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Australian Government
Civil Aviation Safety Authority

ADVISORY CIRCULAR
AC 60-01 v2.0

Flight simulator and flight training device qualification (Subpart 60.B)

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Acknowledgement of Country

The Civil Aviation Safety Authority (CASA) respectfully acknowledges the Traditional Custodians of the lands on which our offices are located and their continuing connection to land, water and community, and pays respect to Elders past, present and emerging.

Artwork: James Baban.

Advisory circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.

Advisory circulars should always be read in conjunction with the relevant regulations.

Audience

This advisory circular (AC) applies to:

persons and organisations operating or proposing to operate Flight Simulators or Flight Training Devices qualified under CASR Subpart 60. B

- persons seeking appointment as an evaluation team leader under regulation 60.090 of the *Civil Aviation Safety Regulations 1998* (CASR).

Note: For information regarding flight simulation training devices (FSTDs) that are not (FFS) Flight Simulators or (FTD) Flight Training Devices see Operational Standards and Requirements---Approved Synthetic Trainers (FSD2)

Purpose

Subpart 60.B of the *Civil Aviation Safety Regulations 1998* (CASR) requires that Flight Simulators and Flight Training Devices undergo initial, recurrent and special evaluations.

The purpose of this AC is to provide operators and evaluation teams with guidance on the content, process and proformas relevant to conduct these evaluations to the level required to achieve the issuance of a qualification certificate.

This AC also provides guidance on the appointment of industry evaluation team leaders.

For further information

For further information or to provide feedback on this AC, visit CASA's contact us page.

Unless specified otherwise, all subregulations, regulations, Divisions, Subparts and Parts referenced in this AC are references to the *Civil Aviation Safety Regulations 1998 (CASR)*.

Status

This version of the AC is approved by the National Manager, Flight Standards Branch.

> **Note:** Changes made in the current version are not annotated. The document should be read in full.

Table 1: Status

Version	Date	Details
v2.0	January 2026	Major update of complete AC.
v1.1	November 2022	Administrative review only.
(0)	April 2003	This is the first AC to be issued on this subject.

Contents

1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this AC are listed in the table below.

Table 2: Acronyms

Acronym	Description
AC	advisory circular
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulations 1998*
ETL	evaluation team leader
FFS	flight simulator (from full flight simulator)
FSTD	flight simulation training device
FTD	flight training device
IOS	instructor operating station
MQTG	master qualification test guide
QTG	qualification test guide

1.2 Definitions

Terms that have specific meaning within this AC are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by 'grey shading'. Should there be a discrepancy between a definition given in this AC and the civil aviation legislation, the definition in the legislation prevails.

Table 3: Definitions

Term	Definition
acceptance test manual	The Acceptance Test Manual is the document or documents that that outline the acceptance test procedures that are carried out prior to initial evaluation. Typically, these procedures test the functionality and performance of many areas of the simulation that are not addressed in the QTG.
flight simulation training device	Flight Simulation Training Device is defined for the purposes of Part 61 as: a) a qualified flight simulator; or b) a qualified flight training device; or c) a synthetic trainer that is approved under Civil Aviation Order 45.0; or d) a device that meets the qualification standards prescribed by a legislative instrument under regulation 61.045; or e) a device that is qualified (however described) by the national aviation authority of a recognised foreign State.

