OPERATIONAL EVALUATION REPORT

AIRBUS

A330, A350

BRAZILIAN AIRCRAFT EVALUATION GROUP

REVISION 03 – JULY 23, 2024

OPERATIONAL EVALUATION REPORT

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A330, A350

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Revision Record

Revision Nº.	Content	Date
Original	Initial A350-900 Operational Evaluation	09 DEC 2015
1	Insertion of A330-200/200F/300/900 information	04 JUL 2018
2	Introduction of A330-800; removal of aircraft pictures; removal of evaluation team composition; update on information related to SFF and MFF; removal of the technical publications section; removal of Annex 1	09 MAR 2022
3	Alternate Auto Pilot	23 JUL 2024

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Acronyms

ATO.....Approved Training Organization
AFCS.....Automatic Flight Control System
AFM .....Airplane Flight Manual
ANAC .....Agência Nacional de Aviação Civil
AOM .....Airplane Operations Manual
A/THR .....Auto Thrust
AP .....Autopilot
ATO.....Approved Training Organization
CDL .....Configuration Deviation List
CRM.....Crew Resource Management
CFIT.....Controlled Flight Into Terrain
CTR .....Common Type Rating
DES .....Descent Mode on Autopilot
EASA .....European Aviation Safety Agency
ECAM.....Electronic Centralized Aircraft Monitoring
ECL .....Electronic Checklist
EFB.....Electronic Flight Bag
FAA .....Federal Aviation Administration
FBW .....Fly By Wire
FCOM.....Flight Crew Operating Manual
FCTM .....Flight Crew Training Manual
FCU .....Flight Control Unit
FD .....Flight Director
FFS .....Full Flight Simulator
FMA .....Flight Mode Annunciator
FMS.....Flight Management System
FSTD .....Flight Simulation Training Device
HUD .....Head-Up Display
IAC .....Instrução de Aviação Civil (Civil Aviation Instruction)
INSPAC.....Inspetor de Aviação Civil (Civil Aviation Inspector)
IS.....Instrução Suplementar (Supplementary Instruction)
KCCU.....Keyboard and Cursor Control Unit
LIFUS.....Line Flying Under Supervision

LVO ..... Low Visibility Operations
MDR ..... Master Differences Requirements
MEL..... Minimum Equipment List
MFD ..... Multi Function Display
MFF..... Multi Fleet Flying
MLTE..... Habilitação de classe avião multimotor terrestre (multi engine – land airplane class rating)
MLW ..... Maximum Landing Weight
MMEL ..... Master Minimum Equipment List
MTOW ..... Maximum Take Off Weight
ND..... Navigation Display
ODR ..... Operator Differences Requirements
OEB ..... Operational Evaluation Board
OIS ..... Onboard Information System
OSD..... Operational Suitability Data
OTD ..... Other Training Device
PF..... Pilot Flying
PFD ..... Primary Flight Display
PIC ..... Pilot In Command
POI ..... Principal Operations Inspector
RA ..... Resolution Advisory
RBAC..... Regulamento Brasileiro de Aviação Civil
RBHA ..... Regulamento Brasileiro de Homologação Aeronáutica
RVSM ..... Reduced Vertical Separation Minimum
SFF ..... Single Fleet Flying
SOP ..... Standard Operating Procedure
TASE..... Training Areas of Special Emphasis
TAWS ..... Terrain Awareness and Warning System
TCAS ..... Traffic Alert and Collision Avoidance System
TCDS ..... Type Certification Data Sheet
VD ..... Vertical Situation Display
WXR..... Weather Radar
XPDR..... Transponder

1. INTRODUCTION

1.1. Background

In 2015, an operational evaluation campaign of the A350 was conducted by the ANAC Aircraft Evaluation Group. The configuration assessed was the A350-900 without HUD, as this is an optional feature.

The proposed initial type rating training for the Airbus A350-900, called Standard Transition Course, was evaluated at Airbus Training Center facilities in Blagnac - France from July 28th until September 4th, 2015.

This evaluation used the T5 Test from IAC 121-1009 as guidance and it was considered satisfactory. Therefore the Cross Crew Qualification Course (CCQ - from A320 to A350) and the Differences Course (CTR - from A330 to A350) evaluations were performed by documental analysis, using the OSD Flight Crew Report for A350 from Airbus, dated May 5th, 2015 as reference.

In April 2018, an operational evaluation campaign of the A330-900 was conducted by the ANAC Aircraft Evaluation Group. The objective of this operational evaluation was to demonstrate that the A330-900 is a variant of the A330-300. The evaluation was conducted through a T2 test, according to ANAC IS 00-007A. Together with this evaluation, the ANAC validated the previous A330 models (present in the ANAC TCDS N° EA-9806) operational suitability information using the EASA A330/A350 Operational Suitability Data (OSD) Flight Crew (Issue 5) report.

In March 2022, the ANAC conducted an operational evaluation of the A330-800. This evaluation consisted in the extension of the conclusion of the T2 test performed for the A330-900, thought a subjective assessment of the handling characteristics of the A330-800 by Airbus pilots, and in a T3 test by analysis to justify the content of the ODR table from A330ceo to A330neo. At that time some information were updated using the EASA A330/A350 Operational Suitability Data (OSD) Flight Crew (Issue 11.1) report.

All recommendations made in this document are based on the evaluations of these aircraft models, equipped in a given configuration and in accordance with the current regulations and instructions.

Modifications and upgrades to the aircraft evaluated can require additional assessment for type designation, training / checking / currency, operational credits, and other elements within the scope of the operational evaluation of aircrafts.

1.2. Objective

The objective of this report is to present the ANAC results from the operational evaluation campaigns of Airbus model A350-900 and A330.

1.3. Purpose

The purpose of this report is to:

- Define the Pilot Type Rating assigned for the models A350-900 and A330;

- Define the requirements for training, checking and currency applicable to flight crew for the models A350-900 and A330, and functionalities;
- Present the compliance of models A350-900 with the requirements of the RBHA 91 and RBAC 121;
- Provide information relative to Airbus family concept and A350 and A330 specifics, operations of A330-A350 variants in Single Fleet Flying concept and operations of more than one type (Mixed Flying Fleet Concept);
- Describe the required Flight Simulation Training Devices (FSTD) for crew training, checking and currency.

1.4. Applicability

This report is applicable to A330 family (A330-200/200F/300/800/900) and A350-900, and should be used by:

- Brazilian operators of models A350-900 and A330 under RBAC 91 and RBAC 121 requirements;
- Approved Training Organizations certified under RBAC 142 (Training Centers);
- Civil Aviation Inspectors (INSPAC) related to safety oversight of models A350-900 and A330;
- ANAC Principal Operations Inspectors (POIs) of models A350-900 and A330 operators.

1.5. Cancellation

This report cancels and replaces ANAC letter 036/2015/GAA/GCOI/SPO, dated 26 Out 2015.

2. DEFINITIONS – TERMINOLOGY

- Base aircraft: an aircraft used as a reference to compare differences with another aircraft.
- Candidate aircraft (also referred to as difference aircraft) means aircraft subject to the evaluation process.
- The term “Common Type Rating” (CTR) differences training is used in this report to outline the differences training program from a base aircraft to a specific difference aircraft when maximum Level D differences have been assigned in the MDR table. In this case, the base aircraft and the candidate aircraft are assigned a single license endorsement.
- The term "Cross Crew Qualification" (CCQ) is used in this report to outline the differences training program (reduced type rating course) from a given base aircraft to a specific difference aircraft when Level E differences have been assigned in the MDR table. In this case, the base aircraft and the candidate aircraft are assigned a different license endorsement. The term CCQ is reserved for such courses between Airbus Fly-By-Wire types.
- The term “Standard transition”, as applied in this report, refers to the full transition program (full type rating) for a given aircraft type.
- The term "SINGLE FLEET FLYING” (SFF) is a definition still not used by ANAC, but it involves a very useful concept. It is used to outline the operations by the same pool of pilots of aircraft having been assigned a common type rating. In context of this report, SFF applies to the operation by the same pool of pilots of A330 and A350.
- The term "MIXED FLEET FLYING” (MFF) – operation of a base aircraft and one or more related aircraft for which credit may be taken for training, checking, and/or currency events. The operational evaluation process defines minimum training, checking, and currency difference levels between related aircraft.

3. SUMMARY AIRCRAFT DESCRIPTION

3.1. A350-900

The Airbus model A350-900 is a long-range, twin-engine wide-body aircraft developed by Airbus. It is the first Airbus with both fuselage and wing structures made primarily of carbon-fiber-reinforced polymer.

It is a low wing pressurized airplane, powered by two high by-pass ratio wing mounted turbofan engines, the Rolls-Royce Trent XWBs. The tricycle landing gear is fully retractable, designed to be operated on paved runways only. The panel has glass cockpit with six displays and presents the "dark and quiet" cockpit concept. The operation is based on the use of the FMS and it is featured with autopilot, flight director and auto-thrust.

The Fly-By-Wire (FBW) system provides closed-loop control and monitoring of all primary and secondary flight control surfaces within the system.

The minimum crew is two pilots. The maximum number of passenger seats is 440 (depending on the cabin configuration).

The A350-900 is certified for Day, Night, VFR and IFR flights to a maximum operating altitude of 43.100 feet. The A350-900 is also approved for flight into known icing conditions and extended operations over water.

