the most challenging conditions, will be determined.   1. **CTO Performance and Standards.** Analysis determines the elements of the environment that are required to ensure the FE has the opportunity to conduct the military tasks required in the Performance section and to demonstrate application of Success Factors (and elimination of Critical Errors) in the Standards section. The statement includes detail for the dimensions and attributes of the training environment that are necessary and sufficient to allow FEs the opportunity to conduct tasks required of them in the CTOs. For example, a task that requires planning and tactical execution of an offensive mission by an Armoured Brigade Combat Team (BCT) will state that a training environment that represents the geographical space required for such action will be necessary. The statement provides detail for each of the tasks and ensures that the elements required to enable delivery of the CTOs and the environmental impact on the FE that is needed are identified. 2. **Level of Realism.** This is determined once the training environment elements needed to deliver the CTOs have been identified. As outlined in Annex I, 1, c, (5), the level of realism is based on analysis of the maximum level described in the Emergent Conditions for Opposition, Environmental Change / Understanding, and Environmental Advantage, as this level must be used for Validation of an FE to meet the CTO requirements. 3. Note that the Interfaces component of the Conditions statement is not relevant to identification of training environment needs. These are addressed in the training media needs statement. |

55 Includes physical, human, and information environments.

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| (10)**Output.** Insert a statement into heading A – Training Environment Needs Statement using the following sub-headings:   1. **Elements.** The training environment elements needed to deliver the environmental impact on the FE for:    1. CTO Conditions (General, Initial, and Emergent); and,    2. CTO Performance and Standards. 2. **Level of Realism.** The level of realism required for specific elements, needed to deliver the environmental impact on the FE required in the Emergent Conditions for the following Level of Challenge Factors:    1. Opposition;    2. Environmental Change / Understanding; and,    3. Environmental Advantage. |
| d. **B - Training Environment Options Statement** |
| 1. This heading relates to Section 2 (Fidelity Options) of the FRS. 2. This statement is needed to identify suitable options to deliver the training environment needs. 3. **Inputs.** Training environment needs statement (Heading A in the FRS). 4. **Process.** Identification of training environment options is based on analysis of the elements and level of realism required, determined in the training environment needs statement. Analysis produces a statement in two parts. The first part identifies the options, including those already in existence, which could meet the requirements to deliver the elements needed. The second part of the statement determines options to deliver the level of realism required. 5. The first part of the training environment options statement identifies options to deliver the elements required for the environmental impact on the FE and to deliver the:    1. CTO Conditions; and,    2. CTO Performance and Standards. 6. For each element analysis considers the suitability**56** of solutions to deliver the following three categories of Live, Virtual, and Constructive (LVC) training environment. A blended approach may be identified at this stage.    1. **Live.** Training that involves real people, using real systems, in a real environment; including:       1. **Live Fire.** Using real ammunition; and,       2. **Live Dry.** Using blank ammunition.    2. **Virtual.** Training in which real people operate simulated systems in a simulated environment.    3. **Constructive.** Training in which simulated people operate simulated systems. Real people stimulate (make inputs to) such simulations but are not involved in determining the outcomes. 7. The second part of the training environment options statement identifies options, using the same LVC categories as above, to deliver the level of realism needed to provide the environmental impact on the FE required for the following Level of Challenge factors:    1. Opposition;    2. Environmental Change / Understanding; and,    3. Environmental Advantage. 8. **Output.** Insert a statement into heading B – Training Environment Options Statement using the following sub-headings: |

56 Ability to provide a solution that will enable delivery and assessment of the CTOs.

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| 1. **Elements.** The options to deliver the training environment elements needed to deliver the environmental impact on the FE for:    1. CTO Conditions (General, Initial, and Emergent); and,    2. CTO Performance and Standards. 2. The LVC categories must be used as the basis for a statement for each element. For delivery of each element, the statement confirms suitability, or non-suitability, of each option. 3. **Level of Realism.** The options to deliver the level of realism required for specific elements within the training environment relating to the environmental impact of the following Level of Challenge Factors:    1. Opposition;    2. Environmental Change / Understanding; and,    3. Environmental Advantage. 4. The LVC categories must be used as the basis for a statement for each element. For delivery of each element at the level of realism required, the statement confirms suitability, or non- suitability, of each option. |
| e. **C - Training Environment Gap Statement** |
| 1. This heading relates to Section 3 (Fidelity Gap) of the FRS. 2. This statement is needed to identify the gaps in the ability to deliver the training environment needs. 3. **Inputs.** Training environment options statement (Heading B in the FRS). 4. **Process.** Identification of training environment gaps is based on analysis of the training environment options statement. Analysis produces a statement in two parts. The first part identifies the gaps in the ability to deliver the elements needed. The second part of the statement determines the gaps in the ability to deliver the level of realism required. 5. The first part of the training environment options statement identifies gaps in the ability to deliver the elements required for the environmental impact on the FE and to deliver the:    1. CTO Conditions; and,    2. CTO Performance and Standards. 6. For each element, the statement confirms:    1. suitability or non-suitability of the option (derived from the training environment options statement);    2. availability57 or non-availability of the option; and,    3. accessibility58 or inaccessibility of the option. 7. The second part of the training environment gap statement identifies gaps in the ability to deliver the level of realism needed to provide the environmental impact on the FE required for the following Level of Challenge factors:    1. Opposition;    2. Environmental Change / Understanding; and,    3. Environmental Advantage. 8. **Output.** Insert a statement into heading C – Training Environment Gap Statement using the following sub-headings:    1. **Elements.** States the gaps in the ability to deliver the training environment elements needed to deliver the environmental impact on the FE for:       1. CTO Conditions (General, Initial, and Emergent); and, |

