

1.0 Introduction

The European Regulation (EU) 1178/2011, as amended, details the rules for FSTDs.

1.1 Purpose of This Document

This document is intended as a guide for FSTD organisations to prepare for an FSTD evaluation by TM-CAD and to maintain the FSTD qualification.

For information regarding the initial approval of FSTD organisations, refer to PEL Notice No 87.

1.2 General

TM-CAD oversees FSTDs in compliance with EASA Aircrew Regulation 1178/2011 as amended, related EASA Applicable Means of Compliance and Certification Specification CS-FSTD (A).

These guidelines do not in any way override the above-mentioned regulations.

2.0 Initial Approval

The initial approval of an FSTD organisation is divided into two parts:

- The approval of the organisation (refer to: PEL Notice 87)
- The device certification following a technical evaluation

2.1 Required Documentation for Initial Evaluation

In preparation for the evaluation of an FSTD, the operator is expected to provide TM-CAD with the following documentation:

- Application form TM/CAD/360- Application for Initial Activities related to Flight Simulation Training Devices. (As per regulation AMC1 ORA.FSTD.200, this application shall be submitted at least 3 months before the intended operation). This application should be submitted to TM-CAD via Centrik. The latest version of the form can be accessed from Transport Malta's official website.
- Type of FSTD and qualification level requested;
- Detailed technical specifications of the device, including, type of FSTD, manufacturer, registration number, date of entry into service, host computer, visual system, motion system, type of IOS, simulated version(s), standards of all the aircraft computers, if applicable. Manuals needed for an evaluation (e.g. flight manuals, system manuals, acceptance test manual, IOS user manual etc. – if applicable) could already be provided as part of the dossier in an electronic format
- QTG (This should also include the VDR)
- Documentation regarding the function and subjective testing of the device
- Plan for the annual QTG and function and subjective tests
- Plan for scheduled preventative maintenance
- Planned modifications
- List of simulated malfunctions
- List of airport visual databases, including for each visual scene: name of the airport, IATA and ICAO codes, type of visual scene (specific or generic), additional capabilities (e.g. snow model, WGS 84 compliance, enhanced ground proximity warning system (EGPWS))
- List of open defects
- QTG status: the list should include for each QTG test available the status of the tests following the FSTD operator reviews.
- Any other relevant information

3.0 Maintaining the FSTD qualification

In order to maintain the qualification of the FSTD, the FSTD organisation shall run the complete set of tests contained within the master qualification test guide (MQTG) and functions and subjective tests progressively over a 12-month period.

The results shall be dated, marked as analysed and evaluated, and retained in accordance with regulations, in order to demonstrate that the FSTD standards are being maintained.

A configuration control system shall be established to ensure the continued integrity of the hardware and software of the qualified device.

TM-CAD shall conduct recurrent evaluations of the FSTD. These evaluations shall take place every year, in the case of a full flight simulator (FFS), flight training device (FTD) or flight and navigation procedures trainer (FNPT). The start for each recurrent 12-month period is the end of the month of the initial qualification unless another date is agreed between TM-CAD and the organisation operating the FSTD. The FSTD recurrent evaluation shall take place within a period of 60 days before and 30 days after the start of each recurrent 12-month period.

3.1 Required Documentation for Recurrent Evaluation

The contents of the dossier for a recurrent evaluation should consist of at least the following items:

- Application form TM/CAD/412 - Application for Activities related to Flight Simulation Training Devices. This application should be submitted via Centrik, by not later than 30 days before the evaluation.
- Type of FSTD and qualification level requested;
- FSTD identification, including type of FSTD, manufacturer, registration number, date of entry into service, host computer, visual system, motion system, type of IOS, simulated version(s), standards of all the aircraft computers, if applicable;
- Status of items raised during the last evaluation and date of closure;
- Reliability data: training hours month by month during the past year, numbers of complaints mentioned in the technical log, training hours lost, availability rate;
- Operational data: a list of FSTD users over the previous 12 months should be provided, with number of training hours;
- Failure tabulation including categorisation of failures (by ATA chapter and Pareto diagram, ARINC classification);
- Details of main failures leading to training interruption or multiple occurrences of some failures;
- Hardware and/or software updates or changes since last evaluation and planned hardware and/or software updates or changes;
- Open hardware failure(s) / defects(s)
- Subjective open defect(s);
- Airport visual databases including for each visual scene, name of the airport, ATA and ICAO codes, type of visual scene (specific or generic), additional capabilities (snow model, WGS 84 compliance, EGPWS);
- QTG status: the list should include for each QTG test available, the date of run during the past year, any comment, and the status of the tests; and
- Results of scheduled internal audits and additional quality inspections (if any) since last evaluation and a summary of actions taken.
- Navigation database.

4.0 Classification of raised items

Following the evaluation of the FSTD by TM-CAD, an evaluation report will be issued. This report becomes official once it is approved and signed by the Department Manager. Any issues raised during the evaluation will be classified as follows:

Unacceptable

An item that fails to comply with the required standard and, therefore, affects the level of qualification or the qualification itself. If these items will not be corrected or clarified within a given time limit, TM-CAD should have to vary, limit, suspend or revoke the FSTD qualification.

