

CHAPTER 13: PROCEDURES FOR THE QUALIFICATION OF AN STD/FSTD UNDER THE CATCH-UP PROCESS

13.1 General

13.1.1 Qualification/Recurrent Qualification of older STD/FSTDs operated outside the JAA/EASA area under the FSTD Catch-up Process (CUP)

13.1.2 This process has been developed to enable the large number of older and not yet JAR-STD/FSTD qualified full flight simulators, located outside EASA Member States' jurisdiction to train JAA licensed flight crews. Most of these STD/FSTDs are not available in Europe, or only in very limited numbers such that the training needs of the European industry cannot be satisfied.

Qualification of these devices in accordance with the latest amendment of JAR-STD/FSTD cannot be achieved in a reasonable timescale due to technical / economical reasons.

This process may also be applicable to devices located in other geographical areas, subject to satisfactory evaluation of local standards and recommended practices (SARPS).

Details of the JAA/EASA FSTD Catch-up Special Conditions are shown in Attachment 2 and reflect the potential training, operating and environmental differences between the JAA JAR-STD 1A Amendment 2 and the FAA AC 120-40B qualification standards resulting from a detailed examination of the differences between the two standards.

Note: The Special Conditions have only been defined for aeroplane simulators; thus the Special Conditions valid for the FSTD Catch-up process as shown in Attachment 2 only addresses aeroplanes. However, it is noted that the differences between JAR-STD 1H and AC 120-63 are minor, and therefore, the FSTD Catch-up Special Conditions could reasonably be applied to full flight helicopter devices, within the context of this CUP.

13.1.3 Eligibility

- The device must hold a current FAA Qualification and meet the standards of AC 120-40B or later (AC 120-63 for Helicopter devices).
- The FSTD CUP is only applicable for full flight simulators first FAA qualified at Level B, C or D, on or before October 6, 2005.
- Where adequate training capacity is available on devices qualified to the latest amendment of the JAR-STD/FSTD, the US/Canadian simulators would be required to be at an equivalent standard to be eligible for qualification under this process.
- Where adequate training capacity is not available on devices qualified to the latest amendment of the JAR-STD/FSTD, but the same type of device, qualified to the latest amendment of the JAR-STD/FSTD, is available, any lower standard devices accepted for qualification under this process may be required to be brought up to the latest amendment of the JAR-STD/FSTD within a reasonable timescale, where it is technically feasible and economically viable to do so.
- Any JAR-STD/FSTD qualification issued under this process will be subject to an annual recurrent evaluation. Notwithstanding the recurrent evaluation the maximum validity of any JAR-STD/FSTD qualification issued under this process will be limited to XXX (date - 4 years post the date of EASA assuming competence for Operations and Licensing).

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13.1.4 STD/FSTD Evaluation Criteria

- Any JAR-STD/FSTD Qualification Certificate issued under the CUP will be issued by a JAA/EASA member state holding mutual recognition status
- The Qualification Certificate will only be issued on basis of an evaluation of the device acceptable to the issuing state.
- This evaluation will require up to two days, including at least 1 four-hour simulator fly-out. Devices that have never previously been evaluated by a JAA member state will likely require a further four-hour simulator fly-out. The evaluation will include confirmation of compliance with the JAA/EASA FSTD Catch-up special conditions as shown in Attachment 2 of this document.
- If an evaluation for a User Approval has been carried out by a JAA Member State holding mutual recognition status within the last twelve months, including compliance with the Special Conditions, then a new evaluation may not be necessary.
- The evaluation will include checks of simulator configuration and control of QTGs in accordance with the operator's quality system.
- The most recent FAA statement of qualification and recurrent evaluation report are to be provided.
- Special emphasis items will be included in the JAA standard flight profiles used during the subjective evaluation.
- A separate audit of the Quality System, configuration system and the safety of the FSTD installations in each training centre will be carried out separately to any device evaluation. Compliance with JAR-STD 1A.025 / JAR-FSTD A.025 must be demonstrated during the Catch-up process and if not, a re-inspection will be required. Information defined in TGL 9, Appendix 2, dated 1 June 2006 to be provided at the inspection.
- Qualification Certificates issued under CUP will clearly identify that they are issued under the CUP.
- The National STD/FSTD Qualification Certificate code numbers will be followed by **CU** (e.g. CH-601Z/CU). (see Attachment 1).

13.1.5 Register of Qualified STD/FSTDs

- The Authority shall maintain an updated register of STD/FSTDs qualified under the CUP. The register should show those essential details of the STD/FSTD which will facilitate rapid dissemination of important information or directives to those whose attention might be so required, and include a clear indication that the qualification has been issued under the CUP. The contact numbers and business address of key management staff should also be included.
- EASA will maintain a register of all currently qualified STD/FSTDs in JAA Member States, including those qualified under the CUP. Each individual Authority will have the responsibility for its own data insertion and updating. Contents of the STD/FSTD IS will be made publicly available by transferring them to the EASA internet website which will be updated regularly.