57 Ability to be used at the time required.

58 Ability to be resourced and enabled (x-DLoD, as relevant) at the time required.

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| ii. CTO Performance and Standards.   1. For delivery of each element, the statement confirms:    1. Suitability or non-suitability;    2. Availability or non-availability; and,    3. Accessibility or inaccessibility. 2. **Level of Realism.** State the gaps in the ability to deliver the level of realism required for specific elements within the training environment relating to the environmental impact of the following Level of Challenge Factors:    1. Opposition;    2. Environmental Change / Understanding; and,    3. Environmental Advantage. 3. For delivery of each element at the level of realism required, the statement confirms:    1. Suitability or non-suitability;    2. Availability or non-availability; and,    3. Accessibility or inaccessibility. |
| f. **D - Training Media Needs Statement** |
| 1. This heading relates to Section 1 (Fidelity Needs) of the FRS. 2. This statement is needed to identify what cues and stimuli are required within the training scenario and the interfaces, and to what Level of Realism. This is in order to enable delivery of training media (i.e., what tools will be used to enable the FE to experience the training) that will allow FEs the opportunity to conduct military tasks to the standards and in the conditions required in the CTOs.    1. **Stimuli.** Entities within the environment that have the potential to trigger a response by the FE (can be regarded as background ‘noise’).    2. **Cues.** Stimuli that have particular features or characteristics that allow them to be distinguished from background ‘noise’ by the FE.    3. **Training Scenario.** This provides the wider wrap of stimuli and cues through which FEs perceive, comprehend, project and act within their environment. This is needed to include a range of stimuli as the background for specific cues, and is therefore needed to enable cues to be distinguished by the FE.    4. **Interfaces.** These provide the FE with the stimuli and cues required for the FE to interact with the environment. Representative interfaces (human and machine) are also needed to avoid false learning of cognitive procedural skills, and this is also enabled by ensuring the use of interfaces that provide more or less familiar stimuli and that have the functionality of the real human and machine systems. 3. **Inputs.** Training media needs are derived from analysis of the Performance, Standards, and Conditions sections of the CTOs. 4. **Process.** Identification of training media needs is based on analysis of the impact of the environment on the FE’s powers of perception, comprehension, projection, and action. Analysis produces a statement in three parts.    1. The first part identifies the stimuli needed, in the training scenario and the interfaces, to support delivery of the CTO Conditions.    2. The second part identifies the cues needed, in the training scenario and the interfaces, to support delivery of the CTO Performance and Standards.    3. The third part determines the level of realism required for the cues and stimuli represented by the Training Scenario and the Interfaces. 5. **Stimuli.** Analysis determines the stimuli within the training scenario and the interfaces that are required to deliver the CTO Conditions and the environmental impact on the FE that is needed. The |

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| statement includes detail for each of the items in the General Conditions and for each Level of Challenge factor in the Initial and Emergent Conditions.   1. **General Conditions.** Identifies what stimuli need to be represented for the duration of the task, within both the training scenario and the interfaces needed. Analysis identifies stimuli for each statement in the General Conditions in the CTO Conditions. For example, information that states: 'By day or night in prevailing meteorological conditions for south-east Europe' and 'In a continental climate with cold winters and hot summers' means that the statement needs to articulate that the training scenario must include stimuli to represent the specified geographical region and its climatic conditions. In addition, the same information in the General Conditions may require interfaces to represent the functionality of the system or the behaviour of human elements within those stimuli, which may vary according to climatic and meteorological conditions affecting the FE’s ability to perceive and act. 2. **Initial Conditions.** Identifies what stimuli need to be represented as a minimum at the outset of the task, and available as required during the task, within both the training scenario and the interfaces needed. This is done for each relevant factor in the Level of Challenge scale. Minimum levels are identified to determine the stimuli required to enable the lower levels of any training progression and to provide a baseline for delivery of the Level of Challenge in training. Each Level of Challenge factor must be included as relevant, considering stimuli requirements for both training scenario and interfaces.    1. **Force Element.**       1. FE experience as a team. For example, the training scenario may include stimuli which could constrain team members from participating fully in certain task (e.g., inclusion of community meetings which conflict with planning periods).       2. Difficulty of operating as part of a Combined Arms and JIIM grouping. For example, interfaces may include stimuli to represent interoperability challenges.    2. **Constraints.**       1. Time pressure. For example, stimuli in the training scenario may provide multiple pressures with the potential to affect the FE’s ability to conduct a task in a timely manner.       2. Resource availability. For example, interfaces may facilitate the inclusion of stimuli to enable the possibility for additional familiarity, for limited periods, with Friendly Forces.       3. ROE permissiveness. For example, stimuli in the training scenario may provide potential reasons for ambiguity over the use of ROE or ROE changes may prompt uncertainty.       4. Risk appetite. For example, interfaces may facilitate stimuli to increase the potential for security breaches.    3. **Opposition.**       1. Degree of opposition. For example, stimuli in the training scenario may provide for significant enemy and adversaries to be represented.       2. Degree of symmetry in enemy tactics. For example, interfaces may facilitate stimuli which represents an increasingly dynamic enemy using a wider range of tactics, including asymmetrical.    4. **Environmental Change / Understanding.**       1. Extent to which the environment is dynamic. For example, stimuli in the training scenario may augment delivery of a dynamic environment.       2. Extent to which the environment is known. For example, interfaces may facilitate stimuli to reduce the FE’s ability to perceive the environment.       3. Extent to which the environment is compressed. For example, stimuli in the training scenario may include the presence of entities, items, information, or events affecting FE perception. |

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| d. Extent to which the environment is responsive. For example, interfaces may facilitate stimuli which represent reactions and adaptation as a response to FE actions.   1. **Environmental Advantage.**    1. Extent to which the FE has a relative advantage over the environment, compared to the opposition. For example, stimuli in the training scenario may augment delivery of a rich information environment which favours the enemy. In addition, interfaces may facilitate stimuli to represent enemy capabilities to disrupt communications. 2. **Fatigue / Morale.**    1. Intensity of activity. For example, stimuli in the training scenario may support the requirement for the FE to concentrate effort for a specified period.    2. Duration of activity. For example, stimuli in the training scenario may support an extended period of activity with varying and unpredictable degrees of intensity.    3. Status of FE morale. For example, interfaces may facilitate stimuli to represent psychological pressures on the FE.   (c) **Emergent Conditions.** Identifies what stimuli need to be represented by the training scenario and interfaces, and available as required. This is done for each relevant factor in the Level of Challenge scale. Statements follow the guidance provided above for Initial Conditions, with the only difference being that the maximum level, representing the most challenging conditions, will be determined.   1. **Cues.** Analysis determines the cues required to enable opportunities to prompt the FE to demonstrate its competence against each military task in the CTO Performance section and against the Success Factors in the Standards section. The statement includes detail for the cues needed to prompt each Success Factor and Critical Error. For example, a Task that requires planning and tactical execution of an offensive mission by an Armoured Brigade Combat Team (BCT) will state that:    1. the training scenario must include a cue to produce a plan for its mission, perhaps in the form of a set of Divisional Orders; and,    2. the interfaces must receive cues to represent incident reports from subordinate FEs, perhaps in disordered or second/third-hand forms to represent more compressed and cluttered information environments. 2. **Level of Realism.** This is determined once the stimuli and cues for inclusion for both the training scenario and the interfaces, that are required to deliver the CTOs, have been identified. As outlined in Annex I, 1, c, (5), the level of realism is based on analysis of the maximum level described in the Emergent Conditions for Opposition, Environmental Change / Understanding, and Environmental Advantage, as this level must be used for Validation of an FE to meet the CTO requirements. 3. **Additional Considerations for Level of Realism in the Training Scenario.** Selection and use of training media in the training scenario must consider the following.    1. Use of simplistic (‘caricatured’) media in the training scenario, with minimal background stimuli/effects (feedback), may be used if:       1. perception/comprehension of sensed experience is operationally difficult (i.e., it is usually hard to distinguish the cue from the stimuli in an operational environment); and/or,       2. the focus is on training speed of response; and/or,       3. the team are novices; and/or,       4. the focus of attention is novel; and,    2. Conversely, greater realism is likely to be needed if the opposite of each factor is the case.    3. For example, a requirement for asymmetric opposition would include difficult to observe cues set in the context of a highly similar, and/or ‘cluttered’ media context; an enemy combatant may be difficult to identify given the similarity to members of a numerous and congested host community. However, this would be difficult operationally as well, so a wide range of practice |

