TYPE-CERTIFICATE

DATA SHEET

No. EASA.A.151

AIRBUS A350

Type Certificate Holder:

AIRBUS S.A.S.

2 Rond-point Emile Dewoitine
31700 BLAGNAC
FRANCE

Airworthiness Category: Large Aeroplanes

For Model(s): A350-941
A350-1041

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SECTION 1: A350-900 SERIES

I. GENERAL

1. Type/Model

A350-941

2. Performance Class

A

3. Certifying Authority

EASA

4. Manufacturer

AIRBUS
2 Rond-point Emile Dewoitine
31700 Blagnac
FRANCE

5. EASA Certification Application Date

A350-941: 15 November 2009

6. EASA Type Certification Date

A350-941: 30 September 2014

II. CERTIFICATION BASIS

1. EASA Certification Basis

The following EASA airworthiness standards are:

- EASA Certification Specifications 25, Amendment 8 – Large Aeroplanes except paragraph 25.795, at Amendment 9, except CS 25.795(b)(3)(iii).
- EASA Certification Specification 25.851 (a) and (c) at Amendment 17 for the installation of halon free handheld fire extinguisher.
- EASA Certification Specifications AWO, Initial Issue – All Weather Operations.
- EASA Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance CS ACNS Initial Issue dated 17 December 2013, Subpart D Sections 2/3/4

- For type A+ emergency exit installation (see also ESF D-39), the following CS are applicable at amendment 20:

  CS 25.561(c), 25.601, 25.603(a)(b)(c), 25.605(a)(b), 25.789(a), 25.0795(d), 25.801(a)(d), 25.0803(a)(c), 25.0807 (a)(7)(g)(i)(f), 25.809, 25.810(a)(1), 25.0811(d)(2)(g), 25.812(h)(k), 25.0813, 25.853(a), 25.869(a)(3), 25.901(c), 25.1301(a)(1)(2)(3), 25.1309(a)(b), 25.1411(c)(d), 25.1415(a)(b)(c), 25.1438, 25.1501, 25.1561(a)(d)(e), 25.1701(a), 25.1703(a)(b)(c), 25.1705(a), 25.1707(a)(d)(l), 25.1709(a)(b), 25.1711(a)(c)(d)(e), 25.1713(a)(c)

  For mixed configurations involving Type A, C and A+ emergency exits, except CS 25.795(d) and 25.803(a)(c), the applicable CS may continue to be applied at an amendment that was applicable before the installation of type A+ emergency exits if the area is not affected by the type + installation.

- For modification 114946 installation or changes to the cowling or nacelle skin:

  CS 25.1193(e)(4)(f) amendment 22

2. Special Conditions

SC B-01	Stalling and Scheduled Operating Speeds
SC B-02	Motion and effect of cockpit controls
SC B-04	Static Directional, Lateral and Longitudinal Stability and Low Energy Awareness
SC B-05	Flight envelope protection
SC B-06	Normal Load Factor limiting System
SC B-09	Flight in Icing Condition
SC B-11	Soft Go Around Mode (post-TC)
SC B-15	Shorter Landing Distances on eligible Wet Grooved or PFC runways

SC C-01	Crash Survivability for CFRP Fuselage
SC C-02	Design dive speed
SC C-05	Tyre Debris vs. Fuel Leakage for CFRP Fuel Tank
SC C-06	Dynamic braking
SC C-07	Limit pilot forces
SC C-10	Design Manoeuvre Requirements
SC C-14	Pivoting Loads
SC D-04	Crew Rest Compartments (post-TC)
SC D-05	Towbarless Towing
SC D-06	High Altitude Operation / High Cabin Heat Load
SC D-07	Control Surface Position Awareness / Electronic Flight Control Systems
SC D-14	Application of Heat Release and Smoke Density Requirements to Seat Materials
SC D-16	In Flight Fire - Composite Fuselage Construction
SC D-20	Lateral Trim Function through Differential Flap Setting
SC D-21	Type C Passenger Exits
SC D-32	Use of Magnesium Alloys for Passenger Seat Components (post-TC)
SC D-35	Installation of inflatable seat belts (post-TC)
SC D-36	Installation of structure mounted airbag (post-TC)
SC D-37	Installation of mini-suite type seating (post-TC)
SC D-42	Installation of stowage or charging stations for Personal Electronic Devices (PED) in an aircraft cabin (post-TC)
SC D-43	Installation of oblique seats
SC D-44	Installation of Three Point Restraint & Pretensioner System (post-TC)
SC D-45	Incorporation of Inertia Locking Device in Dynamic Seats
SC E-08	Fire withstanding Capability of CFRP Wing Fuel Tanks
SC E-12	Water / Ice in Fuel System
SC F-12	HIRF Protection
SC F-13	Lithium Battery Installations
SC F-26	Flight Recorders including Data Link Recording
SC F-38	Security Assurance Process to isolate or protect the Aircraft Systems and Networks from internal and external Security Threats
SC F-53	Fuel System low Level Indication / Fuel Exhaustion
SC F-GEN-01	Non-rechargeable lithium battery installations, applicable by the date of this TCDS at issue 18
SC G-01	ETOPS Approval
SC G-06	Cancellation of AFM Engine Management Tables