The A350-900 is certified in accordance with RBAC 25. It is listed on ANAC Type Certificate Data Sheet (TCDS) Number EA-2015T08 as the model A350-941. Airbus received their ANAC type certificate on 14 Aug. 2015.

A summary of the airplane specification is presented in the table below. For more information, the TCDS issued by ANAC may be consulted. In case of information disagreement between the table below and the TCDS, this last source shall prevail.

Table 1 – A350-900 information

Airbus A350-900	
Certification Basis	RBAC 25
Engine	Two Rolls Royce Trent XWB-84 Turbofan (374 kN)
Minimum Crew	Two pilots
Maximum Passengers	Up to 440
Maximum Weights	Maximum Takeoff Weight (MTOW): 275 t (590,800 lb)
	Maximum Landing Weight (MLW): 207 t (451,900 lb)
	Maximum Zero Fuel Weight (MZFW): 195.7 t (423,300 lb)
Speeds	Maximum operating (M_{MO}): 0.89 Maximum operating(V_{MO}): 340 kias Landing Gear Operation (VLO): 250 KIAS / 0.55 Landing Gear Extended (VLE): 220 KIAS
Altitude	Maximum Operating Altitude: 43,100 ft
Temperature	From -54ºC to +55ºC at -2,000 ft From -80ºC to -36ºC at maximum flight level

Figure 1: A350-900 Lateral and Front Views

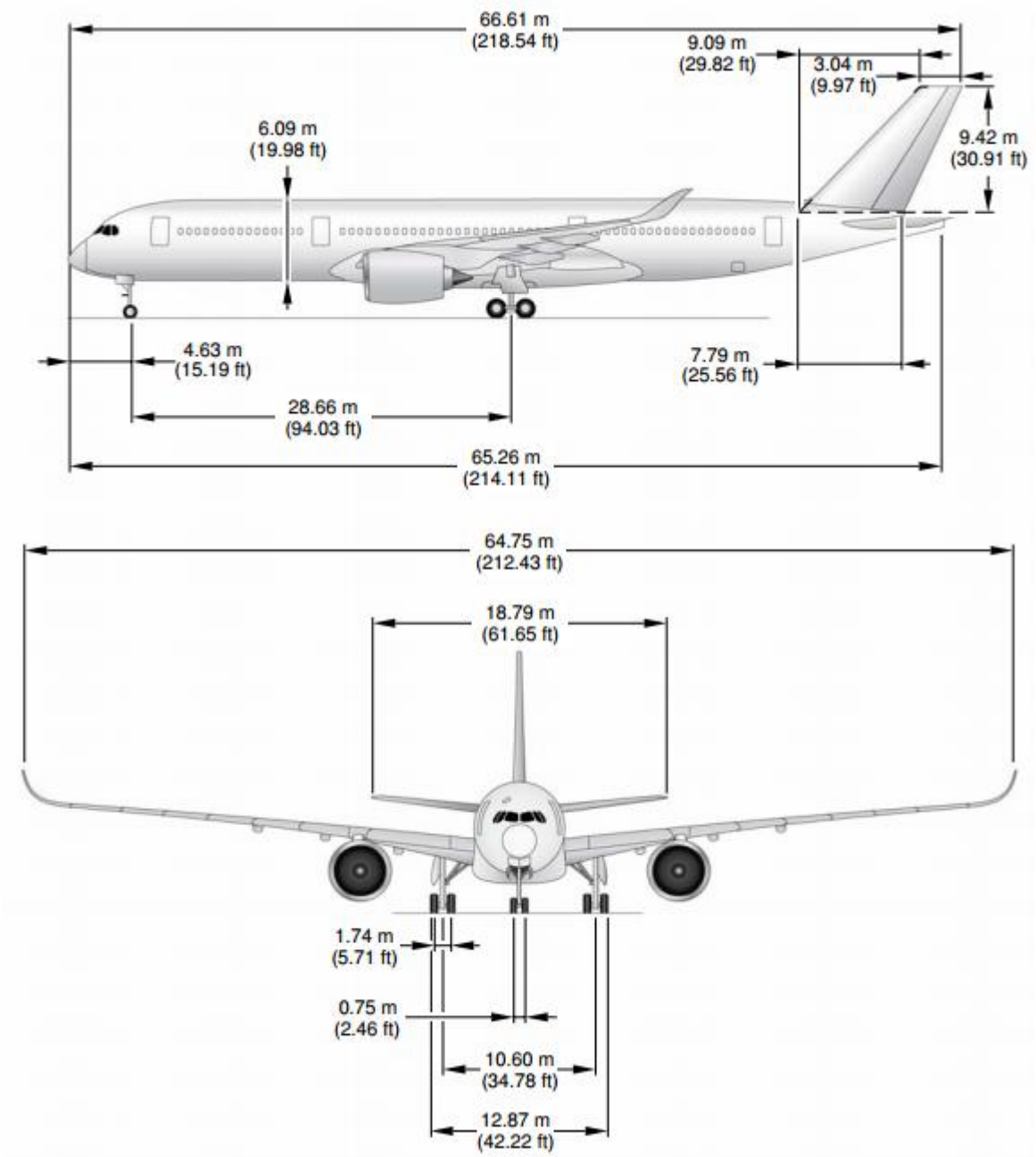
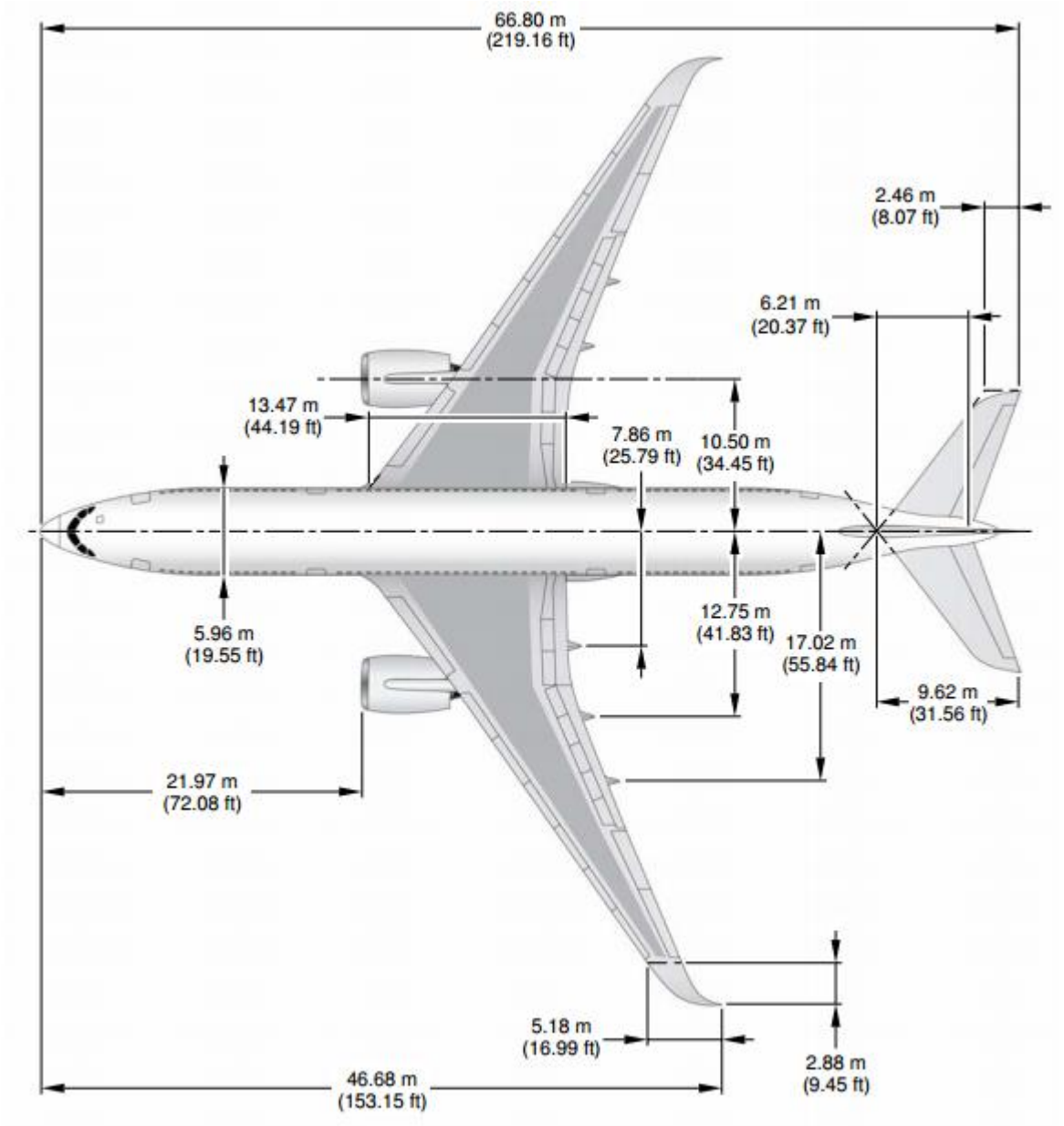


Figure 2: A350-900 Upper View



3.2. A330

The Airbus model A330 is a medium to long-range, twin-engine wide-body aircraft. It is a low wing pressurized airplane, powered by two high by-pass ratio wing mounted turbofan engines. The tricycle landing gear is fully retractable, designed to be operated on paved runways only. The panel has glass cockpit with six displays and presents the “dark and quiet” cockpit concept. The operation is based on the use of the FMS and it is featured with autopilot, flight director and auto-thrust.