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| examples, of varying realism and challenge, may be required to train the FE to target the enemy more effectively.   1. Realism may need to be balanced against other factors, such as:    1. **Stressful Training.** Training scenarios can support realistic and challenging training. However, consideration should be given to the effects of stressful training on FEs and individual members. Realism may need to be balanced against the risk of training that is too stressful and that may overface the FE, and therefore be counter-productive as a result.    2. **Training for Mass** (i.e., how many entities are involved). Realism may target characteristics of entities and trade out individual detail which is not required. 2. **Additional Considerations for Level of Realism for Interfaces.** Selection and use of training media for interfaces must consider the following:    1. **Process Realism.** If the aim is to identify the FE’s ability to conduct a process effectively then high fidelity interfaces will be required to avoid false learning.    2. **Cognitive Load.** If the aim is to identify the FE’s ability to conduct a complicated and/or complex process effectively then high fidelity interfaces will be required to ensure that additional cognitive load is not imposed, leading to false learning. 3. **Output.** Insert a statement into heading D – Training Media Needs Statement using the following sub-headings:    1. **Stimuli.** The stimuli required to deliver the CTO Conditions and the environmental impact on the FE that is needed. The statement includes detail for each of the items in the General Conditions and for each Level of Challenge factor in the Initial and Emergent Conditions, for:       1. Training Scenario; and,       2. Interfaces.    2. **Cues.** The cues required to enable opportunities to prompt the FE to demonstrate its competence against each military task in the CTO Performance section and against the Success Factors in the Standards section, for:       1. Training Scenario; and,       2. Interfaces.    3. **Level of Realism.** The level of realism required for stimuli and cues needed to deliver and augment the environmental impact on the FE required in the Emergent Conditions for the following Level of Challenge Factors:       1. Opposition;       2. Environmental Change / Understanding; and,       3. Environmental Advantage. |
| g. **E - Training Media Options Statement** |
| 1. This heading relates to Section 2 (Fidelity Options) of the FRS. 2. This statement is needed to identify suitable options to deliver the training media needs. 3. **Inputs.** Training media needs statement (Heading D in the FRS). 4. **Process.** Identification of training media options is based on analysis of the stimuli, cues, and level of realism required, determined in the training media needs statement. Analysis produces a statement in three parts.    1. The first part identifies the options, including those already in existence, which could meet the requirements to deliver the stimuli needed.    2. The second part identifies the options, including those already in existence, which could meet the requirements to deliver the cues needed.    3. The third part determines options, including those already in existence, which could meet the requirements to deliver the level of realism required relating to the environmental impact of the following Level of Challenge Factors: |

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| 1. Opposition; 2. Environmental Change / Understanding; and, 3. Environmental Advantage. 4. **Output.** Insert a statement into heading E – Training Media Options Statement using the following sub-headings:    1. **Stimuli.** The options, for training scenario and interfaces, to deliver the stimuli required.    2. **Cues.** The options, for training scenario and interfaces, to deliver the cues required.    3. **Level of Realism.** The options to deliver the level of realism required for the following Level of Challenge factors within the Emergent Conditions:       1. Opposition;       2. Environmental Change / Understanding; and,       3. Environmental Advantage.   (6) For delivery of each stimulus, cue, and level of realism, the statement confirms suitability, or non- suitability, of each option. |
| h. **F - Training Media Gap Statement** |
| 1. This heading relates to Section 3 (Fidelity Gap) of the FRS. 2. This statement is needed to identify the gaps in the ability to deliver the training media needs. 3. **Inputs.** Training media options statement (Heading E in the FRS). 4. **Process.** Identification of training media gaps is based on analysis of the training media options statement. Analysis produces a statement in three parts.    1. The first part identifies the gaps in the ability to deliver the stimuli needed.    2. The second part identifies the gaps in the ability to deliver the cues needed.    3. The third part determines the gaps in the ability to deliver the level of realism required. 5. For each stimulus and cue in the first and second parts of the statement, analysis determines the:    1. suitability or non-suitability of the option (derived from the training media options statement);    2. availability or non-availability of the option; and,    3. accessibility or inaccessibility of the option. 6. The third part of the training media gap statement identifies gaps in the ability to deliver the level of realism needed to provide the environmental impact on the FE required for the following Level of Challenge factors:    1. Opposition;    2. Environmental Change / Understanding; and,    3. Environmental Advantage. 7. **Output.** Insert a statement into heading F – Training Media Gap Statement using the following sub- headings:    1. **Stimuli.** States the gaps in the ability to deliver the stimuli needed to deliver the CTO Conditions;    2. **Cues.** States the gaps in the ability to deliver the cues needed to deliver the CTO Performance and Standards; and,    3. **Level of Realism.** States the gaps in the ability to deliver the level of realism required for the following Level of Challenge Factors:       1. Opposition;       2. Environmental Change / Understanding; and,       3. Environmental Advantage. |

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| 1. For delivery of each stimulus and cue, the statement confirms:    1. Suitability or non-suitability;    2. Accessibility or inaccessibility;    3. Availability or non-availability; and,    4. Compatibility**59** or incompatibility with the training environment. |
| i. **G - Training Methods Needs Statement** |
| 1. This heading relates to Section 1 (Fidelity Needs) of the FRS. 2. This statement is needed to identify requirements for events and trainers in training. 3. **Inputs.** Training methods are derived from analysis of the Performance, Standards, and Conditions sections of the CTOs. 4. **Process.** Identification of training methods needs is based on analysis of the impact of training events to enable practice to a point of performance, and of trainers to interact with, provide feedback to, and assess FE competence, and to influence the level of challenge in delivery. Analysis produces a statement in two parts.    1. The first part identifies event requirements (type and number of each) to reach the point of performance required in the CTOs and to provide the FE with opportunities to demonstrate Success Factors and Critical Errors.    2. The second part identifies trainer requirements (type and number of each) for each event. 5. **Event Requirements.** Events are needed in training to provide time for practise, as part of an experiential approach to learning, and for assessment of FE competence at a military task at the point of performance and at the level of challenge in which that is required (considering Task Performance and Standards (both Success Factors and Critical Errors) and Conditions). The type and number of events are analysed sequentially for each Task in the CTO Performance section, set against the Standards and Conditions sections. 6. **Types of Events.** Events are periods of time to enable FE experience at practising a task in order for its competence to be developed, facilitated, and assessed. To support effective experiential learning, and to assess competence, the following types of events must be present:    1. **Experience.**    2. **Reflection.**    3. **Assessment.** 7. **Experience Events.** These provide the opportunity for an FE to practise its competence at a military task. This includes practising to the point of performance required for the task in the CTOs, and to the Standards required. The balance and number of events are important when analysing Experience event requirements. For example, complicated tasks and / or more complex conditions may require more iterations within a training progression to reach the point of performance. 8. **Balance of Experience Events.** Experience events are aligned to procedural or adaptive FE Actions.    1. **Procedural.** Requiring the FE to apply a standard procedure to plan or execute a Task.    2. **Adaptive.** Requiring the team to adapt its approaches to planning and execution which may, or may not, lead to intended outcomes and/or effective solutions. 9. Experience events which focus on procedure are likely to form an essential part of team training. However, FEs must also be exposed to conditions which require adaptation; false lessons and/or over-confidence may occur if the balance between application of procedure and adaptation is inappropriate to training requirements. 10. **Number of Experience Events.** The need to prompt learning and adaptation, largely through errors, should not prompt over-simplification; the appropriate level of challenge should be applied, and it |