Term	Definition
	For the purposes of this AC, the term 'Flight Simulation Training Device' means a flight simulator, flight training device, or synthetic trainer that is, or is intended to be, qualified or approved by CASA.
flight simulator	Flight Simulator is defined in CASR as, for a specific type (or a specific make, model and series) of aircraft: a) means a simulator that simulates the aircraft in ground and flight operations and comprises: (i) a full size replica of the flight deck of the aircraft; and (ii) a visual system providing an out of the flight deck view; and (iii) a force cueing motion system; and b) includes the necessary software and equipment, and the way that the equipment is interconnected. For this AC, a flight simulator (abbreviated to FFS) is a device that meets this definition and is qualified, or intending to be qualified, to the EASA/FAA Level A to D or ICAO Type VII standards.
flight training device	Flight training device is defined in CASR as, for a specific type (or a specific make, model and series) of aircraft: (a) means a device that: (i) simulates the aircraft in ground and flight operations to the extent of the systems installed in the device; and (ii) comprises a full size replica of the instruments, equipment, panels and controls in an open flight deck area, or an enclosed flight deck, of the aircraft; and (iii) does not, in every respect, simulate the aircraft in ground and flight operations; and (b) includes the necessary software and equipment, and the way that the equipment is interconnected. For this AC, a flight training device is a device that meets this definition and is qualified, or intended to be qualified, to the EASA Level 1 to 3 or FAA Level 4 to 7 standards.
functions and subjective tests	Functions tests are objective tests of systems using aeroplane documentation (i.e., does the system behave like it does in the aircraft). Subjective tests provide a basis for evaluating the flight simulator capability to perform over a typical training period and to verify correct operation and handling characteristics of the flight simulator.
operator	The operator of a flight simulator or flight training device means the person who is responsible for the maintenance and operation of the simulator or device.
qualification test guide	The QTG is the document that shows the performance and handling qualities of the FSTD agree, within prescribed limits, with those of the class or type of aircraft to which it relates. It also demonstrates whether regulatory requirements have been met. The QTG includes data relating to the performance and handling qualities of the aircraft, as well as the device, used to support the validation. It includes validation tests, and all functions and subjective tests. The 'Master QTG' is approved during initial qualification and is used as the basis for future testing.
synthetic trainer	For the purposes of this AC, a 'synthetic trainer' describes all FSTDs that are not flight simulators or flight training devices. These kinds of devices are regulated to Australian standards described in 'FSD-2'. Overseas, these kinds of devices are referred to as 'aviation training devices' by the FAA, and 'flight navigation

Term	Definition
	procedure trainers' or 'basic instrument flight trainers' by EASA. CASA is reviewing the use of the term 'synthetic trainer' to provide additional clarity.
user	The user of a flight simulator or flight training device means the person who uses the simulator or device in a training, testing or checking program.
validation tests	Validation tests are used to objectively compare flight simulator and aircraft data to ensure that they agree within specified tolerances.

1.3 References

Legislation

Legislation is available on the Federal Register of Legislation website https://www.legislation.gov.au/

Table 4: Legislation references

Document	Title
Part 60 of CASR	Synthetic Training Devices
Part 60 MOS	Part 60 Manual of Standards 2019
Part 141 of CASR	
Part 142 of CASR	
Regulation 60.060 of CASR	Quality system - operators other than Part 141 operators and Part 142 operators
Regulation 141.225 of CASR	Part 141 operators - quality system for flight simulation training devices
Regulation 142.270	Part 141 operators - providing personnel with operations manual
Regulation 142.275 of CASR	Part 141 operators - making and keeping flight training records

International Civil Aviation Organization documents

International Civil Aviation Organization (ICAO) documents are available for purchase from http://store1.icao.int/

Many ICAO documents are also available for reading, but not purchase or downloading, from the ICAO eLibrary (https://elibrary.icao.int/home).

Table 5: ICAO references

Document	Title
ICAO Doc. 9625	Manual of Criteria for the Qualification of Flight Simulation Training Devices

Advisory material

CASA's advisory materials are available at https://www.casa.gov.au/publications-and-resources/guidance-materials

Table 6: Advisory material references

Document	Title
AC 60-02	Flight simulator and flight training device user approvals

1.4 Forms

CASA's forms are available at http://www.casa.gov.au/forms

Table 7: Forms

Form number	Title
Form 1482	Application - Flight Simulators or Flight Training Devices Qualification Certificate (FSTDQC)
Form XXXX	FSTD - Compliance Declaration

2 Introduction

2.1 This AC explains how FFSs and FTDs are qualified under Subpart 60.B by providing operators with guidance relevant to the evaluations required for CASA to issue a qualification certificate. Information on user approvals for FFSs and FTDs, and for the qualification of non-Subpart 60.B FSTDs, can be found in other guidance documents.1

2.2 Since the early days of aviation there have been ground-based devices used to support flight training and checking. These vary in complexity from paper-based cockpit mock-ups through to high-fidelity training devices using actual aircraft parts and software to accurately replicate flight. More recently, training devices using virtual and augmented reality systems have become available.