ANAC has certified the A330 in the following series: A330-200, A330-300, A330-200F (freighter series) and A330-900 (A330neo). The A330-800 (A330neo) was under Type Certification validation process during the development of the current revision of this report.

Detailed information on the A330 series passenger, cargo and fuel capacities, weight limitations, and engine configurations can be found on the ANAC TCDS N° EA-9806.

3.3. Airbus Family Concept

The A350 design ensures that the following characteristics are similar to the A330:

- Cockpit layout
- System Operation and
- Handling characteristics.

This level of commonality has a direct and significant impact on the design and construction of the training programs.

3.3.1. Cockpit Layout

The cockpit arrangement has been designed:

- To provide similar panel arrangements
- To provide similar controls (side stick, slats/flaps nomenclature, non-moving thrust levers)
- To provide same “dark cockpit and pushbutton” concept.

3.3.2. System Definition and Operation

The following system characteristics are incorporated into de design:

- EFIS Primary Flight Displays (PFD) and Navigation Displays (ND) provide similar information, with similar symbology, color coding and display principles.
- ECAM Engine/Warning and System Displays provide similar information. The "READ and DO" concept minimizes the impact of system dissimilarities, when dealing with abnormal and emergency operations. Crew response to CAUTIONS and WARNINGS incorporates the same philosophy.

- AUTO PILOT / FLIGHT DIRECTOR / AUTOTHRUST incorporate a similar architecture, and provide generally the same functions for auto flight guidance and management of the flight trajectory.

3.3.3. Handling Characteristics

Although the size, gross weight, and aerodynamic characteristics of the various aircraft may differ, the Fly-By-Wire (FBW) system was designed to minimize the differences in terms of handling characteristics. This similarity in the flight control laws permits a significant level of commonality in handling qualities.

3.3.4. Commonality in aircraft operational philosophy

The aircraft have been designed to permit commonality of procedures as far as possible:

- Similar normal procedures, even though the A350 has interfaces which are different when applying these procedures.
- Similar abnormal/emergency procedures dictated by ECAM (ECAM READ and DO list)
- Similar control location for emergency procedures
- Same task sharing rules (PF-PM/LSP-RSP).

3.3.5. Altitude Callout during landing

Use of automatic voice callouts for landing is the same for A330 and A350 aircraft.

These callouts may be customized consistent with local regulations for low visibility operations in accordance with operator requirements. Unless otherwise agreed to by ANAC, operators seeking mixed fleet flying should standardize those callouts within the applicable fleets.

3.3.6. Automatic landing

Because of the similarity in design among the autoland systems of the A330 and A350, autoland training and qualification may occur in either the A330 or A350 aircraft with differences training as specified by ODR tables. Autoland training must address use of rollout capability as applicable. Operator must ensure autoland is certified for operation in Brazil and seek ANAC approval for this operation.

3.3.7. Flight management system

The FMS's functions are similar between the A330 and A350 aircraft. Training and qualification with the FMS on one type may thus be credited to other types, provided FMS difference training is conducted as specified by ODR tables.

3.3.8. Systems and Procedures Specific to the A350

- New FMS interface using KCCU
- Implementation of electronic checklists (MFD for A350)
- ECAM: implementation of not sensed abnormal/emergency procedures
- New surveillance panel for WXR, TAWS, TCAS, XPDR
- New OIS (Onboard Information System) including the following Airbus Application package:
    - Electronic library (FCOM, FCTM, CCOM, MEL, CDL, AFM)
    - Performance applications (Takeoff, In-Flight, Landing, Weight and Balance)
    - Company Communication
    - Mission management

4. PILOT TYPE RATING

Due to the level of differences to the model A330, the A350 is declared as a variant of the A330. Therefore, the ANAC has determined the common type rating "**A330/350**" for operation of A350-900 and A330-200/300/800/900.

Table 2 – A330 and A350 pilot type rating

Fabricante *(Manufacturer)*	**Aeronave** *(Aircraft)*		**Observações** *(Remarks)*	**Designativo** *(Designative)*
	Modelo *(Model)*	**Nome** *(Name)*		
AIRBUS S.A.S.	A330-202, -203, -223, -243, -301, -321, -322, -223F, -243F	A330	Relatório de Avaliação Operacional A330, A350 *ANAC Operational Evaluation Report A330, A350*	A330/350
	A330-841, -941	A330neo		
	A350-941	A350		

5. MASTER DIFFERENCE REQUIREMENTS (MDR)

The MDR table for the Airbus Family of Fly-By-Wire aircraft is shown below. Definitions of the various levels for Training/Checking/Currency are those used in IS-00-007A or in any further ANAC Instruction that may succeed it.

Table 3: Master differences Requirements (MDR) – Airbus Family

		FROM AIRPLANE			
		A320	**A330**	**A340**	**A350**
TO AIRPLANE	**A320**	-	E/E/D	E/E/D	(1)
	A330	E/E/D	-	B/E/C	D(2)/A/C
	A340	E/E/D	E/E/C	-	(1)
	A350	E/E/D	D(2)/A/C	D/E/C	-

(1) This difference has not yet been evaluated

(2) Level D training should be accomplished in a device meeting at least the requirements as described in Appendix 4

The MDR table for the A330 family aircraft is shown below. Definitions of the various levels for Training/Checking/Currency are those used in IS-00-007A or in any further ANAC Instruction that may succeed it.

Table 4: Master differences Requirements (MDR) – A330 Family

A330		**FROM AIRPLANE VARIANT**				
		A330-200	**A330-200F**	**A330-300**	**A330-800**	**A330-900**
TO AIRPLANE VARIANT	**A330-200**	/	B/A/A	B/A/A	B/A/B	B/A/B
	A330-200F	B/A/A	/	B/A/A	B/A/B	B/A/B
	A330-300	B/A/A	B/A/A	/	B/A/B	B/A/B
	A330-800	B/A/B	B/A/B	B/A/B	/	Not evaluated
	A330-900	B/A/B	B/A/B	B/A/B	Not evaluated	/

6. OPERATOR DIFFERENCES REQUIREMENTS (ODR)

To support the evaluation and the content of proposed minimum CTR difference training and CCQ, ODR tables have been developed and they can be directly requested to Airbus.

These ODR tables are Airbus generic and therefore may not include items that are applicable to particular operators.

Operators using more than one variant should approve ODR tables pertinent to their fleet.

7. SPECIFICATIONS FOR PILOT TRAINING

7.1. A350-900 Initial Type Rating training

The initial pilot type rating course described in this section was evaluated by ANAC and considered to be compliant with the requirements of RBAC 61. It is named by Airbus as A350 Standard Transition Course and accepted for training of pilots with no previous Airbus experience.

This course is recommended to be used as a baseline for A350-900 type rating training.

The initial type rating training footprint is provided in Appendix 1.

7.1.1. Prerequisites

The pilot pre-requisites for candidate pilots proposed by Airbus and now recommended by ANAC as minima are the following:

For all pilots:

- Have accumulated flight experience in high altitude airplanes or in jet airplanes, **or** hold a certificate on an approved high performance aircraft (HPA) course;
- MCC Qualification (have been Type Rated in a multi-pilot aircraft with the aircrew consisting of at least two members **or** hold a certificate on a MCC Course)
- Hold an Instrument Rating;
- Hold a Land Multiengine Class rating (MLTE) **or** a type rating of any multiengine aircraft;
- Experience on a Commercial aircraft equipped with Glass cockpit technology[1] (including FMS); and
- ICAO English Level 4.

For SIC:

- Hold a valid Commercial Pilot License (Airplane) and have been approved in the theoretical exam for an Airline Transport Pilot License **or** hold a valid Airline Transport Pilot License (Airplane); and
- Minimal flight experience of 200 hours (excluding FSTD).

For PIC:

- Hold a valid Airline Transport Pilot License – Airplane (the combination CPL + theoretical ATPL is not sufficient for PIC as it is for SIC);
- 1500 flight hours in airplane (excluding FSTD);

- 1000 flight hours in Airplane w/ MTOW≥ 5.7 tons; and
- 100 flight hours as PIC in Airplane w/ MTOW≥ 5.7 tons.

[1]It is necessary that pilots undertaking the A350 type rating training have a working knowledge and understanding of systems such as FMS, Automated Flight Guidance and Control, TAWS, TCAS, etc. Pilots with limited or no experience with any or all of the systems mentioned above can have some difficulties and should receive additional modular training, as appropriate, before entering the A350 theoretical training phase.

7.1.2. Theoretical knowledge

The theoretical knowledge curriculum is the same for pilot-in-command or second-in-command training. Completion of the theoretical training and approval in the written test are prerequisites for entering in the flight training phase.

The theoretical training phase is comprised of:

• System Knowledge + PTT	32h30
• FMS Utilization	2h00
• Cabin Trainer	1h00
• Aircraft Performance	4h00
• Written Test	2h30
Total	**42h00**

7.1.3. Flight training

The flight training phase is based on the use of a Flight Training Device and a qualified Full Flight Simulator and is comprised of:

• 09 Full Flight Simulator Modules	36h00*
• 06 Flight Training Device Sessions	24h00
• License Skill Test/ Check Ride	4h00
Total	**64h00**

*Plus Briefing and Debriefing

7.1.4. Homework

The time pilots dedicate to self-study is very important for the training. Although this is a course which demands a self-paced study and it is based on competency, the minimum homework time recommended for a regular pilot is:

Total Flight Training Programmed Hours (Homework)

- For Flight Training Device Sessions 6h30
- For Full Flight Simulator Modules 8h30

Total 15h00

7.1.5. Special Events training

Special events training to improve basic crew understanding and confidence regarding aircraft handling qualities, options and procedures as these relate to design characteristics and limitations may include the following:

- **Upset and low-energy recoveries –** recovery from unusual attitudes and from flight in low-energy condition.
- **Manual flight –** with minimum use of automation, including flight under degraded levels of automation.
- **Wind shear –** situational awareness (recognition) and appropriate escape maneuvers.
- **CFIT/ TCAS/ TAWS –** emphasis on avoidance and escape maneuvers, altitude awareness, TCAS/ TAWS warnings, situational awareness and crew coordination.

