**Annex A to FsASTC/00111**
**Dated: 29 September 2015**

# Flight Simulation and Synthetic Trainers (FsAST PT)

# Statement of Work

## for the

## C-17 Interim Training Solution

## Issue 4

## Dated 29 September 2015

## Purpose

1. The purpose of the Statement of Work (SoW) is to set out the responsibilities of the Contractor during the performance of the C-17 Interim Training Solution Contract – FsASTC/00111 to be delivered at the Boeing International Training Centre (ITC), Farnborough (referred to as the 'Interim Training Solution' in the remainder of this SoW).

## Definitions

2. The following definitions apply to the SOW:

a. **Preliminary Design Review (PDR)** - is defined as the joint Authority/Contractor review of the top-level design of the component parts of each of the courses required to be delivered under the contract. This is to include, but is not limited to, courseware, sortie profiles, student and instructor course notes, databases, Computer Based Training (CBT) material etc.

b. **Critical Design Review (CDR)** – is defined as the joint Authority/Contractor review of the detailed design of the component parts of each of the courses required to be delivered under the contract. This is to include, but is not limited to, courseware, sortie profiles, student and instructor course notes, new and existing databases, CBT material etc.

c. **Conditional Acceptance (CA)/Ready for Training (RFT)** – is defined as acceptance by the Authority that necessary testing/demonstration has been conducted on as aspect of the training service to enable the Authority to deem that any given aspect performs sufficiently well to allow training to begin. Albeit this may be with outstanding Acceptance Deficiency Reports (ADRs) that do not have a significant impact upon training. It shall be the Contractors responsibility to resolve the ADRs to the satisfaction of the Authority before final acceptance can be completed. In the case of equipment testing may include, but is not limited to, agreed elements of the Contractors Acceptance Test Plans (ATPs) and/or Automatic Test Guides (ATGs). In the case of courseware this will include demonstration and delivery of the material in question (course content, airfield databases, simulator scenarios etc) such that it can be witnessed and validated by the Authority Subject Matter Experts (SMEs). The validation activity shall confirm that the training courses in question are fit for purpose. The Authority will be the final arbiter on the acceptability of the training service for conducting training.

d. **Final Acceptance** – is defined as acceptance by the Authority that all requirements of the System Requirements Document and this Statement of Work have been completed and all courses within the Normalised Training Requirement can be delivered. Any exceptions raised during the CDR/CA assessments will have been resolved to the satisfaction of the Authority.

e. **Obsolescence** – is defined as the loss, or impending loss, of manufacturers and/or suppliers of services, items or raw materials. For the purposes of the training service this is to be interpreted as the loss, or impending loss, of

manufacturers and/or suppliers of services and equipment required ensuring continued operation of the training service. Obsolescence management and its associated costs are to be the sole responsibility of the Contractor under the Contract.

f. **Courseware** – is defined as any element of the overarching course structure necessary to deliver any of the prescribed courses. This includes but is not limited to: instructor and student notes, presentation materials (powerpoint etc), simulator scenarios, simulator databases/datasets, CBT material etc.

**Background**

3. The Authority requires an enhancement to both aircrew and ground crew C-17 training. This enhancement must ensure that coherency with the USAF training baseline is retained whilst providing additional training which will bring C-17 training into line with other Royal Air Force (RAF) Air Mobility Force (AMF) aircraft. This uplift in training is referred to as the "Normalised Training Requirement" (NTR). The specific instructional requirements for each of the courses to be delivered are defined in detail within Appendices B to I and K to this Statement of Work. The enhancement includes but is not limited to:

a. An increase in the number of hours received during pilot currency training and the transition to true quarterly training.

b. Crew Resource Management (CRM) training for Pilots and Loadmasters

c. Pilot Instrument Simulator Sortie (ISS)

d. Loadmaster Currency and Interior Safety Inspection (ISI)

e. Engine ground running courses for ground crew

f. A Pilot Applied Phase course.

g. A Co-pilot to Captaincy course.

h. Flight Instructor (FI), Role Instructor (RI) and Instrument Rating Examiner (IRE) Training.

i. Pilot Refresher training for previously qualified personnel.

j. Pilot Initial Qualification (PIQ)

k. Avionic Initial Qualification (Av IQ)

l. Mechanical Initial Qualification (Mech IQ)

m. Overfly (to recover failing students)

n. Additional airfield databases (including [REDACTED], [REDACTED] and [REDACTED] airfields along with [REDACTED] Military airfield [REDACTED] to be used for cold weather operation)

**Constraints**

4. Due to the urgent need to introduce some elements of the NTR it is essential that training delivery begins as soon as possible. The Contractor should note this constraint and develop a project plan detailing the dates when each course will be developed, accepted, and ready for training for submission. In the future, courses will include scenarios utilising the new airfields to be generated by this requirement ([REDACTED]etc). The need to include these airfields in training should not delay initial delivery of the training course. Alternative airfields are to be agreed with the SMEs to allow training to begin, with the Contractor providing a full list of all available airfields on the system to the authority upon Contract Award. The new airfields may then be used in the relevant scenarios once they have been accepted by the Authority. The following courses Pilot IQ, Avionic IQ, Mechanical IQ, Pilot Area Navigation Retro, Senior Officer Refresher and Loadmaster Refresher will not be deliverable from the commencement of this contract, with delivery subject to BDUK achieving the following conditions:

a. Pilot IQ course - BDUK are to receive formal accreditation of this course by the USAF which will be followed by Authority acceptance subject to the Authority issued PDR/CDR process (appendix J).
b. Avionic IQ course - Acceptance of this course will be subject to the Authority issued PDR/CDR process (appendix J).
c. Mechanical IQ Course - Acceptance of this course will be subject to the Authority issued PDR/CDR process (appendix J).
d. Pilot Area Navigation Retro course - Acceptance of this course will be subject to the Authority issued PDR/CDR process (appendix J).
e. Senior Officer Refresher course - Acceptance of this course will be subject to the Authority issued PDR/CDR process (appendix J).
f. Loadmaster Refresher course - Acceptance of this course will be subject to the Authority issued PDR/CDR process (appendix J).

**Working Arrangements**

5. To avoid misunderstanding of the Authority's requirements for the Interim Training Solution the Authority intends to work closely with the Contractor in an open and transparent working arrangement. This working arrangement is particularly relevant to the management of risk that could adversely affect the successful acceptance or ongoing delivery of any of the training courses or databases. The Authority intends to hold joint risk sessions which will form part of the quarterly training review meeting and to agree the ownership of risks, which will be based on the principle that the organisation best able to manage a risk will accept ownership of the risk. Early identification of risks and issues affecting the Contract will ensure prompt action to mitigate and resolve risks and issues.

