REFERENCE: 20201201-D-JFI_ITEAP_Ver3.0

DISMOUNTED JOINT FIRES INTEGRATOR (D-JFI)

INTEGRATED TEST EVALUATION AND ACCEPTANCE PLAN

Version: 3.0 DATE: 01 Dec 2020

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Approval

Date	Version	Signature	Name	Post
28 Feb 18	1		[redacted]	Chief Engineer Arty Sys
23 Nov 18	2		[redacted]	Chief Engineer Arty Sys
1 Dec 20	3		[redacted]	Lead Engineer D-JFI

Change Control

1. This Integrated Test Evaluation and Acceptance Plan (ITEAP) is maintained under change control in accordance with the configuration management processes defined by the Project Management Plan (PMP) and only approved versions should be used.

2. It will be reviewed and revised by the project Lead Engineer as required by the project Engineering Management Plan (EMP).

3. The routine re-issue of this Plan will be incorporated into the engineering delivery schedule which will then form part of the baseline against which periodic progress or development is measured. The Plan will also be subjected to unplanned updates in line with change requests in accordance with the change control process. This will ensure that documentation remains current and can be used with authority.

Version	Date	Changes	Created By
0.1	01 Dec 2016	Work in progress	[redacted]
0.2	23 Dec 2016	Work in progress	[redacted]
0.3	24 Mar 2017	Initial draft for review	[redacted]
~~1.0~~ 0.4	31 Mar 2017	Initial Issue for approval - Version number corrected at baseline Feb 18	[redacted]
~~1.1~~ 0.5	30 May 2017	Up issued to reflect changes to the SRD only since Issue 1 of this document - Version number corrected at baseline Feb 18	[redacted]
~~2.0~~ 0.6	06 Jan 2018	Completely revised. VVRM moved out to standalone document	[redacted] DE&S ITS 11
1.0	28 Feb 18	Development and update	[redacted]
2.0	23 Nov 18	Development and update prior to ITN	[redacted]
3.0	01 Dec 20	Contract version	[redacted]

CONTENTS

INTRODUCTION

Background

1. The Single Statement of User Need (SSUN) for the Dismounted Joint Fires Integrator (D-JFI) Capability is[1]:

> **'The User shall be able to generate and communicate target information from a dismounted configuration to effector systems for integrated employment of Joint precision and non-precision fires to achieve tactical success.'**

2. D-JFI will support [redacted] including; [redacted]. D-JFI provides dismounted users with the ability to [redacted] with sufficient accuracy to enable [redacted]; the effective passage of digital information to enable employment of [redacted]; and the subsequent [redacted]

3. The ultimate aim of Jt Fires is to assist friendly forces by destroying, neutralising, harassing or suppressing the defined target and denying the use of ground. Accuracy is required to ensure [redacted] and [redacted]. D-JFI enhances the target acquisition and decision making processes; improving [redacted] and therefore [redacted], while enabling the mitigation of [redacted] by the observer.

4. Fire support enables the attack of military targets, in depth, by day and night, and in all weathers. The principal providers of fires are artillery, mortars[2] and air, including aviation. For D-JFI the responsibility for the [redacted] Joint Fires, lies with [redacted]. D-JFI is optimised to support the operational needs of this community.

Boundary of the Capability to be delivered by this Project

5. The D-JFI Capability will be provided in phases across its lifecycle; potentially with different suppliers responsible for the equipment during the different phases. This Integrated Test Evaluation and Acceptance Plan (ITEAP) covers the first phase; that of delivery of equipment along with associated Defence Lines of Development (DLOD) deliverables.

6. The in-scope system consists of three elements, illustrated in Figure 1 & Figure 2:

   a. Procured equipment (both hardware and software)

[1] D-JFI URD Issue 3.1 dated 6 Apr 16
[2] Mortar Fire Controllers (MFCs) are out of scope for D-JFI.

b. Government Furnished Assets (GFA)

c. Integration of this equipment

Figure 1: Functional architecture for the [redacted] Configuration

Figure 2: Functional architecture for the [redacted] and [redacted] Configurations

Requirement Set Integrity

7. This ITEAP is driven by the Systems Requirements Document (SRD), which is mature and endorsed in Feb 2018, with only minor changes expected. Documents which inform this plan are configuration controlled within the project register and are as follows:

Ser	Document Name	Version	Owner
1	Concept of Employment (CONEMP)	Version 2.1 dated 24 Apr 16	HQ Army GM Cap.
2	User Requirement Document (URD)	version 3.1 dated 6 Apr 16	HQ Army GM Cap
3	System Requirement Document (SRD)	Version 3 dated 01 Dec 20	DE&S Artillery Systems Delivery Team
4	Concept of Use (CONUSE)	Version 1.4 dated 28 Nov 17	HQ Army Sp Integrate

Table 1: Requirements Document Set

8. The requirements with the URD and SRD (Part 3 and 5 of the documents) are under configuation control in the DE&S DOORS database.

ACCEPTANCE STRATEGY

Background

9. The D-JFI Acquisition Strategy is to Contract a Prime Contractor to procure and support the D-JFI capability and own the responsibility for the integration with the supplied GFA. The Contractor is to maximise the use of Commercial Off The Shelf (COTS) equipment and Military Off The Shelf (MOTS) equipment – it is acknowledged that some modification will be required to ensure successful integration.

10. It is noted that some of the GFA:

a. Will be managed and delivered by Project Teams other than D-JFI;

b. Not currently due to be in service until several years after the current Planning Assumption for Service Entry (PASE) of the D-JFI Capability.

11. The Acceptance Strategy has been driven by the need to manage the complex capability, system and commercial environment.

Acceptance Goals

12. The ultimate goal of the D-JFI acceptance process is to; 'Provide sufficient evidence to confirm that the URD defined capability has been delivered.' To achieve this, there are two parallel paths:

a. The build up of capability (equipment, training, information etc.);

b. The build up of evidence to support acceptance of that capability.

13. Each path has a set of defined milestones used to direct the teams and act as review checkpoints. These are contained within Annex A.