7.1.6. Seat Dependent Tasks training

There is no seat dependent task for the A350-900.

7.1.7. System and Procedures Specific to the A350

- New FMS interface using KCCU;
- Implementation of electronic checklists (MFD);
- ECAM: implementation of not sensed abnormal/emergency procedures;
- New surveillance panel for WXR, TAWS, TCAS, XPDR;
- New OIS including the following Airbus Application package:
    - Electronic library (FCOM, FCTM, CCOM, MEL, CDL, AFM, Loadsheet);
    - Performance applications (Takeoff, In-Flight, Landing, W&B);
    - Company Communication; and
    - Mission management.

7.2. A330 Initial Type Rating training

The A330 standard transition course is a course designed for a pilot who complies with RBAC 61 Subpart K and with the following requirements:

- Have at least 70 hours of flight experience as PIC on aeroplanes;
- Have passed the Airline Pilot theoretical knowledge examinations in accordance with RBAC 61.137
- Have accumulated flight experience in high altitude airplanes or in jet airplanes, or hold a certificate on an approved high-performance aircraft (HPA) course;
- MCC Qualification (have been Type Rated in a multi-pilot aircraft with the aircrew consisting of at least two members or hold a certificate on a MCC Course)
- Hold an Instrument Rating;
- Hold a Land Multiengine Class rating (MLTE) or a type rating of any multiengine aircraft;
- Experience on a Commercial aircraft equipped with Glass cockpit technology1 (including FMS); and
- ICAO English Level 4.

Appendix 2 shows the footprint of the course evaluated.

As A330-200, A330-200F, A330-300, A330-800 and A330-900 aircraft share the same type rating, qualification can be conducted according to the following path:

- Standard transition course (Type Rating course) conducted onto any A330 family aircraft
- Familiarization course covering the differences between the A330 family aircraft of the Type rating course and the variant to be flown.

7.3. Training Areas of Special Emphasis (TASE)

Special emphasis training includes systems or procedures training elements that are unique to the aircraft and should be given a higher degree of emphasis than regular training. The ANAC has identified some training items that are specific for the A350-900 and some items that are common to all Airbus aircraft family.

Applicable for all Airbus Fly-by-Wire

All the following characteristics of the Airbus Fly-By-Wire family must be emphasized during the A330 and A350 Standard Transition Courses as they have been identified in previous operational evaluation reports of the Airbus A320, A330 and A340 family.

- Fly-By-Wire:
    - Knowledge of flight characteristics and the degree of flight envelope protection provided by the various flight control laws for pitch, roll and yaw control;

  - Procedural and handling consequences following multiple failures that result in alternate or direct law; and
  - Knowledge of the use of side stick controller with a special emphasis on the relationship between the two controllers and the transfer of control.
- Use of Flight Management System:
  - Knowledge of the various modes of automation;
  - Knowledge and skills related to MFD / FCU use;
  - Recognition of mode awareness and transition modes through the FMA; and
  - CRM issue linked to automation (task sharing and crosschecks).
- Use of ECAM:
  - Knowledge of appropriate use of ECAM in conjunction with system failures; and
  - Crew discipline for ECAM actions: respect of the depicted procedure, crosscheck of irreversible actions, aircraft status analysis.
- Autothrust system:
  - Knowledge of the thrust control system in conjunction with the “non-moving throttles”; and
  - Recognition of all messages associated to Autothrust failure, engagement and disconnection.
- The importance and the roles of the pilot monitoring during each phase of the flight.
- Autoland training should address use of rollout capability as applicable.

TASE applicable only to the A350

A350 features that must receive special emphasis in an A350 Standard Type Rating course as well as in CTR difference training and CCQ courses:

- CRM:
  - Strict respect of SOP’s when using FMS and OIS to avoid both pilots head down.
- FMS / MFD:
  - New interface using the KCCU;
  - Knowledge and use of new specific FMS features and functions; and
  - Knowledge of back-up systems associated with the MFD such as software control of the FCU.
- Use of normal electronic checklists.

- ECAM:
    - Management of not sensed failures using abnormal / emergency procedures and the distinction between sensed and not-sensed procedures.

- Use of OIS
    - Takeoff and landing performance computation in normal operations;
    - Performance computation associated with ECAM aircraft status in abnormal / emergency conditions caused by aircraft systems failure(s);
    - Use of electronic library with a particular emphasis on how to use the MEL and the ECAM messages; and
    - Cross check of vital data and gross error checks.

- Use of the CDA (Continuous Descent Approach) function if applicable:
    - Knowledge of the CDA concept of use including:
        - Explanation of the FMS vertical profile computation principles;
        - Explanation of DES guidance modes logics and feedback associated; and
        - Explanation of the FLAP1/2 pseudo waypoints, and the way to use them as advisory mean only.
    - Emphasis on monitoring not only for PFD and ND, but also of VD for crew assessment/awareness of actual and future trajectory versus the intended one computed by CDA profile.
- The RA procedure for AP and A/THR TCAS MODE is different and must be trained by A350-900 trainees at least during the initial type rating course.

TASE applicable to specific variants or aircraft modifications within the A330 or A350

TASE applicable to specific variants or specific aircraft modifications of the A330 are specified in the document “A330 ODR tables and TASE for variants and modifications” reference G01RP1713249.

TASE applicable to specific aircraft modifications of the A350 are specified in the document “A350 ODR tables and TASE for variants and modifications” reference V01RP1713245.

7.4. A320 to A350 CCQ

The A320 to A350 CCQ course is designed for pilots qualified and current on A320 with minimum 3 months and 150 hours of A320 experience.

It is highly recommended that operators ensure that crews have a very good knowledge of base aircraft systems prior to commencing a CCQ course, as the training program only presents the differences between the 2 types.

Pilots without a valid type rating on the A320 may be eligible for CCQ via a refresher program to be approved by ANAC.

The A320 to A350 CCQ course footprint is provided in Appendix 3.

7.5. A330 - A350 CTR Difference Training

ANAC has determined that the maximum level of differences that exist between the A330 and the A350 was level D as per accepted ODR tables.

7.5.1. A330 to A350 CTR Difference Training

The A330 to A350 difference training is designed for pilots qualified and current on the A330 and is based upon clearly defined objectives and addresses all items as identified in the approved ODR tables.

Operators should ensure that crews have a very good knowledge of A330 systems prior to commencing CTR difference training, as the training program only presents the differences between the 2 variants.

Pilots without a valid type rating on the A330 may be eligible for CTR training via a refresher program to be approved by ANAC.

The A330 to A350 CTR Difference Training footprint is provided in Appendix 4.

7.5.2. A350 to A330 CTR Difference Training

The A350 to A330 difference training is designed for pilots qualified and current on the A350 and is based upon clearly defined objectives and addresses all items as identified in the approved ODR tables.

Operators should ensure that crews have a very good knowledge of A350 systems prior to commencing CTR difference training, as the training program only presents the differences between the 2 variants.

Pilots without a valid type rating on the A350 may be eligible for CTR training via a refresher program to be approved by ANAC.

The A350 to A350 CTR Difference Training footprint is provided in Appendix 4.

7.6. A320 to A330 CCQ

The A320 to A330 CCQ course is designed for pilots qualified and current on A320 with minimum 3 months and 150 hours of A320 experience.

Appendix 5 shows the footprint of the course evaluated.

Note 1: It is highly recommended that operators ensure that crews have a very good knowledge of base aircraft systems prior to commencing a CCQ course, as the training program only presents the differences between the 2 types.

Note 2: Pilots without a valid license proficiency check on the base aircraft may be eligible for CCQ via a refresher programme to be approved by ANAC.

7.7. A340 to A330 CCQ

The A340 to A330 CCQ course is designed for pilots qualified and current on A340 with minimum 3 months and 150 hours of A340 experience. The minimum experience on the A340 may be reduced down to 75 hours provided that the privilege of the A330 type rating is initially limited to flight under the supervision of an instructor. The number of flight hours under the supervision of an instructor on the A330 must be at least equal to the number of missing hours of experience on the A340. In this case, up to 50% of the hours of experience on the A340 may have been completed in a FFS.

Appendix 6 shows the footprint of the course evaluated.

Note 1: It is highly recommended that operators ensure that crews have a very good knowledge of base aircraft systems prior to commencing a CCQ course, as the training program only presents the differences between the 2 types.

Note 2: Pilots without a valid license proficiency check on the base aircraft may be eligible for CCQ via a refresher programme to be approved by ANAC.

7.8. Recurrent Training

Recurrent training must be compliant with the Brazilian regulations and include the Training Areas of Special Emphasis as identified in this report.

Recurrent training should incorporate special events training as described in this report on a rotational basis.