2.3 Ground-based devices used to gain aeronautical experience towards a licence or qualification, including to replace training or checking sequences that would otherwise be conducted in the aircraft, require regulatory approval. Devices used for these purposes are commonly called 'Flight Simulation Training Devices' (FSTDs).

2.4 Broadly, the regulatory approval of FSTDs considers two aspects, which together provide the required training, testing and checking outcomes:

- *device qualification* (or device approval)

  This is about the device itself - its equipment, capabilities and its fidelity. Qualification is assessment of the device against an established and accepted standard, and of the quality system that supports the device to maintain that standard between formal evaluations. To gain and maintain device qualification, an initial evaluation and ongoing evaluations of the device are performed.

- *user approval* (or approval for a training, testing or checking *purpose*)

  This is about the use of a device for specific training or testing purposes. User approvals aim to ensure the required training outcomes are achievable in the specific device, and the risks of negative training are adequately addressed.

2.5 For *device qualification*, two different processes are used, depending on the complexity of device qualification and the risk of negative training associated with devices of that type. High fidelity devices, known as FFS and FTD, are qualified under Subpart 60.B of CASR. Lower fidelity devices (or those used for training where fidelity is less essential to training outcomes) are qualified under the 'synthetic trainer' process described in the Operational Standards and Requirements---Approved Synthetic Trainers (FSD2)

2.6 Sections 3, 4 and 5 of this AC discuss the three kinds of qualification processes and their associated administrative requirements:

- First is the *initial qualification* conducted to qualify a new device.
- Second is the *recurrent evaluation* conducted periodically to ensure the device maintains the required standard and to reissue the qualification.
- Third is the *special evaluation,* conducted on an as-needs basis, such as for modification, reactivation or relocation of a device.

2.7 Section 6 provides guidance on the composition of the evaluation team, with section 7 describing how the on-site evaluation is conducted. Section 8 explains the requirements and process for an industry member to be appointed as an evaluation team leader. Finally, Appendix A provides a sample qualification checklist.

[1] A list of the 'other guidance documents' will be included here on final publication,

3 The qualification process

3.1 Initial qualification

3.1.1 The initial qualification of an FFS or a FTD is conducted to allow a device to be used for regulatory training, testing and checking purposes for the first time. Preparation for an initial qualification is a significant undertaking, and for higher end devices requires specialist knowledge and expertise.

3.1.2 When considering introducing a new device, operators are requested to arrange a pre-application discussion with CASA. This will assist in ensuring the device is presented to CASA ready for qualification, and that a schedule for qualification events can be developed between CASA and the applicant. Requests for pre-application discussions should be made by email to fstd@casa.gov.au.

3.2 The application for qualification

3.2.1 To formally commence the qualification process, an applicant must submit to CASA a completed Form 1482 - Application for Flight Simulator or Flight Training Device Qualification Certificate. It is recommended that this form is completed as soon as approximate device delivery dates are known.

3.2.2 CASA will register the application and then provide the applicant with a fee estimate specifying the hours expected to be taken by CASA to qualify the device at the proposed level. This fee estimate is based on CASA's expectations that all documentation provided, and qualification assessments to be undertaken, will be satisfactorily prepared for immediate review. Further information on relevant fees can be found on the CASA website. The estimated fee must be paid before CASA will commence work on the application. If pre-application discussions haven't occurred, an application meeting will be arranged.

3.2.3 Form 1482 requires the applicant to propose three dates for key qualification events. These dates should reflect guidance provided during the pre-application meeting, and are subject to agreement with CASA:

- submission of the qualification test guide (QTG)
- commencement of on-site evaluation
- when the operator plans for training to commence (known as the device 'ready for training' date).

3.2.4 When planning the QTG submission and on-site evaluation dates, applicants are advised that CASA will need a minimum of 20 working days between submission of the final proposed QTG and the on-site evaluation to conduct its necessary activities.

3.2.5 When planning training, please note that device qualification certificates are not issued immediately upon completion of the on-site evaluation. Applicants should allow 5 business days for certificates to be issued for devices that are shown to meet the required standards. If the on-site evaluation identifies deficiencies or issues which require further engineering consideration, additional time will be needed.

3.2.6 Ensuring there is sufficient time for the conduct of the evaluation in accordance with standard timelines for evaluation of the device and the rectification of issues is the applicant's responsibility.

