



EASA
European Aviation Safety Agency

Operational Suitability Data Requirements for Cabin Crew

Cabin Crew Data – CCD

Brief Introduction

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STC WORKSHOP
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AGENDA



OSD-CCD Regulatory framework



Changes to OSD-CCD



CCD Regulatory Framework – Part 21

Part-21, Subpart B Type-Certificates and Restricted Type-Certificates

21.A.15

...

(d) An application for a type-certificate or restricted type-certificate for an aircraft shall include, or be supplemented after the initial application to include the application for approval of operational suitability data, consisting of, as applicable:

1. the minimum syllabus of pilot type rating training, including determination of type rating;
2. the definition of scope of the aircraft validation source data to support the objective qualification of simulator(s) associated to the pilot type rating training, or provisional data to support their interim qualification;
3. the minimum syllabus of maintenance certifying staff type rating training, including determination of type rating;
4. determination of type or variant for cabin crew and type specific data for cabin crew;
5. the master minimum equipment list; and
6. other type-related operational suitability elements.



21A.15(d) 4 Compliance is specified by the CS-CCD

CS CCD.050 Scope

These Certification Specifications for Cabin Crew Data (CS-CCD) establish the specifications for the applicant for a type certificate, change approval or supplemental type certificate to develop and provide:

- (a) data for the determination process of a new type or variant for cabin crew; and
- (b) type specific data for cabin crew.

NOTE: CD-CCD contain both: the process and the technical requirements for the CCD establishment.

CS CCD.100 Applicability

These Certification Specifications are applicable to:

- (a) aircraft with a maximum passenger seating capacity of more than 19 seats;
- (b) aircraft with a passenger seating capacity of 19 seats or less required to carry cabin crew; and
- (c) any other aircraft with a maximum passenger seating configuration capacity of 19 seats or less if voluntarily elected by the applicant.



Certification Specifications-Cabin Crew Data (CS-CCD)

Cabin Crew Data – Mandatory and Non-mandatory elements to be included by operators into CC training for a/c types and variants

CS CCD 110-OSD box concept, identifies the data provided by the applicant as Mandatory or Non-mandatory (recommendation) for the end-user (i.e. operator; training organisation).

- **Mandatory elements** to be provided by the manufacturer
 - ✓ Determination of type or variant by assessing at least the following type specific elements, and the associated type specific data
 - aircraft configuration (e.g. narrow/wide - bodied; number of passenger decks);
 - doors/exits (e.g. number, types and location; assisting evacuation means);
 - aircraft systems (e.g. system operation; location; reset, etc);
 - normal and emergency operation of the relevant type specific elements.
- **Non-mandatory elements** offered by the manufacturer
 - ✓ additional data to support type training and differences training (e.g. passenger seats where installed, use of CC training devices, etc.)



Certification Specifications-Cabin Crew Data (CS-CCD)

Mandatory CCD Data (Deliverables):

- **Cabin Areas of Special Emphasis” (CASE)** document, as per CS CCD.400
 - Where applicable, available at TC, to demonstrate TCH compliance with Part 21.A.16B-”Special Conditions”(for novel and unusual design features).
 - Is the means to provide “special instructions” to Operators, becoming a component of the CCD “package”.
- **Aircraft Differences Table (ADT)**, as per CS CCD.215 - Determination of variant
 - CS CCD.215(b)- requires provision of: “ Existing differences (between the base and the candidate aircraft) and their assessed impact in accordance with CS CCD.200(b)(1), or using the applicant’s standard form to support the development of the differences training by the end user(s).”
- **Type Specific Data**, as per CS CCD.300 – Data required from the applicant
 - TCH is required to provide:
 - (1) all necessary data in accordance with CS CCD.310 -Type specific data content, to support the development of type specific training programme(s); and
 - (2) all necessary data in accordance with CS CCD.205-Determination elements, to support the development of differences training programmes”.
- **Determination of a/c “type” or “variant” status-** as recorded in the CCD document and reflected in the TCDS.



Example of CCD Applied Scope

A350-900 CCD Evaluation - Scope

- Establish/approve the A350-900 Cabin Crew Type Specific Data (package);
- Demonstrate that for cabin crew, the A350-900 is determined to be a variant of the A330-200/-300 aircraft, thus, becoming a member of the A330 a/c family.





