

Reference: LWC/S&T/Exp/Opt-Survivability/SOR
Date: 14 Jun 2021

ASTRID Task 040 - Statement of Requirement
Support to Land Warfare Centre Science and Technology
Force Optimisation and Experimentation

Background

REDACTED

LWC S&T Experimentation Enterprise Strategy

1. Lead the planning, execution and delivery of LWC WARDEV experimentation projects with an Integrated Project Team
 - establish rolling programme of experimentation directed by FO requirements and informed by wargames, TTX and studies
 - leverage/share knowledge and subject matter expertise across the S&T team and wider related defence S&T projects and programmes
 - improve the generation and robustness of evidence
 - burden sharing through cross-domain analysis and collaborative tasks
 - understanding dynamic linkages and interplay between FO capabilities
 - cooperation and coordination with the wider Defence S&T and CAPDEV/CONDEV community, **REDACTED**.
 - identify emerging requirements for future LWC S&T WARDEV experimentation themes
2. Collaboration with LWC, Field Army WARDEV network and Formation-led FO activities
 - support experimentation planning; improve coherency, efficiency, effectiveness and quality of Field Army FO and related Formation-led WARDEV experimentation activities
 - understand and develop experimentation (evidence) requirements; anticipate future LWC S&T demand
 - leverage and exploit wider S&T investment – maintain corporate knowledge
 - maintain awareness and exploitation of Field Army Innovation, Research and Experimentation plans and outputs
3. Drive the exploitation and implementation of experimentation outputs to support the delivery of FO

- collective approach to coherent optimisation – with Field Army and LWC Warfare, Training, Lessons and Doctrine
- provide awareness, education and support to developing good practice
- support the implementing, testing and refinement of change
- support validation, capture, codification and sharing of best practice – informed and updated doctrine, training, etc.

Project Requirement

4. The project will establish an agile team of subject matter experts, principally drawn from the existing LWC S&T Experimentation Enterprise, which, over two Financial Years (FY21/22 and FY22/23), will deliver pro-active, dynamic and responsive support and experimentation activity to enable the delivery of FO and WARDEV in line with the Experimentation Enterprise Strategy.
5. **REDACTED**, The project will, to the fullest extent, exploit the experimental evidence and recommendations and leverage the investment made in the following areas
 - LWC S&T
 - Agile Command and Control
 - **REDACTED**
 - **REDACTED**
 - Close Combat
 - Cap GM
 - **REDACTED**
 - Light Forces experimentation
 - HoC C4ISTAR
 - Command and Control Analysis and Experimentation
 - Dstl
 - Agile Command and Control Research
 - Light Forces studies, wargames and experimentation
6. The project team will
 - prioritise effort toward 1 (UK) Division and Light Forces
 - exploiting experimentation outputs and recommendations to improve baseline capability
 - identifying, planning, supporting and undertaking new Light Forces experimentation requirements
 - coordination and cooperation with Dstl to provide an enterprise approach to Light Forces studies, wargames and experimentation
 - engage across Field Army, particularly 3 (UK) Division/GMET, to provide expert guidance, coordination and support to Formation-led FO and WARDEV activity.

- establish working relationships across LWC and Field Army, particularly with end users and Collective Training Group as part of the training cycle (including prior to, during and post-exercise deployment).
 - provide end-user advice, coaching, mentoring, support wider exploitation (e.g. recommended updates to documentation), briefings and will identify and undertake additional studies and experimentation to augment the evidence base.
 - engage, support, leverage and exploit wider related Defence S&T activities as identified.
7. The project will address near-term, non-equipment Defence Lines of Development (DLOD) – e.g. Training, Personnel, Doctrine and Organisation. Where FO demands additional investment to deliver improvements (e.g. Equipment), this will be reported but will be beyond the scope of the project to address directly.

Approach

8. The project team will be structured such that it provides
- overarching Task Lead
 - an enterprise approach to planning, execution and delivery
 - continuous engagement across military stakeholders
 - subject matter knowledge, skills and expertise to support formation-led experimentation and FO/WARDEV activity
 - resources to continue ongoing research activities (e.g. C2 and Human Factors)
9. With support and direction from LWC S&T Experimentation Capability Advisors, the Project team will
- deliver the Project in Stages (anticipated to each last ~6-9 months) in line with an overarching Project Plan - each Stage will be defined by the Project team and agreed by LWC S&T.
 - enable the delivery of Force Optimisation and WARDEV change by accelerating the development of “What Good Looks Like” and supporting the implementation of best practice,
 - **REDACTED**
 - develop and educate on practical measures that can be implemented to reduce risk and improve effectiveness,
 - support, influence and shape/guide Formation sponsored/led experimentation, training events and Force Optimisation activity on Operations to create opportunities for developing, testing and assuring best practice,
 - monitor and measure performance and provide feedback on observations to support the implementation of best practice,
 - identify, plan and deliver, as an Integrated Project Team (**REDACTED**), a Light Forces experimentation plan as directed by existing and emerging FO/WARDEV

requirements (from 1 (UK) Division and LWC) and informed by previous and current work including, but not limited to, wargames, TTX and studies.