3.3 Submission of quality system

3.3.1 All operators of FFSs or FTDs qualified under Subpart 60.B are required to have a quality system that ensures the correct operation and maintenance.[2] The quality system covering the device is the responsibility of the device operator (rather than the user). Applicants are required to submit the quality system for approval as part of the application.

3.3.2 For Part 141 operators the quality system is required by, and described in, regulation 141.225 of CASR. Such operators should add, or amend an existing, quality system within the Part 141 operations manual through a Part 141 significant change application.

3.3.3 For Part 142 operators who only conduct training in FSTDs, a quality management system is required by regulation 142.270 of CASR and must be in accordance with regulation 142.275 of CASR. For Part 142 operators who also conduct training in aircraft, the quality system will be part of the operator's safety management system. In both cases, a significant change application should be processed.

3.3.4 For operators who do not also have a Part 141 or Part 142 certificate, the quality system is required to be in accordance with regulation 60.060 of CASR. Submission details should be discussed with the CASA flight simulation team (contactable via email at fstd@casa.gov.au).

3.3.5 As devices cannot be qualified until the operator's quality system is in place, CASA will not commence the off-site technical evaluation process (see section 3.6 of this AC) until the quality system has been reviewed and considered acceptable. Applicants are encouraged to provide the quality system, or amendments to the existing quality system, as early as possible.

3.4 Device installation and acceptance testing

3.4.1 Once the device is installed at the operator's site, the operator and manufacturer complete testing using a documented acceptance testing procedure covering flight deck layout, all simulated aeroplane systems, instructor operating station (IOS), engineering facilities, motion, visual system, and any other systems. CASA is not involved in this testing.

3.4.2 The purpose of this acceptance testing is to conduct thorough examination of the quality of simulation in all areas of flight and systems operation. As described by ICAO:

'..these procedures will test the functionality and performance of many areas of the simulation that are not addressed in the QTG as well as such items as the instructor operating station."[3]

3.4.3 This process includes conducting all qualification tests which are expected to comprise the master qualification test guide (MQTG).

3.4.4 At the end of the acceptance testing process, the operator **must** be satisfied that the device is fit for purpose and meets all aspects of the required standard prior to advancing to the next stage.

3.5 Applicant declaration and submission of MQTG

3.5.1 Once the device has been installed and acceptance testing is complete, the operator is required to complete Form XXXX - FSTD compliance declaration4 and submit the final proposed MQTG.

3.5.2 This form requires the operator to:

[2] Regulation 60.060 of CASR.

[3] ICAO Doc 9625, Appendix B s 1.1.

[4] Form currently under development, will be available on final publication of AC.

- declare that a documented acceptance testing procedure covering flight deck layout, all simulated aeroplane systems, IOS, engineering facilities, motion, visual system, and any other systems has been satisfactorily completed.
- confirm that the device meets the standard nominated for assessment, and that all tests required by the relevant standard for the qualification level sought have been satisfactorily conducted.

3.5.3 All tests must have been conducted after the simulator was installed, and within the 90 days prior to the on-site evaluation. These tests will be used to establish the MQTG which will be approved by CASA as part of the qualification activity and that will serve as the baseline for subsequent recurrent evaluations.

3.5.4 Where the operator identifies non-compliances that it believes are appropriate for acceptance by CASA using 'engineering judgment', these must be provided with the form, along with the engineering disposition and justification for consideration by CASA.

3.5.5 Due to workforce constraints, CASA will not conduct an evaluation activity if the final proposed MQTG and declaration are submitted less than 20 working days prior to the scheduled commencement of the on-site evaluation.

3.6 Desktop technical evaluation

3.6.1 Once the declaration and proposed MQTG have been received, CASA will conduct a desktop technical evaluation to determine if the proposed MQTG is compliant with the requirements and shows the device meets the applicable performance for the qualification level sought.

3.6.2 If the MQTG is not suitable (i.e., has tests that are outside tolerances or does not include all required items for the qualification standard) the discrepancies will be notified to the applicant for corrective action.