Example: A350-900 Mandatory & Non-mandatory data

A350-900 CCD Evaluation Outcome

Type rating determination & ADT/"ODR" Table

To determine if new type or variant & to identify the differences to be trained

MANDATORY

Type specific data for cabin crew

To support the development of aircraft type specific and differences training programme

MANDATORY

Cabin Aspects of Special Emphasis (CASE)

Cabin crew requirements identified from airworthiness certification
(e.g. emergency evacuation demonstration/analysis)

MANDATORY

Other cabin crew type related elements

Requirements for:
- door training device
- etc.

NON-MANDATORY



Example: A350-900 Non-Mandatory CCD

Base aircraft
A330



DOOR TRAINING DEVICE (Non-Mandatory)

EASA agreed
that A330 & A350 doors
present
similar characteristics and
operation

- Door arming/disarming
- Direction of movement of the operating handle
- Direction of door opening
- Power-assist mechanism
- Assisting evacuation means

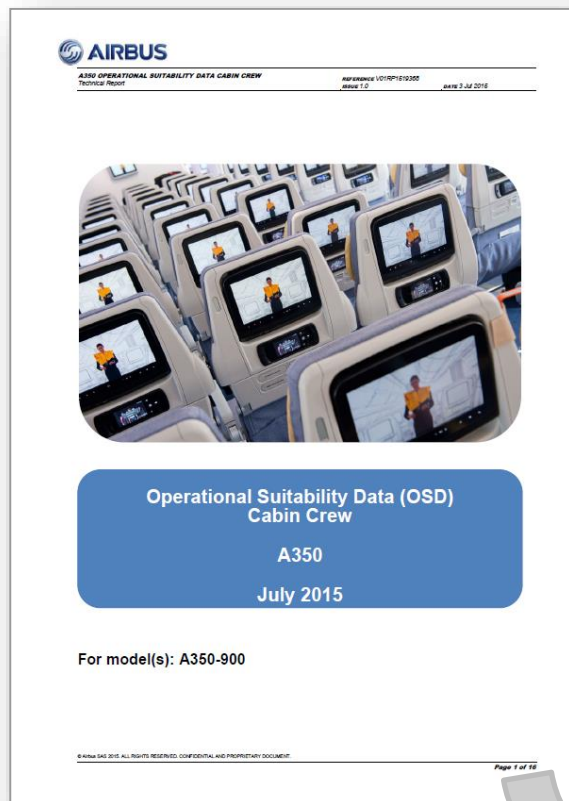
Candidate aircraft
A350



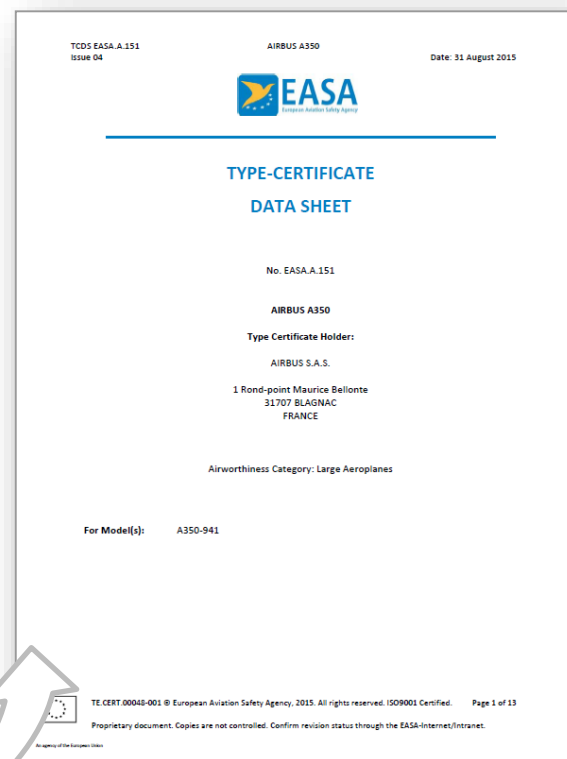
**Doors operation in all modes has been assessed as similar.
Consequently practical door training may occur in either the A330 or the A350, provided differences briefing is completed.**



A350-900 Example - Link between OSD-CCD and the TCDS



CCD Document is
referenced in the
A350 TCDS





Example of CCD compliance referenced in the TCDS

Excerpt from the A350 Type Certification Data Sheet (TCDS)

“V. OPERATIONAL SUITABILITY DATA (OSD)”

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate [original TC number] as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

.....