3. Deviations

None

4. Equivalent safety findings

ESF C-11	Ground Loads Conditions
ESF C-12	Undercarriage Lateral Turning Loads
ESF D-11	Packs off operations
ESF D-15	Post Crash Fire - Composite Fuselage Construction
ESF D-19	Overpressure Relief Valves and Outflow Valves
ESF D-23	Indication of the Passenger Door from outside Position if the Door is not fully Closed, Latched and Locked
ESF D-28	Green Arrow and "Open" Placard for Emergency Exit Marking
ESF D-30	Installation of Angled Seats (post-TC)
ESF D-31	Application of reduced Intrusion Loads in certain Areas of the Flight Deck Boundaries
ESF D-34	APU Doors Compliance to CS 25.783(a)
ESF D-39	Type A+ Emergency Exits
ESF E-04	Thrust Reverser Testing
ESF E-07	Warning Means for Rolls Royce Engine Fuel Filters
ESF E-09	Rolls Royce Engine Turbine Overheat Detection
ESF E-13	Fire Extinguishing Agent Concentration
ESF E-14	Pressure fuelling system shut-off operation check
ESF F-22	Minimum Mass Flow of Supplemental Oxygen
ESF F-23	Landing Light Switch
ESF F-33	Pneumatic Systems – harmonised 25.1438
ESF F-52	Crew Determination of Quantity of Oxygen in Passenger Oxygen System
ESF F-63	Improved Passenger Oxygen Mask Deployment System
ESF F-69	Pitot Heat Indication Systems
ESF G-05	Engine Oil Temperature Indication
ESF G-11	Alternative to CS 25.1563 Airspeed Placard, for the installation of modification 114913, EASA major change approval 10078061
ESF K-03	Localizer Excessive Deviation Alerts (post-TC)
ESF K-04	Limit Risk (post-TC)
ESF K-08	CAT 3 Operations - Super Fail Passive Anomalies (post-TC)

5. Environmental Protection Requirements

Fuel venting:
Certification Specification-34 initial issue
ICAO Annex 16, Volume II, amendment 06, Part II, chapter II

Noise:
See TCDSN No. EASA.A.151

6. Operational Suitability Data

The EASA Type Certification with respect to Operational Suitability Data (OSD) is defined as follows:

CCD: Certification Specifications and Guidance Material for Cabin Crew Data CS-CCD Initial Issue dated 31 January 2014

MMEL: Certification Specifications for Master Minimum Equipment List CS-MMEL Initial Issue dated 31 January 2014 (Book 1 only)

FCD: Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data CS-FCD Initial Issue dated 31 January 2014.

III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. A350-900 powered by RR engines

1.1 Type Design Definition

A350-941 Type Design Definition: 00 V 000 A0941 / C90 Issue 2 or later approved issues

1.2 Engines

A350-941: Two (2) Rolls Royce Trent XWB-84 or XWB-75 (modification 113768) turbofan engines
See Engine Type Certificate Data Sheet EASA E.111
Engine limitations: See Engine TCDS EASA.E.111.

1.3 Fuel and fuel additives

The fuel system has been certified with: JET A, JET A1, JP5, JP8, N° 3 Jet Fuel, RT and TS-1.

Refer to applicable Airbus Consumable Material List (CML) for additives.

1.4 Oil

Refer to applicable Airbus Consumable Material List (CML).

1.5 Limit Speeds

Refer to approved Airplane Flight Manual.

1.6 Centre of Gravity Range

Refer to approved Airplane Flight Manual.

1.7 Maximum Certified Weights

VARIANT (Mod number)	000 (Basic)	001 (104052)	002 (107986)	003 (107987)	004 (108086)
Engine model	XWB-84	XWB-84	XWB-84	XWB-84	XWB-84
MTOW (t)	268	275	272	268	260
MLW (t)	205	207	207	207	207
MZFW (t)	192	195.7	194	195.7	195.7

VARIANT (Mod number)	005 (108396)	006 (115231)	007 (110117)	008 (108594)	009 (109397)
Engine model	XWB-84, XWB-75	XWB-84	XWB-84	XWB-84, XWB-75	XWB-84
MTOW (t)	250	272	268	240	275
MLW (t)	205	207	207	207	207
MZFW (t)	192	195.7	194	195.7	197.2

VARIANT (Mod number)	010 (110113)	011 (109585)	012 (110115)	013 (110112)*	014 (109837)
Engine model	XWB-84	XWB-84, XWB-75	XWB-84, XWB-75	XWB-84	XWB-84, XWB-75
MTOW (t)	280	255	250	280	235
MLW (t)	207	207	207	205	207
MZFW (t)	195.7	195.7	194	192	195.7

VARIANT (Mod number)	015 (110796)	016 (112672)	017 (111626)	018 (112498)	019 (113792)
Engine model	XWB-84	XWB-84	XWB-84, XWB-75	XWB-84, XWB-75	XWB-84, XWB-75
MTOW (t)	277	278	210	217	235
MLW (t)	205	207	205	207	205
MZFW (t)	192	195.7	195.7	195.7	192

VARIANT (Mod number)	020 (115156)			023 (114698)	
Engine model	XWB-84			XWB-84	
MTOW (t)	283			280	
MLW (t)	207			205	
MZFW (t)	195.7			192	

*For aircraft with removed forward cargo compartment as per Mods 110456 & 110512

1.8 Notes

None

2. Data pertinent to all A350-900 series

2.1 Description

Two turbo-fan, long range, twin-aisle, large category airplane

2.2 Fuel quantity

Tanks	**Usable Fuel (l)**		**Usable Fuel (kg)**	
Mod number	Basic	110211	Basic	110211
Wing	29,924	29,726	23,490	23,335
Center	80,947	107,036	63,543	84,023
Total	140,795	166,488	110,523	130,693

Fuel density is 0.785 kg/l

2.3 Minimum Flight Crew

Two (2): Pilot and Co-pilot

2.4 Minimum Cabin Crew

For the A350-900, the minimum required cabin crew number established during the aircraft certification process is 8 (2 per exit pair), irrespective of the Maximum Operational Passenger Seating Capacity (MOPSC).