Operators must establish an approved recurrent training and checking program which is relevant to the aircraft variant flown and its intended operation.

The A350 is declared as a variant of the A330 and assigned a Common Type Rating (CTR), therefore:

Recurrent training performed on A330 or on A350 series aircraft is valid for all variants, provided that the differences are addressed and according to RBAC 61.217 (b).

Differences to be addressed in recurrent training are identified in ODR tables.

Difference Level D is applicable for recurrent training between A330 and A350 variants, therefore use of an FTD Level 6 or an FFS applies.

7.9. Training for Low Visibility Operations

The operational evaluation for LVO has not been conducted. Nevertheless, the ODR tables associated with this report may be used by ANAC to assess training credits.

7.10. ETOPS

The operational evaluation for ETOPS has not been conducted. No specific ETOPS related differences items have been identified in the ODR tables.

7.11. HUD (reserved)

7.12. LINE FLYING UNDER SUPERVISION (LIFUS) / FAMILIARIZATION FLIGHTS

7.12.1. Purpose of LIFUS / Familiarization Flights

There is a variety of reasons why the ANAC may recommend LIFUS / Familiarization Flights.

One or more of the reasons described below may apply:

a. Introduction of new aircraft types or variants;

b. Introduction of new systems (e.g., FMS, ECL, TCAS, HUD);

c. Introduction of new operation (e.g. oceanic, polar or ETOPS operations);

d. Experience for a particular crew position (e.g. PIC, SIC);

e. Post qualification skill refinement (e.g. refining alternate or multiple ways to use particular equipment to increase operating efficiency, operating flexibility, or convenience); or

f. Special characteristics (e.g. mountainous areas, unusual or adverse weather, special air traffic control procedures, non-standard runway surfaces and dimensions, etc.).

NOTE: Although similar to the item 121.434 from RBAC 121, nowadays LIFUS is not foreseen in Brazilian regulations. However, the ANAC found technically relevant that these items should be accomplished by the pilot after the regular training, as defined by EASA.

7.12.2. LIFUS following A330 or A350 Standard Transition Course

After completion of the Standard Transition Course, a minimum of **8 route sectors** of LIFUS should be performed, followed by a **2 route sector line check**.

Where the change of aircraft type also implies a change of operating conditions or route structure this should also be taken into account and may need the addition of route sectors to cover these elements.

Note: if the A350 aircraft is equipped with HUD, operation with and without HUD in different phases of flight should be addressed.

7.12.3. LIFUS following A320 to A330 CCQ Course

After completion of CCQ A320 to A330, a minimum of **4 route sectors** of LIFUS should be performed, followed by a **2 route sector line check**.

Where the change of aircraft type also implies a change of operating conditions or route structure this should also be taken into account and may need the addition of route sectors to cover these elements.

Note: if the A330 aircraft is equipped with HUD, operation with and without HUD in different phases of flight should be addressed.

7.12.4. LIFUS following A340 to A330 CCQ Course

After completion of CCQ A340 to A330, a minimum of **2 route sectors** of LIFUS should be performed, followed by a **2 route sector line check**.

Where the change of aircraft type also implies a change of operating conditions or route structure this should also be taken into account and may need the addition of route sectors to cover these elements.

Note: if the A330 aircraft is equipped with HUD, operation with and without HUD in different phases of flight should be addressed.

7.12.5. LIFUS following A320 (or A340) to A350 CCQ course

After completion of CCQ A320 (or A340) to A350, a minimum of **4 route sectors** of LIFUS should be performed, followed by a **2 route sector line check**.

Where the change of aircraft type also implies a change of operating conditions or route structure this should also be taken into account and may need the addition of route sectors to cover these elements.

Note: If the A350 aircraft is equipped with HUD, operation with and without HUD in different phases of flight should be addressed

7.12.6. Familiarization flights following A330 - A350 CTR Difference Training

The A350 is declared as a variant of the A330 and assigned a common type rating, as a consequence LIFUS is not applicable, however familiarization flying is recommended.

7.12.6.1. Familiarization flights following A330 to A350 CTR Difference Training

After completion the A330 to A350 CTR training, a minimum of 4 route sectors of Familiarization Flights (three as PF) should be performed. Alternatively, a minimum of one LOFT session in an A350 FFS of at least 2 hours as PF plus 2 route sectors on the A350 as PF shall be performed.

Familiarization flights should be conducted with a flight crew member nominated by the operator and approved by ANAC.

After completion of the familiarization flights, a minimum of 4 consolidation route sectors shall be performed on the A350 before starting SFF with an A330.

Note: Familiarization flights differ from LIFUS, as a line check is not required following their completion.

7.12.6.2. Familiarization flights following A350 to A330 CTR Difference Training

After completion the A350 to A330 CTR training, a minimum of 4 route sectors of Familiarization Flights (three as PF) should be performed. Alternatively, a minimum of one LOFT session in an A330 FFS of at least 2 hours as PF plus 2 route sectors on the A330 as PF shall be performed.

Familiarization flights should be conducted with a flight crew member nominated by the operator and approved by ANAC.

After completion of the familiarization flights, a minimum of 4 consolidation route sectors shall be performed on the A330 before starting SFF with an A350.

Note: Familiarization flights differ from LIFUS, as a line check is not required following their completion.

8. SPECIFICATIONS FOR CHECKING

8.1. Proficiency Check

The A350 is declared as a variant of the A330 and assigned a common type rating, therefore:

a) Proficiency checks performed on A330 or on A350 series aircraft are valid for both variants, provided that the differences are addressed during recurrent training as per ODR tables; and

b) Consequently, proficiency checks can be conducted on any approved A330 simulator or A350 simulator (FFS Level C or D).

The initial proficiency check shall be performed in accordance with RBAC 61 and IS 00-002.

8.2. Line Checks (RBAC 121.440)

The A350 is declared as a variant of the A330 and assigned a common type rating, therefore:

a) Line checks performed on any A330 or A350 series aircraft are valid for all variants; and

b) This does not relieve operators from line check requirements specific to route and airport qualification as prescribed by Air Operations rules.

9. SPECIFICATIONS FOR RECENT EXPERIENCE AND CURRENCY

As the A350 is declared as a variant of the A330 and assigned a common type rating, Takeoff and Landing performed on any A330 or A350 series aircraft is valid for all variants.

The HUD currency was not evaluated.

10. FLIGHT SIMULATION TRAINING DEVICES (FSTD) AND OTHER TRAINING DEVICES (OTD)

The devices used for the initial and recurrent training must replicate the A330/A350 in function and fidelity to the degree determined by the level of device.

The Full Flight Simulator – FFS used for the flight training, checking and currency must be qualified as level C or D according to the technical requirements established by the ANAC.

The appendix 7 provides a brief description of the devices used in the various A350 training footprints and identify to which training and currency level they are associated. Similar training devices can be approved but should consider the technical specifications and features of this appendix as minimal requirements.

11. COMPLIANCE WITH RBHA/RBAC 91 AND RBAC 121

Airbus has submitted a compliance checklist with the requirements of RBHA 91 and RBAC 121 for the A350-900. This document is retained by the ANAC Aircraft Evaluation Group office and can be made available upon request.

No compliance checklist was submitted for the A330 models.

12. OPERATION OF MORE THAN ONE TYPE OR VARIANT

For Mixed Fleet Flying (MFF) and Single Fleet Flying (SFF) concepts used herein, refers to item 2 – Definitions - Terminology.

The following information is provided to assist operators in their implementation of the Single Fleet Flying, and/or Mixed Fleet Flying concept.

12.1. Operation of A330 and A350 variants in Single Fleet Flying (SFF)

When introducing the A350 in an existing fleet of A330 for the purpose of flying both variants (A330 and A350) in a Single Fleet Flying concept, the following steps should be applied:

a) Pilot prerequisite: qualified and current on the A330;

b) CTR difference Training from A330 to A350. Alternatively, A350 qualification can be achieved by following an A350 standard transition course, or a CCQ to A350;

Note: No Type Rating Check required as the A350 is declared as a variant of the A330 and assigned a common type rating.

c) Operational training modules if required (HUD, EFB, LVO, etc);

d) Familiarization flights;

Note: No Initial Operating Experience (LIFUS) on the A350 required as the A350 is declared as a variant of the A330 and assigned a single license endorsement. No initial line check is required;

e) Consolidation route sectors without supervision;

For operations of A330 and A350 variants in SFF concept, it is highly recommended that pilots are scheduled to fly both variants on a regular basis.

Note: the same steps apply when introducing A330 into an A350 existing fleet.

12.2. Operation of A330/A350 and other Airbus types in Mixed Fleet Flying (MFF)

This section presents information regarding the operation of the A330 and A350 with other Airbus models in the MFF operational concept.

Note: Although the aircraft is not validated by the ANAC, reference to model A380 is presented in this report to keep information fidelity and consistency with the EASA A330/A350 Operational Suitability Data (OSD) Flight Crew report.

12.2.1. **Setting up MFF between A330 and A320 (or A340 or A380)**

Note: In the following section it is assumed that only A330 aircraft and A320 (or A340 or A380) aircraft are flown in MFF operations. This does not include A350.

When setting up a Mixed Fleet operations of A330 and A320 (or A340 or A380) the following steps are to be applied:

a) Pilot prerequisite: qualified and current on the A320 (or A340 or A380), and type-rated on the A330;

b) Operational training modules if required (HUD, EFB, LVO, etc.);

c) LIFUS as applicable;

d) Initial line check on A330; and.