13.1.6 Composition of the Evaluation Teams:

- Evaluations for qualifications under CUP will be carried out by teams agreed by the JAA FSTD Steering Group.
- Full JAR-STD 1A/JAR-FSTD A qualifications will be carried out by JAA NAA teams in accordance with existing processes.
- The evaluation pilot provided by the operator, if needed, must be type-rated and current on the aircraft type being simulated and also acceptable to the evaluation team.
- In relation to the Catch-up, two designees may be used (see ACJ No. 1 to STD 1A.015, paragraph 2.1).
- Auditing of JAR-STD 1A.025 / JAR-FSTD A.025 will be carried out by JAA NAAs in accordance with existing processes.

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Attachment 1 STD/FSTD Qualification Certificate layout under the JAA/EASA Catch-up Process

[COUNTRY]

STD/FSTD QUALIFICATION CERTIFICATE

No [JAA ID No]Z/CU

On behalf of the [Authority],
a member of the Joint Aviation Authorities,
it is hereby certified that the FSTD

[Aircraft Type and Variant simulated]

operated by

[STD/FSTD Operator]

[Address]

has satisfied the Qualification requirements by means of the JAA/EASA
FSTD Catch-Up Process and [insert details of relevant national legislation]
subject to the conditions of the attached.

Refer to the JAR-STD/FSTD Joint Implementation Procedures (JIP) contained in
JAA Administrative and Guidance Material Section Six: Synthetic Training Devices (STD/FSTD),
Part Two: Procedures which provide guidance on the regulation qualification under the
JAA/EASA FSTD Catch-Up Process.

**This certificate is valid accompanied by a valid FAA statement of qualification
for FAA ID #[insert No] only. It is not transferable and, unless sooner
suspended or revoked, valid until**

[insert day/month (in words) of year (in figures)]

Issued at:

Signature:

Date:

Name:

Title:

JAA FSTD CU Certificate [STD/FSTD Identification No]

STD/FSTD Specification under the JAA/EASA Catch-up Process

[COUNTRY - Authority]

STD/FSTD QUALIFICATION CERTIFICATE No [JAA ID No] Z/CU

STD/FSTD SPECIFICATION

- A) Type/Variant of Aircraft**
- B) STD/FSTD Qualification Level**
- C) Visual System**
- D) Motion System**
- E) Engine Fit**
- F) Instrument Fit**
- G) TCAS Fit**
- H) Windshear**
- I) Additional Capabilities**
- J) Restrictions/Limitations**

Issued by:

Signature:

Name:

Title:

Date:

STD/FSTD Specification [*STD/FSTD Identification No*]

Attachment 2

FSTD CATCH-UP QUALIFICATION PROCESS GUIDANCE

1. Introduction

1.1 The purpose of this Attachment is to provide information and guidance on how to evaluate an STD/FSTD under the terms of the JAA/EASA FSTD Catch-up process in reference to Chapter 13.

2 Special Conditions

#	JAA/EASA FSTD Catch-up Special Conditions
(a)	There is a supplement to the instructor operating station manual that includes operation with European standards.
(b)	There is a detailed procedure for the operation of an independent Quality System.
(c)	The FSTD has a valid FAA Statement of Qualification.
(d)	The aircraft configuration must conform to European Standards.
(e)	Instructor operating station indications conform to European units of measurement.
(f)	There is at least one European airport/airfield model available featuring proper modeling and navigation/communication facilities.
(g)	Category I, II, or III (as applicable) Instrument Approaches demonstrated at a European Airport.
(h)	Visual Ground Segment Test presented using a European Airport and RVR Standards.
(i)	Additional objective and functional & subjective tests as required by JAR-STD 1A Amendment 2 that are in excess of those required by the FAA FFS standard level of qualification.

2.1 Additional Guidance for the Evaluation according Catch-up Special Conditions

2.1.1 Instructor Operating Station (see special condition (a) and (e))

The instructor operating station (IOS) manual should include sufficient instructions for the operation of the FSTD with European metric standards. Some areas to check include:

- a) How to convert relevant FSTD displays to metric units of measurement.
- b) How to convert the FSTD to European/JAA aircraft configuration.
- c) Appropriate instructions for the use of European airports.
- d) The Instructor’s station is capable of controlling and monitoring the environment and systems as appropriate in “metric”.

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2.1.2 Operators Quality System (see special condition (b))

An assessment of the operators Quality System shall demonstrate its conformity with JAR-STD 1A.025 / JAR-FSTD A.025. The Temporary Guidance Leaflet (TGL) No. 9 of the JAA Administrative & Guidance Material Section Six, Part Three may be used as an additional guidance.