Reservation

An item where compliance with the required standard is not clearly proven and the issue will be reserved for a later decision. Resolution of these items will require either:

1. A TM-CAD policy ruling; or
2. Additional substantiation.

Unserviceability

A device which is temporarily inoperative or performing below its nominal level.

Limitation

An item which prevents the full usage of the FSTD according to the training, testing and checking considerations due to unusable devices, systems or parts thereof.

Recommendation for Improvement

An item which meets the required standard, but where considerable improvement is strongly recommended.

Comment

Self-explanatory

5.0 Period of Rectification - As set out in AMC2 ARA.FSTD.100(a)(1) point (b):

Following an evaluation, it is possible that a number of defects are identified. Generally, these defects should be rectified and TM-CAD notified of such action within 30 days. Serious defects, which affect flight crew training, testing and checking, could result in an immediate downgrading of the qualification level, or if any defect remains unattended without good reason for a period greater than 30 days, subsequent downgrading may occur or the FSTD qualification could be revoked.

TM-CAD shall receive an action plan within 30 days for any item categorized as Unacceptable, Reservation and Unserviceability. Closure of all items shall normally occur within 90 days.

6.0 Post Evaluation Procedure

Raised items listed in the evaluation report, will also be uploaded on Centrik with the exception of Recommendations for Improvements and Comments. The operator is expected to provide 30 day reports until the closure of all raised items. Items classified as Recommendations for Improvements and Comments need not be included in the 30 day reports, however these should be included in the organisation's CMS rectification process and TM-CAD should be informed once this issues have been rectified. The operator is also expected to update Centrik with an action plan and then any updates until the closure of all raised items.

7.0 Changes to FSTDs

When an FSTD organisation wishes to modify, upgrade, de-activate, re-activate or relocate an FSTD, it shall inform TM-CAD using application form TM/CAD/361 – Application for Changes related to Flight Simulation Training Devices. The application shall be submitted via Centrik, by not later than 30 days before the date of intended change.

Upon receipt of the application, TM-CAD will evaluate the application and decide on the depth of the inspection that is required. The organisation will then be informed whether an evaluation is required before the changes can be approved. This decision will be based on the magnitude of the change, the time left till the next recurrent evaluation, the organisation's assessment of the modification and whether a similar modification had already been approved by an EASA member state, following an evaluation by an FSTD team. Once approved, a revised Qualification Certificate will be issued, if required.

In the case of a re-activation, an evaluation is always required. However, the type of evaluation required will depend on various factors, including: the status of the device during the time it has been de-activated, if it remained disassembled and properly stored, if it was requalified by another regulatory authority, if updates or modifications were carried out and if any parts or components were removed for use elsewhere. Following the evaluation, the annual recurrent evaluation cycle will be resumed, based on the original entry-into-service date.

8.0 Extended Evaluation Procedure

TM-CAD may extend the recurrent evaluation period of an FSTD to a maximum of 36 months, provided that all of the following apply:

- (1) during the preceding 36 months, the organisation operating that FSTD complies with the criteria specified in points ARA.GEN.305(c)(1) to (c)(4);
- (2) the FSTD has been subject to an initial and at least one recurrent evaluation that have established its continuous compliance with the qualification basis;
- (3) TM-CAD performs an audit of the elements of the management system of the organisation, as specified in points ORA.GEN.200(a)(3) and (a)(6) of Annex VII, every 12 months;
- (4) the organisation has developed procedures to conduct the following tasks:
 - Assign a person or a group of persons with adequate experience, who shall do all of the following within a period of 60 days before and 30 days after the start of each recurrent 12-month period:
 - Review the regular reruns of the complete tests in the MQTG
 - Conduct the relevant functions and subjective tests
 - Send a report of the results to TM-CAD

The person or group of persons assigned should:

- Be qualified in flight simulation hardware, software, computer modelling or equivalent with sufficient technical knowledge and experience to understand and analyse objective test results, and assess that the FSTD complies with the applicable certification specifications
- Be qualified to assess the performance, handling and features of the FSTD, hold or has held an instructor certificate and meet either of the following:
 - Hold or has held a type/class rating on the aircraft being simulated (in this case, it is recommended, that the assigned person is supported by a pilot who holds or has held a rating on the same or similar type when conducting the functions and subjective tests); or
 - Is assisted by an instructor that holds or has held a rating on the aircraft being simulated, with sufficient flying experience to support the evaluation team (in this case there is no need for an additional supporting pilot during functions and subjective testing)
 - Have been involved at least in an initial evaluation or one recurrent evaluation carried out by a competent authority within the last 36 months
 - Should not have been involved in tasks referred to in point ORA.FSTD.105(b) within the previous 12-months on the FSTD being evaluated, to ensure an appropriate level of independence

The organisation should maintain the list of assigned person(s) qualified to perform the task.