**Project Management Requirements**

6. The following plans are to be submitted in final within 4 weeks of Contract Award and are to be used in the delivery of the Contract requirements:

a. A Project Management Plan detailing the proposed work programme and timescales for development, acceptance and delivery of new courses and additional airfield databases noting the Contractors requirements for any Authority provided SME and the requirement for the provision of Government Furnished Assets (GFA) (if required). The plan shall include a project schedule showing the activities required to develop and accept the new courses and databases. In addition, once the first tranche of courses have been confirmed, the Contractor is to provide a schedule of all training courses for the forthcoming training year. This schedule shall be updated as and when required and shall be issued to the Authority at the quarterly review meetings as a minimum. Access to the latest version of the training schedule shall be provided immediately upon request.

b. Risk and Opportunity Management Plan (ROMP). Detailing how risks and opportunities relating to the delivery of courses to the RAF shall be managed. The Contractor shall create and maintain a risk and opportunities register, the content of which shall be provided to the Authority and routinely reviewed at the Quarterly review meetings.

c. Integrated Test, Evaluation and Acceptance Plan (ITEAP). Detailing how the training equipment/instructors/training syllabus shall be tested, accredited and evaluated and to what periodicity. This plan shall not contradict the requirements of the C-17 interim training solution contract in any way.

d. Quality Management Plan. Detailing how quality will be managed at the facility. This plan must include a firm commitment on the part of the Contractor to maintain the relevant Quality Assurance (QA) certifications as required by the Interim Training Solution Contract/Statement of Work as defined in paragraph 22c of this SOW.

e. Configuration Management Plan. Detailing how the configuration of the training service shall be managed. This shall include configuration of the training equipment, courses and all documentation associated with delivery of the training service. In particular the plan shall address how the Contractor shall maintain configuration control of the training devices relative to the aircraft build standard the United States Air Force (USAF) training device standard and the accreditation activity baseline. The plan shall also address how the Contractor intends to manage obsolescence updates/upgrades. It is essential that the Authority is able to demonstrate reasonable equivalence with USAF training throughout the term of the Contract. The Contractor shall make all necessary information regarding the configuration of the equipment, courses and instructors to allow an assessment of equivalence to be undertaken.

f. Environmental Management Plan. Detailing how the Contractor shall meet the relevant United Kingdom (UK)/European Union (EU) legislation and the requirements of this SoW.

g. Government Furnished Assets Plan. Detailing what GFA are required. The plan will also explain the quantity/quality of GFA required and the required dates in order to meet the schedule proposed in the project management plan.

h. Safety Management Plan (SMP)/Hazard Log. The SMP shall detail how safety shall be managed at the facility and shall include the latest version of the Hazard log for the facility and the C-17 training equipment/classrooms. This safety management plan shall be adhered to throughout the term of the Contract. Any proposed changes to the safety management processes undertaken at the facility shall be subject to Authority agreement during the term of the Contract. The Authority shall have a regular input to the Contractor safety meetings such that perceived hazards can be identified and added to the hazard log for mitigation by the Contractor. Further details on how the Authority is to be provided with assurance that hazards at the facility have been mitigated to a tolerable and As Low as Reasonably Practical (ALARP) level are contained in paragraph 18 of this SoW.

i. Documentation Management Plan detailing how document configuration control shall be maintained at the facility.

j. New database plan shall define to specification of the new databases to be provided to facilitate training delivery e.g. [REDACTED]etc. Annex A to the SoW defines the airfields to be modelled.

**Meetings**

7. The Contractor is to facilitate the following progress meetings at the locations shown against each meeting in accordance with Def Con 642. Wherever practical/possible PDR/CDR/Validation/Acceptance meetings for multiple courses should be combined to minimise the time spent travelling for Authority SMEs:

a. Inaugural meeting within 2 weeks of contract Award (Contractors premises).

b. Quarterly Progress Meetings throughout the period of the contract (Contractors training facility).

c. Preliminary Design Review (PDR) Meetings (Contractors training facility).

d. Critical Design Review (CDR) Meetings (Contractors training facility).

e. Conditional Acceptance (CA)/Ready for Training (RfT) Review Meetings (Contractors training facility).

f. Database and Dataset Review and Acceptance Meetings as required (Contractors training facility).

g. Ad Hoc meetings as required.

h. Final Acceptance Meeting for all Contract Requirements (Contractors training facility).

i. Project Environmental and Safety Committee (PESC) meetings (Contractors training facility).

**Agenda and Progress Reports**

8. The Contractor is to provide an agenda, and a progress report prior to all quarterly meetings[1] in accordance with Def Con 604, 2 weeks prior to all meetings, which is to include as a minimum:

a. Progress against the agreed training delivery /course development schedules.

b. Project Management and Timescales Issues.

c. Risk management activities and review of Risks, Issues and Opportunities.

d. Validation and Acceptance Testing and Reliability Demonstrations.

e. Performance against Key Performance Indicators (KPI) Matrix for the preceding Quarter and any known service availability issues for the forthcoming quarter.

f. Forward plan (courses scheduled for the remainder of the Authority's Financial Year (FY)).

g. Health and Safety (including accidents, incidents and near misses).

h. Safety, Environmental and Quality.

i. Security.

j. Obsolescence issues and other risks to training delivery going forward.

k. Finance and Commercial.

9. The Contractor is to provide monthly written reports to the Authority Project Manager, which are to include as a minimum:

a. Progress against the agreed course development schedule (if applicable).

b. Risks/Issues that have arisen since the last report or are ongoing.

[1] A Progress Report is not required for the Inaugural meeting.

c. Other significant issues not yet reported to the Authority.

10. Draft minutes for all meetings are to be provided to the Authority Project Manager within 2 weeks of the date of meeting and issued within one week of the minutes being agreed with the Authority Project Manager.

**Accreditation of the Training Service**

11. The training service shall undergo an initial accreditation process as recorded in the C-17 Safety Case report International Training Centre (ITC) Farnborough dated 20130404. To support this activity Boeing Defence UK (BDUK) shall provide all evidence and documentation as deemed necessary by the Authority to accredit the facility and assess equivalence of the training provided at the ITC with that provided by the USAF. The accreditation process will include the training equipment, course syllabus and instructors. This accreditation process shall be repeated on at least an annual basis, but there is to be an opportunity for Authority SMEs to attend on a six monthly basis to review this evidence if requested. In exceptional circumstances there may be a requirement for additional reviews outside of this periodicity, for instance, following a protracted period of poor performance. The evidence required shall include, but is not limited to:

a. Evidence that the devices have been certified in accordance with the USAF simulator certification process which includes current Federal Aviation Authority (FAA) certification IAW FAA AC 120-40B or FAA AC 120-45B (for a Level 7 Flight Training Device) as applicable.

b. Documentation and physical examination of the devices to determine the Aircraft build/software standard upon which the devices are based. This will include an assessment of the device configuration and the version of the Central Integrated Processor (CIP) and Operational Flight Program (OFP) to ensure that is the same as the latest UK C-17 aircraft block/software standard.

c. Evidence of available simulator databases, models and airfields.

d. The training device history to demonstrate (where applicable) that the device is a standard production device equivalent with a USAF standard device. The evidence shall demonstrate that the Weapon System Trainer (WST) meets the USAF contractual system requirements as defined in SS-0253-C17ATS Rev C dated 1 Aug 2002 and the Prime Item Development Specification (PIDS) PIDS-0254-C17ATS recognising that the PIDS “Tailored for Export Prime Item Development Specification for the C-17 Weapons System Trainer” applies.

e. Evidence that the Hardware and Software Baseline of the Flight Simulation Training Devices is based on a USAF standard hardware and software baseline.

f. Evidence demonstrating any differences between the ITC training devices and the USAF standard devices upon which they are based.

g. Evidence that the devices have been certified in accordance with the Airplane Simulator Qualification Code of Federal Regulations (CFR), Title 14, Part 60 for a level C (and selected level D) compliant Flight Simulation Training Device initial and continuing qualification and use.

h. Evidence that the Air Vehicle System (AVS) has been certified in accordance with the USAF AMC Aerial Refuelling Airplane Simulator Qualification (ARASQ) Level C.

i. Evidence that the Operational and Functional Test Procedures have been successfully completed (Test Procedure #101 dated 8 Feb 2013)

j. Evidence that the Certification Test Procedure (Test Procedure #100 dated 8 Feb 2013) has been successfully completed for both independent and integrated AVS/Loadmaster Station (LS) modes.

k. Evidence that Approval Test Guides (ATGs) have been successfully completed and that the performance characteristics (e.g. airspeed/altitude/attitude, primary flight control response, control surface deflections, engine response etc) have been compared against corresponding C-17 aircraft flight test data and any deviations have been identified to and accepted by the Authority.