2.1.3 Flight Simulator Configuration (see special condition (d) & (e))

The FSTD's aircraft configuration must conform to European/JAA Standards. The FSTD Operator must provide a document that lists the differences between the JAA and the FAA certified aircraft configurations. A conformity evaluation will include a check of stall warning and stick shaker indications, center of gravity limits, aural warnings/callouts and the instrument indications to ensure conformity to European/JAA units of measurement. In addition to the static checks of the instruments for conformity, a dynamic check (e.g., vary the altimeter settings at more than one airport) should be accomplished. All of the European/JAA differences should be evaluated for initial qualifications. A spot check of European/JAA differences is satisfactory for recurrent qualification.

2.2 Functions & Subjective Testing

Perform a flyout similar to the flight profile as shown in the JIP Appendix 1, paragraph 6.4.

2.2.1 Additional Function & Subjective Testing Checklist (see special conditions (f) to (i))

- a) Simulator operator has procedures in place for flight simulator occupants to be briefed to ensure that they are aware of all safety equipment and arrangements in the flight simulator in case of emergency.
- b) All relevant instrument indications involved in the simulation of the applicable aeroplane automatically responded to control movement by a crewmember or external disturbances to the simulated airplane; i.e., turbulence or windshear. Comment: Numerical values must be presented in the appropriate units for European Operations.
- c) Communications and navigation equipment corresponding to that installed in the applicant's airplane operation in the tolerances prescribed for the applicable airborne equipment including but not limited to:
 - Systems –Configurable options for program pin selectable items
 - FMS databases
 - 8.33 KHz VHF comm.
 - BRNAV / GPS
 - RVSM capabilities
 - ETOPS capability
- d) Instructor operating station indications use appropriate units of measurement e.g. RVR in Meters, QNH in hPa.
- e) Minimum of three specific airport scenes inclusive one European airport model:
 - Surfaces on runways, taxiways, and ramps
 - Lighting of appropriate colour for all runways including runway edge, centerline, VASI/PAPI, and approach lighting for the runway in use
 - Airport taxiway lighting
 - Ramps and terminal buildings which correspond to an operator's Line-Oriented Flight Training and Line Oriented Simulator scenarios
- f) Verification of visual ground segment visual scene content at a decision height on landing approach for the required minima.

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The QTG/ATG (supplement) should contain appropriate calculations and a drawing showing pertinent data used to establish the aeroplane location and visual ground segment. Such data should include, but is not limited to:

- Airport and runway used
- Glide slope transmitter location for the specified runway
- Position of the glide slope receiver antenna relative to the airplane main landing wheels
- Approach and runway light intensity setting
- Airplane pitch angle

The above parameters should be presented for the airplane in landing configuration and a main wheel height of 100 feet above the touchdown zone. The visual segment and scene content should be determined for a RVR 300 m using a European airfield.

- g) Instrument approaches and landing (An appropriate sample should be flown Indicate which approaches have been evaluated).
- (i) CAT I
- Manual approach with/without flight director including landing
 - Autopilot/autothrottle coupled approach and manual landing
 - Manual approach to DH and go-around, all engines
 - Manual one engine out approach to DH and go-around
 - Autopilot/autothrottle coupled approach, one engine out to DH and go-around
 - Approach and landing with minimum/standby power
- (ii) Cat II
- Autopilot/autothrottle coupled approach to DH and landing
 - Autopilot/autothrottle coupled approach to DH and go-around
 - Autocoupled approach to DH and manual go-around
- (iii) CAT III: Does not call out approach with generator failure
- Autopilot/autothrottle coupled to land and roll-out
 - Autopilot/autothrottle coupled approach to DH/Alert height and go-around
 - Autopilot/autothrottle coupled approach to land and roll-out with one engine out
 - Autopilot/autothrottle coupled approach to DH/Alert height and go-around with one engine out
- h) Windshear models on Level C and D simulators
- i) Subjective Assessment of the following as representative:
- Rejected Take-off
 - Take-offs and Landings and varying weights
 - For aeroplanes with reversible controls, controls forces throughout flight

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2.3 Additional Objective Testing (See special condition (i))

The Qualification Test Guide (QTG) or Acceptance Test Guide (ATG) index should indicate the additional objective and functional or subjective tests as required by JAR STD-1A Amendment 2 that are in excess of those required by the FAA. During an initial evaluation the additional JAA tests should be reviewed.

Many of the additional objective tests required by JAR STD 1A Amendment 2 have been “changed” to requiring a subjective assessment. Where objective tests and data are actually available, these additional tests should be included in the QTG/ATG.

The preferred source of validation data for the additional tests is flight test where appropriate. Where flight test is not available, the following hierarchy of validation data sources should be used:

- Approved engineering simulator data
- Flight Manual or other approved manuals
- Flight Simulator Acceptance test procedures
- Flight Simulator Maintenance procedures
- Footprint test with an associated subjective “sign off” as being fully representative.