14. **Capability Milestones.** On the first path the major Capability Milestones are:

a. **Early Equipment Delivery Date (EEDD).** EEDD is defined as:

(1) Delivery of low integration risk Line Replaceable Units (LRU)[3].

(2) Integrated Logistic Support (ILS) in place to support early delivery of LRUs.

b. **Equipment Delivery Date (EDD).** EDD is defined as:

[3] Coded Target Marker and Designator, IR Target Marker, Coded Handheld Target Marker, Laser Spot Tracker.

(1) Train the trainer (T3) package delivered by the Contractor and cascade training established.

(2) [redacted], [redacted] fully equipped with D-JFI; with at least 2 personnel per unit trained and ready to deliver cascade training.

(3) [redacted] equipped to 1/3.

(4) Sufficient ILS in place to support the initial fielding of D-JFI systems.

(5) Interoperability with Surface-to-Surface and Air-to-Surface fires; and in-service STA equipment.

c. **Initial Operating Capability (IOC).** IOC is defined as:

(1) [redacted] trained to Collective Training Level 3 (CT3) *(dependant on CT3 Trg date).*

(2) Cascaded delivery of D-JFI in conjunction with the drawdown of Firestorm OM.

d. **Full Operational Capability (FOC).** FOC is currently defined as:

(1) Fielding Plan complete.

(2) All Units trained to CT3 *(depending on CT3 Trg date).*

(3) All DLOD Acceptance Milestones achieved.

15. **Acceptance Milestones (AM).** The second pathway contains AM's. At least one AM will be set for each DLOD (so there will be at least 9). A diagram showing the Acceptance Milestone Progression is at Annex A and a table showing the interdependencies is at Annex B. The additional GFA needing to be integrated to prove Full System Acceptance (FSA) is outlined within the D-JFI Capability Roadmap at Annex D. The D-JFI PT intends to deliver low integration risk LRUs as soon as possible after contract award, prior to EDD. The equipment AMs have currently been identified as:

a. Limited System Acceptance (LSA). LSA will support IOC.

b. Equipment DLOD Acceptance that the entire in-scope contractor supplied system has been delivered as specified within the SRD and successfully integrated with the GFA available at that time[4] to provide a coherent IOC.

[4] Noting that not all GFE will be available at IOC to fully integrate with D-JFI as captured at Annex D.

c. Full System Acceptance (FSA). FSA will support FOC.

d. Equipment DLOD Acceptance that the system has been integrated with all GFE, such that all requirements within the SRD have been fully met.

16. **Non-equipment DLOD Acceptance.** Each Non-Equipment DLOD will need at least one AM. For example, Ready For Training Date (RFTD) or Logistics Support Date (LSD). This will require integration of any non-equipment DLOD elements provided by the contractor. All DLOD AMs will need to be fully delivered before FOC can be declared.

17. **Maturing the Acceptance Strategy.** The key activity required to mature the Acceptance Strategy was to fully define the DLOD contributions required for each AM and CM (Annex A and Annex B). This involved:

a. Fully defining the User and System Requirements, along with their verification and validation activities (which will be informed by the Test and Evaluation (T&E) Strategy).

b. Defining the D-JFI boundary.

c. Defining the DLOD contributions outside the Equipment DLOD.

d. Aligning the Acceptance Strategy with the Commercial Strategy.

e. Developing the Fielding Plan to define how the units will be provided with the capability through to FOC.

18. Once the DLOD contributions are fully defined, the process of progressively accepting the capability can begin.

Acceptance Organisation

19. **Meeting Structure.** The organisational hierarchy is shown in Figure 3.

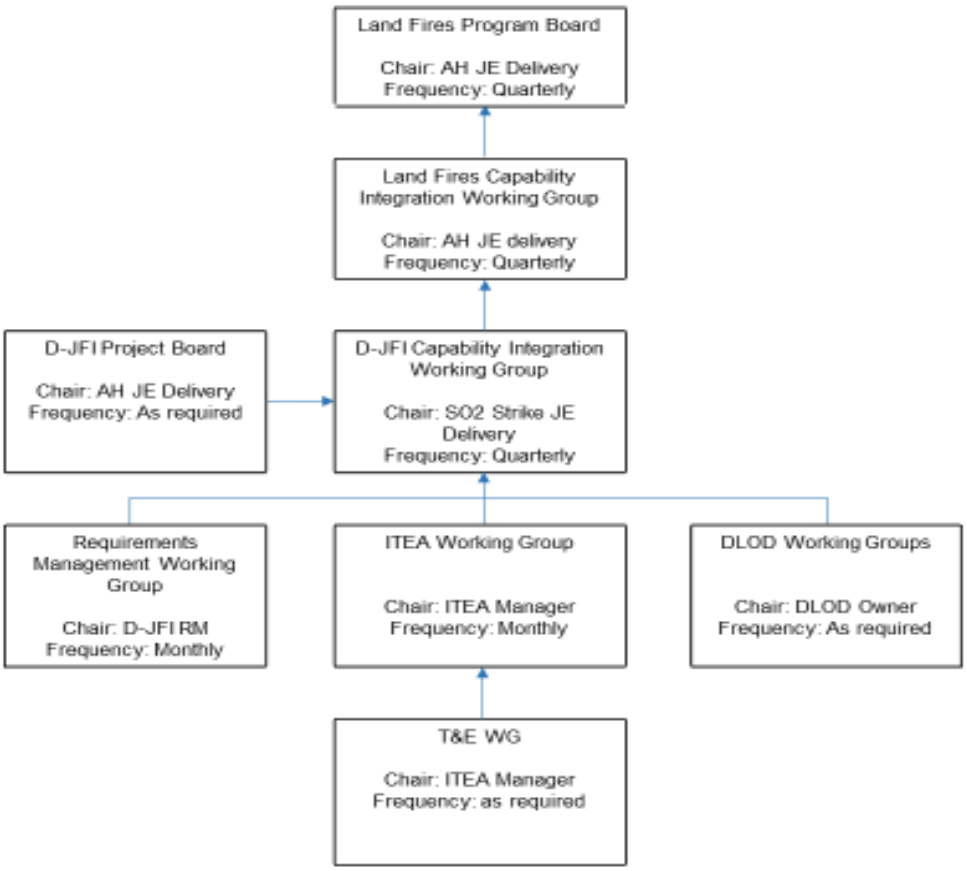

Figure 3: Meeting Structure

20. **Capability Team in Army Headquarters (AHQ).** The Land Fires Capability Integration Working Group (CIWG), chaired by the Assistant Head (AH) Joint Effects (JE) Delivery, is responsible for delivering the D-JFI Capability. A full project stakeholder matrix for producing and delivering key elements to contribute to the Capability is at Annex C.