l. Full reports from the ACCESS Problem Report (PR) entry tool for each device to allow the Authority to review open problems to identify any training impact.

m. Access to the devices to conduct an operator assessment of the performance of the entire training service (Instructors, equipment, syllabus, facility). Continued accreditation will be dependent upon the devices performing in an equivalent manner to that currently in use with the USAF (if applicable) and that in the opinion of the Authority SME, they are suitably representative of the C-17 aircraft so as not to deliver negative training.

n. Continued accreditation of the ITC will be conditional upon BDUK notifying the Authority of any planned modification to any of the training devices at the facility. The Contractor shall provide a Training Impact Analysis to the Authority prior to the embodiment of any modifications. The Training Impact Analysis for any modification shall be provided to the Authority within a reasonable timescale to allow the Authority sufficient time to evaluate the modification and feedback to the Contractor prior to its embodiment.

o. Evidence that the Integrated Maintenance Procedures Trainer (IMPT) maintains configuration with that of the AVS and the WST #21 standard excluding visuals and motion elements. Deviations to this configuration are to be identified to the Authority for agreement.

p. Evidence supporting the configuration, build/software standard and acceptance of the “learning centre applications” including CBT, the Core

Integrated Processor (CIP) Trainer, Virtual Cargo Load Model (VCLM) and Portable Flight Planning System (PFPS).

q. Configuration control logs for all devices (hardware and software) and syllabi.

r. Instructor qualifications, currency, certification and Curriculum Vitae (CVs). The Contractor shall explain how it will recruit, train, qualify and re-qualify its instructors. The Authority shall have the right to conduct an assessment of the instructor's performance and where the standard of instruction is assessed to be unacceptable, the Contractor shall put in place corrective action to return the instruction standard to a level that is acceptable to the Authority.

s. Course syllabi, student/instructor guides and/or notes, sortie profiles etc. This shall include the training objectives for each course. The course objectives shall allow the Authority to continue to demonstrate equivalence with the USAF training objectives that are relevant to UK operation of the C-17 along with the UK specific training requirements and Basic Currency Requirements throughout the term of the Contract.

t. Boeing Aircrew Training System (ATS) procedures manual.

12. All courses shall be validated/accredited by the Authority and will follow a Preliminary Design Review (PDR)/Critical Design Review (CDR) acceptance process as defined in appendix J to the SOW. Courses shall not be delivered either in part or full until this has been achieved.

**Post-Installation Acceptance Testing**

13. The purpose of acceptance testing is to ensure that supporting elements required to deliver any given training course are satisfactory. This shall include but is not limited to databases and specific simulator scenarios which will be used to deliver training objectives.

**Service Availability**

14. The training service shall be available and equipment serviceable to deliver training in accordance with the agreed training schedule. The service shall be available to meet scheduled training requirements 95% of the time. The Contractor is to track the availability of the service and present this information at the quarterly reviews. In defining the performance mechanism for the Contract, the Contractor is to include a Key Performance Indicator which includes availability of scheduled training at a minimum of 95%.

**Technical Documentation**

15. The Contractor shall manage all Technical Documentation to support the service and shall ensure that the documentation is maintained to a standard that enables courses to be delivered. All data required to deliver courses developed under the Contract including, but not limited to, scenarios, course notes, training objectives, instructional specifications etc shall be made available on request. The

Contractor shall make all such documentation available in hard or soft copy within one month of a request from the Authority.

**Training Syllabus**

16. The Contractor shall allow and provide the appropriate training to enable Authority instructors to work alongside Contractor instructors to deliver training where sorties are to be delivered under Authority instruction.

**Security Accreditation**

17. The service will require accreditation to a protective marking of Official Sensitive. Under no circumstances is course information developed as part of this contract to be provided to another nation either in the form of Contractor led training or in document form (either hard or soft copy). The process of security accreditation will be overseen by the Authority. However, the Contractor is required to assist the Authority with the re-accreditation of the STE through liaison with the Authority SMEs and attendance at Authority Security Working Group Meetings, and other activities may be required.

**Personal Security Accreditation**

18. The Contractor shall conduct a Privacy Impact Assessment (PIA) IAW JSP440 part 5

**Obsolescence**

19. For the purposes of this Contract, the responsibility for maintaining availability of the training service rests solely with the Contractor. The Authority shall bear no responsibility for serviceability or availability of equipment, instructors or courseware. The Contractor shall be solely responsible for obsolescence management and shall maintain the equipment to the standard accepted and as defined in this SoW. Where, for reasons of obsolescence or modification of the aircraft standard it is no longer possible to maintain the accepted baseline, the Contractor must inform the Authority and seek re-accreditation of the device/courseware. Should the item in question fail to achieve re-accreditation then the Authority shall not be required to accept (or pay for) any training requiring use of that item.

**Safety and Environmental Management**

20. The Contractor is to comply with Def Stan 00-56 – Part 1 Issue 5 and relevant and current UK and EU legislation including but not limited to ISO 9001, ISO 14001, OHAS 18001, HSG 65, the Health and Safety (H&S) at work act, JSP 454, JSP 418, the Project Oriented Safety Management System (POSMS), Project Oriented Environmental Management System (POEMS) and the FsAST Safety and Environmental Management System (SEMS). The Contractor is to identify and manage all safety hazards associated with the operation of the training service, ensuring residual risks are reduced to Broadly Acceptable or Tolerable and As Low As Reasonably Practical (ALARP). The Contractor will be required to attend Safety Meetings which for routine business will be co-incident with the date of quarterly training review. Where specific safety concerns arise there may be a need for

additional meetings until these issues have been resolved. The Contractor will be required to provide such information as may reasonably be required to ensure that risks and hazards are managed effectively. The Authority shall be granted representation at the Contractors safety meetings and have the opportunity to raise safety concerns at these meetings. As the service provider the Contractor will be responsible for establishing safety management competence within the C-17 International Training Centre and maintaining that competence throughout the duration of the Contract. All safety related materials including documentation, plans, certificates etc shall be made available upon request for independent audit.

21. The Contractor shall assist the Authority in the development of a Part 1 Safety case prior to the Contractor producing and delivering a Part 2 (Design) and Part 3 (Operation and Support) Safety case and Safety Case Reports as defined within JSP 454, DefStan 00-56 Part 1 Issue 5 and the FsAST Safety and Environmental Management System (SEMS).

**Quality Management**

22. The Contractor shall maintain its Quality Management System in accordance with the applicable standards. The Authority is fully committed to ISO 9001:2008 and the Contractor shall be registered to this Standard to meet the Quality Management requirements of Ministry Contracts. For the purposes of the Contract, the following Quality Assurance Standards shall apply:

a. AQAP 2110 Edition 3 NATO Quality Assurance Requirements for Design, Development and Production. Certificates of Conformity (CoC) shall be provided in accordance with DEFCON 627

b. AQAP 2210 Edition 1 – NATO Supplementary Software Quality Assurance Requirements to AQAP 2110 shall apply.

c. A Deliverable Quality Plan is required in accordance with DEFCON 602A 12/06 and AQAP 2105 NATO Requirements For Deliverable Quality Plans Edition 2.

d. Concessions shall be managed in accordance with DEFSTAN 05-61 Part 1, Issue 5 - Quality Assurance Procedural Requirements – Concessions.

e. Any Contractor working parties shall be provided in accordance with DEFSTAN 05-61 Part 4, Issue 3 – Quality Assurance Procedural Requirements – Contractor Working Parties.

f. For guidance on the application and interpretation of AQAPs use AQAP 2009 Edition 3.

g. Where Government Quality Assurance (GQA) is performed against this contract it will be in accordance with AQAP 2070 Edition 2.

h. ISO 25051: 2014 Software Engineering – Software Product Quality Requirements and Evaluation (SQuaRE) – Requirements for quality of Commercial Off The Shelf (COTS) software product and instructions for testing.