- adopt a flexible and agile Whole Force approach, working with Field Army Formations, LWC Warfare Branch (WARDEV, Lessons and Doctrine), Ground Manoeuvre Experimentation Group (GMET), Trials and Development Units and training delivery organisations. Additionally, engage, cohere and support CTG delivery of training and measures of effectiveness via HQ HANNIBAL.

10. Initially proposed Work Packages are

WP 1 – Project scoping and planning – as an integrated Project Team, conduct Project Management activities to develop an agreed

- outline Project Plan (including Project design, team organisation, roles and responsibilities, Project products¹, anticipated schedule)
- stakeholder engagement and communications plan
- Risk and Issues register
- Stage Plans, to include (as a minimum)
 - work packages or tasks to be completed during the Stage (including new or emerging work packages, e.g. related to Light Forces experimentation requirements)
 - anticipated resource allocations and associated costs,
 - expected duration,
 - expected outputs and delivery dates,
 - budget, forecasts and payment schedule for the Stage.

WP 2 - Force Optimisation exploiting existing experimental evidence

- 1a – Priority focus on 1 (UK) Division Light Forces FO requirements - experiment planning; scheduling activity with Force Preparation Schedule and CUB stakeholders; BG BCS and CT support (Workshops, BCS advisory visits, wargame/TTX)
- **REDACTED**
- 1b – support 3 (UK) Division/GMET FO requirements - experiment planning; scheduling activity with Force Preparation Schedule and GMET (Op CABRIT Force Preparation); BG BCS and CT support (Workshops, BCS advisory visits, wargame/TTX)
- 1c – support 1ARTY Brigade Exercise **REDACTED** - experimentation planning, design execution and exploitation
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WP 3 – Light Forces experimentation

- identify, plan, deliver and support role-specific Light Forces experimentation as directed by 1 (UK) Division and LWC

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WP 4 – Development and maintenance of appropriate, realistic and agreed scenarios to set the context for S&T activity. **REDACTED**.

¹ Project Products - what the team expects to deliver as management, technical and supporting information products, records or reports to enable successful delivery of the Project.

WP 5 – Command and Control (C2) conceptual map, benefits analysis and Measure of Effectiveness

- developed under ASC Task 285, a conceptual map using benefits analysis methodology models the relationships across C2 effectiveness parameters and has been validated through SME stakeholder workshops and initial testing. Further work will
 - validate the links within the map through sensitivity testing of each node,
 - conduct wargames or tested scenarios to fully validate the maps usability,
 - define, with LWC/CTG/CTTP, the “end use” of the map allowing for the development of “user interface” (i.e. how data is input and how the output is displayed).
- progress the development of the C2 Effectiveness Performance Indicators (PI) for use by CTG/CTTP in order to assist in the assessment of the Primary Training Audience (PTA) to conduct effective command and control. Further work is required to take forward PI's, identified as requiring minimal investment, to ensure that the proposed data collection and analysis approach recommended
 - is appropriate,
 - minimises impact on PTA,
 - is practicable for use by CTG/CSTTG OM,
 - minimises burden on PTA,
 - ensures robust data for analysis, that can be used to provide insight to the Measurable Factor and overarching PI as intended.

WP 6 – Human factors in C2 **REDACTED**

- **REDACTED**
- Continuation of this research will
 - validate initial findings with an expanded target audience - to include but not limited to interviews/workshops/study days,
 - focus activity on known areas of inefficiencies within the WARDEV sphere of influence e.g. doctrine, organisation, training etc,
 - examine the application of Organisational and Human Behaviour Theories to Fd Army to ensure that current systems and processes are fit for the purpose of achieving both change and maintaining an improved state.

Deliverables and Outputs

11. The Project team, with LWC S&T, will define and agree (in advance) the nature, timing and anticipated cost of all Project Products expected at each Project Stage. The Products may be influenced and/or defined by the needs of wider stakeholders, e.g. inputs to doctrine, lessons, training and education events or other S&T activities).

12. Deliverables will be defined in detail during stage planning and will be directly linked to an assessment of progress and formal payment. They may consist of plans, desk level reports, presentations, briefings.

13. An initial list of anticipated Deliverables is as follows

- a continuously maintained Project Plan (including Project design, Products, expected schedule, engagement and communications plan); initial Risk and Issues Register; initial Stage Plan – no later than contract award + 2 months,
- Stage Plans (with payment milestones),
- monthly Project review meeting record highlighting review of
 - Stage plans
 - completed vs. outstanding tasks
 - outputs and outcomes (including successes and failures)
 - realised and/or potential benefits/disbenefits
 - emerging requirements,
 - risks and issues
- stakeholder progress reports and/or briefings,
- end of Stage reports to include record of effort expended,
- Concept of Analysis (approach and methodology), Experimentation Design Documents and Data Collection plans.