21. **Capability Integration Working Group (CWIG).** The D-JFI Project CIWG is responsible for monitoring progress towards IOC / FOC.

22. **Acceptance Authority.** The Capability will be accepted into service by the Senior Responsible Owner (SRO) who is AHQ AH JE Delivery.

23. **ITEA Working Group.** The development of T&E and Acceptance will be managed by the ITEA Working Group[5], which will also oversee the delivery of the ITEA programme, and the evidence generated.

24. **DLODs.** The DLOD ownership, taken from the User Requirements Document (URD) is summarised in Table 3. The DLODs will be tasked by the SRO on behalf of the Project Manager (PM). Progress will be monitored via the D-JFI CIWG and any issues that cannot be resolved at this level, will be reported upwards through the hierarchy identified in Figure 3.

DLOD	Appointment	Incumbent/Remarks
Training	SO1 JE Trg, Cap GM	
Equipment	SO2 Arty, Eqpt Plans	
Personnel	SO2 Pers, RA RHQ	
Information	SO2 JFI, Cap GM	
Doctrine & Concepts	SO2 JFI, Cap GM	
Organisation	SO1 JE Org, Cap GM	
Infrastructure	SO2 Tech Infra, B&I	
Logistics	SO2B Pol, Log Sp	
Interoperability	SO2 JFI, Cap GM	

Table 3: D-JFI DLOD ownership

[5] Membership of Working Groups and their Terms of Reference (TOR) are detailed in Annex H.

Acceptance Process

25. **Process.** The goals listed in this plan will be delivered by the organisations described below and shown in Figure 4.

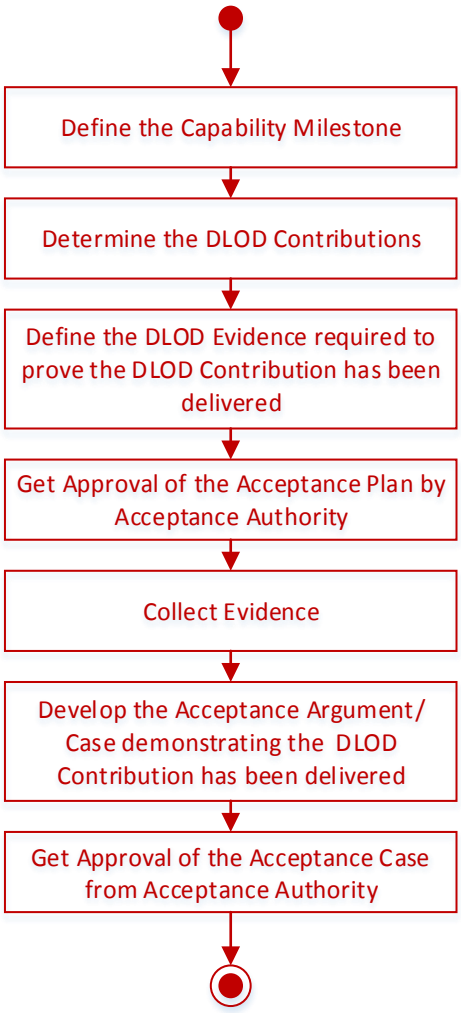

Figure 4: Acceptance Process

26. **DLOD Contributions.** Each DLOD owner is responsible for assessing T&E evidence provided, to verify that their DLOD requirements have been met, before advising the ITEA WG of the outcome. The DLOD contributions will be captured and managed in a similar way to the System Requirements. DLOD inputs to Verification and Validation (V&V) planning and Acceptance is summarised as follows:

a. Each DLOD will assess technical and associated requirements (URD & SRD) to ensure that DLOD capability issues are adequately addressed.

b. The ITEAP Manager will allocate each line in the Verification and Validation Requirements Matrix (VVRM) to a DLOD, so that each DLOD has visibility of every acceptance item that applies to them.

c. Each DLOD will assess all VVRM lines allocated to them and provide input to V&V activities to ensure that T&E will provide sufficient evidence for a sound acceptance case.

d. Each DLOD will be involved in trial assessments (relative to their domain) to ensure an accurate decision is made regarding Acceptance Status (AS).

27. **Acceptance Evidence.** The ITEA Manager is to manage acceptance evidence utilising the VVRM DOORS module. The ITEA WG will present recommendations to the Requirements Manager (RM) based upon evidence gathered from all of the DLODs.

28. **Acceptance Cases.** The SRO is to approve the format for acceptance arguments, reports and cases. The RM is responsible for raising and submitting acceptance arguments, reports and cases, to the Acceptance Authority. When reporting acceptance to the Sponsor, the SRO is to report in writing, highlighting acceptance decisions and recommendations. In addition, the Sponsor is to be made aware, at each key AM, of any major concessions granted or where the capability will fall short of the endorsed URD.

STAKEHOLDERS

29. The full D-JFI Stakeholders Matrix is available at Annex A of the D-JFI Communication and Stakeholder management Plan. Stakeholder management will be conducted in line with the D-JFI Communication and Stakeholder Management Plan.

30. The RACI matrix will be reviewed on at least a 6-monthly basis in order to ensure that the Stakeholder details are kept up to date.