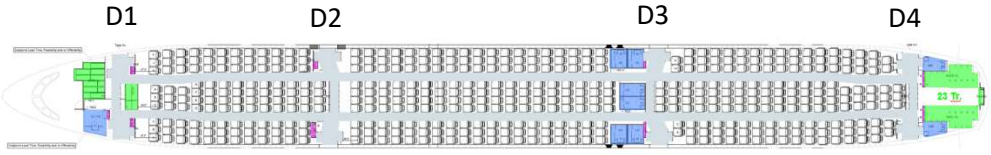
The above minimum cabin crew numbers are those demonstrated by the type certificate holder. A lower number is acceptable in the case of specific cabin layouts if documented in an EASA approved major design change or Supplemental Type Certificate (STC).

In accordance with the operational requirement ORO.CC.100-Number and composition of cabin crew, if the MOPSC for the specific aircraft exceeds 400, the minimum required cabin crew number becomes 9.

If, for the installation of Type A+ emergency exits, the modifications referenced in Section 1, part III, paragraph 2.5 are embodied, in addition a third cabin crew member must be stationed at each installed pair of Type A+ emergency exits.

2.5 Maximum Operational Passenger Seating Capacity

The maximum number of passengers approved for emergency evacuation are:



A350-941	Max Pax D1-D4	D1-D2	D2-D3	D3-D4	D1-D3	D2-D4
A - A - A - A	440	110	189	141	299	330
A - A - A - A	428	98	184	146	282	330
A - A - A - A	439	121	159	159	280	318
A - A - A - A	432	102	181	149	283	330
A - A - A - A	440	121	168	151	289	319
A - A - A - A	440	110	171	159	281	330
C - A - A - A	385	55	189	141	244	330
C - A - A - A	385	95	180	110	275	290
C - A - A - A	385	55	179	151	234	330
C - A - A - A	385	55	188	142	243	330
C - A - A - A	385	55	180	150	235	330
C - A - A - A	385	100	135	150	235	285
C - A - C - A	330	56	129	145	185	274
C - A - C - A	283	24	133	126	157	259
C - A - C - A	295	30	138	127	168	265
C - A - C - A	303	28	138	137	166	275
A - A - C - A	385	111	129	145	240	274
C – C - C - A	275	63	92	120	155	212
C – C – A - A	330	55	125	150	180	275

If, for the installation of Type A+ emergency exits, the following modifications are embodied:

- Mod 115016 and 110972 and as applicable
  - Mod 110654 (Type A+ dual lane slide-rafts at PAX doors 1 LH/RH) and/or
  - Mod 110655 (Type A+ dual lane slide-rafts at PAX doors 2 LH/RH) and/or
  - Mod 114823 (Type A+ dual lane slide-rafts at PAX doors 3 LH/RH) and/or
  - Mod 110657 (Type A+ dual lane slide-rafts at PAX doors 4 LH/RH)

a. the limitations as per ESF D-39 are applicable.
b. the maximum operational passenger seating capacity and zonal capacities approved for emergency evacuation are:

A350-941 including Type A+ configuration	Max Pax D1-D4	D1-D2	D2-D3	D3-D4	D1-D3	D2-D4
C_A+_A+_A+	415	56	190	169	246	359
C_A+_A_A+	405	110	135	160	245	295
C_A_A+_A+	405	55	190	160	245	350
C_A+_A_A	395	110	135	150	245	285
C_A_A_A+	395	55	180	160	235	340
C_C_A+_A+	350	55	135	160	190	295
C_C_A_A+	340	55	125	160	180	285
C_C_C_A+	285	63	92	130	155	222

2.6 Cargo compartment loading

Cargo compartment	Maximum load (kg)	
Forward	Basic	Mods 110456 / 110512
	22,000	0
Aft	19,000	
Rear (bulk)	3,468	

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weights), see Weight and Balance Manual Chapter 1.10 ref. 00 V 080 A0001 / C9S.

2.7 Environmental Flight Envelope

Maximum operating altitude is 43,100 ft.
Refer to approved Airplane Flight Manual.

2.8 Other Limitations

Refer to approved Airplane Flight Manual.

ALS-ETWF (Items of equipment subject to on-going Extent of Test without Failure), reference 00V207AETWF/C11 issue 5:
This document identifies temporary limitations due to ongoing tests. Since no failure occurred at time of TC this specific document ALS-ETWF contains temporary limitations that will be updated depending on test progress or deleted when tests are successfully completed. In case of failure, the failed item will be assessed for introduction in the ALS Part 4 at its demonstrated life limit.

For each item, the recorded progress of the ongoing test is sufficiently ahead of the anticipated fleet leader, even assuming the maximum utilisation rates provided in the approved MRBR.

2.9 Auxiliary Power Unit (APU)

One APU, Honeywell HGT1700.

Fuel and Oil: Refer to applicable approved Manuals.

2.10 Equipment

The equipment required by the applicable requirements shall be installed.

Cabin seats shall conform to the “Passenger Seat Frame Specification” document ref. 00V252K0005/C91 Issue 4.

2.11 All Weather Capabilities

The aircraft is qualified to Cat 3 precision approach and autoland.

2.12 Wheels and Tyres

Gear	Quantity	Wheel size	Tyre size
NLG	2	16”	1050 x 395R16 28PR
MLG	8	23”	1400 x 530R23 42PR

2.13 Hydraulics

Fluid specifications: Refer to applicable Airbus Consumable Material List (CML) document.

2.14 Electrical Power Center Configuration Data File Tool

An Airline Configuration Tool (EPDS* Tool Suite) is being developed and qualified to allow airlines to manage the Configuration Data Files of Secondary Power Distribution Boxes (SPDB). This tool will be available post A350 Entry Into Service.

IV. OPERATING AND SERVICE INSTRUCTIONS

1. Aircraft Flight Manual

A350 Aircraft Flight Manual: STL 35000 (certification reference for TC: 00 V 101 A0941 / C9S Issue 4) or later approved revisions.