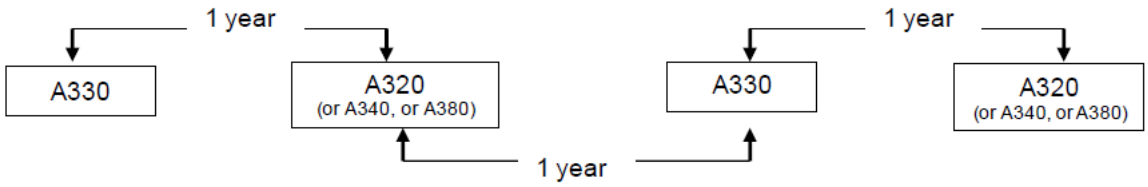
e) Consolidation period: 50 flying hours or 20 sectors solely on A330.

For operations of A330 in a Mixed Fleet Flying concept with A320 (or A340 or A380), it is highly recommended that pilots are scheduled to fly both aircraft types on a regular basis.

12.2.1.1. A330 and A320 (or A340 or A380) MFF Line checks

A line check performed on either A330 or A320 (or A340 or A380) is eligible to revalidate the line check for the other type.

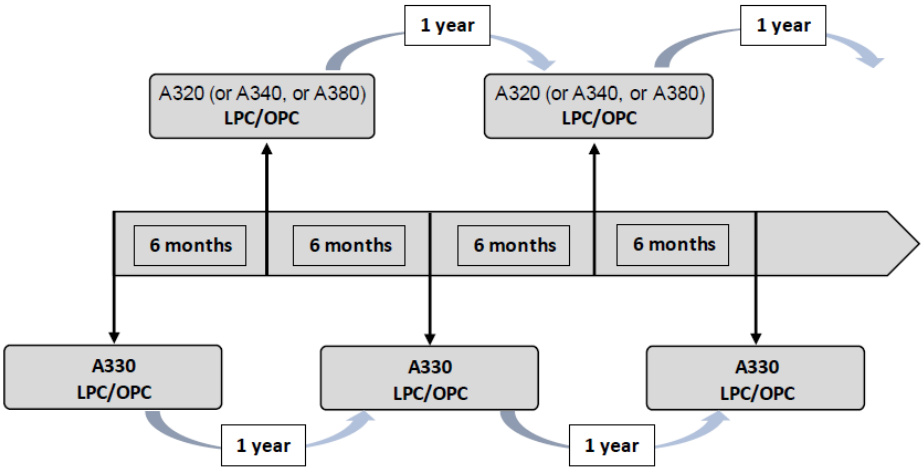
Line check should alternate as follows, for A330 and A320 (or A340 or A380) MFF operations:



12.2.1.2. Example of A330 and A320 (or A340, or A380) MFF recurrent checking

An operator proficiency check performed on either A330 and A320 (or A340, or A380) revalidate the operator proficiency check for the other type.

Proficiency check should alternate as follows, for A330 and A320 (or A340, or A380) MFF operations:



Note: In the above scheme it is assume that only A330 aircraft and A320 (or A340, or A380) *aircraft are flown in MFF operations. This does not include A350.*

12.2.1.3. A330 and A320 (or A340, or A380) MFF recent experience requirements

Recent experience requirements are contained in RBAC 61.

Credit may be granted for recent experience requirements when operating both the A330 type and the A320 (or A340, or A380) type, as specified in the following table:

MIXED FLEET FLYING	CURRENCY / RECENT EXPERIENCE REQUIREMENTS
A330 and A320	• 3 takeoffs and landings as PF in either A330 or A320 within 90 days • 1 takeoff and landing as PF in each type every 45 days
A330 and A340	• 3 takeoffs and landings as PF in either A330 or A340 within 90 days • 1 takeoff and landing as PF in each type every 90 days
A330 and A380	• 3 takeoffs and landings as PF in either A330 or A380 within 90 days • 1 takeoff and landing as PF in each type every 45 days

Note: re-establishing currency/recent experience requirements – when lost, it may be re-established by a training or use of a flight simulator of the airplane type concerned.

12.2.2. **Introducing A350 into an existing MFF operation (A330/A320, or A330/A340, or A330/A380)**

When introducing the A350 in existing Mixed Fleet of A330/A320 or A330/A340 or A330/A380 for the purpose of both A330/350 type and A320 type (or A340 or A380 type) in a Mixed Fleet Flying concept, the following steps are to be applied:

a) Pilot prerequisite: qualified and current on the A330 and A320 (or A340 or A380) and already flying A330 and A320 (or A340, or A380) in MFF;

b) CTR difference Training from A330 to A350 (licensing training). Alternatively A350 qualification can be achieved by following an A350 standard transition course, or a CCQ to A330;

Note: No Type Rating Check required as A350 is declared as a variant of the A330 and assigned a Common Type Rating.

c) Operational training modules if required (HUD, EFB, LVO, etc.);

d) Familiarization flights; and

Note: No Initial Operating Experience (LIFUS) on the A350 required as A350 is declared as a variant of the A330 and assigned a common type rating. No initial line check is required.

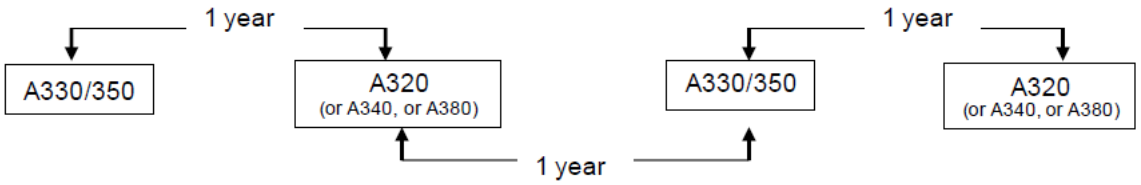
e) Consolidation route sectors without supervision.

Note: For operations of A330/350 type and A320 type (or A340 or A380 type) in a Mixed Fleet Flying concept, it is highly recommended that pilots are scheduled to fly both A330/350 and A320 (or A340 or A380) on a regular basis.

12.2.2.1. A330/350 and A320 (or A340 or A380) MFF Line checks

A line check performed on either A330/350 or A320 (or A340 or A380) is eligible to revalidate the line check for the other type.

Line check should alternate as follows, for A330/350 and A320 (or A340 or A380) MFF operations:

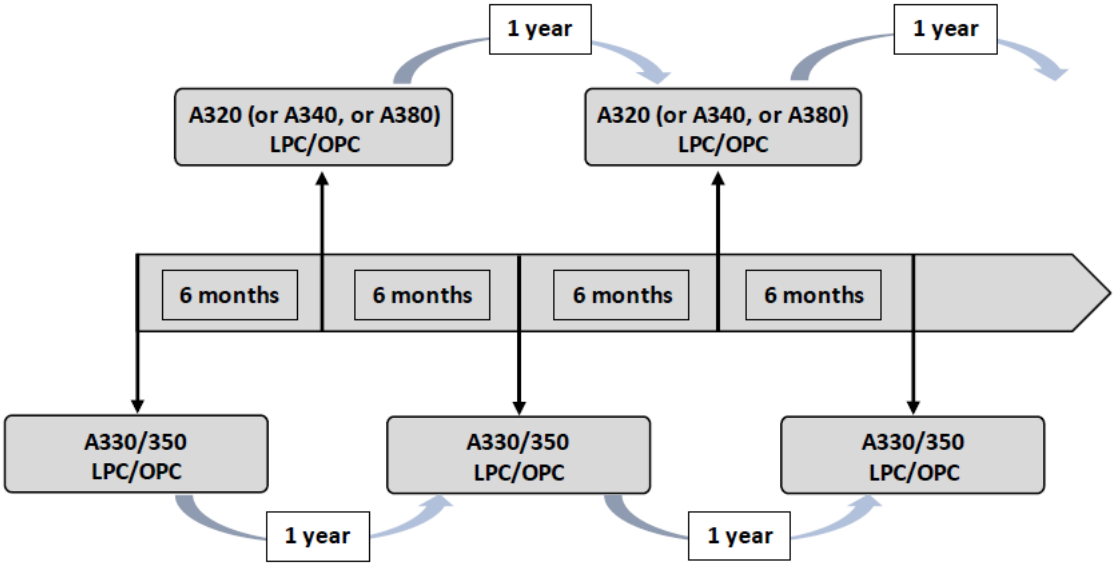


Note: "A330/350" refers to a line check conducted either on the A330 or the A350.

12.2.2.2. Example of A330/350 and A320 (or A340, or A380) MFF recurrent checking

An operator proficiency check performed on either A330/350 and A320 (or A340, or A380) revalidate the operator proficiency check for the other type.

Proficiency check should alternate as follows, for A330/350 and A320 (or A340, or A380) MFF operations:



Note: "A330/350" refers to a recurrent check conducted either on the A330 or the A350 provided the differences are addressed in the recurrent training as per the ODR tables.

12.2.2.3. A330/350 and A320 (or A340, or A380) MFF recent experience requirements

Recent experience requirements are contained in RBAC 61.