2. Flight Crew Data

.....

3. Cabin Crew Data

- a. The Cabin Crew data has been approved as per the defined Operational Suitability Data Certification Basis and as documented in “A350 Operational Suitability Data Cabin Crew, Issue 1.0.(Ref: Airbus V01RP1519368 dated 03 July 2015)”, or later approved revisions.
- b. Required for entry into service by EU operator.
- c. The A350-900 aircraft model is determined to be a variant to the A330-200/-300 aircraft model(s).





A350-900 Example – Type Specific Data versus CCOM

Type specific data



OPERATIONAL SUITABILITY DATA CABIN CREW

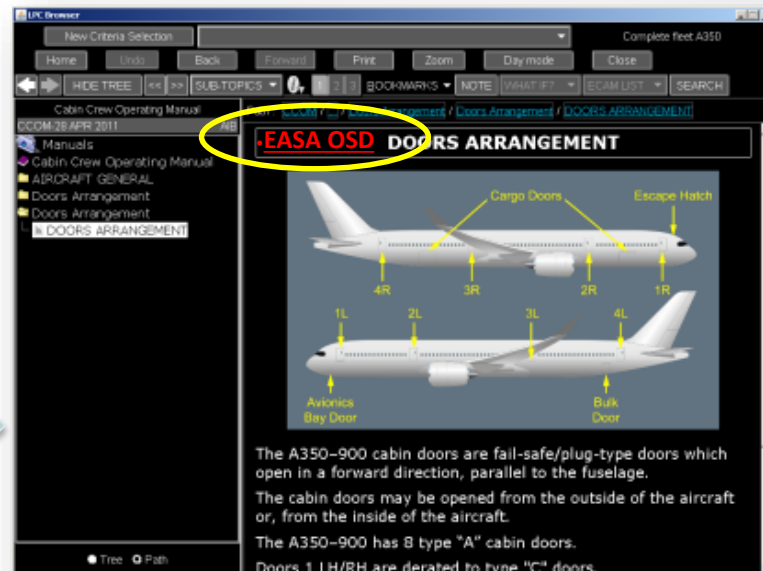
Approval date: 22 JUL 15
Approval reference: 10053878

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•OSD is directly identified in the CCOM and highlighted accordingly

•The Operator meets the EASA requirements and can easily demonstrate compliance.



Changes to CCD- Applicability (1/2)

When managing CCD changes, an important step is to identify whether the change to OSD is triggered by a change to type design or by a stand-alone change to CCD.

Examples of type design changes with impact on CCD:

- Introduction of mini suits or high wall suits to replace standard passenger seats;
- Mobile Crew Rest Compartments installation;
- Replacement of standard cabin crew seats with “high comfort” seats (for TTL and as Crew Rest Compartment);
- Change in door arrangement (activation/deactivation of an exit, change from Type III to automatic disposal hatch, etc.);

Stand-alone CCD changes can be triggered by:

- TC/STC holder monitoring experience with CCD and making improvements as necessary;
- Airlines request (e.g. operational improvements, in-service experience, etc.);
- Airworthiness Authorities request in association or not with an AD.



Changes to CCD- Applicability (2/2)

When managing CCD changes, an important step is to identify whether the change to OSD is triggered by a change to type design or by a stand-alone change to CCD.

Examples of changes in the cabin with “no effect” on CCD:

- Portable safety equipment relocation, change in quantity/type (where not installed by the TCH).
- Re-equipment of galleys with ovens, coffeemakers, refrigerators, etc;
- Stretcher installation;
- In-Flight Entertainment System (IFE);
- Changing seat abreast (from triple to double seating or vice versa);
- Partitions/monuments with no effect on cabin safety (e.g. direct view, width of isle, etc)
- The above changes would not impact the original CCD, since the items are not considered part of the a/c generic type design, but “customer options”, hence, generally not addressed by the initial CCD.
- Changes to these items can be addressed via a Flight Attendant Manual-Supplement (FAM-S)/Service Bulletin (SB), and do not require a CCD-S.