3.6.3 In most cases, if an unacceptable MQTG is provided then the scheduled on-site evaluation will be deferred. This is to give the applicant time to not only correct the technical deficiencies, but to investigate why its quality and internal systems did not ensure the device was presented in a state suitable for qualification and allowed an incorrect declaration of compliance to be made.

3.6.4 CASA will endeavour to reschedule the on-site evaluation as soon as possible after the acceptable MQTG is received and the applicant has addressed ineffective elements of the quality system. However, applicants should be aware that rescheduling delays may be significant and defer the device ready for training date.

3.7 On-site evaluation

3.7.1 The on-site evaluation involves an inspection of the device and completing a sample of the relevant QTG tests to verify device functionality and compliance with applicable performance requirements. A description of how these tests are conducted is in section 7 of this AC.

3.7.2 The on-site evaluation should not be seen as an opportunity to continue to work on the device to achieve the required standard. It is a confirmation exercise by CASA to validate the statements made by the applicant that the device is fully functional, sufficiently reliable, and is compliant with the required performance standard.

3.7.3 The duration of on-site testing varies with device complexity. As a guide, for devices simulating a single type, model or variant, an FAA Level 4 FTD will take approximately 1 day, while a Level D FFS will require approximately 4 days. Devices simulating multiple types, models or variants will require additional time. Generally, validation tests are conducted first and, should the device perform satisfactorily, are followed by function and subjective tests then any special assessments.

3.8 Post-evaluation activities

3.8.1 Following the on-site evaluation, if CASA is satisfied that the device meets the required qualification standard the simulator will be qualified at the relevant level consistent with regulation 60.020 of CASR and a qualification certificate issued.

3.8.2 If issues with the device remain, CASA may decide to:

- not qualify the device
- qualify the device at a lower level, impose limitations, or limit the period of validity, while remedial works are completed.

Note: See section 8 of this AC for more information on the concluding phases of on-site evaluations.

4 Recurrent evaluations

4.1 Subpart 60.B device qualifications have a validity period of 12 months from the date of issue, or a shorter period if specified in the qualification certificate.

4.2 Within this 12-month period, the operator must progressively perform all validation tests mentioned in the MQTG, and all functions and subjective tests within the current (and any planned) training program, or an equivalent sample approved by CASA[5].

4.3 Within 60 days prior to the expiry of a device qualification, an operator may ask CASA, using Form 1482, to conduct a *recurrent evaluation* of the device[6]. Recurrent evaluations conducted within the 60-day period will retain the same validity anniversary date (i.e. 12-months from the expiry of the current certificate).

4.4 Recurrent evaluations are conducted on-site, led by an evaluation team leader (ETL) who may be a CASA officer or an industry team leader nominated by CASA. Industry team leaders must hold an instrument of appointment under regulation 60.090 of CASR (see section 9 of this AC). Operators wishing to propose a specific team leader who already holds an approval under regulation 60.090 of CASR should indicate this on the application form.

4.5 Importantly, recurrent evaluations should not be viewed as an opportunity for the operator to identify and address any deficiencies. That is the function of the operator's quality system and ongoing fidelity requirements[7], which should be ensuring the device remains fit for purpose throughout the period between evaluations.

4.6 Instead, recurrent evaluations confirm the device continues to meet the required standards through a representative sample of the QTG tests and a review of the effectiveness of the operator's quality system. The evaluation assesses to both the standard to which the device was qualified, and the baseline results within the MQTG.

4.7 Recurrent evaluations for devices simulating a single type, model or variant are typically completed in one day and require the FFS or FTD to be available for this period. Devices simulating multiple types, models or variants will likely take additional days. The quality system is also evaluated for effectiveness during the evaluation, and operators should be ready to provide documentation including:

- a dossier outlining the previous 12 months usage, reliability and device ratings compared to performance targets, and any periods of downtime or significant unserviceability.
- a list of all open or in work defects with order of priority based on training requirements
- evidence that all QTG tests have been completed in the previous 12 months
- evidence that Function and Subjective test sequences have been performed at regular spaced intervals within the preceding 12 months
- any modifications to the training load or hardware changes to the device
- planned maintenance and load drops for the following 12 months

4.8 Similarly to initial evaluations, operators should be mindful that the renewed simulator qualification certificate is not issued immediately following the on-site evaluation. To avoid disruption to training, the recurrent evaluation should be scheduled with sufficient time before expiry of the previous certificate.