**New Database Specifications**

23. The Contractor shall provide the new databases as defined at Appendix A to Annex A SOW (Serials 34, 35, 36 and 37) to the following visual database image resolution level of detail requirements:

a. **LOD 1 - Modeled Runway/Airport**: The Modeled Runway/Airport Area uses 1-meter imagery and include everything within 3 nautical miles (nm) of the centre of the runway. 2-D features will include runways, taxiways, parking areas, and surface markings for all airfields within the Database. 1-meter imagery and typical textures representing common materials, such as concrete or asphalt are used on the 2-D surface to provide high resolution landing cues. Buildings will be placed in the footprints shown in related high-resolution imagery. Night time traffic is simulated using moving light points located on roads within approach and departure zones and on 4-lane roads in the Airport Area.

b. **LOD 2 – Pattern Area**: The Pattern Area has 1-metre imagery and includes everything within 3 nm to 5 nm of the centre of the modeled runway/airport. Vertical relief features in this area are extruded from the imagery based on customer requirements. Types of vertical relief generally include but are not limited to buildings, large trees on final, fences under short approaches, reporting points, or other features unique to the airfield. Features in the Pattern Area have appropriate lighting (obstruction lights, floodlights, parking lot lights). Road features have light points for streetlights. The 1-metre imagery in the Pattern Area smoothly transitions to the 5-meter Outer Pattern Area. Nighttime traffic is simulated using moving light points.

c. **LOD 3 – Outer Pattern Area**: The Outer Pattern Area is designed to support height and velocity cues for climbs and descents into the pattern. The Outer Pattern Area has 5-metre imagery and includes everything within 5 nm to 20 nm of the centre of the modeled runway/airport. The 5-metre imagery fully accommodates normal and abnormal approach patterns. Culture lights are created from linear road features and urban aerial features. All airfields within this ring used for navigational reference only are simulated by asphalt strips for runways with appropriate edge lights and with an airport beacon if appropriate.

d. **LOD 4 – Transitional Area**: The Transitional area has a seamless transition between the 5-metre imagery of the Outer Pattern Area and the 10-metre imagery of the High Flight Area. The Transitional Area uses 5m imagery and includes everything within 20 nm to 25 nm of the centre of the modeled runway/airport. All airfields within this ring used for navigational reference only are simulated by asphalt strips for runways with appropriate edge lights and with an airport beacon if appropriate.

e. **LOD 5 – High Flight Area**: The High Flight area is designed to provide an earth-sky reference to support high flight and aerial refueling. The High Flight area

has 10-metre imagery and extends from 25 nm of the centre of the modeled runway/airport to the horizon. Geotypical texture is used in these areas if imagery is not available.

**SYSTEM REQUIREMENTS**:

| ID No. | Requirement |
|---|---|
| | **Information:** |
| **3** | Royal Air Force (RAF) C-17 Loadmaster Initial Qualification (IQ) Training including Aircrew Life Saving Equipment (ALSE) and specialist system level maintenance training are to continue under Foreign Military Sales (FMS) arrangements with the United States Air Force (USAF), RAF personnel being integrated into the existing USAF C-17 Aircrew Training System (ATS). |
| | **Synthetic Training Equipment (STE) Configuration & Compliance:** |
| **4** | The Contractor shall ensure that the training devices remain coherent with the current United States Air Force (USAF) aircraft Block standard, and configuration shall be maintained with any other future planned Block upgrades/modifications introduced during the Contract period. |
| **5** | The Air Vehicle Simulator (AVS) shall be a full motion simulator designed to meet FAA Level C+ standard, which must be Instrument Rating Test (IRT) certifiable and Night Vision Goggle (NVG) Training capable.<br><br>**Threshold**: The AVS shall meet FAA Level C+ certification as defined in FAA Advisory circular (AC) 120-40B) |
| **6** | The Loadmaster Station (LS) shall meet FAA Level C+ equivalence as defined in the FAA Advisory Circular (AC) 120-40B.<br><br>**Threshold**: The LS shall meet FAA Level C+ certification as defined in FAA Advisory circular (AC) 120-40B) |
| **7** | The Maintenance Training Device shall be a full-scale replication of the aircraft flight deck. It will be a high fidelity device embodying all the system capability of the Weapon Systems Trainer (WST) but without motion or external visuals. It will be used to assist aircraft maintenance technicians to better understand the systems within the aircraft and to learn both normal and failure mode operations of the integrated aircraft systems, including fault diagnosis and rectification.<br><br>**Threshold**: FAA Level 7 Training Device certification as defined in FAA Advisory Circular (AC) 120-45A |
| **8** | The system requires sufficient Computer Based Training (CBT) to support the training objectives as detailed in individual course specifications |
| **9** | The Training syllabus shall meet both the USAF training objectives relevant to UK operation of the C-17 and UK specific training requirements in line with the aircrew and maintenance Operating Performance Standards (OPS) and Formal Training Statement (FTS) requirements owned by Air Officer Air Mobility (AO AM) as the Training Requirements Authority. |
| | **Facility Availability:** |
| **10** | All courses provided to the Authority shall be conducted within the ITC's routine operating hours of Mon-Fri, 0700-1800, excluding Boeing Winter break and UK Public Holidays. |
| **11** | The AVS, LS and MTD shall be able to deliver training continuously throughout the ITC's routine operating hours. |

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| | **Threshold**: AVS can be used to deliver training continuously from 0700-1800<br><br>**Objective**: All the devices can be used to deliver training continuously from 0700-1800 |
| | **Overfly:** |
| **139** | **Overfly**<br><br>When required, the system shall allow for an overfly factor to be applied to all courses to recover failing students.<br>Where courses are conducted with multiple students, the use of overfly shall only be attributed to the failing student. Students who successfully complete a training event/sortie shall not consume any additional training days should they be required to participate in the recovery of a failing student. |
| | **Pilot Courses:** |
| **150** | **Pilot Initial Qualification course**<br><br>The system shall deliver Pilot Initial Qualification training – with 2 x students per course, which equates to 72 x Training Days (TDs) per course.<br>The USAF developed Aircrew Life Support Equipment (ALSE) training is also to be delivered as part of this course.<br>The course shall cover the objectives of the USAF Pilot Initial Qualification course: (UK 203 - C-17 Pilot Initial Qualification) and (D117132 - Aircrew Life Support Equipment Training) |
| **12** | **Pilot Applied Phase Course**<br><br>The system shall deliver Pilot Applied Phase training – with 2 x students per course receiving 10 x 3 hour AVS Sim events (Total 30 AVS hours per course), which equates to 20 x TDs per course.<br><br>The first 2 x 3 hour AVS Sim sessions per course (6 hours) shall be delivered and taught by an Authority RAF Flight Instructor (RAF FI) with the Contractor's instructor to act as simulator operator. The sim operator is to be available for the entire duration of these sorties plus 30 mins briefing time prior to the start of training.<br><br>The next 5 x 3 hour AVS Sim sessions shall be delivered and taught by the Contractors flight instructor.<br><br>The final 3 x 3 hour AVS Sim sessions (to include IRT and Sim Check) shall be delivered and taught by an Authority RAF FI with the Contractor's instructor to act as simulator operator. The sim operator is to be available for the entire duration of these sorties plus 30 mins briefing time prior to the start of training<br><br>The course shall cover objectives of the USAF CURRENCY TRAINING Courses:<br>(D129036 – Pilot Airland Continuation With ISS)<br>(D118023 – Pilot WST Evaluator)<br>(D129041 – Pilot Airland Continuation without ISS)<br><br>The course shall cover the objectives of the C-17 Defence Systems Approach to Training |