Note: In accordance with GM No 1 to 21.A.91(c), it is assumed that minor type design changes do not have an impact on CCD.



Impact assessment of changes to CCD

The impact assessment shall identify whether the intended change affects existing CCD.

For type design changes:

- If the type design change affects an existing design feature already captured in the initial data, the appropriate information documenting the impact must be generated.
- If the type design change introduces information addressing a design feature not already captured in the existing CCD, the required associated information must be generated in line with CS-CCD.310 Type Specific Data Content.

Note: In both cases, a “CCD-Supplement (CCD-S)” must be developed.

For stand-alone changes:

- If the stand-alone change affects existing data or requires introduction of additional data, a CCD-Supplement must be developed.
- Addition of new CASE elements or expansion of existing CASE (see CS-CCD.400 Cabin Aspects of Special Emphasis-CASE) would require CCD-Supplement.



Classification of changes to OSD-CCD (1/3)

Identification of CCD major or minor classification will be based on the use of the Aircraft Difference Table (ADT) of the CS-CCD.200 (Refer to GM 21.A.91 §3.5. c)

Type design changes:

- If the difference has no impact on the operation of a determination element of the ADT for the candidate aircraft, the related OSD CCD change should be classified as minor.
- If the difference has an impact on the operation of a determination element of the ADT for the candidate aircraft, the related OSD CCD change should be classified as major.
- A change to OSD CCD should be classified as major when an ADT analysis is required to confirm that the aircraft with the type design change is not a “new type” for cabin crew, but a “variant”(see CS-CCD 205; 2010; 2015).



Classification of changes to OSD-CCD (2/3)

Identification of CCD major or minor classification will be based on the use of the Aircraft Difference Table (ADT) of the CS-CCD.200 (Refer to GM 21.A.91 §3.5. c)

Stand-alone changes:

- If the change does not concern a determination element of the ADT, the stand-alone OSD CCD change should be classified as minor.
- If the change has no impact on the operation of a determination element of the ADT, the stand-alone OSD CCD change should be classified as minor.
- If the change has an impact on the operation of a determination element of the ADT, the stand-alone OSD CCD change should be classified as major.
- Stand-alone changes to Cabin Aspects of Special Emphasis (CASE) should be classified as major. Example: addition of further CASE, expansion of CASE (see CS-CCD 400).



Classification of changes to OSD-CCD (3/3)

Identification of CCD major or minor classification will be based on the use of the Aircraft Difference Table (ADT) of the CS-CCD.200 (Refer to GM 21.A.91 §3.5. c)

Changes to CCD are considered **minor** when they:

- incorporate optional information (representing improvements/enhancements);
- provide clarifications, interpretations, definitions or advisory text;
- do not change the intent of the OSD document, e.g. changes to:
 - order, sequence, pagination; or
 - titles, numbering, formatting, applicability;
 - sketches, figures, units of measurement, and correction of editorial mistakes such as:
 - spelling; or
 - reference numbers.



CCD Evaluations-Certification Basis

Completed/Ongoing/Upcoming CCD evaluations have different certification basis, hence, different deliverables

CRI-CCD-01 Special Conditions (GF-ed CCD)	CRI CCD -01 Elect to Comply to CS-CCD (CUP GF-ed CCD)	CS-CCD ("New" applications)
<u>Completed CCD:</u> -A320 family -A330 family -A340 family -A380 <u>Ongoing CCD</u> -A330neo	<u>Completed CCD:</u> -ATR 42/72 -RRJ-95B -ERJ-170/-175/-190/-195 -CRJ-700/-900/-1000 -DHC-8-400 -B747-8 -B737NG -B777 -B787-8/-9	<u>Completed CCD</u> -A350-900 -Bombardier CS 100/-300 -B737-8 MAX <u>Ongoing CCD</u> -A350-1000 -MRJ 200; -B777-9 -B787-10 -ERJ (E2) 190-300 -A321 ACF <u>Upcoming CCD</u> -C 919

A photograph of a modern cable-stayed bridge at dusk. The bridge features a large, illuminated, golden arch structure that spans the width of the bridge. The arch is supported by a central pylon and is reflected in the calm water below. The bridge deck is illuminated with blue lights, and the surrounding area is lit up with city lights. The sky is a deep blue with some clouds.

OSD: Bridging certification and operations.

Thank you!