[5] As required by regulation 60.065 of CASR.

[6] As required by regulation 60.045 of CASR

[7] As required by regulation 60.065 of CASR.

5 Special evaluations

5.1 Following modification, relocation or reactivation, a *special evaluation* may be required. Special evaluations follow the process for an initial qualification but may involve a reduced scope. The need for a special evaluation, and its scope, will be determined by CASA. Special evaluations following significant modifications to a device are likely to be similar in scope to an initial evaluation.

5.2 A special evaluation is requested by submitting Form 1482. Operators considering simulator modifications or relocations are encouraged to contact the CASA flight simulation team early through fstd@casa.gov.au to determine the scope of a special evaluation.

5.3 Operators are reminded that:

- before making modifications to the equipment or software of a simulator that will change its characteristics, the operator is required to notify CASA[8])
- if an operator plans to deactivate, relocate, or reactivate a device, CASA must be notified ([9]), noting that the device qualification certificate ceases to be in force when the device is deactivated or relocated.
- any changes to the quality system resulting from modifications that require a special evaluation must be made prior to the evaluation.

[8] As required by regulation 60.070 of CASR.

[9] As required by regulation 60.080 of CASR.

6 Evaluation personnel

6.1 Composition of the evaluation 'team'

6.1.1 For each evaluation, a range of personnel are required. This section describes the roles required to conduct the on-site evaluation, and the skills and qualifications required of the participants.

6.1.2 The evaluation will be led by a CASA officer, or an industry ETL, who is an industry person with an instrument of appointment under regulation 60.090 of CASR (see section 9 of this AC). Other participants are provided by the flight simulator operator.

Note: CASA staff may also participate in any evaluation in an appropriate team member role.

6.1.3 The flight simulator operator should make additional staff available as required to support the conduct of the assessment and rectify any discrepancies.

6.2 Evaluation leader

6.2.1 For each evaluation with an on-site component, CASA will lead the assessment or appoint an industry ETL. The leader is responsible for managing the conduct of the evaluation, certifying the results achieved, and completing the required on-site evaluation report.

6.3 Flight simulation technical specialist

6.3.1 The flight simulation technical specialist is a person who is familiar with the operation and technical aspects of the flight simulator, as well as the scope and content of the simulator master qualification test guide (MQTG).

6.3.2 The flight simulation technical specialist should work closely with other technical staff from the flight simulator operator to facilitate required device tuning and where possible rectify defects found during the evaluation.

6.4 Specialist pilot

6.4.1 The operator's quality system is required to identify pilots who have the expertise to evaluate the simulator's performance compared to the aircraft. The specialist pilot is selected from the pilots identified in the quality system. Where these pilots are unavailable, the operator may propose alternatives to CASA.

6.4.2 The specialist pilot should be qualified on the aircraft type and have recent experience flying the aircraft type being simulated. Typically, a pilot with extensive experience in checking and training on the type is nominated.

6.5 Simulator operator

6.5.1 A training pilot, instructor, or other person who is familiar with the operation of the flight simulator as a training device, especially regarding operation of the IOS, should be included in the evaluation.

7 Conduct of on-site evaluation activities

7.1 Introduction

7.1.1 There are a variety of steps and tests to be undertaken during the on-site component of a device qualification. This section describes the principal considerations to be addressed.

7.2 Device safety

7.2.1 Device safety inspection involves assessment of the FFS or FTD safety features such as escape ladders and emergency stop functions. The inspection will also review the device safety briefing that will be provided to users.

7.3 Validation tests

7.3.1 FFS or FTD performance and system operation is validated by objectively comparing the results of tests conducted in the simulator to validation data, unless specifically noted otherwise.

7.3.2 The on-site evaluation will re-run a representative sample of the validation tests in the MQTG. This sample size should be approximately 30-40% for an initial evaluation, or 10%-15% for a recurrent evaluation. A selection of the validation tests should also be run manually to verify the integrity of the automatic test procedures. For special evaluations, the scope of required validation tests will be determined by CASA with focus on the specific areas of the device which require evaluation.