Credit may be granted for recent experience requirements when operating both the A330/350 type and the A320 type (or A340, or A380) type, as specified in the following table:

MIXED FLEET FLYING	CURRENCY / RECENT EXPERIENCE REQUIREMENTS
A330/350 and A320	• 3 takeoffs and landings as PF in either A330/350 or A320 within 90 days • 1 takeoff and landing as PF in each type every 45 days
A330/350 and A340	• 3 takeoffs and landings as PF in either A330/350 or A340 within 90 days • 1 takeoff and landing as PF in each type every 90 days
A330/350 and A380	• 3 takeoffs and landings as PF in either A330/350 or A380 within 90 days • 1 takeoff and landing as PF in each type every 45 days

Note1: When operating A330 and A350 variants in MFF, recent experience requirement in section 9 applies.

Note 2: re-establishing currency/recent experience requirements – when lost, it may be re-established by a training or use of a flight simulator of the airplane type concerned.

Note 3: for operations where only the A350 variant of the A330/350 license endorsement is flown, refer to here-below section 12.2.3.

12.2.3. **Setting up MFF between A350 and A320 (or A340, or A380)**

Note: In the following section it is assumed that only A350 aircraft and A320 (or A340 or A380) aircraft are flown in MFF operations. This does not include A330.

When setting up a Mixed Fleet operations of A350 and A320 (or A340 or A380) the following steps are to be applied:

a) Pilot prerequisite: qualified and current on the A320 (or A340 or A380), and type-rated on the A350 either by a standard transition course or a CCQ;

b) Operational training modules if required (HUD, EFB, LVO, etc.);

c) LIFUS as applicable;

d) Initial line check on A350; and.

e) Consolidation period:

i) If qualified and current on A380 and for the purpose of A350/A380 MFF: 4 sectors solely on A350.

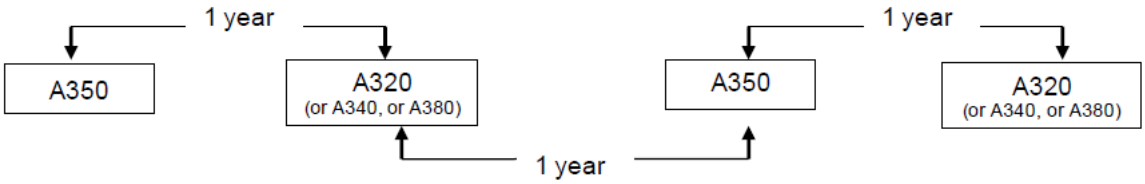
ii) If qualified and current on A320, or A340 and for the purpose of A350/A320 or A350/A340 MFF: 50 flying hours or 20 sectors solely on A350.

For operations of A350 in a Mixed Fleet Flying concept with A320 (or A340 or A380), it is highly recommended that pilots are scheduled to fly both aircraft types on a regular basis.

12.2.3.1. <u>A350 and A320 (or A340 or A380) MFF Line checks</u>

A line check performed on either A350 or A320 (or A340 or A380) is eligible to revalidate the line check for the other type.

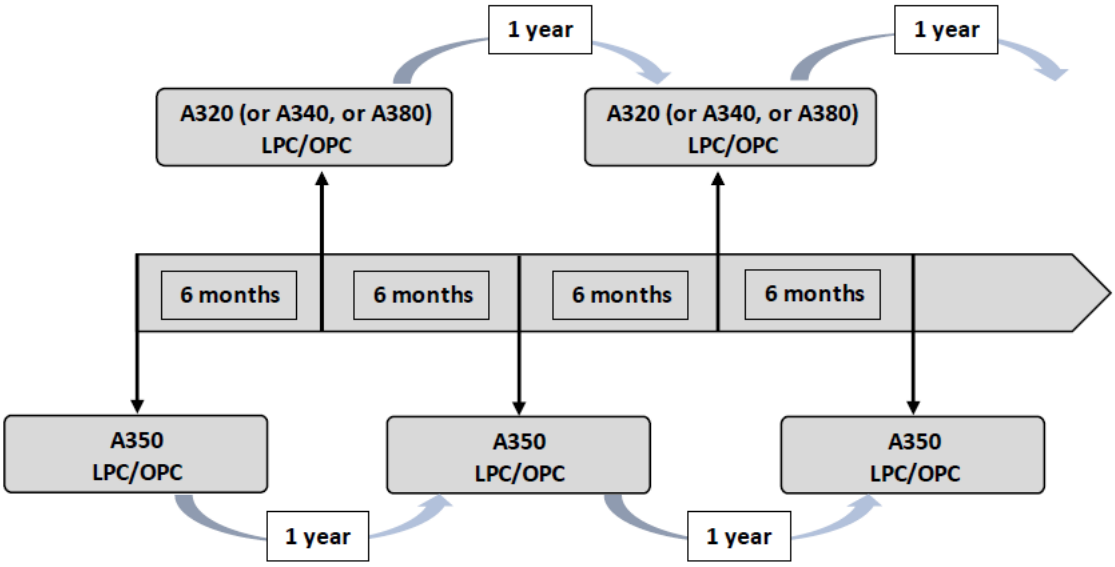
Line check should alternate as follows, for A350 and A320 (or A340 or A380) MFF operations:



12.2.3.2. Example of A350 and A320 (or A340, or A380) MFF recurrent checking

An operator proficiency check performed on either A350 and A320 (or A340, or A380) revalidate the operator proficiency check for the other type.

Proficiency check should alternate as follows, for A350 and A320 (or A340, or A380) MFF operations:



Note: In the above scheme it is assume that only A350 aircraft and A320 (or A340, or A380) aircraft are flown in MFF operations. This does not include A330.

12.2.3.3. A350 and A320 (or A340, or A380) MFF recent experience requirements

Recent experience requirements are contained in RBAC 61.

Credit may be granted for recent experience requirements when operating both the A350 type and the A320 (or A340, or A380) type, as specified in the following table:

MIXED FLEET FLYING	CURRENCY / RECENT EXPERIENCE REQUIREMENTS
A350 and A320	• 3 takeoffs and landings as PF in either A350 or A320 within 90 days • 1 takeoff and landing as PF in each type every 45 days
A350 and A340	• 3 takeoffs and landings as PF in either A350 or A340 within 90 days • 1 takeoff and landing as PF in each type every 90 days

A350 and A380	• 3 takeoffs and landings as PF in either A350 or A380 within 90 days • 1 takeoff and landing as PF in each type every 90 days

Note: re-establishing currency/recent experience requirements – when lost, it may be re-established by a training or use of a flight simulator of the airplane type concerned.

13. MISCELLANEOUS

13.1. Forward Observer Seat

This seat was evaluated according AC 120-83 for both A350 and A330 aircraft.

The seat is comfortable and its position assures good visibility of the panels and the exterior. The seat belt is identical to those for the other pilots and it has own oxygen mask. It has dedicated communication through headset with own control panel. It also has dedicated light and adjustments that enable a position with closed height to the other pilots.

Thus the seat was considered satisfactory to perform enroute checks.

13.2. Aircraft Approach Category

The minimum straight-in approach category for the A330 and A350 variants is as follows:

Aircraft	Category
A330-200/-300/-800 variants and A350-900	**C**
A330-900 variant	**D**

13.3. Electronic Checklist (ECL)

In the A350-900, the ECL is the ECAM Checklist. It was evaluated and determined to be satisfactory.

This item was not evaluated for the A330 aircraft.

13.4. Electronic Flight Bags (EFB)

The A350 has EFB capable of displaying worldwide aeronautical charts in full color with high resolution, with quick change between pre-selected charts, zoom and copy features, among others. There are two dedicated screens for the EFB functionality.

Data available includes Standard Terminal Arrivals, Departure Procedures, Instrument Approach Procedure and Airport Diagrams charts.

This item was not evaluated for the A330 aircraft.

APPENDIX 1

FOOTPRINT - A350 STANDARD TRANSITION TYPE TRAINING

Day 1	Day 2	Day 3	Day 4	Day 5
System Knowledge & PTT (6:00)	**System Knowledge & PTT** (05:50)	**System Knowledge & PTT** (06:30)	**System Knowledge & PTT** (04:45)	**System Knowledge & PTT** (05:25) + **Cabin Trainer** (1:00)
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
SOP & FM Preparation (4:00) + **FMS Utilization** (02:00)	**Theoretical Knowledge Test (open book) and Debriefing** (1:30 + 1:00) + **Aircraft Performance** (4:00)	**FFS Session 1 (Manual Flying)** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**APT+ Session 1 (SOP)** (Briefing 0:30) (FFS 4:00) (Debriefing 0:30)	**APT+ Session 2 (SOP)** (Briefing 0:30) (FFS 4:00) (Debriefing 0:30)
Day 11	**Day 12**	**Day 13**	**Day 14**	**Day 15**
APT+ Session 3 (SOP) (Briefing 0:30) (FFS 4:00) (Debriefing 0:30)	**FFS Session 2 (Advanced Handling)** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FFS Session 3 (Advanced Handling)** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FFS Session 4 (Advanced Handling)** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**APT+ Session 4 (Abnormal)** (Briefing 0:30) (FFS 4:00) (Debriefing 0:30)
Day 16	**Day 17**	**Day 18**		
APT+ Session 5 (Abnormal) (Briefing 0:30) (FFS 4:00) (Debriefing 0:30)	**APT+ Session 6 (Abnormal)** (Briefing 0:30) (FFS 4:00) (Debriefing 0:30)	**FFS Session 5 (Engine Failures)** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FFS Session 6 (Scenario Based Training & Advanced Handling)** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FFS Session 7 (Scenario Based Training & Advanced Handling)** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)
Day 21	**Day 22**	**Day 23**		
FFS Session 8 (Scenario Based Training & Advanced Handling) (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FFS Session 9 (Scenario Based Training & Advanced Handling)** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**Simulator Skill Test** (Briefing 1:00) (Skill Test 4:00) (Debriefing 0:30)		

Legend:

PTT - Part Task Trainer – ACE/FMS Trainer in the case of Airbus Training Center

APT+ - Flight Training Device Level 6

FFS - Full Flight Simulator Level D

The training outlined above reflects the training evaluated by ANAC and considered acceptable for A350-900 type rating training aiming an ANAC license endorsement. An operator or an ATO may develop a variation of this training provided it is proven that it maintains an equivalent level of safety. Depending on the level of the modification, ANAC may judge necessary an operational evaluation of the proposed training.