59 Ability to integrate with elements represented within the training environment.

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| should not take too long to introduce complexity within training progressions. It is important to identify the number of:   1. Experience events required to reach target performance; and, 2. Iterations (‘sets and reps’) required as the level of challenge increases. 3. **Reflection Events.** These are periods of time to enable reflective learning. These are needed to provide mutual support to Experience events as part of experiential learning. Reflection will generally focus on the causes of Critical Errors but must also give appropriate weight to causes of Success Factors. Reflection events provide the opportunity for teams to review:    1. What was meant to happen?    2. What happened?    3. Why did it happen?    4. What possible alternative approaches were available?    5. What approach will be taken in the future? 4. There are four main types of Reflection event.    1. **After-Action Review.** Usually as an FE or part of the FE but may also be one-to-one. AARs include a mixture of coaching and mentoring.    2. **Coaching.** The focus is on facilitating the FE’s learning by asking questions which prompt reflection before, during or after an Action serial. This could take the form of support from peers, from more experienced personnel, or from specialists.    3. **Mentoring.** Mentoring focuses on facilitating team learning by providing direct advice, based on the mentor’s own knowledge, skills, attitudes, and experience.    4. **Self-Appraisal.** Usually as an FE or part of the FE. The focus is on empowering participants to independently review their own performance and generate areas for reinforcement and development without the use of external coaching/mentoring. It is important that opportunities for this element are included before, during, and after an Experience event, and between events within a training progression, even as concurrent activity. 5. **Assessment Events.** These are periods of time to enable assessment of FE competence at a military task. These are required to support learning through formative assessment, and to ensure reliable and valid diagnostic and summative assessment of FE competence at the point of performance. The balance and number of events are important when analysing assessment requirements. 6. There are 3 types of assessment event:    1. **Diagnostic.** These can be used at the outset of training to measure how teams perform against set standards. They can be useful to identify specific areas for reinforcement and development and can also boost self-efficacy and engagement among teams. The target performance standards, at the target Level of Challenge, should be used to develop these assessment results. However, teams may also perform significantly below target standards. This can be justified if it yields more engagement, more tailored formative assessments, more targeted realism in training conditions, and if the expectations of FEs and trainers are made clear from the outset.    2. **Formative.** Also known as progress tests, these are administered at intervals during training to gain data for feedback to FEs and trainers. The outcome of the assessment is to determine how much progress the FE has made thus far against the Performance Standards and in the Conditions specified in the CTOs. They provide the basis for action to be taken by both parties to reduce and mitigate Critical Errors and to ensure achievement of Success Factors. These are likely to be the type of assessment event which causes the most disruption to realism, with a higher reliance on rapid and informal After-Action Reviews. However, they also provide significant support to learning and improving practise. A careful balance will be needed in design, clear FE and trainer expectations and guidance will be necessary. This includes an understanding of the level of challenge required which will affect the standards teams are able to achieve (i.e., if the target Level of Challenge is higher than the point at which a formative assessment is conducted, this is likely to positively affect performance but may lead to false confidence in the ability to meet summative standards). |

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| **Event** | **Controller** | **Observer** | **Coach** | **Mentor** | **Assessor** |
| **Experience** | X | X | X | X | X |
| **Reflection** |  | X | X | X | X |
| **Assessment** |  |  |  | X | X |

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| (c) **Summative.** These are used to determine whether teams have demonstrated competence to reach the point of performance in the CTOs. They provide the required data to grade the FE’s competence. Realism must enable the target Level of Challenge to provide the opportunities for the FE to demonstrate it can meet the Performance Standards in the Conditions prescribed, and for that performance to be measured accurately. Disruption to realism is least likely among summative assessment events and mainly caused by the presence of assessors and instrumentation.   1. **Trainer Requirements.** The types and numbers of trainers required are analysed sequentially for each event. 2. **Types of Trainers.** There are five types of trainers required for the different types of events to take place effectively:    1. **Controller.** Controls the exercise to enable all events and to ensure that other trainers ((b) to (e)) are in place to perform their roles;    2. **Observer.** Observes Experience events in order to provide feedback;    3. **Coach.** Facilitates Reflection events;    4. **Mentor.** Facilitates Reflection events; and,    5. **Assessor.** Evaluates Assessment events. 3. Table three shows the types of trainers in each event in relation to their direct influence on the FE, and therefore shows where they may most affect training capability and may negatively impact on realism.   *Table three - Types of Trainers in Events.*   1. Trainers present a challenge to realism, and the benefits they provide must be balanced accordingly.   This will depend on:   * 1. The type of event trainers are facilitating;   2. The level of experience and engagement of the FE; and,   3. The risk appetite for FE failure.   4. Trainer Focus. In error-based experiential training, there should be a focus on the trainer’s skill in being able to:      1. Shape the team’s understanding that they will make errors; and,      2. Provide minimal information at the outset of an Action serial, so that errors are encouraged naturally, and teams are given opportunities to explore their response.   5. The presence of familiar trainers in assessment.  1. Trainers must possess suitable knowledge, skills, experience, and behaviours to provide the necessary facilitation for learning to take place. This includes:    1. Credibility. Knowledge, Skills, and Experience of the task and/or environment is key.    2. Ability as a trainer:    3. knowledge, skills and experience of the military task and task development;    4. knowledge, skills and experience of the FE and team development;    5. knowledge, skills and experience of how to train, including; |

