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EASA 21J Approval Number: EASA.21J.019

Reason for Revision

Chapter 2	**Applicability** Business Unit AVIATION MRO INFRASTRUCTURE SERVICES (T/TK) removed; Design Department MUC CLHTO at Lufthansa City Line (CLH) removed
Chapter 4.3.3	**Limitations** Application of riblet foil extended to entire fuselage and engine nacelles
Chapter 4.4.2	**Management Personnel** Head of Office of Airworthiness Heiko Brosamler successor of Dr. Uwe Schüler. Rainer Lindau nominated as Safety Manager
Chapter 4.5	**Authorized Signatories** Rolf Clemens Walter added. Paul Bolder successor of Maribell Buedo Leyva
Chapter 5	**Revision Record** Chapter added

Editor	Prepared	Released
Lufthansa Technik AG **Weg beim Jäger 193** **P. O. Box 630300** **D-22313 Hamburg** **Germany**	Digital signiert von Sebastian Deutschmann Datum: 2023-09-20 11:00+02:00 Quality Management Design Organisation	Digitally signed by: Dr. Schüler, Uwe LHT-HAM T/TR Date: 20.09.2023 Dr. Uwe Schüler Head of Design Organisation

Distribution The Supplements are available via the quality management documentation system IQ MOVE or directly on LHT's intranet.

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Table of Contents

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1 Scope

This document explains and clarifies the content of the LHT Design Organisation Approval. The EASA Certificate No. EASA.21J.019 can be found on the LHT intranet.

It supplements the Integrated Management Manual of the Lufthansa Technik Group and covers the principles of the processes of the integrated quality management system IQ MOVE.

2 Applicability

This supplement applies to the following business units and locations:

Lufthansa Technik AG (LHT)[1]

- DESIGN ORGANISATION (T/TR)
- QUALITY MANAGEMENT (T/TQ)
- ORIGINAL EQUIPMENT & SPECIAL AIRCRAFT SERVICES - OES (T/OS and T/OO)
- AIRCRAFT COMPONENT SERVICES - ACS (T/AC and T/AO)
- DIGITAL FLEET SERVICES – DGF (T/DS)
- AIRCRAFT MAINTENANCE SERVICES - AMS (T/MO)
- ENGINE SERVICES - ENG (T/EC and T/EO)

Lufthansa Technik Shenzen (LTS), Airport Shenzen, China

- SZX OS

Lufthansa Technik Philippines (LTP), Airport Manila, Philippines

- MNL TS

SWISS International Air Lines (LX), Airport Zürich, Switzerland

- ZRH TES

Lufthansa Technik Component Services (LTCS), Tulsa, USA[1]

- TUL T/CA 3

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Lufthansa Airlines (LHA), Flughafen-Bereich West, Frankfurt/Main, Germany

- FRA L/TO
- FRA L/TE

3 Principles

Lufthansa Technik AG shall be entitled to perform design activities under Part 21 and within its scope of approval.

The design organisation approval requires compliances with the procedures specified in the Integrated Management Manual, this Supplement #101 and the processes of the Integrated Documentation System IQ MOVE covered by its process map “LHT Design Organisation (Part 21/J)”.

This Supplement defines the organisation and basic procedures upon which the approval is based.

[1] Location described in Integrated Management Manual

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4 Procedure

4.1 Compliance Statement of the Head of Design Organisation

This supplement, in conjunction with the Integrated Management Manual of the Lufthansa Technik Group and the Integrated Quality Management System IQ MOVE (”LHT Design Organisation (Part 21/J)”) describe the Design Organisation, the processes, and the responsibilities which relate to the Part 21/J approval as issued by the European Aviation Safety Agency.

This supplement is approved by the signatory and must be obeyed, where appropriate, when performing work within the scope of the granted Part 21/J approvals

It is accepted that the described processes do not take precedence over new or changed aviation safety requirements.

EASA is entitled to suspend, limit, or revoke the Part 21/J approval when EASA detects that processes and work standards are not being met or obeyed.

4.2 Conformity Statement of EASA (Design Organisation Handbook)

The European Aviation Safety Agency confirmed the fact, that by means of the current approval of the LHT Design Organisation (DO), this IQ MOVE Part Supplement Nr. 101 (EASA) together with the Integrated Management Manual of the Lufthansa Technik Group and the Integrated Quality Management System IQ MOVE (”LHT Design Organisation (Part 21/J)”) meet the requirements for a Design Organisation Handbook (DOH) in accordance with Part 21, § 21.A.265 according to the Approval Certificate EASA.21J.019.