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| | (DSAT) Instructional Specification (ISPEC) at Appendix B to the SOW |
| **14** | **Pilot Annual Phase Course**<br><br>The system shall deliver Pilot Annual Phase training – with 2 x students per course, with each student pair undertaking 4 x phase events per annum with each phase event equating to 6 x TDs.<br><br>Phase events shall be evenly distributed throughout the year i.e. 1 phase event per student pair every 13 weeks (approximately).<br><br>Each phase event is to include 9 x WST hours x 4 phase events totals 36 WST hours per annum, to be delivered as 3 Sim sorties x 3 AVS hours per sortie as follows:<br><br>a; 8 x WST hours per phase event x 4 phase events totals 32 WST hours per annum for delivery of currency training objectives.<br>b; 1 x WST hour per phase event x 4 phase events totals 4 WST hours per annum for delivery of IRT, Sim/Ac Cat training.<br>Combined Total 36 WST hours per student pair per annum.<br>To be included within the above WST hours, are the following requirements:<br>a; Crew Resource Management (CRM) training courses, with 2 x Pilot students undertaking each CRM with 2 x ALM in the Loadmaster station (LS)<br>b; Annual Pilot Evaluations course (1 x evaluation per student), with RAF Flying Instructor carrying out the evaluation.<br>c; Annual Pilot Instrument Simulator Sortie (ISS) courses with 2 x students per course<br><br>Delivery of Pilot Phase training is to be undertaken by the Contractor's instructor. The exception to this is IRT and Sim Cat training sorties, which are to be delivered by the Authority RAF FI with the Contractor's instructor acting as simulator operator.<br><br>The course shall cover the objectives of the USAF CURRENCY TRAINING Courses:<br>(D129036 – Pilot Airland Continuation With ISS)<br>(D118023 – Pilot WST Evaluator)<br>(D129041 – Pilot Airland Continuation without ISS)<br>(D117197 – Crew Resource Management)<br><br>The course shall cover the objectives of the C-17 DSAT ISPEC at Appendix C to the SOW |
| **15** | **Co Pilot to Captain Course**<br><br>The system shall deliver Co Pilot to Captain Scenario training – with 2 x students per course receiving 4 x 3 hour WST sim events (Total 12 x WST hours per course), which equates to 8 x TDs per course.<br><br>Delivery of training to be undertaken by the Authority RAF FI. The Contractor's instructor shall act as simulator operator. |

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| | The course shall cover the objectives of the C-17 DSAT ISPEC at Appendix D to the SOW |
| **16** | **Instrument Rating Examiner Training**<br><br>The system shall deliver Instrument Rating Examiner (IRE) Training – with 1 x student per course receiving 2 x 3 hour WST sim events (Total 6 x WST hours per course), which equates to 2 x TDs per course .<br><br>Delivery of training to be undertaken by the Authority RAF FI. The Contractor's instructor shall act as simulator operator.<br><br>The course shall cover the objectives of the C-17 DSAT ISPEC at Appendix E to the SOW |
| **17** | **Flight Instructor Training**<br><br>The system shall deliver Flight Instructor (FI) Training – with 1 x student per course receiving 2 x 3 hour WST sim events (Total 6 x WST hours per course), which equates to 2 x TDs per course.<br><br>Delivery of training to be undertaken by the Authority RAF FI. The Contractor's instructor shall act as simulator operator.<br><br>The course shall cover the objectives of the C-17 DSAT ISPEC's at Appendix F and K to the SOW |
| **18** | **Role Instructor Training**<br><br>The system shall deliver Role Instructor (RI) Training – with 1 x student per course receiving 2 x 3 hour WST sim events (Total 6 x WST hours per course), which equates to 2 x TDs per course.<br><br>Delivery of training to be undertaken by the Authority RAF FI. The Contractor's instructor shall act as simulator operator.<br><br>The course shall cover the objectives of the C-17 DSAT ISPEC at Appendix G to the SOW |
| **19** | **Pilot Refresher Course**<br><br>The system shall deliver pilot refresher training with 1 x student per course. This course is designed to provide training to Executives and previously C-17 Pilot Initial Qualified (PIQ) qualified students.<br><br>Each course is to provide 8 x 3 hour WST sim events (Total 24 x WST hours per course), which equates to 10 x TDs per course including CBT.<br><br>The first 4 x AVS sessions per course (12 hours) shall be delivered and taught by the Contractor's Flight Instructor (CFI).<br><br>The remaining 4 x AVS sessions (12 hours) shall be delivered and taught by an Authority RAF Flight Instructor (RAF FI) and therefore only require the Contractor's instructor to act as simulator operator. The sim operator is to be available for the entire duration of the |

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| | sortie plus 30 mins briefing time prior to the start of training.<br><br>The course shall cover the objectives of the C-17 DSAT ISPEC at Appendix H to the SOW |
| **20** | **Senior Officer Familiarisation Course**<br><br>The system shall deliver senior officer re-familiarisation training – with 1 x student per course<br><br>This course is to provide 2 x 3hr WST events (Total 6 x WST hours per course), which equates to 2 x TDs per course.<br><br>Delivery of training to be undertaken by the Authority RAF FI. The Contractor's instructor shall act as simulator operator.<br><br>The course shall cover the objectives of the SOFC Requirements at Appendix I to the SOW |
| **157** | **Pilot Area Navigation Retro training Course**<br><br>The system shall deliver Pilot Area Navigation Retro training – with 2 x students per course.<br><br>The course is to provide 1 x 3 hour WST sim event (Total 3 x WST hours per course), which equates to 4 x TDs per course.<br><br>Delivery of training to be undertaken by the Contractor's instructor.<br><br>The course shall cover the agreed objectives from the C-17 RNAV DSAT ISPEC at Appendix L to the SOW . |
| **161** | **Senior Officer Refresher Course**<br><br>The system shall deliver Senior Officer Refresher training – with 1 x student per course. The course is to provide 1 x 3 hour WST sim event (3 x WST hours per course), which equates to 1 x TD per course.<br><br>Delivery of training to be undertaken by the Authority RAF Flight Instructor. The Contractor's instructor shall act as simulator operator.<br><br>All students must have undertaken the 2 day Senior Officer Familiarisation course, prior to undertaking this course.<br><br>The course shall cover the objectives of the C-17 Defence Systems Approach to Training (DSAT) Instructional Specification (ISPEC) currently under development. |
| **168** | **Controller Pilot Data Link Communications (CPDLC) Retro Course**<br><br>The system shall deliver Controller Pilot Data Link Communications (CPDLC) Retro training – with 2 x students per course. |