2. Maintenance Instructions and Airworthiness Limitations

- Safe Life Airworthiness Limitation Items are provided in the A350 Airworthiness Limitations Section (ALS) Part 1, Revision 00 (Document 00 V 050 ALS01 / C01 Issue 1, [1]);

- Damage-Tolerant Airworthiness Limitation Items are provided in the A350 Airworthiness Limitations Section (ALS) Part 2, Revision 00 (Document 00 V 050 ALS02 / C01 Issue 1, [1]);

- Certification Maintenance Requirements are provided in the A350 Airworthiness Limitations Section (ALS) Part 3, Revision 00 (Document 00 V 050 ALS03 / C01 Issue 2, [1]);

- A350 System Equipment Maintenance Requirements are provided in the A350 Airworthiness Limitations Section (ALS) Part 4, Revision 00 (Document 00 V 050 ALS04 / C01 Issue 1, [1]);

- A350 Fuel System Airworthiness Limitations are provided in the A350 Airworthiness Limitations Section (ALS) Part 5, Revision 00 (Document 00 V 050 ALS05 / C01 Issue 2, [1]);

- Maintenance Review Board Report 00 V 050 AMRBR / C01.

Except if documented in Aircraft documentation (Maintenance Procedures, Structural Repair Instructions, Electrical Standard Practices, Service Bulletins), all elements that are part of the Electrical Structure Network (ESN) shall not be modified, removed or repaired without agreement of Airbus.

Note [1]: Initial Revision and subsequent Variations (that may be compiled in a Revision) are approved under the EASA system. The applicable Airworthiness Limitation Section of the ICA is available on the AirbusWorld website.

3. ETOPS

The Type Design, system reliability and performance of the following A350 model(s) were found capable for Extended Range Operations (ETOPS) when configured, maintained and operated in accordance with the current revision of the ETOPS Configuration, Maintenance and Procedures (CMP) document, XWB/EASA: CS 25.1535/CMP.
This finding does not constitute an approval to conduct Extended Range Operations (operational approval must be obtained from the responsible Authority).

The following table provides details on the ETOPS approvals.

Model	Engine Type	180 min. Approval date	Beyond 180 min. Approval date
A350-941	Trent XWB-84	14 October 2014	14 October 2014
A350-941	Trent XWB-75	03 April 2019	03 April 2019

V. OPERATIONAL SUITABILITY DATA (OSD)

The Operational Suitability Data elements listed below are approved by the European Union 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

   a. The Master Minimum Equipment List has been approved as per the defined Operational Suitability Data Certification Basis and as documented in A350 MMEL (reference: STL 35100) first revision dated 06 November 2014, or later approved revisions.
   b. Required for entry into service by EU operator.

2. Flight Crew Data

   a. The Flight Crew data has been approved as per the defined Operational Suitability Data Certification Basis and as documented in “A350 Operational Suitability Data Flight Crew, (Ref: Airbus V01RP1505446 Issue 1, dated 05 May 2015)”, or later approved revisions.
   b. Required for entry into service by EU operator.
   c. Pilot Type Rating: The licence endorsement for the A350-900 series aircraft is "A330/A350". The A350-900 and the A330 series aircraft are variants of the same type of aircraft.

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 A350-941 aircraft model is determined to be a variant to the A330-200/-300 aircraft model(s).
   d. The A350-941 model equipped with at least one pair of Type A+ exits is determined to be a variant to the A350-941 model equipped with Type A exits.
   e. The model A350-941 equipped with at least one pair of Type A+ exits is determined to be a variant to the A330-200/-300 aircraft models.

SECTION 2: A350-1000 SERIES

I. GENERAL

1. Type/Model

A350-1041

2. Performance Class

A

3. Certifying Authority

EASA

4. Manufacturer

AIRBUS S.A.S
2 Rond-point Emile Dewoitine
31700 Blagnac
FRANCE

5. EASA Certification Application Date

A350-1041: 30 July 2013

6. EASA Type Certification Date

A350-1041: 21 November 2017

II. CERTIFICATION BASIS

The Certification Basis included in the below §1 to §7 is valid for all areas of the A350-1041 (no distinction between affected or non-affected areas).

1. EASA Certification Basis

The following EASA airworthiness standards are applicable:

- EASA Certification Specification 25, Amendment 13 – Large Aeroplanes
- EASA Certification Specification 25.851 (a) and (c) at Amendment 17 for the installation of halon free handheld fire extinguisher.
- EASA Certification Specification AWO, Initial Issue – All Weather Operations
- EASA Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance CS ACNS Initial Issue, Subpart D Sections 2/3/4 and Subpart E Section2.

- For type A+ emergency exit installation (see also ESF D-39), the following CS are applicable at amendment 20:

  CS 25.561(c), 25.601, 25.603(a)(b)(c), 25.605(a)(b), 25.789(a), 25.0795(d), 25.801(a)(d), 25.0803(a)(c), 25.0807 (a)(7)(g)(i)(f), 25.809, 25.810(a)(1), 25.0811(d)(2)(g), 25.812(h)(k), 25.0813, 25.853(a), 25.869(a)(3), 25.901(c), 25.1301(a)(1)(2)(3), 25.1309(a)(b), 25.1411(c)(d), 25.1415(a)(b)(c), 25.1438, 25.1501, 25.1561(a)(d)(e), 25.1701(a), 25.1703(a)(b)(c), 25.1705(a), 25.1707(a)(d)(l), 25.1709(a)(b), 25.1711(a)(c)(d)(e), 25.1713(a)(c)

  For mixed configurations involving Type A, C and A+ emergency exits, except CS 25.795(d) and 25.803(a)(c), the applicable CS may continue to be applied at an amendment that was applicable before the installation of type A+ emergency exits if the area is not affected by the type + installation.