Therefore, this Supplement is not individually signed by EASA DOA Team Leader.

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4.3 Scope of Approval

The holder of the Design Organisation Approval is entitled to design with the applicable type-certification basis, operational suitability data certification basis and environmental protection requirements as defined in the table below.

Under this scope of approval the design of parts and appliances including additive manufactured (AM) parts (polymer and metallic) for the products defined under 4.3. is covered. However, EASA must be involved, if the AM part or appliance may contribute to a failure condition that is classified as hazardous or catastrophic at the aircraft level.

	TC	STC	Major changes	Minor changes	Major repairs	Minor repairs	Flight conditions	permit to fly
Small and large aeroplane								
Avionics								
All areas		X	X	X	X	X	X	
Cabin								
All areas		X	X	X	X	X	X	
Electrical Systems								
All areas		X	X	X	X	X	X	
Environmental Control Systems								
All areas		X	X	X	X	X	X	
Flight								
Flight characteristics		X	X	X	X	X	X	
Hydro-Mechanical Systems								
All areas		X	X	X	X	X	X	
Powerplant and Fuel Systems								
All areas		X	X	X	X	X	X	
Structures								
All areas		X	X	X	X	X	X	
Piston and Turbine engine, APU								
Propulsion								
All areas		X	X	X	X	X	X	

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4.3.1 Products

The DOA approval certificate does not indicate specific aircraft or engine types.

LHT showed capability to perform design on the aircraft and engine types as listed below. The lists include all type families and series listed in the related EASA type certificate data sheet.

If a design shall be performed for other types, the list has to be amended or a singular permit has to be granted according to IQ MOVE process 743762 "Expanding capability of aircraft and engine type".

Designs to aircraft and engine components may only be done for the respective aircraft or engine. Therefore, an approval under EASA.21J.019 can only be issued for these aircraft or engine types.

4.3.1.1 Aircraft

The EASA.21J.019 approval covers to the following aircraft families, including its components, parts and appliances:

- Airbus A300 (incl. A300-600ST (Beluga)); A310; A318; A319; A320; A321; A330; A340; A350; A380
- ATR 42/72
- BAe 146 (incl. AVRO 146 RJ)
- Beech 200 (incl. 300 and 1900)
- Boeing 717; 727; 737; 747; 757; 767; 777; 787
- Bombardier BD-500 (CSeries)
- Bombardier BD-700 (Global Express, Global 6000 and Global 5000)
- Bombardier DHC-8 – Series 100, 200, 300 and 400 (incl. Q400)
- Bombardier Canadair Jet CL-600 Series (incl. 600, 601, 604 & Regional Jet Series 100, 701, 702, 703, 705, 900)
- Bombardier BD-100-1A10 (Challenger 300)
- Douglas DC8, DC9 (incl. MDxx); DC 10; MD 11

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- Embraer EMB-145 (incl. 145xx and 135xx)
- Embraer ERJ-170 Series
- Embraer ERJ-190 Series
- Fokker F50, F70, F100

  Learjet 24; 25; 31; 35; 36; 45; 55; 60

4.3.1.2 Engines

The EASA.21J.019 approval covers to the following engine families, including its components, parts and appliances:

- ALF502 Series (incl. LF507-1)
- CFM56
- CF6
- CF34
- GE90
- GEnx Series
- JT8D
- JT9D
- LEAP-1A & LEAP-1C Series
- LEAP-1B Series
- PW 4000
- PW100 Series
- PW150A Series
- PW1100G-JM
- PW1500G
- RR RB 211 (incl. Trent)
- RR Trent 1000 series engines
- V2500
- Trent XWB series engines

4.3.1.3 Product Aircraft (incl. APU), Engine or Propeller

The EASA.21J.019 approval for LHT covers the following categories of products:

- Large aircraft (aeroplanes),
- Small aircraft (aeroplanes),
- Engines,
- Auxiliary Power Units (APU) (covered under aforementioned aircraft)

The product “propeller” is not part of the EASA.21J.019 approval.

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Designs for the product aircraft have to be shown compliant to EASA CS / JAR / FAR-25/-23 airworthiness requirements listed on the Type Certificate Data Sheet. This also includes designs applied to the integration of engines or APU.