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| | The course is to provide 1 x 3 hour WST sim event (Total 3 x WST hours per course), which equates to 2 x TDs per course.<br><br>Delivery of training to be undertaken by the Contractor's instructor.<br><br>The course shall cover the USAF training CPDLC training objectives. |
| **Loadmaster Courses:** | |
| **21** | **Loadmaster Annual Phase Course**<br><br>The system shall deliver Loadmaster Annual Phase training – with 2 x students per course, with each student pair undertaking 4 x phase events per annum which equates to 4 x TDs per phase event.<br><br>Phase events shall be evenly distributed throughout the year i.e. 1 phase event per student pair every 13 weeks (approximately).<br><br>Each phase event shall include 2 x 3 hour Sim sorties (total 6 x hours) to be delivered as 2 x 3 hour simulator sorties presented as follows:<br><br>1. ITC Courses 351-353 inclusive delivered on the LS (3 x phase events x 3 hour simulator sorties).<br><br>2. ITC Courses 355A and 355B delivered either on the AVS or IMPT (4 x ISI events x 3 hour simulator sorties). Requirement to based upon delivery of 2 x Interior Safety Inspection (ISI) courses 355A and 2 x Interior Safety Inspection (ISI) courses 355B per student pair, per annum.<br><br>3. ITC Crew Resource Management course delivered on the LS. (1 x CRM event x 3 hour simulator sortie per student pair, per annum). The CRM event is a linked Sim, the ALMs will be in the LS, and the Pilots will be in the WST.<br><br>4. ITC Pilot Incapacitation course, led by ITC ALM instructor. (1 x annual event x 1 hour classroom session per student pair) To enable real time discussion and actions in the event of pilot incapacitation. The ITC Pilot Incapacitation course is expected to be mostly classroom based, led by the Contactor's instructor and is planned to make use of Contractor CBT and any spare capacity from other Loadmaster Annual Phase Course Sim sessions. Final content to be agreed with the Authority.<br><br>Combined total = 24 Sim hours per annum, per student pair (no Sim hours assigned to Pilot Incapacitation as this is classroom based).<br><br>Delivery of training to be undertaken by the Contractor's instructor.<br><br>The course shall cover the objectives of the USAF CURRENCY TRAINING Courses:<br>(D129034 – Loadmaster Airland Continuation),<br>(D117198 – Loadmaster Interior Safety Inspection)<br>(D117197 – Crew Resource Management)<br><br>The course shall cover the objectives of the C-17 Loadmaster DSAT ISPEC currently |

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| | under development. This course will not exceed the stated training hours above. |
| **165** | **Loadmaster Refresher Course**<br><br>The system shall deliver Loadmaster Refresher training – with 1 x student per course receiving 1 x 3 hour AVS/IMPT event and 2 x 2 hour AVS/IMPT events (Totalling 7 AVS/IMPT hours per course) plus 4 x 3 hour Loadmaster Station (LS) events of simulated training events per course), which equates to 15 x TDs per course.<br><br>Delivery of training to be undertaken by the Contractor's instructor.<br><br>The course shall cover the objectives of the C-17 Loadmaster Refresher DSAT ISPEC currently under development. |
| **Maintenance Courses:** | |
| **22** | **Ground Engine Run Initial Qualification (IQ) Course**<br><br>The system shall qualify maintenance staff to perform C-17 Aircraft Maintenance Engine Runs.<br><br>Each course to provide 4 x 3 hour Sim sessions (Total 12 hours per course), with 2 x students per course, which equates to 6 x TDs per course.<br><br>Delivery of training to be undertaken by the Contractor's instructor.<br><br>The course shall cover the Training Objectives from the USAF Ground Engine Run Initial Qualification Course (D117057) |
| **23** | **Ground Engine Run Annual Refresher Course**<br><br>The system shall provide annual refresher training for previously qualified C-17 Aircraft Maintenance Engine Ground Run personnel.<br><br>Each course to provide 2 x 3 hour Sim sessions (Total 6 hours per course), with 2 x students per course, which equates to 4 x TDs per course.<br><br>Delivery of training to be undertaken by the Contractor's instructor.<br><br>The course shall cover the Training Objectives from the USAF Ground Engine Run Annual Refresher Course (D117059) |
| **24** | **Ground Engine Run Assessor Course**<br><br>The system shall deliver a course to qualify maintenance personnel to perform duties of C-17 Aircraft Maintenance Engine Run Assessor.<br><br>Each course to provide 2 x 3 hour Sim sessions (Total 6 hours per course), with 2 x students per course, which equates to 4 x TDs per course.<br><br>Delivery of training to be undertaken by the Contractor's instructor.<br><br>The course shall cover the objectives of the USAF Ground Engine Run Assessor course |
| **154** | **Avionic Technician Initial Qualification Course** |

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| | The system shall deliver a course to qualify Avionics Technicians to perform their duties on the C17.<br><br>Each course shall consist of 8 x students with the course delivered over a 10 day duration, which equates to a total of 40 x TDs per course.<br><br>The training package shall include Classroom-Based Teaching (CBT) and the use of the STE.<br><br>The first 8 days of the course shall be taught by the Contractor's Instructor. The 9th day shall be a summarised assessment conducted at the ITC by an Authority Instructor, supported by the Contractor's Instructor who shall also operate the STE.<br>The 10th day shall include re-testing of any failing student(s) under the direction of the Authority's Instructor. If no re-testing is required, then the Contractor's Instructor shall lead (an) innovative session(s) that teaches a level of understanding for the students in a particular area; the content of this lesson shall be varied between each course and content discussed with the Authority in advance of delivery. |
| **156** | **Mechanical Technician Initial Qualification Course**<br><br>The system shall deliver a course to qualify Mechanical Technicians to perform their duties on the C17.<br><br>Each course shall consist of 8 x students with the course delivered over a 6 day duration, which equates to a total of 24 x TDs per course.<br><br>The training package shall include Classroom-Based Teaching (CBT) and the use of the STE.<br><br>The first 5 days of the course shall be taught by the Contractor's Instructor. The 6th day shall be a summarised assessment conducted at the ITC by an Authority Instructor, supported by the Contractor's Instructor who shall also operate the STE. |
| **STE System Support:** | |
| **28** | The System shall supply Terrain Databases (TDBs) and models that incorporate the attributes necessary to support visual displays for out-the-window (OTW) and all appropriate sensors and aircraft equipment displays including Traffic Collision Avoidance System (TCAS) and Terrain Awareness and Warning System (TAWS). |
| **29** | The System shall be able to use Flight Safety International’s database of airfields |
| **30** | The System shall ensure that terrain data is correlated with the time of year and weather.<br><br>TDBs to be modelled to visually represent given geographic area for specific seasons of year.<br><br>To include ability to select / de-select 2D visual snow scenes; to include ability to select / de-select 3D snow banks on sides of runways, taxiways and parking areas, dependent on weather. |
| **31** | The System shall allow weather to be defined for a specific area.<br><br>**Threshold**: Weather can be manually specified for a given area and time of day within the TDB. |

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| | **Objective**: Weather can be automatically specified for a given area and time of day within the TDB. |
| **32** | The System shall ensure that the effect on all terrain databases, displays and sensors is coherent with simulated weather.<br><br>To include: two-dimensional (2D) visual scene changes to reflect snow and ice coverage; build-up of three-dimensional (3D) snow banks on edges of runways, taxiways and parking areas; effects of cloud and moisture on visual displays, radar and other sensors. |
| **Required Terrain Databases:** | |
| **33** | The System shall supply Terrain Databases (TDBs) and 3D models as per the USAF simulator build standard |
| **34** | The system shall provide a database which will include [REDACTED] airfield.<br><br>Development of all airfields listed within ID No's: 34, 35, 36 and 37 shall be developed in the following order:<br><br>1. [REDACTED]– 29th Sept 14<br>2. [REDACTED] – 5th Jan 15<br>3. [REDACTED] – 23rd Feb 15<br>4. [REDACTED] – 13th Apr 15<br>5. [REDACTED] – 1st Jun 15<br>6. [REDACTED] – 20th Jul 15<br><br>These airfields must be complete by the dates presented above in order to allow continued successful delivery of the courses listed at Serials 12 – 20 inclusive. |
| **35** | The system shall provide an [REDACTED] database which will include [REDACTED], [REDACTED] and [REDACTED] airfields |
| **36** | The system shall provide a database which includes [REDACTED] airfield ([REDACTED]) with tactical lighting (box plus 2).<br><br>**Objective**: A generic Natural Surface strip shall be included within the [REDACTED] airfield database. The generic strip is to be based upon the following dimensions: 3500FT length and 90FT width |
| **37** | The System shall provide a database which includes [REDACTED] airfield, [REDACTED].<br><br>The database shall have the ability to select / de-select 2D visual snow scenes; to include ability to select / de-select 3D snow banks on sides of runways, taxiways and parking areas, dependent on weather. |
| **Airfield Requirements:** | |
| **38** | Airfield models shall represent airfield lights, Approach, Strobe, Centreline, Taxi, Runway Edge, Touchdown Zone, Visual Approach Slope Indicator (VASI), Precision Approach Path Indicator (PAPI), Category 3 lighting and guidance, Obstructions and airfield beacons. |
| **39** | The System shall provide a generic civilian airfield that can be located at designated airfield sites within the overall TDB area.<br><br>Airfield capable of being placed at designated sites, as specified via the Instructor Operating Station (IOS). |