- For modification 114947 installation or changes to the cowling or nacelle skin:

  CS 25.1193(e)(4)(f) amendment 22

2. Special Conditions

SC B-01	Stalling and Scheduled Operating Speeds
SC B-1002	Motion and effect of cockpit controls
SC B-04	Static Directional, Lateral and Longitudinal Stability and Low Energy Awareness
SC B-05	Flight envelope protection
SC B-09	Flight in Icing Condition
SC B-11	Soft Go Around mode

SC C-01	Crash Survivability for CFRP Fuselage
SC C-05	Tyre Debris vs. Fuel Leakage for CFRP Fuel Tank
SC C-06	Dynamic braking
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SC D-07	Control Surface Position Awareness / Electronic Flight Control Systems
SC D-14	Application of Heat Release and Smoke Density Requirements to Seat Materials
SC D-16	In Flight Fire - Composite Fuselage Construction
SC D-20	Lateral Trim Function through Differential Flap Setting
SC D-32	Use of magnesium alloys for passenger seats components
SC D-35	Installation of inflatable seat belts
SC D-36	Installation of structure-mounted airbag
SC D-37	Installation of mini-suite type seating
SC D-42	Installation of stowage or charging stations for Personal Electronic Devices (PED) in an aircraft cabin (post-TC)
SC D-43	Installation of oblique seats
SC D-44	Installation of Three Point Restraint & Pretensioner System (post-TC)
SC D-45	Incorporation of Inertia Locking Device in Dynamic Seats
SC E-08	Fire withstanding Capability of CFRP Wing Fuel Tanks
SC E-12	Water / Ice in Fuel System
SC F-12	HIRF Protection
SC F-13	Lithium Battery Installations
SC F-26	Flight Recorders including Data Link Recording
SC F-38	Security Assurance Process to isolate or protect the Aircraft Systems and Networks from internal and external Security Threats
SC F-GEN-01	Non-rechargeable lithium battery installations, applicable by the date of this TCDS at issue 18
SC G-06	Cancellation of AFM Engine Management Tables

3. Deviations

None

4. Equivalent Safety Findings

ESF C-11	Ground Loads Conditions
ESF C-12	Undercarriage Lateral Turning Loads

ESF D-11	Packs off operations
ESF D-15	Post Crash Fire – Composite Fuselage Construction
ESF D-19	Overpressure Relief Valves and Outflow Valves
ESF D-23	Indication of the Passenger Door from outside Position if the Door is not fully Closed, Latched and Locked
ESF D-28	Green Arrow and “Open” Placard for Emergency Exit Marking
ESF D-30	Installation of Angled Seats
ESF D-31	Application of reduced Intrusion Loads in certain Areas of the Flight Deck Boundaries
ESF D-34	APU Doors Compliance to CS 25.783(a)
ESF D-39	Type A+ Emergency Exits
ESF E-1004	Trent XWB 97k Thrust Reverser Testing
ESF E-07	Warning Means for Rolls Royce Engine Fuel Filters
ESF E-09	Rolls Royce Engine Turbine Overheat Detection
ESF E-13	Fire Extinguishing Agent Concentration
ESF E-14	Pressure fuelling system shut-off operation check
ESF E-1022	Trent XWB -97 zone 2 and 3 (seals and caps) fire withstanding capability
ESF F-22	Minimum Mass Flow of Supplemental Oxygen
ESF F-23	Landing Light Switch
ESF F-33	Pneumatic Systems – harmonised 25.1438
ESF F-52	Crew Determination of Quantity of Oxygen in Passenger Oxygen System
ESF F-63	Improved Passenger Oxygen Mask Deployment System
ESF F-69	Pitot Heat Indication Systems
ESF G-05	Engine Oil Temperature Indication
ESF K-03	Localizer Excessive Deviation Alerts
ESF K-04	Limit Risk
ESF K-08	CAT 3 Operations – Super Fail Passive Anomalies

5. Environmental requirements

Fuel venting:
Certification Specification-34 amendment 1
ICAO Annex 16, Volume II, amendment 07, Part II, chapter II

Noise:
See TCDSN No. EASA.A.151

6. Reversions

Reversion to Amendment 8 is applied for paragraph CS 25.1322 “Flight Crew Alerting”.

7. Operational Suitability Data

The EASA Type Certification with respect to Operational Suitability Data (OSD) is defined as follows:

CCD: Certification Specifications and Guidance Material for Cabin Crew Data CS-CCD Initial Issue

MMEL: Certification Specifications for Master Minimum Equipment List CS-MMEL Initial Issue (Book 1 only)

FCD: Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data CS-FCD Initial Issue

III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. A350-1000 powered by RR engines

1.1 Type Design Definition

A350-1041 Type Design Definition: 00 V 000 A1041 / C10 Issue 2 or later approved issues

1.2 Engines

A350-1041: Two (2) Rolls Royce Trent XWB-97 turbofan engines
See Engine Type Certificate Data Sheet EASA E.111
Engine limitations: See Engine TCDS EASA.E.111.

1.3 Fuel and fuel additives

The fuel system has been certified with: JET A, JET A1, JP5, JP8, N° 3 Jet Fuel, RT and TS-1.

Refer to applicable Airbus Consumable Material List (CML) for additives.

1.4 Oil

Refer to applicable Airbus Consumable Material List (CML) document.

1.5 Limit Speeds

Refer to approved Airplane Flight Manual.

1.6 Centre of Gravity Range

Refer to approved Airplane Flight Manual.

1.7 Maximum Certified Weights

VARIANT (Mod number)	000 (Basic)	001 (110476)	002 (110134)		004 (112750)
Engine model	XWB-97	XWB-97	XWB-97		XWB-97
MTOW (t)	308	311	316		308
MLW (t)	233	236	236		236
MZFW (t)	220	223	223		223

VARIANT (Mod number)	005 (112751)		009 (114124)	010 (114125)	011 (114623)
Engine model	XWB-97		XWB-97	XWB-97	XWB-97
MTOW (t)	270		290	300	316
MLW (t)	236		233	233	233
MZFW (t)	223		220	220	220

2. Data pertinent to all A350-1000 series

2.1 Description

Two turbo-fan, long range, twin-aisle, large category airplane

2.2 Fuel quantity

Tanks	Usable Fuel (l)	Usable Fuel (kg)
Wing	29,437	23,108
Center	99,917	78,435
Total	158,791	124,651

Fuel density is 0.785 kg/l

2.3 Minimum Flight Crew

Two (2): Pilot and Co-pilot

2.4 Minimum Cabin Crew

For the A350-1000, the minimum required cabin crew number established during the aircraft certification process is 8, irrespective of the Maximum Operational Passenger Seating Capacity (MOPSC).