31. Test and Evaluation is a pan-DLOD process and each of the DLOD Owners identified in Table are responsible for overseeing and conducting evidence collection activities with respect to their DLOD area.

32. For T&E activities relating to DLOD initiated activity (such as training courses, infrastructure and associated processes) each DLOD will be responsible for directing the evidence requirements and ensuring these are achieved before reporting to the ITEA WG.

TEST AND EVALUATION STRATEGY

Test and Evaluation Goals

33. The T&E goals are to:

a. Provide the Acceptance Authority with sufficient evidence that the delivered system satisfies the requirements in the Contract SRD.

b. Provide that evidence within the timescales of the project.

c. Provide that evidence for the minimum cost.

d. Provide that evidence in a joined-up manner across the DLODs.

Test and Evaluation Organisation.

34. The ITEA Manager is responsible for all T&E activity and evidence management. The ITEA Manager is responsible for maintaining governance and ownership of pan DLOD T&E up to EDD.

35. The Royal Artillery Trials and Development Unit (RATDU) is to be the MOD lead for T&E. They will be assisted by Subject Matter Experts (SMEs) and representative users from 1st Artillery (1 Arty) Brigade, the RSA (Joint Fires Wing, Precision Targeting Cell, Artillery Command Systems (ACS) Branch), Joint Air Land Organisation (JALO) and JFACTSU. Other test and evaluation units can be tasked by the Project Team (PT) to conduct discrete tasks for evidence gathering in support of acceptance such as Electro Magnetic Capability (EMC) testing, environmental testing and accuracy testing. The ITEA WG will co-ordinate and manage all trials.

36. Each DLOD may be represented at the ITEA WG meetings in order to ensure that pan-DLOD T&E occurs in an efficient manner.

37. The out-of-scope GFA testing requirements will require careful coordination across Project Teams. This will be captured in the GFA Plan which is currently under development.

Test and Evaluation Process

38. T&E will be driven by the milestones identified in Annex B.

39. All T&E activity will need to be scheduled to meet the Capability Milestones (CMs).

40. The ITEA Manager will generate and maintain the project VVRM hosted on DOORS.

41. The RM will generate and maintain the ITEA Schedule of acceptance activities (evidence identification and collection). This schedule will provide an audit trail to support capability acceptance. Review of this schedule will be a key agenda item at each ITEA WG and CIWG. This schedule will be captured in Annex G in future updates to the plan.

42. Once the verification criteria have been decided for each requirement, detailed configuration managed Test Plans will be produced by RA TDU. These decompose the T&E schedule into discrete trials and/or groups of trials (Test Events). Each Test Plan will contain:

a. Trial management information;

b. Which tests are required;

c. Which Requirements are verified by the trial;

d. Detailed Test Evidence contained in the evidence repository.Summary test evidence contained in DOORS with refence to the Detailed Test Evidence

43. The Test Plans will inform the Prime Contractor on what T&E activity is expected from them. The test plan will provide information on which T&E activity is Authority led, and which will be Prime Contractor led.

44. From each Test Plan, the Prime Contractor will generate configuration managed Test Forms in DOORS in a common format. These Test Forms will be the direction to the testing team on how to complete the trial. They will be authorised by the ITEA WG and will detail:

a. Each test or evidence collection activity;

b. Details of how a test or evidence collection will be conducted;

c. Details of the desired results;

d. Details of the preparations required;

e. Details of what resources need to be arranged.

45. The ITEAP WG will review and approve all completed Test Forms co-opting SME advisors as required

46. The ITEA WG is responsible for reviewing and assessing evidence (in conjunction with any experts, advisors or stakeholders) and to recommend acceptance statuses to the Acceptance Authority.

47. The Acceptance Authority is responsible for approving or rejecting acceptance status recommendations from the ITEA WG. The D-JFI RM is responsible for managing the evidence process.

48. **Evaluation of Evidence.** Time for evaluation of evidence will be allocated in the T&E Plans once they have been defined. Time will be allowed for multiple stakeholders to review the same evidence, allowing each to produce evaluation reports with acceptance recommendations before the next increment of testing. This will be defined further by the stakeholders and ITEA WG once the testing solution is confirmed.

49. **Evaluation of Theoretical Evidence.** In some cases, a verification or validation activity will not necessarily produce outputs which can be easily assessed in the same manner as physical test results (e.g. analysis or modelling). In order to ensure that these theoretical evidence items are properly assessed, such items will be presented in written and verbal form, to a Military Judgement Panel (MJP) which will include representatives from the D-JFI Project Team and other relevant stakeholders as required. It will be the responsibility of that panel to recommend acceptance of the output to the ITEA WG.

Detailed Test and Evaluation Strategy

50. D-JFI is a complex system-of-systems consisting of sensors, software and communications equipment, a sub set of which will be provided by a contractor and the remainder as GFA.

51. The strategy for D-JFI T&E is therefore designed to confirm that individual components and sub-systems perform as specified, initially individually then as an integrated system of systems. This will include non-functional requirements testing, such as Human Factors.

52. A VVRM will be developed to identify the activities necessary to provide the evidence needed to achieve acceptance. This evidence will form an input to the Acceptance Case. Further details regarding the VVRM, including its content, format, a high-level plan for its management and a set of V&V Methodologies upon which the VVRM is based can be found at Annex I.

53. The initial testing will be Prime Contractor led and will form the first stage of V&V; Design Review, Analysis, Certification and Factory Acceptance Test (FAT) to prove the Contracted System Requirements and the ability to integrate with the GFA sub-systems.

54. Once the sub systems have been integrated, the second stage of testing will involve trials of the System through System Acceptance Tests (SATs) and User Acceptance Trials (UATs). SAT will be Prime Contractor led supported by the authority with the authority retaining the right to amend a test plan and/or location. The Prime Contractor will be responsible for defining the test plans and booking test facilities once agreed by the authority. The RA TDU will be responsible for organising the User Trials and will witness the tests as required. They will capture the users' feedback and include this in a formal test report.