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| | Direction, length and slope of a single usable runway shall be capable of definition via the IOS |
| **40** | The System shall provide a generic military airfield that can be located at designated airfield sites within the overall TDB area.<br><br>Airfield capable of being placed at designated sites, as specified via the Instructor Operating Station (IOS).<br>Direction, length and slope of a single usable runway shall be capable of definition via the IOS. |
| **41** | The system shall provide the ability to conduct short, narrow runway training on a [REDACTED] |
| **42** | The System shall provide the capability to amend airfield lighting and markings from the IOS.<br><br>Markings to be capable of definition via the IOS, to include visual markings or lighting Box + 2<br>[REDACTED]<br>[REDACTED] |
| **Environmental (Weather) Requirements:** | |
| **43** | The System shall allow appropriate world-wide weather effects to be added to a scenario. |
| **44** | The System shall allow clouds to be added to any scenario.<br><br>Cloud layers and individual clouds to be generated from physics based models at any height, and of any size, with any density, at any time within the scenario |
| **45** | The System shall allow the simulation of world-wide weather effects during landing and take off.<br><br>This shall include: representative world-wide clouds, cloud layers and cloud types; representative frontal zones, storm clouds and lightning; correlation of frontal zones and clouds with radar.<br><br>This shall include: sensor performance and effects on instruments to vary in accordance with ambient conditions; provision of realistic effects on STE of rain, hail, snow, sleet, mist, fog, and clouds. |
| **46** | The System shall allow the simulation of dust, sand and snow clouds during landing and take off.<br><br>This shall include: training for realistic audio and visual effects of snow, ice, surface water, sand and gravel during landings and take-offs on contaminated runways or natural surfaces.<br><br>This shall allow values to vary dependent on wind and precipitation and on own ship engine settings. To include training for 'white-out' and 'brown-out'. |
| **47** | The System shall allow the simulation of effects including wind shear, turbulence and icing.<br><br>This shall include training for realistic effects of wind, wind shear, clear air turbulence and valley effects.<br>To include training for realistic onset, build-up, and dissipation of ice, including effects on aircraft performance and handling. |

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| | All effects shall be correlated with ambient weather conditions and geographic scenario. |
| **48** | The System shall allow lightning to be added to a scenario.<br><br>**Threshold**: This shall include provision of models of cloud-to-ground lightning, and intra-cloud lightning<br><br>**Objective**: This shall include models of all types of lightning |
| **49** | The System shall allow wind effects to be added to a scenario.<br><br>Wind effects shall include turbulence, wind shear and microburst's, selectable from the IOS.<br><br>Wind effects shall include turbulence, wind shear and microburst's, automatically linked to prevailing weather conditions and terrain |
| **84** | The System shall allow meteorological phenomena to be added to a scenario.<br><br>This shall include provision of the following, with all associated localised effects:<br>dust storms;<br>blizzards;<br>storm cells;<br>weather fronts;<br>models of tropical storms.<br><br>This shall include provision of models of all world-wide meteorological phenomena necessary for AM training. |
| **50** | The System shall allow precipitation to be added to a scenario.<br><br>**Threshold**: This shall include provision of a model capable of providing between 0 to 16mm of precipitation/hour<br><br>**Objective**: This shall include provision of a model capable of providing between 0 to 50mm of precipitation/hour |
| **51** | The System shall allow the setting of temperature within a scenario.<br><br>**Threshold**: Temperature shall be able to be set between -50 and +50 degrees Celsius, and varies appropriately with altitude<br><br>**Objective**: Temperature shall be able to be set between -60 and +60 degrees Celsius, and varies appropriately with altitude and location |
| **52** | The System shall ensure that the precipitation type is consistent with the temperature. |
| **53** | The System shall ensure that representative weather models are available for each of the training areas. |
| **54** | The System shall ensure that representative atmospheric models are available for each of the training areas. |
| **55** | The System shall provide the ability to simulate the impact of different types of weather.<br><br>The system shall be capable of modifying the weather from the IOS during a scenario. |
| **56** | The System shall be able to specify multiple types of weather at the same time and location in the same scenario. |

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| | **Threshold**: This shall include a minimum of 2 weather models<br><br>**Objective**: This shall include a minimum of 5 weather models |
| **57** | The System shall ensure that the effect of the weather model on 3D models is consistent.<br><br>**Threshold**: This shall include notification of when the surface of 3D models should change due to effects of the weather<br><br>**Objective**: Automatically changing of the surface of 3D models due to changes or effects of the weather |
| **58** | The System shall ensure that the effect of the weather model on the training system is consistent.<br><br>**Threshold**: This shall include notification of when the performance and visual representation in the training system should change based on weather<br><br>**Objective:** Automatic changing of the performance and visual representation in The System |
| **59** | The System shall change the visual models used based on the weather.<br><br>This shall include automatic changing of the visual models |
| **60** | The System shall allow the Instructor to change the weather during a scenario. |
| **61** | The System shall provide realistic visual representations of weather.<br><br>**Threshold**: This shall include realistic visual representations of rain, cloud and fog<br><br>**Objective**: This shall include realistic visual representations of all weather |
| **Other Factors:** | |
| **62** | The System shall provide the capability to adjust lunar lighting level to support NVG training. |
| **63** | The System shall provide world-wide magnetic variation. |
| **64** | The system shall provide full weather selection down to zero/zero with turbulence and windshear.<br><br>As per USAF standard training devices |
| **Integrated Test, Evaluation and Acceptance:** | |
| **65** | The Contractor is to provide an Evaluation and Accreditation documentation pack for review and approval by the Authority.<br><br>To include FAA certificates, Acceptance Test Procedures (ATPs) and Acceptance / Approval Test Guides (ATG) for each item of STE. To include ATPs for associated systems hardware and software. |
| **Configuration Control:** | |
| **66** | The System shall be under configuration control.<br><br>Compliance with Defence Standard 05-57 Issue 5 – Configuration Management of Defence Materiel. |
| **67** | The system shall provide an audit trail for all training |