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| 1. skill at providing the appropriate level of feedback, underpinned by the use of appropriate data that is accessible to the FE so that cognitive dissonance is minimised between what the FE believe regarding their performance and what they are told, but cannot accept as valid; 2. skill at influencing the level of challenge experienced by the FE; 3. skill at minimising intrusion upon the realism experienced by the FE in training; and, 4. appropriate behaviours to interact effectively with the FE; in particular:    1. to control the training (including for safety, as required);    2. to provide encouragement and empowerment at appropriate points;    3. without alienating members of the FE; and,    4. without adding artificial stress for the FE outside of the inherent stress of the training. (20)**Number of Trainers.** Requirements will be based on: 5. the number of trainees being validated, and the direct support to facilitating, developing, and assessing their competence that is necessary; and, 6. the balance and number of Experience, Reflection, and Assessment events.   (21)**Output.** Insert a statement into heading G – Training Methods Needs Statement using the following sub-headings:   1. **Events.** State the type and number of events required for each Task in the CTO Performance section, considering the Success Factors and Critical errors in the CTO Standards section and the level of challenge in the CTO Conditions. 2. **Trainers.** State the type and number of trainers required for each event, considering the challenge to realism that trainers can pose, and the KSEB required by trainers. |
| j. **H - Training Methods Options Statement** |
| 1. This heading relates to Section 2 (Fidelity Options) of the FRS. 2. This statement is needed to identify suitable options to deliver the training methods needs. 3. **Inputs.** Training methods needs statement (Heading G in the FRS). 4. **Process.** Identification of training methods options is based on analysis of the events and trainers required, determined in the training methods options statement. Analysis produces a statement in two parts. The first part identifies the options, including those already in existence, which could meet the requirements to deliver the events required. The second part of the statement determines options to deliver the trainers required. 5. The first part of the training methods options statement identifies options to deliver the events required to deliver and assess the CTOs. For each event requirement identified, the suitability of solutions is considered. 6. The second part of the statement identifies options to deliver the trainers required to deliver and assess the CTOs, and to facilitate FE learning. For each trainer requirement identified, the suitability of solutions is considered. 7. **Output.** Insert a statement into heading H – Training Environment Options Statement using the following sub-headings:    1. **Events.** The options to deliver the events requirements in order to deliver and assess the CTOs, confirming suitability or non-suitability.    2. **Trainers.** The options to deliver the trainer requirements in order to deliver and assess the CTOs and to facilitate FE learning, confirming suitability or non-suitability. |
| k. **I - Training Methods Gap Statement** |
| 1. This heading relates to Section 3 (Fidelity Gap) of the FRS. 2. This statement is needed to identify the gaps in the ability to deliver the training methods that are needed. |

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| 1. **Inputs.** Training methods options statement (Heading H in the FRS). 2. **Process.** Identification of training methods gaps is based on analysis of the training methods options statement. Analysis produces a statement in two parts.    1. The first part identifies the gaps in the ability to deliver the events required.    2. The second part identifies the gaps in the ability to deliver the trainers required. 3. For each event and trainer requirement in the first and second parts of the statement, analysis determines the:    1. suitability or non-suitability of the option (derived from the training methods options statement);    2. availability or non-availability of the option; and,    3. accessibility or inaccessibility of the option. 4. **Output.** Insert a statement into heading I – Training Methods Gap Statement using the following sub- headings:    1. **Events.** States the gaps in the ability to deliver the events required.    2. **Trainers.** States the gaps in the ability to deliver the trainers required. 5. For delivery of each event and trainer requirement, the statement confirms:    1. Suitability or non-suitability;    2. Accessibility or inaccessibility; and,    3. Availability or non-availability. | | | | |
| l. **J - Data Capture Methods Needs Statement** | | | | |
| 1. This heading relates to Section 1 (Fidelity Needs) of the FRS. 2. This statement is needed to identify requirements for data capture methods, defined as how data training data will be captured. 3. **Inputs.** Data capture methods are derived from analysis of CTO Metrics. 4. **Process.** Identification of data capture methods needs is based on analysis of data capture requirements in the CTO Metrics for task Actions, Outcomes, Status, and for Conditions. Training data needs to be captured to support learning and assessment of the FE, and to develop a larger data set for analysis over time (to reveal insights into training performance in general). 5. Analysis produces a statement in two parts.    1. The first part identifies the data capture methods that need to be used to obtain the data.    2. The second part identifies the levels of data required for capture. 6. **Data Capture Methods.** Initial analysis of the CTO Metrics identifies the data capture requirements for Task Action, Outcome, and Status. Analysis of the statements for each then identifies the focus of capture requirement. For example, data capture requirements for Task Actions will identify the requirement to ‘measure’ actions to provide data to determine performance against success factors and critical errors. Once the focus of the capture requirement has been confirmed, the appropriate data capture method can be determined. For example, data which must be captured to measure Task Action performance needs to be instrumented. Table four provides a guideline for the relationships between data capture requirements, the focus of each capture requirement, and the most appropriate data capture methods required for each. | | | | |
|  | **Data Capture Requirement** | **Focus of Capture Requirement** | **Data Capture Method** |  |
|  | **Action** | Measure performance against standards (Success Factors and  Critical Errors) | Instrument |  |
|  | **Outcome** | Assess performance against standards (Success Factors and Critical Errors) | Instrument / Observe |  |
|  | **Status** | Evaluate performance against standards (Success Factors and Critical Errors) | Observe |  |

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|  | **Conditions** | Measure the environmental  conditions and level of challenge | Instrument |  |
| Table four - Data Capture Methods.   1. **Levels of Data.** Once data capture methods have been identified, analysis determines what levels of data are required for capture, considering the purpose, accuracy, and volume of data required. 2. **Purpose of Data Capture.** Firstly, the purpose of data capture is identified based on analysis of whether the data captured through the methods of instrumentation and/or observation will be used to:    1. describe performance during and after training events;    2. diagnose the reasons for performance during and after training events;    3. predict performance during or after training events; or,    4. prescribe remedies to manage performance during or after training events. 3. In general, lower levels of data will be required to describe performance than to prescribe remedies to manage performance. 4. **Accuracy of Data Capture.** Secondly, the accuracy requirements for data are identified. 5. **Volume of Data Capture.** Thirdly, the volume requirements for data are identified. (12)**Output.** Insert a statement into heading J – Data Capture Methods Needs Statement using the   following sub-headings:   * 1. **Data Capture Methods.** State the requirements for:      1. instrumentation; and,      2. observation.   2. **Levels of Data.** State the requirements for:      1. purpose of data capture;      2. accuracy of data capture; and,      3. volume of data capture. | | | | |
| m. **K - Data Capture Methods Options Statement** | | | | |
| 1. This heading relates to Section 2 (Fidelity Options) of the FRS. 2. This statement is needed to identify suitable options to deliver the data capture methods needs. 3. **Inputs.** Data capture methods needs statement (Heading J in the FRS). 4. **Process.** Identification of data capture methods options is based on analysis of the instrumentation and observation requirements, determined in the data capture methods needs statement. Analysis produces a statement in two parts.    1. The first part identifies the options, including those already in existence, which could deliver the instrumentation required. For each instrumentation requirement identified, the suitability of solutions is considered.    2. The second part of the statement identifies options, including those already in existence, which could deliver the observation required. For each observation requirement identified, the suitability of solutions is considered. 5. **Output.** Insert a statement into heading K – Data Capture Methods Options Statement using the following sub-headings:    1. **Instrumentation.** The options to deliver the instrumentation requirements, confirming suitability or non-suitability.    2. **Observation.** The options to deliver the observation requirements, confirming suitability or non-suitability. | | | | |
| n. **L - Data Capture Methods Gap Statement** | | | | |