7.4 Functions and subjective tests

7.4.1 Functions and subjective testing is undertaken to confirm that the simulation has produced a totally integrated and acceptable replication of the aircraft. This means that the aircraft systems function as they should, and that the device replicates the aircraft's performance and characteristics across the flight envelope that may reasonably be reached by the trainee.

7.4.2 The testing should be structured into several flights, with the purpose being to evaluate the simulator’s reliability and usability as a training device. The overall fidelity, including the integration of the visual and motion systems, should be evaluated, with user specific training manoeuvres or scenarios being incorporated into the flight profiles.

7.4.3 This evaluation should cover areas essential for flight crew member training, testing, such as:

a. flight deck configuration (physical layout, placards, engine, autopilot, flight management system, etc.)

b. handling qualities

c. performance

d. systems functionality during normal and non-normal operations.

7.4.4 During functions and subjective testing, the normal aircraft crew complement should occupy the operating flight crew seats. One of the operating crew seats should be occupied by the specialist pilot described in section 6.4 of this AC.

7.4.5 Like validation testing, functions and subjective testing is a 'spot check' sampling of the performance of the device. It does not rigorously examine the quality of the simulation in all areas of flight and systems operation, which is to have been conducted during acceptance testing and from which the MQTG has been derived.

7.4.6 Further information on functions and subjective testing is available in ICAO Doc 9625 Part III Appendix C.

7.5 Special assessments

7.5.1 Special assessment may be conducted as part of an evaluation to determine a device's compliance with specific requirements or ability to provide a basis for specific training scenarios such as UPRT.

7.6 Instructor operating station evaluation

7.6.1 Evaluation of the IOS, together with the seating, lighting, radio communications, navigation aids and intercom facilities, is conducted on an ongoing basis throughout the on-site evaluation. Additionally, the IOS is assessed to ensure that its operation does not present an unnecessary distraction from observing the activities of the flight crew whilst providing adequate facilities for the tasks.

7.7 Reliability and device management

7.7.1 Recurrent evaluations will also review the defect history and reported overall performance and consider their effects on the qualification level. This includes any notified problem areas, such as those identified during surveillance, audit, or brought to the attention of the evaluation leader.

7.7.2 The operator should provide metrics describing the simulator's performance since the previous evaluation.

7.7.3 This process also considers the effectiveness of the operator’s quality system regarding the specific FFS or FTD, including:

a. corrective and preventative measures

b. compliance with ongoing fidelity requirements under regulation 60.060 of CASR

c. defect management, which includes reports, findings and follow up actions, and assessment of training impact.

Note: An operator’s quality system may be subject to a separate CASA audit that is independent of the device evaluation.

8 Evaluation outcome

8.1 Introduction

8.1.1 Following the on-site evaluation, the on-site checklist will be completed by the CASA lead or the industry ETL. The evaluation checklist requires information in the following areas:

- unacceptable items
- reservations
- unserviceable items
- restrictions/limitations
- recommendations for improvement
- final recommendation.

8.2 Unacceptable items

8.2.1 Unacceptable items are those that fail to comply with the required standard. Where unacceptable items are noted on an initial evaluation, the device will not be qualified at that level.

8.2.2 Where unacceptable items are noted on a recurrent evaluation, urgent action to rectify the issue by the operator is required. Depending on the nature of the unacceptable item, CASA may suspend, vary, restrict, or revoke an existing qualification, or refuse to grant the FFS or FTD qualification.

8.3 Reservations

8.3.1 Reservations are noted during an evaluation where CASA or the industry ETL believes the device is suitable for use, but compliance with a required standard is not clearly proven. This is often because further information from the device/aircraft manufacturer is required, or additional expert consideration is required.

8.3.2 When devices are qualified with a reservation, the operator is expected to work proactively with CASA to resolve the matter by obtaining any required information/data and conducting any further tests as requested. A timeline for resolution will be established based on the nature of the reservation and the work required. A reduced certificate validity period may be applied.

8.3.3 Where this further analysis reveals non-compliance, CASA will work with the operator on a rectification plan. D depending on the nature of the non-compliance, the device qualification may need to be suspended, varied, restricted or revoked.

8.4 Unserviceable items

8.4.1 Unserviceable items are device items or capabilities that are temporarily inoperative.

8.4.2 For initial qualification, unserviceable items that affect restrict or prevent completion of the qualification assessment will prevent the device being qualified.