| Security Standards and Compliance: | |
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| **68** | The System shall ensure that the Security Accreditation requirements iaw JSP 440 Part 8 and HMG IA Standard No 1, No 2 and No 5 are satisfied and ISO 27001 where approved.<br><br>The System shall achieve and retain accreditation to OFFICIAL SENSITIVE by the Authority and have a procedure that will allow adaptation of all related arrangements in the event that there are changes to Authority security requirements.<br><br>The system shall support the conduct of mission planning, briefing, training and de-briefing in a secure, approved training environment.<br><br>The system shall adhere to the guidance contained within all relevant security publications.<br><br>The RMADS shall be completed in accordance with agreed security standards.<br><br>The RMADS shall include, as a minimum, a description of the system, a fast-track questionnaire, a risk register (as required) and applicable/approved SyOps. |
| **69** | The following Joint Service Publications contain detailed security principles with which the system shall comply:<br>JSP440 - Defence Manual of Security, Version 3.9.2, Part 8<br>JSP541 - MOD Information Security Alert Warning and Response Policy and Procedures Manual<br>JSP480 - Defence Co-ordinating Installation Design Authority Manual of Regulations for Installation of Communication & Information Systems<br>JSP503 - Business Continuity Management Policy |
| **70** | The following documents contain additional security principles with which the system shall comply:<br>HMG IA Standard No 1 & 2 Issue 4.0 (Apr 12) – Information Risk Management<br>HMG IA Standard No 1 & 2 Supplement Issue 1 (Apr 12) - Technical Risk Assessment and Risk Treatment<br>HMG IA Standard No 5 Issue 5 (Apr 14) - Secure Sanitisation<br>Communication Electronic Security Group (CESG) Good Practice Guide (GPG) No 13 - Protective Monitoring<br>ISO 27001 |
| **71** | The System shall comply with recognised security principles.<br><br>In accordance with the latest issued HMG Security Policy Framework (SPF) Document |
| **72** | The System shall comply with Communications and Information Systems (CIS) security standards.<br><br>In accordance with the latest issued HMG Security Policy Framework (SPF) Document |
| **73** | The System shall ensure the security of its CIS network<br><br>In accordance with the latest issued HMG Security Policy Framework (SPF) Document |
| **74** | The Contractor shall note that all data is to be handled in accordance with legislation.<br><br>Data shall be managed in accordance with the Data Protection Act 1998 |

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| | And the Freedom of Information Act 2000 |
| **75** | The Contractor shall support the Authority in gaining the appropriate security accreditation to carry out training at the C-17 ITC, Farnborough<br><br>The Contractor shall be responsible for:<br>- the completion of all procedures necessary for security accreditation<br>- the delivery to the Authority of all documentation necessary for security accreditation |
| **Non Functional Requirements:** | |
| **76** | The system shall conform to extant UK and EU Health and Safety legislation including but not limited to the Health and Safety At Work Act (1974). |
| **77** | The system shall conform to the UK and EU Environmental legislation including but not limited to ISO 14001 and BS8900 and JSP 418 |
| **78** | The system shall conform to the MOD Sustainability policy.<br><br>The system shall comply with JSP 418 |
| **79** | Intellectual Property Rights (IPR) requirements shall be as shown in relevant contractual DEFCONs. |
| **80** | The system shall conform to MOD guidance for Project-Oriented Environment Management Systems (POEMS).<br><br>The system shall comply with JSP 815. |
| **81** | The system shall conform to MOD guidance for Project-Oriented Safety Management Systems (POSMS).<br><br>The system shall comply with DefStan 00-56 Part 1 Issue 5 Jan 2014. |
| **82** | The system shall conform to MOD Quality Management Policy.<br><br>The system shall comply with DefStan 05-57, ISO 9001.2005, ISO 9001.2008 and subsequent revisions as agreed, JSP 886, AQAP 2110, 2210, 2105, DEFCON 602A and DefStan 05-61, Part 4 (Contractor Working Parties). |
| **83** | The system shall ensure that requirements for Human Factors Integration (HFI) are addressed.<br><br>In accordance with relevant MOD Defence Standard 00-250 Human Factors for Designers of Systems |

# Acronyms

| Term | Definition |
|---|---|
| 2D | Two Dimensional |
| 3D | Three Dimensional |
| AC | Advisory Circular |
| ADR | Acceptance Deficiency Reports |
| ALARP | As Low As Reasonably Practical |
| ALM | Air Loadmaster |
| ALSE | Aircrew Life Support Equipment |
| AMC | Air Mobility Command |
| AO AM | Air Officer Air Mobility |
| AOF | Acquisition Operating Framework |
| AQAP | Allied Quality Assurance Publications |
| ARASQ | Aerial Refuelling Airplane Simulator Qualification |
| AT AAR | Air Transport Air to Air Refuelling |
| ATG | Automatic Test Guides |
| ATP | Acceptance Test Plans |
| ATS | Aircrew Training System |
| AVS | Air Vehicle Simulator |
| BDUK | Boeing Defence United Kingdom |
| CA | Conditional Acceptance |
| CBT | Computer Based Training |
| CDR | Critical Design Review |
| CFR | Code of Federal Regulations |
| CIP | Central Integrated Processor |
| CIS | Communications and Information Systems |
| CoC | Certificate of Compliance |
| COTS | Commercial Off The Shelf |
| CRM | Crew Resource Management |
| CVs | Curriculum Vitae's |

| Term | Definition |
|---|---|
| DSAT | Defence Systems Approach to Training |
| EU | European Union |
| FAA | Federal Aviation Authority |
| FFS | Full Flight Simulator |
| FI | Flight Instructor |
| FMS | Foreign Military Sales |
| FOI | Freedom of Information |
| FsAST | Flight Simulation and Synthetic Training |
| FTS | Formal Training Statement |
| FY | Financial Year |
| GFA | Government Furnished Assets |
| GQA | Government Quality Assurance |
| H&S | Health and Safety |
| HMG | Her Majesty's Government |
| IAW | In Accordance With |
| IMPT | Integrated Maintenance Procedures Trainer |
| IOS | Instructor Operating Station |
| IPR | Intellectual Property Rights |
| IQ | Initial Qualification |
| IR | Infra Red |
| IRE | Instrument Rating Examiner |
| IRT | Instrument Ratings Training |
| ISI | Interior Safety Inspection |
| ISPEC | Instructional Specifications |
| ISS | Instrument Simulator Sortie |
| ITC | International Training Centre |
| ITEAP | Integrated Test, Evaluation and Acceptance Plan |
| JSP | Joint Service Publication |
| KPI | Key Performance Indicator |
| LIQ | Loadmaster Initial Qualification |

| Term | Definition |
|---|---|
| LOFT | Line Orientated Flight Training |
| LS | Loadmaster Station |
| MOD | Ministry of Defence |
| MTD | Maintenance Training Device |
| NATO | North Atlantic Treaty Organisation |
| NM | Nautical Mile |
| NTR | Normalised Training Requirement |
| NVG | Night Vision Goggles |
| OFP | Operational Flight Program |
| OPS | Operating Performance Statement |
| OTW | Out-the-Window |
| PAPI | Precision Approach Path Indicator |
| PDR | Preliminary Design Review |
| PFPS | Portable Flight Planning System |
| PIA | Privacy Impact Assessment |
| PIDS | Prime Item Development Specification |
| PIQ | Pilot Initial Qualification |
| POEMS | Project Oriented Environment Management Systems |
| POSMS | Project Oriented Safety Management Systems |
| PR | Problem Report |
| PT | Project Team |
| QA | Quality Assurance |
| QFI | Qualified Flight Instructor |
| QMP | Quality Management Plan |
| QMS | Quality Management System |
| QS | Quality Standard |
| RAF | Royal Air Force |
| RFT | Ready for Training |
| RI | Role Instructor |
| ROMP | Risk and Opportunities Management Plan |

| Term | Definition |
|---|---|
| RTI | Routine Technical Instruction |
| SE | Synthetic Environment |
| SME | Subject Matter Expert |
| SMP | Safety Management Plan |
| SNE | Synthetic Natural Environment (cf TDB) |
| SOW | Statement of Work |
| SPF | Security Policy Framework |
| SQuaRE | Software Product Quality Requirements and Evaluation |
| STE | Synthetic Training Equipment |
| TAWS | Terrain Awareness and Warning System |
| TCAS | Traffic Collision Avoidance System |
| TDB | Terrain Database (cf SNE) |
| UK | United Kingdom |
| URD | User Requirements Document |
| USAF | United States Air Force |
| VASI | Visual Approach Slope Indicator |
| VCLM | Virtual Cargo Load Model |
| WST | Weapon Systems Trainer |