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| 1. This heading relates to Section 3 (Fidelity Gap) of the FRS. 2. This statement is needed to identify the gaps in the ability to deliver the data capture methods that are needed. 3. **Inputs.** Data capture methods options statement (Heading K in the FRS). 4. **Process.** Identification of data capture methods gaps is based on analysis of the data capture methods options statement. Analysis produces a statement in two parts.    1. The first part identifies the gaps in the ability to deliver the instrumentation requirements.    2. The second part identifies the gaps in the ability to deliver the observation requirements. 5. For each instrumentation and observation requirement in the first and second parts of the statement, analysis determines the:    1. suitability or non-suitability of the option (derived from the data capture methods options statement);    2. availability or non-availability of the option; and,    3. accessibility or inaccessibility of the option. 6. **Output.** Insert a statement into heading L – Data Capture Methods Gap Statement using the following sub-headings:    1. **Instrumentation.** States the gaps in the ability to deliver instrumentation requirements.    2. **Observation.** States the gaps in the ability to deliver instrumentation requirements. 7. For delivery of each instrumentation and observation requirement, the statement confirms:    1. Suitability or non-suitability;    2. Accessibility or inaccessibility; and,    3. Availability or non-availability. |
| o. **M - Collective Training Pathway** |
| 1. This heading relates to Section 4 (Training Progression) of the FRS. 2. This is needed to provide the strategy for training that will be the basis for subsequent design and development. 3. **Inputs.** Sections 1 to 3 in the FRS (Fidelity Needs, Options, and Gaps) and Sections C and D of the Scoping Study (Representative FE Characteristics, and Throughput Requirements). 4. **Process.** Analysis is conducted in six phases.    1. **Phase One.** Analysis determines the CTP based on analysis of the outputs of Sections 1 to 3 of the FRS, which identified for selection as part of the CTP the suitable, available, and accessible training environment, training media, training methods, data capture methods, and training media that is compatible with the training environment. Analysis determines a CTP which:       1. balances the shortfall and conflicts affecting training delivery and assessment through a training progression; and,       2. develops the FE to the point of performance at the level of challenge required.    2. **Phase Two.** Analysis balances the CTP, making changes if required, with the:       1. representative capability characteristics of the FEs undergoing training, by analysing, and updating, if necessary, the outputs for Section C of the Scoping Study (Representative FE Characteristics); and,       2. capacity requirements, by analysing, and updating, if necessary, the outputs for Section D of the Scoping Study (Throughput Requirements); and,       3. **Phase Three.** Analysis addresses the needs of any additional requirements that are not directly related to delivery and assessment of FE competence against the CTOs. For   example, this considers the needs of Defence Engagement, deterrence, support to UK |

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| exports, Force Optimisation (WARDEV), Experimentation and Force Development (CONDEV, CAPDEV, trials and pilots), and additional Combined, Joint, Intra-governmental, Inter-agency and Multinational (CJIIM).   1. **Phase Four.** Analysis addresses the financial costs required to resource the CTP. 2. **Phase Five.** Analysis of flexibility. The ability to adapt design, planning, and delivery to meet requirements. 3. **Phase Six.** Analysis of risks. To delivery and assessment of the CTOs through the design / planning, and delivery stages of the training system. 4. Analysis produces a CTP statement explaining how it employs the following through a training progression:    1. **Training Environment.** The statement justifies selection of the LVC categories used to represent the elements required in the training environment, and to the level of realism required, to deliver the Conditions, Performance and Standards in the CTOs.    2. **Training Media.** The statement justifies selection of the stimuli and cues for representation in the training scenario and by the interfaces, and to the level of realism required, to deliver the Conditions, Performance and Standards in the CTOs. Consideration:    3. The level of realism provided by media may vary during the CTP to facilitate progression in the FE’s ability to:       1. distinguish between cues and stimuli, and to sense effects (on the team) accurately; and,       2. use interfaces effectively within the training environment.    4. **Training Methods.** The statement justifies selection of the:       1. type and number of events (Experience, Reflection, and Assessment); and,       2. type and number of trainers (Controller, Observer, Coach, Mentor, Assessor).    5. Identification of events for inclusion in a CTP must consider:       1. **Learning Cycle.** Army Collective Training uses experiential exercises and events to expose FEs, as a team, to military tasks they will need to be able to perform in the operating environment. In accordance with Kolb and Fry’s experiential learning model60 (Figure one), effective learning will occur when an FE is provided with the opportunity to complete an experiential learning cycle, including learning from practical ‘concrete experience’ (their own and that of others) to form observations and reflections, followed by generating concepts and generalisations on how to complete the task in an improved or different way, and then to testing their concepts through practical application61.       2. For example, a requirement for the FE to be able to meet Performance and Standards of the CTOs in the context of heavy opposition (as a level of challenge factor) might prompt a training method which provided an intense period of combat at the outset of an exercise to enable FE experience, and their ability to reflect on it. Training may then proceed to break down elements of the combat experienced, before introducing increased opposition for longer and/or more intense periods again until the point of performance, at the level of challenge required, is reached by the FE. |

60 Kolb, D.A., and Fry, R., (1975) Toward an applied theory of experiential learning, in Cooper, C. (ed.) *Theories of group processes*, John Wiley, London.

61 It is not always necessary to start with ‘concrete experience’, but this experiential learning cycle must be completed at least once to be effective.

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| *Figure one - Kolb and Fry’s experiential learning model.*   1. **Crawl - Walk - Run Iterations.** The CTP should include training modules which enable progressive development towards target performance at the level fo challenge by adopting an approach which introduces increased challenge in increments. 2. **Incline and Decline Challenge.** The CTP should include ‘incline’ and ‘decline’ serials which progressively build and reduce the inherent and intended stress felt by FEs. Realism may initially be traded-out in Experience events which have an increased Level of Challenge; allowing for more time, more pauses, more reflection, and greater support, than may be needed for the realistic conditions required to enable the target training output performance. Sufficient time and support, at the right point/s in training, must be allowed by exercise designers and controllers to increase and decrease the Level of Challenge. Tactical pauses within exercises may also be beneficial for learning, especially in the earlier stages of a training progression. 3. **Balance of Events.** Action events are always required in order to provide opportunities for the FE to have ‘concrete experiences’. However, in the earlier stages of training progressions less emphasis may be placed on summative Assessment events, with a corresponding increase in diagnostic and formative Assessment events and on Reflection events. In the later stages of training progressions, this may be reversed. 4. **Flexibility.** To ‘dial-up’, and ‘dial-down’, the level of challenge during training to facilitate FE learning and to meet the CTOs as part of a training progression. 5. **Disruptive Potential of Reflection Events.** These must be timed and sequenced so as not to break the FE’s immersion in the training more than is necessary. Reflection events are inherently disruptive to realism. Disruption is caused by the presence of observers/assessors and instrumentation which support Reflection events but affect the realism of the physical, information, and human environments and the interfaces through which the FE experiences these through cues and stimuli. Disruption is also caused by the act of reflective analysis itself, especially if the FE is removed from the task environment, if real world timings are disrupted, and if the FE cannot assimilate the version of events that they are being shown with their own direct experience of what happened and why. Consideration must therefore be given to how disruption can be minimised to enable effective training. 6. **Time to Effect.** An estimate of the time needed to deliver the training capability and realism requirements, compared with the lead-in time to the first exercise. 7. **Training for Scale** (e.g., Section62 to Corps level). 8. **Part-Task Practice.** Suitable for repetition of task skills and application of procedures. This is likely to take place in Special-to-Arm CYCLONE exercises (Training Levels ALPHA to CHARLIE and ECHO). Part-Task Practice is particularly appropriate for tasks that: | | |