55. **D-JFI Test and Evaluation Process.** The T&E processes are sub-divided into a number of different methodologies. The methodologies are:

a. Design Review; (Prime Contractor led)

b. Analysis; (Prime Contractor led)

c. Certification; (Prime Contractor led)

d. Factory Acceptance Test (FAT); (Prime Contractor led)

e. System Acceptance Test (SAT); (Prime Contractor led)

f. User Acceptance Trial (UAT); (RA TDU led)

56. Each System Requirement (SR) will be verified via one or more of the above methodologies, with different methodologies applied at different stages of Acceptance to progressively build a body of evidence. The details of which methodologies will be used for which System Requirement is captured within the VVRM.

57. Test Events will be scheduled to verify a number of SRs at the same time (i.e. an individual FAT will verify a number of different SRs). The aim of this is to provide a progressive, comprehensive and efficient T&E process which supports the Acceptance Case. The detailed relationship of T&E events against SRs is captured within the VVRM.

58. **T&E Planning Process**. The VVRM and test schedule captured within this ITEAP of the ITEAP are initial estimates for planning purposes and to inform the Assessment Phase trials. The process to confirm which methodologies will be used will involve all ITEA stakeholders and will be required to be completed to support the negotiations with the selected Prime Contractor, for the contracted element of D-JFI, in Q1 2023 (TBC). This will allow a fully costed T&E plan to be produced by the selected Prime Contractor. The process will be as follows:

a. **Strategy.** The draft ITEA Strategy has been documented in this ITEAP but has yet to be agreed by stakeholders and endorsed by the Project Board.

b. **VVRM.** The initial version of the VVRM has been drafted, covering the entire SRD. This identifies all evidence requirements and the T&E methodologies for each SR and identifies an initial set of test events that are expected. The full list of test events and their linkage to the individual SRs will continue to be developed up to Main Gate and will only be confirmed once the full ITEA schedule has been delivered by the Prime Contractor and accepted by the Ministry of Defence (MOD).

c. **ITEAP/VVRM development.** The ITEAP and VVRM will continue to be developed up to Main Gate in order to reflect lessons identified during the Assessment Phase, particularly during the Tender evaluations Part 2.

d. **Test Plan Development.** The ITEA WG will be responsible for maintaining the overall verification T&E schedule and managing delivery of it up to EDD. While still to be confirmed, it is assumed that the selected Prime Contractor will be responsible for developing and delivering a detailed schedule up to and UAT, which the Prime Contractor will be required to support.

e. **Tender Evaluation.** Tenderers will be required to provide a costed T&E plan as part of their tender response. This must support the T&E Strategy captured within this ITEAP and deliver the verification testing identified within the VVRM. Tenderers will however be encouraged to identify, where existing test data exists, efficiency in test delivery or other means which could be used to provide the necessary evidence at a reduced cost. Potential modifications to the V&V activities identified within this ITEAP will then be discussed with the tenderers during the ITN phase; such that the T&E programme can be delivered within acceptable cost and time boundaries.

f. **Post-Contract Award.** This phase will involve detailed planning of all T&E activities with the Prime Contractor and DLOD owners. The process for doing this will be developed in later iterations of this document and agreed before Main Gate.

59. Once complete, these milestones and processes will be included in the ITEA Schedule at Annex G.

60. **Trials Programmes.** Once the required evidence has been identified and the most likely method of evidence collection determined, the trials programmes can be defined. Each Trials Programme will consider the following areas:

a. How combined testing could be used to generate a more efficient trials programme;

b. How trials can be planned to build upon evidence already collected and evaluated, enabling confidence to be built up in stages and preventing system level tests being initiated before individual elements have been confirmed as successful. This process is known as Incremental Assurance;

c. How elements of the system identified as a risk are tested to increase the confidence of the delivery. This will form part of the wider D-JFI risk management process.

61. **Test and Evaluation Organisation.** The Test and Evaluation Organisation will be subordinate to the Acceptance Organisation and will be led by the D-JFI ITEA Manager, through the ITEA WG. The T&E process will be managed through the ITEA WG. Individual test organisations including RA TDU, the Prime Contractor and sub-contractors will be subordinate to the ITEA WG. Figure 5 shows the draft Test and Evaluation Organisation.