8.4.3 For recurrent evaluations, unserviceable items may be acceptable where they are of a nature that does not fundamentally prevent the use of the device for training at the qualified level. For example, an unserviceable thrust reverser lever may be acceptable, as many training activities can be temporarily adapted around this defect. However, an unserviceable thrust lever is unlikely to be acceptable.

8.4.4 The operator's quality system must have a process for managing unserviceable items, and for notifying devices users of the potential impact on training. The effectiveness of the operator's system in these elements will also be considered as part of the evaluation.

8.4.5 Unserviceable items on the evaluation report must also include a planned rectification process and remediation date.

8.5 Restrictions and limitations

8.5.1 Restrictions or limitations are noted where full use of the FFS or FTD for training, testing or checking is not possible due to unusable devices, systems, or parts thereof, but the device still meets a qualification standard.

8.5.2 Restrictions and limitations are applied for issues that are more fundamental than unserviceable items, and rectification is not likely in the short term. These items will be included on the qualification certificate.

8.6 Recommendation for improvement

8.6.1 Recommendations for improvement are made where an item meets the applicable standard, but in the view of CASA or the industry ETL considerable improvement is both desirable and achievable.

8.7 Final recommendation

8.7.1 The final requirement of the on-site evaluation form is the recommendation from the CASA officer or the industry ETL whether the device meets the required standard and should be qualified.

8.7.2 For initial evaluations, unacceptable or unserviceable items will lead to a negative recommendation, and further work will be required prior to device qualification. The next steps will be determined by CASA.

8.7.3 For recurrent evaluations, where minor discrepancies remain unresolved, a process and a timeline for rectification is to be agreed between the device operator and CASA. When the evaluation is led by CASA, details of the agreement will be included in the evaluation report. For evaluations conducted by industry ETLs, the proposed timeline is to be included in the evaluation report and is subject to CASA acceptance.

8.7.4 Where major discrepancies remain unresolved, a recommendation that the device is not suitable to be qualified may be made. Industry ETLs are encouraged to contact the CASA flight simulation team for support (via email to fstd@casa.gov.au) if a recommendation to not qualify the device is being considered.

8.7.5 All outstanding discrepancies from the on-site evaluation and operator testing should be entered into the operator's maintenance management system.

8.7.6 Following initial evaluations, CASA will also approve the MQTG where the QTG is assessed to meet the requirements of the standard and the device has been shown to meet the performance requirements for the relevant device level.

8.7.7 Operators should be mindful that the simulator qualification certificate is not issued immediately following the on-site evaluation. Applicants should allow 5 working days for the issue of the certificate and approval of the MQTG following a successful initial on-site evaluation.

Annex A Industry Evaluation Team Leader approval

Note for reviewers - This section will be expanded in future versions.

A.1.1 Regulation 60.090 of CASR provides for CASA to appoint, by instrument of appointment, a non-CASA person to act as an ETL.

A.1.2 Instruments of appointment are issued for a fixed period and enable the person to act as an ETL. These appointments may be general or be limited to a specific activity, or series of activities. For example, recurrent evaluations for a specific operator.

A.1.3 Operators seeking to have a person appointed as an ETL should contact the CASA flight simulation team (via email to fstd@casa.gov.au) for an initial discussion of the proposal.

A.1.4 When appointing an industry ETL, CASA is required to have regard to the skills, qualifications and experience necessary to lead and undertake the evaluation.[10] Typically, the applicant will have:

a. completed a flight simulator evaluation course and on-the-job training
b. experience in participation, planning and execution of evaluations
c. a thorough understanding of Part 60 of CASR, the Part 60 MOS, the Part 60 guidance material and relevant international standards
d. have participated in a recent recurrent evaluation as a team member where a CASA officer was conducting supervision or leading the activity.

A.1.5 The renewal of an ETL appointment instrument will also consider the person's skills, qualification and experience. Typically, the person would be expected to have:

a. performed the duties of an ETL on at least two occasions within the last three-year period
b. demonstrated to CASA the successful completion of a recurrent evaluation within the last 12 months.

A.1.6 The CASA Flight Simulation team is available to assist industry ETLs as required.

[10] As required by regulation 60.090 of CASR.