62 Of a Platoon/Troop.

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| 1. do not require the entire team, such as headquarters staff procedural training; 2. can isolate environmental stimuli and cues for experience by the separate parts of the team, such as FE-specific tasks; and, 3. are required to be performed at higher levels of challenge. 4. **Whole-Task Practice.** Appropriate for training an FE as a whole, and building on previous training, such as large-scale Live Dry tactical training. ‘Scaffolding’ should be used to enable FEs to achieve target performance standards at the required Level of Challenge, and to meet training outputs. Scaffolding should be progressively removed (e.g., practising a Task in lesser Conditions (i.e., at a lower Level of Challenge) with trainers providing significant guidance and support, then gradually increasing the Level of Challenge while reducing direct trainer support. 5. **Stage of Training Progression.** Realism of training can be traded for increased learning effects in the earlier events within a training progression. This will enable teams to focus more on applying procedures and establishing adaptive responses. Realism can also be traded to enable greater trainer support in the early stages. 6. **Progression of Events.** Progression from ‘Clear’ to more ‘Complex’ or even ‘Chaotic’ conditions, in the context of the selected level of challenge factors, may be required. 7. **Disrupted Timings, Locations, and Separation.** Reflection events can involve a pause in the exercise, a possible change of location, and the separation of FE members; all of which can disrupt realism. Although critical to learning, they should only be included in sufficient number/format and at appropriate times, and only for as long as necessary. 8. **Timing.** Coinciding the timing of scheduled Reflection events with ‘tactical pauses’ and ‘decline’ Experience events should be considered; this will support team well-being as well as aid reflective practice. 9. **Attendance at Reflection Events.** This should include as many participants as necessary, but realism will be more disrupted when more of the FE attends; this may be unavoidable to ensure effective learning opportunities are provided. Maintaining FE coherence could be supported by considering whether they can be conducted separately or need to be part of whole-team AARs. 10. **‘Doing Things Right’.** Rapid and immediate After-Action Reviews, which occur immediately after one Experience event and precede another, often at or near to the location where the Experience event took place and with more limited data inputs, will benefit practice and refinement of pre-existing skills and procedures and support single- loop learning focussed on ‘doing things right’. These types of Reflection event may be delivered ad hoc, but time should be factored into the exercise to facilitate interventions. They will cause less disruption to realism than longer events removed from the environment in which the Experience event took place; but some disruption will still occur, and they should be used judiciously, balancing the need to support learning with the need to disrupt realism. 11. **‘Doing the Right Thing’.** More formally scheduled, longer duration After-Action Reviews which take place away from the point of the Experience event, with richer data inputs, will benefit deeper exploration of FE knowledge, skills, and behaviour. This will favour development of adaptive skills and double-loop learning focussed on ‘doing the right things’, but will cause greater disruption to realism. Allowing longer periods between these events will aid realism.     1. Identification of trainers to be used within a CTP must consider:        1. **Stage of Training Progression.** High levels of mentoring may be suitable in the early stages of training, leading to more coaching as FEs develop their skills. Detailed feedback will be important as FEs encounter adaptive tasks and higher levels of challenge. Then, in the later stages of training, as the training approaches target performance standards at the level of challenge required, Reflection events should be significantly reduced until after the final Action and/or Assessment events. In the early stages of training, imaginative approaches to mentoring, such as providing feedback through effects and interfaces used as part of training, could be considered (e.g., using news reports). This would reduce interference, empower FEs, and aid realism. |

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| ii. **Disruptive Potential to Realism.** High levels and / or inappropriate trainer intervention can affect realism. The use of trainers must be tailored to the reasons for their inclusion at each stage of the CTP.   1. **Data Capture Methods.** The statement justifies selection of the:    1. **Instrumentation.** To measure Task Actions and CTO Conditions, and to assess Task Outcomes; and,    2. **Observation**. To assess Task Outcomes and evaluate Status. 2. **Output.** Insert a statement into heading M - Collective Training Pathway (CTP), including the following.    1. **CTP Statement.** Showing the FE training progression through one or more training modules to reach the point of performance at the level of challenge required in the CTOs, including use of the following to balance shortfalls and conflicts in fidelity requirements.       1. **Training Environment.** Outlining:          1. Environmental elements to be used; and,          2. Level of Realism.       2. **Training Media.** Outlining:          1. Stimuli for inclusion in the training scenario and for interfaces; and,          2. Cues for inclusion in the training scenario and for interfaces;       3. **Training Methods.** Outlining:          1. Number and type of Events for inclusion; and,          2. Number and type of Trainers for inclusion;       4. **Data Capture Methods.** Outlining:          1. Instrumentation for inclusion; and,          2. Observation for inclusion. 3. **CTP Diagram.** Illustrating the CTP in time and space. 4. **Confirmed Representative FE Characteristics.** Including their impact and recording any adjustments made to the CTP to facilitate learning. 5. **Confirmed Throughput Requirements.** Including its impact and recording any adjustments made to the CTP to facilitate training to meet demand. 6. **Other Requirements.** To address the needs of requirements that are not directly related to delivery and assessment of FE competence against the CTOs (e.g., Defence Engagement, deterrence, support to UK exports, Force Optimisation (WARDEV), Experimentation and Force Development (CONDEV, CAPDEV, trials and pilots), and additional Combined, Joint, Intra- governmental, Inter-agency and Multinational (CJIIM)). 7. **Financial Costs.** Required to resource the CTP. 8. **Flexibility.** The ability to adapt design, planning, and delivery to meet requirements. 9. **Risks.** The key risks, aligned to the RAIDO, to delivery and assessment of the CTOs through the design / planning, and delivery stages of the training system in order to deliver Validated outputs. This includes identification of CTOs which cannot be delivered, in full or in part, as a result of balancing gaps and shortfalls to optimise the training progression. Note that some gaps may be impossible to bridge (for example, there will be obvious constraints on the extent to which live firing and battlefield inoculation can be achieved; but these must still be recorded as risks). Others may be possible to train for, but the Army may not currently have appropriate resource. |
| p. **N - Statement of Requirement** |
| (1) This heading relates to the RTCGS. |