APPENDIX 2

FOOTPRINT - A330 STANDARD TRANSITION TYPE TRAINING

Day1	Day 2	Day 3	Day 4	Day 5
CREW registration	CBT + APT A	CBT + APT B	CBT + APT C	PERFORMANCES
Day 6	Day 7	Day 8	Day 9	Day 10
APT 1	APT 2	APT 3	APT 4	APT 5
Day 11	Day 12	Day 13	Day 14	Day 15
APT 6	APT 7	APT 8	APT 9	PERFORMANCE TEST SYSTEM TEST
Day 16	Day 17	Day 18	Day 19	Day 20
FFS 1	FFS 2	FFS 3	FFS 4	FFS 5
Day 21	Day 22	Day 23	Day 24	Day 25
FFS 6	FFS 7	LOFT	SKILL TEST	(OPTIONAL) LOW VISIBILITY OPERATIONS FFS

CBT: Computer Based Training

APT: Airbus Pilot Transition

FFS: Full Flight Simulator Level D

APPENDIX 3

FOOTPRINT – A320 TO A350 CCQ

PREREQUISITE: VALID A320 TYPE RATING WITH 3 MONTHS AND 150 HOURS OF A320 EXPERIENCE

Day 1	Day 2	Day 3	Day 4	Day 5
System Knowledge & PTT (6:45)	**System Knowledge & PTT** (6:45)	**System Knowledge & PTT** (6:55)	**System Knowledge & PTT** (4:40) + **Theoretical Knowledge Test (open book)**(2:00)	**FFS 1** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
APT+ 1 (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**APT+ 2** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**APT+ 3** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FFS 2** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FFS 3** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)
Day 11				
Skill Test				

Legend:

PTT - Part Task Trainer – ACE/FMS Trainer in the case of Airbus Training Center

APT+ - Flight Training Device Level 6

FFS - Full Flight Simulator Level D

APPENDIX 4

FOOTPRINT – A330 - A350 DIFFERENCES TRAINING

A) A330 TO A350 DIFFERENCES TRAINING

PREREQUISITE: QUALIFIED AND CURRENT ON A330.

Day 1	Day 2	Day 3	Day 4	Day 5
System Knowledge & PTT (6:45)	**System Knowledge & PTT** (5:35)	**System Knowledge & PTT** (6:55)	**System Knowledge & PTT** (4:40) **+** **Theoretical Knowledge Test (open book)** (2:00)	**FTD Level 6** **1** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)
Day 6	**Day 7**	**Day 8**		
FTD Level 6 **2** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FTD Level 6** **3** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)	**FTD Level 6** **4** (Briefing 1:00) (FFS 4:00) (Debriefing 0:30)		

Legend:

PTT - Part Task Trainer – ACE/FMS Trainer in the case of Airbus Training Center

FTD Level 6: Flight Training Device Qualified Level 6 per ANAC (FAA Level 6 according Part 60 or EASA Level 2 according CS-FSTD)

B) A350 TO A330 DIFFERENCES TRAINING

PREREQUISITE: QUALIFIED AND CURRENT ON A350.

Day 1	Day 2	Day 3	Day 4	Day 5
System Knowledge & PTT	**System Knowledge & PTT**	**System Knowledge & PTT**	**System Test**	**FTD Level 6** **1** Standard Operational Procedures
Day 6	**Day 7**	**Day 8**		
FTD Level 6 **2** Advanced Training, study of systems and procedures differences	**FTD Level 6** **3** Advanced Training, study of systems and procedures differences	**FTD Level 6** **4** Advanced Training, study of systems and procedures differences		

Legend:

PTT - Part Task Trainer – ACE/FMS Trainer in the case of Airbus Training Center

FTD Level 6: Flight Training Device Qualified Level 6 per ANAC (FAA Level 6 according Part 60 or EASA Level 2 according CS-FSTD)

APPENDIX 5

FOOTPRINT – A320 TO A330 CCQ

PREREQUISITE: VALID A320 TYPE RATING WITH 3 MONTHS AND 150 HOURS OF A320 EXPERIENCE

Day1	Day 2	Day 3	Day 4	Day 5
CREW registration CBT	CBT	CBT	FFS 1	FFS 2
Day 6	**Day 7**	**Day 8**		
FFS 3	SKILL TEST FFS	BASE TRAINING FLIGHT OR BASE TRAINING FFS		

CBT: Computer Based Training

FFS: Full Flight Simulator Level D

APPENDIX 6

FOOTPRINT – A340 TO A330 CCQ

PREREQUISITE: QUALIFIED AND CURRENT ON A340

Day1	Day 2	Day 3
CREW registration CBT	SKILL TEST FFS	BASE TRAINING FLIGHT or ZFTT

CBT: Computer Based Training

FFS: Full Flight Simulator Level D

APPENDIX 7

A350 FSTD SPECIFICATIONS

1. A350 Part Task Trainers (PTT)

a. Airbus Cockpit Experience ACE

The Part Task Trainer "ACE" is a 2D trainer that uses a virtual 3D environment coupled with aircraft system simulation that reproduces the A350XWB cockpit in an interactive environment.

It allows the Training of system knowledge and procedures. Thanks to its simulation capabilities, ACE also supplements instruction to ensure attainment or retention of pilot skills and abilities to accomplish the more complex tasks, usually related to operation of particular aircraft systems.

As such "ACE" is adequate for Level C training and Level C Currency.

ACE is also capable of Distance Learning.

b. Airbus FMS Trainer

The FMST (Flight Management System Trainer) is a 2D trainer, installed on a desktop which provides a high-fidelity FMS simulation including AFS (Auto Flight System), flight instruments display, radio navigation system and a minimum simulation of other A/C systems in order to support on-ground and in-flight FMS functions. The FMST is able to run in free-play mode but also in guided mode through a set of pre-defined scenario. The scope of the FMST is to focus on the dynamic elements of the FMS functionalities.

As such the FMST is adequate for Level C training and Level C Currency.

2. A350 APT+

The APT+ is a three dimensional (3D) type specific training device providing an open flight deck which replicates the A350 cockpit spatial organization. Cockpit instrumentation is mainly computer generated, with interactive graphics respecting panel size and location which are displayed on multiple touch-sensitive LCD displays.

Aircraft equipment requiring intensive manipulation, such as FCU, KCCU, Engine throttles and landing gear, consist of 3D replicated aircraft panels with physical controls, knobs and switches.

The APT+ is an enhanced FTD also providing adjustable crew seats, side sticks and rudder pedals making the APT+ capable of flying manually all flight phases. In front of each pilot, there is an additional screen that can be used by the instructor to display alternately visual scene (with the possibility to superimpose HUD image) and Airbus tutorials.

The device incorporates the necessary malfunctions to accomplish the training of Normal, abnormal and emergency procedures.

The APT+ device is configured to permit the incorporation of future updates.

An instructor operating station (IOS) is available to allow initialization, the modification of flight and environmental conditions (wind, temperature, pressure, etc.). It permits repositions (in flight and on ground), freezes, system resets, airport selection and aircraft malfunction insertion. Lessons plan are also available.

The device is located in a suitable quiet room, free of training distractions, with adequate temperature and lighting conditions.

3. A350 FTD Level 6

While the APT+ is a three dimensional (3D) type specific training device providing an open flight deck which replicates the A350 cockpit spatial organization, the FTD Level 6 is a three dimensional (3D) type specific training device providing an enclosed flight deck and all cockpit panels are 3D replicated aircraft panels/equipment with physical controls, knobs and switches.

The FTD Level 6 is also equipped with aircraft pilot seats allowing an accurate pilot position adjustment, as well as a control loading system to drive rudder pedals in both normal and abnormal flying conditions.

The device is installed in a dedicated spacious and quiet room, free of training distractions, with adequate temperature and adjustable lighting conditions to meet training needs.

The computer complex is located in a separate room with a dedicated appropriate air conditioning and cooling, to avoid noise disturbance.

This training device has been qualified by EASA Level 2 according EASA CS-FSTD and Level 6 by FAA according to CFR Part 60 and should be qualified by ANAC as level 6.

4. A350 FFS

This Full Flight Simulator is capable of being qualified by ANAC as Level D (as EASA according CS-FSTD and FAA according CFR Part 60).

APPENDIX 8

ALTERNATE AUTO PILOT

Operational evaluation of the **Alternate Auto Pilot** modification for **Airbus A330-941** was carried out by **documental analysis** following the Type Rating Determination Through Analysis according to the item B.2.1 from IS 00-007.

The levels of differences proposed by Airbus and considered appropriated by ANAC are **B/A/B**.

There are no specific Training Areas of Special Emphasis for this modification.

The OEM didn't provide a training program as a baseline for operators or training centers.

The original ODR was modified by the OEM in order to address this update and was considered satisfactory.

The differences do not affect the MDR.