The above minimum cabin crew numbers are those demonstrated by the type certificate holder. A lower number is acceptable in the case of specific cabin layouts if documented in an EASA approved major design change or Supplemental Type Certificate (STC).

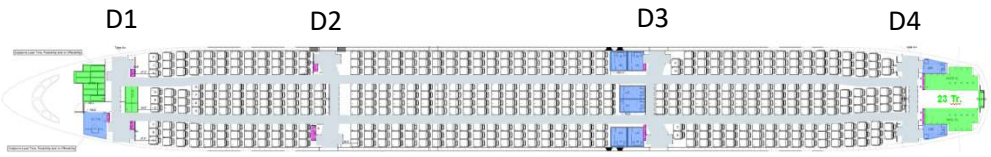
In accordance with the operational requirement ORO.CC.100-Number and composition of cabin crew, if the MOPSC for the specific aircraft exceeds 400, the minimum required cabin crew number becomes 9.

If, for the installation of Type A+ emergency exits, the modifications referenced in Section 2, part III, paragraph 2.5 are embodied, in addition a third cabin crew member must be stationed at each installed pair of Type A+ emergency exits.

2.5 Maximum Operational Passenger Seating Capacity

The zonal capacities certified on A350-941 (ref. Section 1, III, §2.5) are also considered acceptable for A350-1041. The zonal capacities certified on A350-1041 only **are not** acceptable for A350-941

The maximum number of passengers approved for emergency evacuation are:



A350-1041 only	Max Pax D1-D4	D1-D2	D2-D3	D3-D4	D1-D3	D2-D4
A - A - A - A	440	110	177	153	287	330
A - A - A - A	440	110	158	172	268	330
A - A - A - A	440	110	165	165	275	330
A - A - A - A	440	110	161	169	271	330
C - A - A - A	385	55	158	172	213	330
C - A - A - A	370	40	162	168	202	330
C - A - A - A	372	44	165	163	209	328
C - A - A - A	385	55	165	165	220	330
C - A - A - A	385	90	140	155	230	295
C - A - A - A	385	55	160	170	215	330
C - A - A - A	385	96	140	149	236	289
C - A - A - A	385	55	155	175	210	330
C - A - A - A	385	100	130	155	230	285
C - A - C - A	330	55	110	165	165	275
C - A - C - A	330	56	129	145	185	274
A - A - C - A	385	110	110	165	220	275

If, for the installation of Type A+ emergency exits, the following modifications are embodied:

- Mod 115016 and 110972 and as applicable
  - Mod 110654 (Type A+ dual lane slide-rafts at PAX doors 1 LH/RH) and/or
  - Mod 110655 (Type A+ dual lane slide-rafts at PAX doors 2 LH/RH) and/or
  - Mod 110656 (Type A+ dual lane slide-rafts at PAX doors 3 LH/RH) and/or
  - Mod 110657 (Type A+ dual lane slide-rafts at PAX doors 4 LH/RH)

a. the limitations as per ESF D-39 are applicable.

b. the maximum operational passenger seating capacity and zonal capacities approved for

emergency evacuation are:

A350-1041 including Type A+ configuration	Max Pax D1-D4	D1-D2	D2-D3	D3-D4	D1-D3	D2-D4
A+_A+_A+_A+	480	120	180	180	300	360
A+_A+_A+_A+	480	120	170	190	290	360
A+_A+_A+_A+	480	124	176	180	300	356
A_A+_A+_A+	470	110	175	185	285	360
A_A+_A+_A+	429	69	180	180	249	360
A_A+_A_A+	460	110	168	182	278	350
A_A_A+_A+	460	110	175	175	285	350
A_A+_A_A	450	110	171	169	281	340
A_A_A_A+	450	110	165	175	275	340
C_A+_A+_A+	415	55	180	180	235	360
C_A+_A_A+	405	55	165	185	220	350
C_A+_A_A+	405	110	130	165	240	295
C_A_A+_A+	405	55	170	180	225	350
C_A_A+_A+	405	96	150	159	246	309
C_A+_A_A	395	55	165	175	220	340
C_A_A_A+	395	55	165	175	220	340
C_A_A_A+	395	90	140	165	230	305
C_A+_C_A+	350	56	139	155	195	294
C_A_C_A+	340	55	110	175	165	285

2.6 Cargo compartment loading

Cargo compartment	Maximum load (kg)
Forward	26,500
Aft	24,500
Rear (bulk)	1,500

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weights), see Weight and Balance Manual Chapter CTL-LIM ref. 00 V 080 A0001 / C1S.

2.7 Environmental Flight Envelope

Maximum operating altitude is 41,450 ft.

Refer to approved Airplane Flight Manual.

2.8 Other Limitations

Refer to approved Airplane Flight Manual.

ALS-ETWF (Items of equipment subject to on-going Extent of Test without Failure), reference 00V207AETWF/C11 issue 5:
This document identifies temporary limitations due to ongoing tests. Since no failure occurred at time of TC this specific document ALS-ETWF contains temporary limitations that will be updated depending on test progress or deleted when tests are successfully completed. In case of failure, the failed item will be assessed for introduction in the ALS Part 4 at its demonstrated life limit.

For each item, the recorded progress of the ongoing test is sufficiently ahead of the anticipated fleet leader, even assuming the maximum utilisation rates provided in the approved MRBR.