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| 1. This is needed to articulate the evidence-based justification for identified residual training capability gap. 2. **Inputs.** Draft CTOs. FRS Sections 1 to 4. 3. **Process.** Analysis confirms the Fidelity Gaps identifying where there are shortfalls in the ability to deliver and assess CTOs as a result of unsitable options, unavailable and/or inaccessible solutions, and due to balancing gaps and shortfalls to optimise the training progression. 4. **Outputs.** Insert a statement into heading N - Statement of Requirement, including CTOs that cannot be delivered or assessed, in full or in part, as a result of:    1. Unsuitable options;    2. Unavailable solutions;    3. Inaccesible solutions;    4. Inability to include as a result of the selected, optimised CTP. |
| q. **O - Impact of Failure** |
| 1. This heading relates to the RTCGS. 2. This is needed to articulate the impact of residual training capability gaps. 3. **Inputs.** Statement of Requirement (Heading N in the RTCGS). 4. **Process.** Analysis confirms the impact of each shortfall in the ability to deliver and assess CTOs. Impact should be evidence-based and articulate the impact on Army capability (e.g., the ability for the the Field Army to deploy FEs@R.) to meet timelines. 5. **Outputs.** Insert a statement into heading O - Impact of Failure, including:    1. impact statements for each CTO that cannot be delivered or assessed, in full or in part;    2. a statement of the combined impact of not being able to deliver or assess CTOs. |
| r. **P - Recommendations** |
| 1. This heading relates to the RTCGS. 2. This is needed to articulate recommendations to address residual training capability gaps. 3. **Inputs.** Statement of Requirement (Heading N in the RTCGS). 4. **Process.** Analysis confirms outline user and system requirements for solutions that will remove or reduce gaps. 5. **Outputs.** Insert a statement into heading P - Recommendations, including outline user and system requirements for solutions. |

**Annex J to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Collective Training Objectives**

1. Step 4 starts by asking ‘what are the final requirements?’
2. Final CTOs are produced as Product 4.1. The process described for the production of draft CTOs applies (see Step 2 - Product 2.2). However, the final CTOs will take account of the Fidelity Requirement Statement and Residual Training Capability Gap Statement produced at Step 3, and:
   1. Make adjustments to Performance, Standards, Conditions, and Metrics as required; and,
   2. Identify and record the Residual CTOs. These are CTOs (or parts thereof) which will not be trained.
3. Upon completion of the Final and Residual CTOs, the RAIDO and Lessons from Experience logs must be updated.
4. [Architectural model](https://sparxea.ahe.r.mil.uk/repositories/Artifacts/View/repId/12ba9c90-1ead-416d-bbdb-2a06c11369ab/%7B13C7DA86-147A-4390-A93B-3B9DAB97566E%7D).

**Annex K to**

**Collective Training Needs Analysis Methodology 02 September 2024**

**Training Needs Report**

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| **Step 4** | **Product 4.2** |
| 1 | **Training Needs Report**63 |
| a. **Question** | (1) The Training Needs Report (TNR) brings together analysis produced for Products 2.1, 2.2, 3, and 4.1, to provide an overall answer to the question ‘w*hat are the final requirements?’* |
| b. **Purpose** | 1. The TNR provides a bounded set of final requirements based on CTNA products for consideration and approval by the TRA. 2. The information will provide a traceable document and inform:    1. The quality of the Force Preparation Order (FPO);    2. Parameters for resource allocation and training design;    3. Recommendations for direction on the management of residual training capability gaps;    4. Effective evaluation of training requirements (External Validation (ExVal)). |
| c. **Conduct** | 1. [Architectural model.](https://sparxea.ahe.r.mil.uk/repositories/Artifacts/View/repId/12ba9c90-1ead-416d-bbdb-2a06c11369ab/%7B84DD9EF3-31E7-4d90-942A-3EF549E8655E%7D) 2. A report is produced using the following headings:   **A** - Executive Summary.  **B** - Training Requirements.  **C** - Other Requirements.  **D** - Resource Requirements.  **E** - Residual Training Capability Gap Statement.  **F** - Training Needs Evaluation Plan.   1. Once Steps 2 to 3 and Product 4.1 of Step 4 have been completed, production of a TNR is the next step. 2. The minimum standard will be a TNR which includes sufficient detail to support TRA decision-making and to enable the training system. 3. It will be informed by the Terms of Reference (ToRs) agreed between the TRA and the CTNA provider following the recommendations of the Scoping Study (Product 1), and will be assured by the TRA. 4. **Inputs.** Products 1 to 4.1 of the CTNA. 5. **Process.**    1. A - Executive Summary. Completed once the contents of the TNR has been confirmed to provide a summary of key points in the report.    2. B - Training Requirements. Analysis of Products 3 and 4.1 confirm:       1. Final CTOs (from Product 4.1); |

63 Maps to Training Needs Report in JSP 822, Vol 3: Coll Trg V3.0 (Feb 24).

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|  | 1. Residual CTOs (from Product 4.1); 2. Througput Requirements, stating the training capacity required for a specified period, and including how many FEs will need to be trained (from Product 3). 3. C - Other Requirements. Analysis of Product 3 identies requirements for:    1. Defence Engagement;    2. Deterrence;    3. support to UK exports;    4. Force Optimisation (WARDEV);    5. Experimentation and Force Development (CONDEV, CAPDEV, trials and pilots); and,    6. additional Combined, Joint, Intra-governmental, Inter-agency and Multinational (CJIIM). 4. D - Resource Requirements. Analysis of the Collective Training Pathway in Product 3 identifies resource requirements. 5. E - Residual Training Capability Gap Statement. Analysis of the RTCGS in Product 3 identifes gaps and the TNR confirms recommendations for solutions to fill the gaps. 6. F - Training Needs Evaluation Plan. A clear plan to evaluate the effectiveness of training (i.e., to confirm that the training requirements identified produced the right training outputs so that FEs were able to succeed at Readiness or on Operations). This is tailored for requirements, considering risks to the relevance of the CTOs to provide the operational capability over time. 7. Upon completion of the FEPS, the RAIDO and Lessons from Experience logs must be updated. 8. **Outputs.** A TNR which includes all headings A to F. |
| d. **Inputs** | 1. Scoping Study. 2. FEPS. 3. CTOs. 4. FRS. 5. RTCGS. |
| e. **Outputs** | 1. TNR. 2. Updated RAIDO and Lessons from Experience logs. |
| f. **Decision Points** | 1. Initiation authorised by the TRA. 2. Authorised by the TRA as part of a Training Needs Report (TNR). 3. Informs/supports the TRA’s Force Preparation Order (FPO). |