14. Project Outputs will not be tied to payment schedule but will be generated to capture knowledge and provide a record of information and evidence. Examples are

- technical reports,
- change proposals (e.g. As-Is/To-Be analysis) to improve Field Army effectiveness,
- the transfer of knowledge and outputs (data, observations, insights, evidence and material) into practical outcomes to inform or support including (but not limited to)
 - Military Judgement Panels (MJP) and workshops
 - inputs to LWC Lessons/DLIMs
 - information products to support Doctrine development
 - improved representation of the THREAT through HANNIBAL
- “good practice guides” for exploitation of experimentation outputs, consolidating the project approach, lessons learned and guidance to support future exploitation projects.

Outcomes and Exploitation

15. The project will enable

- the implementation and adoption of best practice within Field Army Formations throughout the Training pipeline,
- assured Field Army best practice to be codified and embedded in Training, Doctrine, Processes and Procedures,

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Schedule

16. The work should commence in June 2021 and be completed by March 2023.

17. Suggested project schedule

- Project planning, development of approach and initial Stage Plan (Jun- Jul 21),
- build stakeholder collaboration and support to Formation-led activities, and related studies, wargames and experimentation, identifying, exploiting and implementing “quick-wins” whilst testing and refining the project approach (Sept – Nov 2021),
- evaluation of approach, lessons learned and consolidation of initial project outputs (Oct – Nov 2021),
- planning for engagement during Training Year 2022 focused on maximising exploitation (Nov – Dec 2021),
- full scale roll-out of approach during Training Year 2022 (Jan – Dec 2022),
- consolidation and final reporting and delivery (Dec 2022 – Feb 2023),
- project closure (Mar 2023).

Assurance and Acceptance

18. LWC S&T, supported by stakeholders and/or contracted support as required, will review all Project deliverables prior to acceptance. The level of scrutiny and timescales for review will be appropriate to the nature of the Project Products and will be agreed between the Project team and LWC S&T.

Payment

19. The contractor team will be paid according to an agreed Project and Stage Plans and on satisfactory completion of Project Deliverables, within a Limit of Liability (LoL), which will be endorsed and accepted by LWC S&T. Given the agility required to deliver this exploitation work in support of dynamic Force Optimisation priorities over the two-year period, it is expected that a LoL contract will best service the developmental nature of this task.

Project Governance

20. The project will be delivered as a contracted collaboration between suppliers and LWC S&T experimentation team. It will be coordinated and supported through monthly Project review meetings chaired by LWC S&T. This will

- review progress against Stage plans, give direction and take corrective actions as required,
- assess, manage and maintain project risks and issues register,

- facilitate meetings and back-briefs with key stakeholders where appropriate.

21. Additionally, LWC S&T will hold regular one-to-one contractor meetings where there is a need to discuss commercially sensitive information.

GFX

22. LWC will endeavour to provide or enable access to

- relevant key stakeholders and information,
- coordination with other commercial entities supporting Field Army initiatives,
- general support from Land Warfare S&T,
- ModNet account, laptops and appropriate permissions,
- access to military subject matter expert staff within Field Army,
- access to live training events in the UK and (potentially) overseas,
- access to SSET Troops if required (early identification will be required for Trg Yr 2022/23).

Security

23. All Contractors employed on the task will require SC clearance. Deliverables may be sensitive in nature and will be delivered at the appropriate classification up to and including NATO SECRET/SECRET.

General Data Protection Regulations

24. All data collected that could be considered "Personal data" under the new General Data Protection Regulation (GDPR) must be handled in accordance with the regulation. It should be noted that the GDPR widens the definition of personal data to include:

"Any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person".

25. Any personal data must comply with entire GDPR however the following key parts of the regulation are expected to be demonstrated as minimum. The 6 principles of this regulation must be followed, these are

- Processing must be fair and lawful
- Purposes of processing must be specified, explicit and legitimate
- Personal data must be adequate, relevant and not excessive
- Personal data must be kept up to date

- Personal data must be kept for no longer than necessary
- Personal data must be processed in a secure manner

26. A Privacy Impact Assessments (PIA) must be conducted as part of any personal data collection to ensure compliance with the GDPR. In addition, data subjects must opt into having any personal data collected and their consent must be provable. The individual rights of data subjects should also be understood and respected through the collection, processing and storage of their personal data. All parties involved in the handling of personal data should also understand their obligation to report data breaches as soon as they are discovered. Parties involved in processing personal data should understand their obligation for doing so lawfully. Data must be processed under one of the following bases to be lawful

- Consent
- Contract
- Legal obligation
- Vital interest
- Public Task
- Legitimate interest

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