Designs for the product engine have to be shown compliant to JAR-E / EASA CS-E, FAR-33, FAR/CS-34 or FAR/CS-36 airworthiness requirements listed on the Type Certificate Data Sheet of the engine type.

Designs to APU shall be shown compliant to EASA CS / JAR / FAR-25/-23 airworthiness requirements as well as CS-APU.

Certain components are not always part of the same product; in particular those components at the aircraft, engine and propeller interface. The category has to be defined according to the following criteria:

Certain components are not always part of the same product; in particular those components at the aircraft, engine and propeller interface. The category has to be defined according to the following criteria:

- Is the component mentioned specifically on the Type Certificate Data Sheet;
- Can the component be attributed to the product via IPC, or;
- Is the component covered by a CS-E, FAR / JAR 33, CS-25, FAR/JAR 25, FAR/CS-34 or FAR/CS-36 airworthiness requirement?

Design affecting the product propeller is not part of the LHT DO approval.

In case of doubt, the Office of Airworthiness decides which category shall be used before the start of the design development.

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4.3.2 Privileges

a) (reserved)

b) (reserved)

c) LHT shall be entitled, within the limits of the terms of approval and under the relevant procedures of the design assurance systems to:

1. classify changes to a type-certificate or to a supplemental type-certificate and repair designs as "major" or "minor";
2. approve minor changes to a type-certificate or to a supplemental type-certificate and minor repair designs;
3. (reserved)
4. (reserved)
5. approve certain major repair designs under Part 21, Section A, Subpart M to products or auxiliary power units (APU);
6. approve the conditions under which a permit to fly can be issued in accordance with 21.A.710(a)(2), except for permits to fly to be issued for the purpose of 21.A.701(a)(15).

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4.3.3 Limitations

1. Privilege to approve the flight conditions supporting permits to fly is restricted to the technical capability defined in the scope and excludes flight conditions for initial flights of a new type of aircraft, or an aircraft modified by a change that is or would be classified as a significant major change, or an aircraft whose flight and/or piloting characteristics may have been significantly modified
2. Development of Operational Suitability Data excludes the OSD constituents Simulator Data (SIMD) and Maintenance Certifying Staff Data (MCSD).
3. The privilege under paragraph 4.3.2 c(5) is limited to the approval of the design of major repairs to products for which LHT holds the supplemental type-certificate.
4. The discipline of Flight Characteristics is limited to the application of riblet foil on fuselage and engine nacelles, as well as the installation of common radomes.

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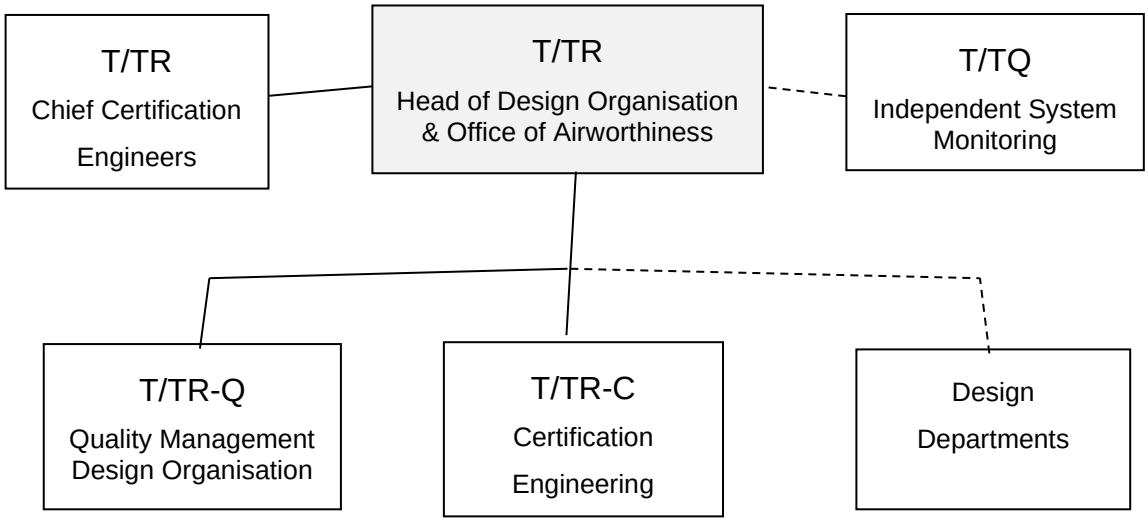
4.4 Management & Responsibilities

4.4.1 General Overview



The organisation and the related roles of each function within the Design Organisation are documented in the IQ MOVE organisational chart IQM.143089 "EASA Part 21/J – Design Organisation".The qualification requirements of the management personnel are documented in the related IQ MOVE role description.