2.3.1 Objective Testing Checklist (Expanded)

- a) Visual ground segment visual:
European airfield model, 100ft wheel height above touchdown zone elevation, 300m RVR
- b) Dynamic engine failure after takeoff:
± 20% Body rates; 1st segment climb; failure speed w/in ±3 kts of aeroplane data. Engine failure may be a snap deceleration to idle. Record hands off from 5 sec before engine failure to +5 sec or 30 deg bank, whichever occurs first, and then hands on until wings level recovery CCA: Test in Normal and Non-normal control state.
- c) One engine inoperative en route climb
- d) Additional lever (the propeller lever) where present.
Where these levers do not have angular travel, a tolerance of ±2 cm (±.8 inches) applies.
- e) Small control inputs:
±20% body rates in cruise & approach; small control inputs defined as 5% of total travel.

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Attachment 3

Comprises the EASA Application Form which should be used to request an already FAA qualified STD/FSTD under the terms of the JAA/EASA FSTD Catch-up process, provided that the device fully complies with the eligibility criteria as stated on Chapter 13, paragraph 13.1.3.

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European Aviation Safety Agency



**APPLICATION FOR JAA QUALIFICATION OF A FLIGHT SIMULATION
 TRAINING DEVICE (FSTD) UNDER THE JAA/EASA CATCH-UP PROCESS**

STD Type (Tick whichever is applicable)	FFS Aeroplane			FFS Helicopter		
FAA/TC Qualification (Please attach current certificate)	Code		Qualification Level		Original Qualification Basis	

- a) This form is to be completed in full and returned to EASA, together with the fee, where relevant.
- b) The JAA requires a minimum of three (3) months notice before any evaluation may be conducted.
- c) This application is to be made as part of, and in accordance with the relevant Joint Aviation Requirements – Synthetic Training Devices (JAR-STD) and the defined process for qualification of devices, currently used for European pilot training, but not JAR-STD qualified, and located in the United States of America or Canada (Catch-up).
- d) The device must hold a current qualification issued by the FAA or Transport Canada
- e) The Quality System at the centre where the device is located must have been successfully demonstrated to be in compliance with the requirements of JAR.STD 1A/H.025
- f) The device to be qualified must be available to the evaluation team on the agreed date, and for the agreed number of hours. Failure to comply with this requirement will result in the Applicant having to pay another fee, for a new qualification.
- g) This Application Form is to be sent by fax, e-mail or regular mail to:

European Aviation Safety Agency
 Certification, Flight Standards Department
 Postfach 10 12 53
 D-50452 Köln
 Germany

Fax: + 49 - (0)221 – 89990 9513
 E-mail: Flightstandards@easa.europa.eu

- h) The relevant fee is to be paid into the following bank account:

ABN AMRO Bank No 43.88.96.815
 Marktplaan 1-3
 2132 DL HOOFDDORP
 NETHERLANDS
 SWIFT ABNANL2A
 IBAN: NL18ABNA0438896815

- i) Failure to comply with the above may result in a delay.

Section 1 STD Details	
Aircraft Type	
FSTD Manufacturer	
FSTD Serial Number	
Year of Manufacture	
Engine Types:	a) _____
	b) _____
	c) _____
Visual system	
Motion system	
JAA Qualification Level sought	
FSTD Sponsor	

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Section 2 Operator Details			
Company Name			
Address			
Contact		Position within the Company	
Telephone		Fax	
e-mail		Mobile	
Location of FSTD <i>(if different from the above address)</i>			
Contact/Telephone/Fax/e.mail.			
Quality Manager: <i>(if different from above contact)</i>			

Section 3 Dates

The following dates are available for the evaluation

(Minimum of four dates, but, if dates have already been agreed with or notified to the Joint Aviation Authorities (or a member National Aviation Authority) please state what they are)

Briefing Report Time

Simulator Timings (Minimum of 4 hours if previously evaluated by JAA member state, 8 hours if never previously evaluated).

Section 4 Declaration by the Applicant
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I confirm that the information contained herein is correct and complete
 I agree to pay the fees levied by the JAAT in respect of this application for a JAR-STD qualification, irrespective of the outcome of the evaluation.

Applicant's Signature		Name (Block Capitals)	
Position within the Organisation		Date of Signing	

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FOR OFFICIAL USE ONLY:				
Date Received		Fee Taken	YES/NO	Receipt No.
Date Instructed:				
Received by:				
Nominated Evaluation Team:				

Section 5 Fees

- a) The charge for an evaluation under the catch-up process is Euro 7,110 for each device, plus travel costs/accommodation/daily allowance, in accordance with the attached Cost Recovery Scheme.
- b) The charge for the quality audit required in support of a catch-up qualification will be calculated on a case by case basis.