2.9 Auxiliary Power Unit (APU)

One APU, Honeywell HGT1700.

Fuel and Oil: Refer to applicable approved Manuals.

2.10 Equipment

The equipment required by the applicable requirements shall be installed.

Cabin seats shall conform to the "Passenger Seat Frame Specification" document ref. 00V252K0005/C01 Issue 1.

2.11 All Weather Capabilities

The aircraft is qualified to Cat 3 precision approach and autoland.

2.12 Wheels and Tyres

Gear	Quantity	Wheel size	Tyre size
NLG	2	16"	1050 x 395R16 28PR
MLG	12	22"	50 x 20.0R22 34PR

2.13 Hydraulics

Fluid specifications: Refer to applicable Airbus Consumable Material List (CML) document.

2.14 Electrical Power Center Configuration Data File Tool

An Airline Configuration Tool (EPDS* Tool Suite) is being developed and qualified to allow airlines to manage the Configuration Data Files of Secondary Power Distribution Boxes (SPDB). This tool will be available post A350 Entry Into Service.

IV. OPERATING AND SERVICE INSTRUCTIONS

1. Aircraft Flight Manual

A350 Aircraft Flight Manual: STL 35000 (certification reference for TC: 00 V 101 A1041 / C1S Issue 3) or later approved revisions.

2. Maintenance Instructions and Airworthiness Limitations

- Limitations applicable to Safe Life Airworthiness Limitation Items are provided in the A350 Airworthiness Limitations Section (ALS) Part 1 [1],
- Limitations applicable to Damage-Tolerant Airworthiness Limitation Items are provided in the A350 Airworthiness Limitations Section (ALS) Part 2 [1],
- Certification Maintenance Requirements are provided in the A350 Airworthiness Limitations Section (ALS) Part 3 [1],
- System Equipment Maintenance Requirements are provided in the A350 Airworthiness Limitations Section (ALS) Part 4 [1],
- Fuel System Airworthiness Limitations are provided in the A350 Airworthiness Limitations Section (ALS) Part 5 [1].
- Maintenance Review Board Report 00 V 050 AMRBR / C01 issue 2.

Except if documented in Aircraft documentation (Maintenance Procedures, Structural Repair Instructions, Electrical Standard Practices, Service Bulletins), all elements that are part of the Electrical Structure Network (ESN) shall not be modified, removed or repaired without agreement of Airbus.

Note [1]: Initial Revision and subsequent Variations (that may be compiled in a Revision) are approved under the EASA system. The applicable Airworthiness Limitation Section of the ICA is available on the AirbusWorld website.

3. ETOPS

The Type Design, system reliability and performance of the following A350 model(s) were found capable for Extended Range Operations (ETOPS) when configured, maintained and operated in accordance with the current revision of the ETOPS Configuration, Maintenance and Procedures (CMP) document, XWB/EASA: CS 25.1535/CMP.
This finding does not constitute an approval to conduct Extended Range Operations (operational approval must be obtained from the responsible Authority).

The following table provides details on the ETOPS approvals.

Model	Engine Type	120 min. Approval date
A350-1041	Trent XWB-97	06 February 2018

Model	Engine Type	180 min. Approval date	Beyond 180 min. Approval date
A350-1041	Trent XWB-97	19 June 2018	06 July 2018

V. OPERATIONAL SUITABILITY DATA (OSD)

The Operational Suitability Data elements listed below are approved by the European Union 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

   a. The Master Minimum Equipment List has been approved as per the defined Operational Suitability Data Certification Basis and as documented in A350 MMEL (reference: STL 35100), first revision at Type Certification date, or later applicable revision.
   b. Required for entry into service by EU operator.

2. Flight Crew Data

   a. The Flight Crew data has been approved as per the defined Operational Suitability Data Certification Basis and as documented in "Operational Suitability Data – Flight Crew – A330/A350 (ref: A330 350 FCDR update for A350-1000_V00RP1731843_v1.0, dated 13 October 2017), or later approved revisions.
   b. Required for entry into service by EU operator.
   c. Pilot Type Rating: The licence endorsement for the A350-900 and A350-1000 series aircraft is "A330/A350". The A350-900, the A350-1000 and the A330 series aircraft are variants of the same type of aircraft.

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 2 (Ref: Airbus V01RP1519368 dated 17 May 2017)", or later approved revisions.
   b. Required for entry into service by EU operator.
   c. The A350-1041 model is determined to be the same aircraft type as the A350-941 model. The A350-941/-1041 model(s) are determined to be variants to the A330-200/-300 aircraft model(s).
   d. The A350-1041 model equipped with at least one pair of Type A+ exits is determined to be a variant to the A350-1041 model equipped with Type A exits.
   e. The model A350-1041 equipped with at least one pair of Type A+ exits is determined to be a variant to the A330-200/-300 aircraft models.

ADMINISTRATIVE SECTION

VI. ACRONYMS AND ABBREVIATIONS

AFM	Aircraft Flight Manual
ALS	Airworthiness Limitations Section
APU	Auxiliary Power Unit
AWO	All Weather Operations
CFRP	Carbon Fiber Reinforced Plastic
EASA	European Union Aviation Safety Agency
ESF	Equivalent Safety Finding
ETOPS	Extended Range Operation with Two-Engine Aeroplanes
HIRF	High Intensity Radiated Field
RR	Rolls Royce
SC	Special Condition
TC	Type Certificate
TCDS	Type Certificate Data Sheet
XWB	Extra Wide Body