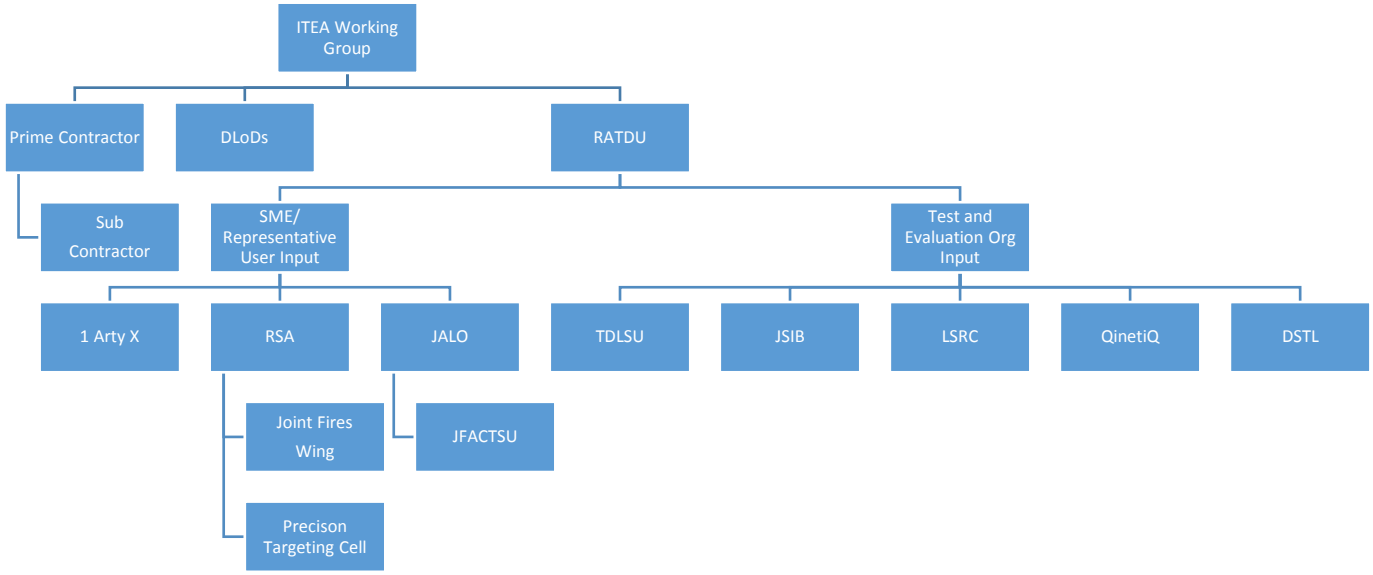

Figure 5: Test and Evaluation Organisation chart

62. **Role of RA TDU.** The role of RA TDU is to support the PT throughout the acceptance testing of the D-JFI system. RA TDU should be involved throughout the Project, including during

the initial design phase where they can provide valuable Subject Matter Expertise (SME) to the contractor. Subject to contractual arrangements.

63. **Factory Acceptance Tests (FAT).** RA TDU will provide SME support by witnessing contractor FAT, and attendance at design reviews. RA TDU will provide the following support to the FAT programme:

a. The Contractor will develop the FAT plan. RA TDU will then provide comment on the test plan as an ITEA WG member;

b. RA TDU will attend the Test Readiness Review;

c. The Contractor will run the trials, analyse the results and draft the FAT report.

d. RA TDU will then provide comment on the FAT report as an ITEA WG member.

64. **Systems Acceptance Tests (SAT).** RA TDU will provide the following support to the SAT programme:

a. RA TDU will be available to support the contractor to develop the SAT plan. Responsibility for defining the test plan and booking test facilities will be that of the supplier. The authority retains the right to amend a test plan and/or location.

b. The Prime Contractor will run the trials, analyse the results and draft the SAT report.

65. **User Acceptance Test (UAT).** RA TDU will plan, run and report on the results from the UAT. The Prime Contractor will be able to comment on the UAT Report.

66. **Test and Evaluation Responsibilities.** This section describes the current assumptions on responsibilities for discrete aspects of the test and evaluation process. It should be noted that this will need to be negotiated with the selected Prime Contractor and formally captured within the contract placed with them. The Prime Contractor is expected to:

a. Manage trials and the trials programmes up to and including FAT;

b. Provide the Trials Manager and test forms for these tests (to be approved by MOD);

c. Collect evidence and prepare it for ITEA WG assessment, for these tests;

d. Book non-MOD facilities and request MOD facilities, for these tests; and,

e. Manage sub-contractor trials.

67. Where trials are designated as Prime Contractor led, but are held at MOD facilities, the Prime Contractor retains responsibility for the trial, but the MOD retains responsibility for the management of the facility. The MOD is to:

a. Provide oversight and assurance;

b. Provide the Acceptance Officer; and,

c. Provide GFA.

68. The MOD retains the right to attend and view sub-contractor trials. The notice period will need to be agreed with the Prime Contractor.

RESOURCES

69. This section describes the current assumptions regarding responsibilities for resourcing during the T&E process. It should be noted that this will need to be agreed with responsibility authorities, including the selected Prime Contractor, and captured within formal agreements with them. Overall responsibilities for the running of individual Test Events are identified within this plan and at Annex I. The ITEA Manager will identify and document the various responsibilities as the capability to be delivered at each AM is agreed and the test plans to achieve each milestone mature.

Manpower

70. The authority responsible for running the test (Annex I) will be responsible for providing the required manpower. Witnessing authorities will provide their own manpower. Any requirement to provide Army personnel in support of trials will initiated by the PT and co-ordinated by RA TDU using the Scientific Support to Experimentation and Trials (SSET) process[6]. Existing planned exercises such as Ex BOLD QUEST may be suitable for development and testing activities, and participation in these exercises will have to be requested by the responsible authority. Significant notice and planning will be required for such trials, and RA TDU should be consulted at the earliest opportunity. Whilst RA TDU involvement at trials within the UK is covered under normal procedures; however, the D-JFI PT will be required to cover costs where attendance is required outside the UK.

Facilities.

71. The authority responsible for running the test (Annex I) will be responsible for providing the required facilities. Where the Prime Contractor requires use of MOD facilities, or other GFA, this should be identified within their T&E Plan and agreed at Contract Award. The MOD will then be responsible for arranging and providing all GFA facilities as requested.

Equipment and Logistics.

72. The Prime Contractor shall be responsible for providing all equipment and associated logistics support for trials that is within the scope of the contract. The MOD is responsible for providing and supporting GFA including equipment for integration which is outside of the contractor's responsibility (i.e. DAGR, DETL etc.).

[6] At least 6 months notice is required to arrange manpower from the Field Army.

Budgets

73. Costs for T&E activities will be identified during planning and must be budgeted for with each authority's plans.

GFA

74. The ITEA WG are responsible for early identification of any GFA required for each AM across all DLODs. Once identified, the GFA required to support T&E will be captured in the GFA plan. There are likely to be additional non-equipment DLOD GFA requirements that will need to be identified and resourced accordingly (e.g. frequencies, crypto, manpower, training facilities etc.).

Locations

75. Trials locations will be confirmed as a part of the T&E plan. Trials locations could include Prime or sub-contractor premises, standard training areas such as Salisbury Plain Training Area (SPTA), MOD controlled facilities such as Boscombe Down (Environmental Testing) or Corsham (Sensor testing), or other locations that are agreed in the Test Plan.

PROJECT INTERDEPENDENCIES

GFA

76. This project has critical dependencies on a number of GFA elements, as per the project scope. In particular, one of the KURs falls upon BATCIS Project Team to provide the bearer communications. An understanding and agreement of what capability BATCIS will be able to provide and when, will be critical to capability development and integration.