4.4.2 Management Personnel

Head of Design Organisation	Dr. Uwe Schüler, HAM T/TR
Head of Office of Airworthiness	Heiko Brosamler, HAM T/TR-C
Head of Independent System Monitoring	Rainer Lindau, HAM T/TQ
Safety Manager	Rainer Lindau, HAM T/TQ
Head(s) of Design Department	As per IQ MOVE Doc. 21J-011

Changes to Head of Design Organisation, Head of Office of Airworthiness and Head of Independent System Monitoring are to be approved by the Agency as a Significant Change before implementation.

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4.5 Authorised Signatories

On behalf of the Head of the Design Organisation, Dr. Uwe Schüler, HAM T/TR, the following persons are authorised to sign the following documents:

- Applicant´s Declaration of Compliance	Heiko Brosamler, T/TR-C Jörg Rohwer, HAM T/TR Robert von den Bosch, HAM T/TR
- Certificate of Authorisation via IT based workflow DO!Authorise • General • of DE´s at T/OO-4 • of DE´s at T/OS-4	 Rolf Clemens Walter, T/TR-Q Heiko Brosamler, T/TR-C Jörg Rohwer, HAM T/TR Robert von den Bosch, HAM T/TR Jörn Dahmen, HAM T/OO-4 Paul Bolder, HAM T/OS-4
- Applications for Design Organisation System Approvals	Rolf Clemens Walter, T/TR-Q Heiko Brosamler, T/TR-C
- DO Quality Arrangements	Rolf Clemens Walter, T/TR-Q Heiko Brosamler, T/TR-C

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4.5.1 Personnel Preparing and Making Decisions Affecting Airworthiness and Environmental Protection

Employees of the business units, as well as companies and subsidiaries documented in chapter 2, fulfill responsibilities under EASA.21J.019, Part 21/J Design Organisation Approval of Lufthansa Technik AG.

The employees responsible for design, including the CVEs and the CEs, are members of the design departments listed in document "21J-011 - Design Departments of LHT Design Organisation" or are members of the office of airworthiness.

The Qualification Requirements are listed in IQ MOVE document "21J-010 - Qualification Requirements and Staff Authorizations".

The qualification records are archived in the database in accordance with the IQ MOVE process IQM.56046 "Qualifying and authorizing personnel of Design Organisation (21/J)".

4.5.2 Partners and Subcontractors

The principles to integrate partners and subcontractors are documented in IQ MOVE documents 21J-009 "Design Organisation – Subcontracting Policy" and 21J-035 "DO Subcontracting Verified Design".

The requirements for their integration are described in the IQ MOVE processes of process map IQM.1609661 "Working with Partners and Suppliers (Part 21)".

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4.6 Duration and Continued Validity

The approval of the LHT Design Organisation remains valid for an unlimited period unless relinquished early, temporarily invalidated, or withdrawn by the authority.

The procedure to keep the approval valid is described in process description IQM.72142 "Maintaining aviation authority approvals".

Significant changes of the Design Organisation System are listed in IQ MOVE document "21J-003 - Design Organisation - Significant Changes to Design Assurance System" and have to be submitted to EASA for approval before implementation.

Designs created under the former Design Organisation Approvals of Luftfahrt-Bundesamt, I-EA 15 (LBA) and LBA.JA.003 (JAA/LBA) remain approved under the EASA.21J.019 approval. However, changes to these designs have to be approved under the current procedures of EASA.21J.019.

4.7 Amendment Procedures

The amendment procedure for this Supplement, the Integrated Management Manual and IQ MOVE is described in the processes contained in the process map IQM.1147900 "Editing IQ MOVE content".

5 Revision Record

Issue	Issue date	Reason for Revision
24	19 JUL 2022	**4.3 Scope of Approval** Statement on Additive Manufacturing (AM) added **4.4.1 General Overview** Organisation chart revised: T/TR-M removed; T/TR Chief Engineering role added **4.4.2 Management Personnel** Quality Management DO removed, Form 4 roles clarified, editorial changes **4.5 Authorized signatories** Dr. Dagmar Elten replaced by head of Certification Engineering Heiko Brosamler and Chief Certification Engineers Jörg Rohwer and Robert van den Bosch