VII. CHANGE RECORD

Issue	Date	Changes
01	30 September 2014	Initial Issue for TC
02	14 October 2014	Approval of ETOPS 180 min and beyond 180 min
03	09 January 2015	- Part II – Paragraph 2.1; - Part III – Paragraph 1.1 ; Part III – Paragraph 2.10 ; - Part III – Paragraph 2.13 - Part IV – Paragraph 1 ; Part IV – Paragraph 2 - Part V – Paragraph 1
04	31 August 2015	- Part II – Paragraph 7 - Part III – Paragraph 1.7, Paragraph 2.2, Paragraph 2.4 (new) - Part V – Paragraph1, Paragraph 2, Paragraph 3 ;
05	22 February 2016	- Part III – Paragraph 1.7
06	18 May 2016	- Part II – Paragraph 2.1
07	24 October 2016	- Part III – Paragraph 1.7
08	08 December 2016	- Part III – Paragraph 1.7
09	30 June 2017	- Part II – Paragraph 2.1, Paragraph 6; - Part III – Paragraph 1.7
10	21 November 2017	- Section 1, Part III – Paragraph 1.7 - Section 2: Inclusion of the A350-1000 TC
11	21 December 2017	- Section 2, Part III – Paragraph 1.7 - Section 2, Part IV – Paragraph 2

Issue	Date	Changes
12	29 May 2018	- Section 2, Part III – Paragraph 1.7 - Section 2, Part III – Paragraph 2.8 - Section 2, Part IV – Paragraph 3
13	27 June 2018	- Section 1. Part II – Paragraph 2.1, SC D-45 added - Section 1, Part III – Paragraph 1.7, WV010 added - Section 1, Part III – Paragraph 2.8 ALS-ETWF is. 5 - Section 2, Part II – Paragraph 2.1, SC D-45 added - Section 2, Part III – Paragraph 2.8 ALS-ETWF is. 5 - Section 2, Part IV – Paragraph 3, ETOPS 180min added
14	09 July 2018	- Section 2, Part IV – Paragraph 3, ETOPS beyond 180min added
15	26 September 2018	- Section 1, Part II – Paragraph 2.1, SCs D-42 and D-44 added - Section 1, Part III – Paragraph 1.7, WV013 added - Section 1, Part III – Paragraph 2.2, optional fuel quantities added - Section 1, Part III – Paragraph 2.4, clarification on cabin crew distribution - Section 1, Part III – Paragraph 2.5, emergency exit configuration C-C-C-A added - Section 1, Part III – Paragraph 2.6, optional cargo compartment loading added - Section 2, Part II – Paragraph 2.1, SCs D-42 and D-44 added - Section 2, Part III – Paragraph 2.11, all weather capabilities updated
16	12 March 2019	- Section 1, Part II – Paragraph 1, CS 25.851(a)(c) amdt 17 added for halon free handheld fire extinguishers - Section 1, Part III – Paragraph 1.2, 75k engine rating added - Section 1, Part III – Paragraph 1.7, WV016 added - Section 2, Part II – Paragraph 1, CS 25.851(a)(c) amdt 17 added for halon free handheld fire extinguishers
17	03 April 2019	- Section 1, Part III – Paragraph 1.2, wording correction - Section 1, Part VI – Paragraph 3, ETOPS for XWB-75 engine rating added
18	15 May 2018	- Section 1, Part II – Paragraph 2, SC F-GEN-01 added - Section 1, Part II – Paragraph 5, Reference standardisation - Section 1, Part III – Paragraph 1.7, WV018 added - Section 2, Part II – Paragraph 2, SC F-GEN-01 added - Section 2, Part II – Paragraph 5, Reference standardisation
19	02 July 2019	- Section 1, Part III – Paragraph 1.7, engine rating and WV 023 added - Section 2, Part III – Paragraph 1.7, WV 005, 009, 010 added

Issue	Date	Changes
20	09 Aug. 2019	- Section 1, Part II – Paragraph 2, SC D-43 added - Section 1, Part III – Paragraph 1.7, WV 019 and clarification * for WV013 added - Section 2, Part II – Paragraph 2, SC D-43 added
21	12 Nov. 2019	- Section 1, Part II – Paragraph 5, Fuel Venting requirement added - Section 1, Part III – Paragraph 1.2, generic reference to engine TCDS EASA.E.111 added, duplication of engine TCDS deleted - Section 1, Part III – Paragraph 1.7, WV 006 and added - Section 2, Part II – Paragraph 5, Fuel Venting requirement added - Section 2, Part III – Paragraph 1.2, generic reference to engine TCDS EASA.E.111 added, duplication of engine TCDS deleted
22	27 Nov. 2019	- Section 1, Part II – Paragraph 4, ESF D-39 added - Section 1, Part III – Paragraph 2.4, 3rd cabin crew added - Section 1, Part III – Paragraph 2.5, MPSC added - Section 1, Part V – Paragraph 3, sub-paragraph d. and e. added - Section 2, Part II – Paragraph 4, ESF D-39 added - Section 2, Part III – Paragraph 2.4, 3rd cabin crew added - Section 2, Part III – Paragraph 2.5, MPSC added - Section 2, Part V – Paragraph 3, sub-paragraph d. and e. added
23	16 June 2020	- Section 1, Part II – Paragraph 1, CS at amdt 20 and 22 added - Section 1, Part II – Paragraph 2, SC B-15 added - Section 2, Part II – Paragraph 1, CS at amdt 20 and 22 added - Section 2, Part III – Paragraph 1.7, WV 011 added
24	26 June 2020	- Section 1, Part III – Paragraph 1.7, WV 017 added
25	2021	- Section 1, Part II - Paragraph 4, ESF G-11 added - Section 1, Part III - Paragraph 1.3 & 1.4, reference changed from engine operating instruction to aircraft CML - Section 1, Part III - Paragraph 2.13, reference changed to aircraft CML - Section 1, Part III -Paragraph 1.7, WV020 added - Section 2, Part III - Paragraph 1.3 & 1.4, reference changed from engine operating instruction to aircraft CML Section 2, Part III - Paragraph 2.13, reference changed to aircraft CML