77. The GFA Manager is responsible for generating a detailed roadmap of the planned delivery of all required GFA. An initial understanding of this is at Annex D. However, this will be updated as the project progresses and need to be baselined and agreed by stakeholders by Main Gate. In order to co-ordinate this, GFA providers will need to be represented at ITEA WG and at the D-JFI CIWG. A summary of these is included in Table 5 below.

Internal Business Agreements (IBAs)

78. The ITEA Manager is responsible for ensuring IBAs are developed between all project teams where any interdependency exists, in order to provide a clear understanding of what resources and capability will be provided and when.

Dependencies and Interfaces

79. D-JFI has a complex dependency relationship with numerous hardware and software projects that will be provided as GFA. The assumptions on those dependencies and interfaces being provided by the Contractor and as GFA are summarised in Table 2 below.

Provided by D-JFI Prime Contractor

Provided as GFA

Ser	Function	Description	Prime Contractor Responsibility
1	[redacted]	[redacted]	[redacted]
2	[redacted]	[redacted]	[redacted]
3	[redacted]	[redacted]	[redacted]
4	[redacted]	[redacted]	[redacted]

	Provided by D-JFI Prime Contractor
	Provided as GFA

Ser	Function	Description	Prime Contractor Responsibility
5			
6			
7			Provide for JTAC and TACP users
8		Provides conformation of	Provide for users
9		Used to	Provide for users only
10	Power and data management	Integrated power management and data concentration for different components of the D-JFI system	Integrate for all configurations with the
11	User Interface Device	Ruggedized UID for the user to provide a data connection from D-JFI to the communication infrastructure.	Provide and integrate for configurations only.
12	Man Carried User Display Terminal (MCUDT) - (Panasonic FZ-M1 Mk2)	Ruggedized tablet issued to the	Integrate with configuration only.
13	Software	Software suite to enable users to generate	Provide and integrate for JTAC and TACP configurations

	Provided by D-JFI Prime Contractor Provided as GFA		
Ser	**Function**	**Description**	**Prime Contractor Responsibility**
		[redacted] This software should have the same user interface as the [redacted] Software	
14	[redacted] Software	Software suite to enable users to [redacted] This software should have the same user interface as the [redacted]	Provide and integrate for [redacted] configuration only
15	[redacted]	[redacted]	Integrate for all configurations
16	[redacted]	[redacted]	Integrate [redacted] configuration only
17	[redacted]	Allows the user to [redacted] messages	Integrate all configurations

	Provided by D-JFI Prime Contractor
	Provided as GFA

Ser	Function	Description	Prime Contractor Responsibility
18	[redacted]	Provision of [redacted] communication infrastructure. The [redacted] will be issued the [redacted] tablet User Interface Device (UID) which will connect to the [redacted]	Integrate [redacted] configuration only
19	[redacted]	Replaces [redacted] for the provision of voice and data communications infrastructure. [redacted].	Integrate [redacted] configuration only
20	[redacted])	Capable of both [redacted] radio communications. Used as a standalone system for voice communications or connected to the [redacted].	Integrate [redacted] configurations only
21	Bowman VHF Radio	Issued to the [redacted], used as a standalone system for [redacted] or connected to the [redacted]	Integrate [redacted] configuration only
22	VIRTUS	In-service body armour and load carriage system. Integration VIRTUS Man-worn power and data is not in scope.	All D-JFI User components will be carried in or on the VIRTUS load carriage system. Compliant, non-standard issue pouches will need to be provided by the Contractor
23	Vehicles	D-JFI's vehicle integration is limited to power supply and battery charging only - physical mountings and digital integration with vehicle architecture is not scope for D-JFI	Integrate power and battery supply for all configurations

Table 2: D-JFI Project Interdependencies

RISKS, ASSUMPTIONS AND LEARNING FROM EXPERIENCE (LFE)

ITEA Risk

80. It is imperative that all risks identified through the ITEA process directly inform wider risk management activity and are escalated accordingly. The overall responsibility for D-JFI Risk Management resides with the D-JFI Project Manager. ITEA risks are those which affect the achievement of Acceptance milestones. ITEA risks will be managed on ARM by the ITEA Manager. The D-JFI ITEAP Risks will be identified at Annex E.

Risk Reporting

81. ITEA risks will be managed by the ITEA Manager and risk owners identified in the Risk Register. The ITEA Manager will report Risk to the CIWG through the PM, who will be responsible for ensuring mitigation procedure are implemented via the ITEA WG. All risks identified that could have an impact on the delivery of any CM must be elevated to the CIWG or to the Programme Board.

Assumptions

82. All assumptions including those related to T&E will be recorded in the Master Data Assumptions List (MDAL). The MDAL should be regularly reviewed by the PM and endorsed by the D-JFI Project Head to ensure that all ongoing assumptions are correct.

83. The initial scoping of ITEA assumptions will take place as part of the pre-Main Gate ITEA planning and included at Annex F once complete. These initial assumptions will then be updated as the project matures.

Learning from Experience (LfE)

84. LfE aids in anticipating risks and issues and increases the probability of future success. Throughout the D-JFI acceptance process previously identified LfE from other projects will be utilised to ensure best practice.

85. LfE will also be captured from the Project in order to assist future projects. In order to achieve this the ITEA Manager will set up an ITEA Lessons Log to consider aspects where LfE could be useful to other projects, such as:

a. Test over-kill or under-kill;

b. Assessing the effectiveness of T&E risk identification and mitigation;

c. Checking the validity of the ITEA assumptions.

REFERENCES

1. DJFI_CONEMP_VER_2_Final dated 25 11 2014: D-JFI Concept Of Employment.

2. D-JFI_CONUSE_VER_0.31 dated 28 Mar 2017: D-JFI Concept of Use

3. CDCD (OS) 04_19_02_03_JFI Issue 3.1, dated 6 Apr 2016: D-JFI User Requirements Document.

4. FNC 53409/45315R Issue 1 dated 26 May 2017: Systems Requirements Document.

ABBREVIATIONS

AD	Air Defence
AM	Acceptance Milestone
AO	Acceptance Officer
Arty Sys	Artillery Systems
ASG	Acquisition System Guidance
AWG	Availability Working Group
BATCIS	Bowman and Tactical Comms And Information Systems
BC Tac Party	Battery Commanders' Tactical Party
BDA	Battle Damage Assessment
Bde	Brigade
CAS	Close Air Support
CDCS	Capability Directorate Combat Support
CD CS OS	Capability Directorate Combat Support Offensive Support
CDE	Collateral Damage Estimation
CIS	Communications Information Systems
CIWG	Capability Integration Working Group
CM	Capability Milestone
CM1	Capability Milestone Number 1
CONEMP	Concept of Employment
CWE	Common Working Environment
DACAS	Digitally Aided Close Air Support
DE&S	Defence Equipment and Support
DLOD	Defence Lines of Development
D-JFI	Dismounted Joint Fires Integrator
DOORS	Dynamic Object Oriented Requirements System
DT	Delivery Team
ELOD	Equipment Lines of Development
FAC	Forward Air Controller
FAT	Factory Acceptance Test
FOC	Full Operating Capability
FSA	Full System Acceptance
FST	Fire Support Team
GFE	Government Furnished Equipment
GFA	Government Furnished Assets (GFA) includes Government Furnished Equipment (GFE), Services (GFS), Facilities (GFF), and Information (GFI)
IBA	Internal Business Agreement
IOC	Initial Operating Capability
ISD	In Service Date
ISTAR	Intelligence, Surveillance, Target Acquisition and Reconnaissance
ITE	Independent Technical Evaluation
ITEA	Integrated Test, Evaluation and Acceptance

ITEAP	Integrated Test, Evaluation and Acceptance Plan
ITN	Invitation to Negotiate
JALO	Joint Air Land Organisation
JFACTSU	Joint Forward Air Controller Training and Standards Unit
JFC	Joint Force Command
JFI	Joint Fires Integrator
JTAC	Joint Terminal Air Controller
KUR	Key User Requirement
LfE	Learning From Experience
LSA	Limited System Acceptance
LSD	Logistics Support Date
MG	Main Gate
MOD	Ministry of Defence
MOP	Measure Of Performance
OSD	Out of Service Date
PASE	Planning Assumption for Service Entry
PgB	Programme Board
PT	Project Team
RA	Royal Artillery
RAAT	Regular Army Assistance to Trials
RAF FP Wgs	Royal Air Force - Force Protection Wings
RACI	Responsible, Accountable, Consulted, Informed
RAMP	Requirements & Acceptance Management Plan
RFTD	Ready for Training Date
RM	Requirements Manager
SAT	System Acceptance Test
SME	Subject Matter Expert
SO1	Staff Officer Grade 1
SR	System Requirements
SRD	System Requirements Document
SRO	Senior Responsible Owner
SSUN	Single Statement of User Need
STA	Surveillance and Target Acquisition
T&E	Test and Evaluation
TBD	To Be Determined
TDU	Trials Development Unit
TEST PT	Trials, Evaluation Services and Targets Project Team
TNA	Training Needs Analysis
TO	Trials Officer
TORs	Terms of Reference
UAT	User Acceptance Trial
UOR	Urgent Operational Requirement
UR	User Requirements
URD	User Requirements Document

V&V	Verification and Validation
VVRM	Verification and Validation Requirements Matrix
WG	Working Group

DEFINITIONS:

5. **Acceptance Goals.** The Acceptance Strategy will identify the goals of Acceptance in the form of pan-Defence Lines of Development (DLOD) Capability Milestones (CMs) and Acceptance Milestones (AMs). It will show the route to acceptance of the capability.

6. **Acceptance Organisation.** This ITEAP defines the organisations and individuals involved with ITEA for the D-JFI Capability and defines their responsibilities.

7. **Acceptance Process.** The Acceptance Process will describe the methods that will be used, how Acceptance Arguments and Cases will be made, who will make decisions and how the organisation will be held to account.

8. **Capability Milestone (CM).** A pan-DLOD milestone which describes a stage in the introduction of operational capability. It will define a level of operational capability that can be delivered by the User at that point in time, and not an enabling input from a DLOD. An example of a Capability Milestone is Initial Operating Capability (IOC).

9. **Acceptance Milestone (AM).** A DLOD-specific milestone that contributes to the achievement of a CM. An example would be Limited System Acceptance of a particular equipment, which is an Equipment-LOD milestone that will provide input to a CM associated with the next stage of operational capability that will be delivered.

10. **Progressive Acceptance.** Progressive Acceptance is the progressive assurance through CMs, not progressive collection of evidence through the T&E process. D-JFI will likely use both concepts.

11. **Acceptance End State.** This is a milestone at which point the ITEA process ceases and the organisation behind it stands down. This will coincide with, or follow soon after, Full Operating Capability (FOC). Beyond this point any T&E, upgrades or modifications will be handled as an In-Service issue and not affect the declaration of FOC.

12. **Validation.** Has the right thing been built? Validation is a 'left side of the V[7]' activity, confirming that the system has been designed properly such that the delivered system satisfies the requirements expressed in the Contract SRD, which in turn have been validated to ensure they satisfy the URD.

13. **Verification.** Has the thing been built right? Verification is a 'right side of the V' activity, confirming that the delivered system has been correctly built, is robust and fully tested to prove that it will behave as designed under all defined operating conditions.

[7] The "V" refers to the Systems Engineering 'V' model, used to define the process of developing complex equipment.

ANNEXES:

Annex A – D-JFI Acceptance Milestone Progression

Annex B – D-JFI DLOD Deliverables and Interdependences

Annex C – D-JFI Stakeholder Matrix

Annex D – D-JFI Capability Roadmap

Annex E – D-JFI ITEA Risks

Annex F – D-JFI ITEA Assumptions

Annex G – D-JFI Schedule

Annex H – D-JFI Acceptance Meetings

Annex I – D-JFI Verification and Validation Requirements Management Plan and Matrix