

# The EASA contribution to aircraft noise mitigation

*ICANA 2023*

**Working for sustainable aviation.**

**Your safety is our mission.**

# European Union Aviation Safety Agency – Our mission

- Ensure the highest common level of safety protection for EU citizens
- Ensure the highest common level of environmental protection
- Single regulatory and certification process among Member States
- Facilitate the internal aviation single market & create a level playing field
- Work with other international aviation organisations & regulators

## Total system approach

Airworthiness

Environment

Third Country  
Operators

Operations  
& Licencing

Air Traffic  
Management

Aerodromes

(Cyber-)  
Security

Drones &  
Urban Air  
Mobility

Dual-Use  
platform

Established  
**2002**

**18 years+**  
in operation



aviation experts  
& administrators

Headquarters in  
**Cologne**  
Office in  
**Brussels**



# What is EASA's role in aircraft noise mitigation?

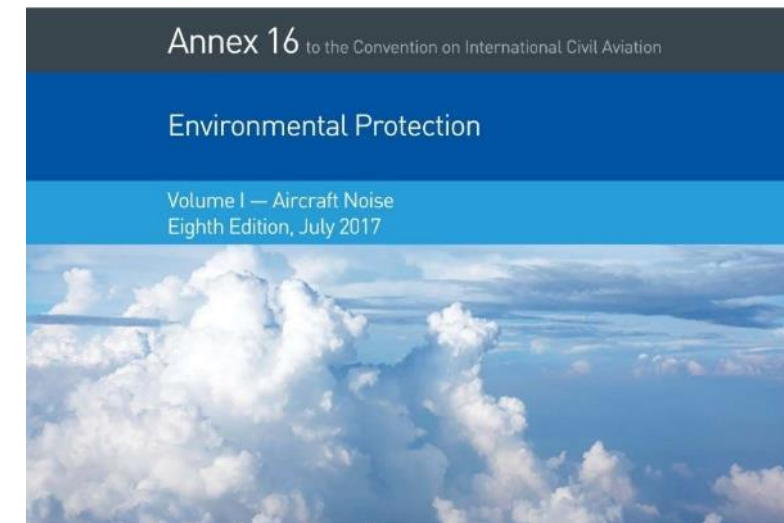
1. EASA certifies aircraft against applicable noise standards
2. EASA updates existing noise standards
3. EASA develops noise standards for new entrants
4. EASA publishes data on aircraft noise

# 1. Aircraft noise certification

- EASA Basic Regulation 2018/1139 Article 9 (essential requirements) makes reference to ICAO Annex 16
- ICAO Annex 16 defines the applicable environmental protection standards for a wide range of aircraft
- Objective: encourage implementation of best technology in aircraft designs
- Annex 16 is divided in four volumes:
  - **Volume I – Aircraft Noise**
  - Volume II – Engine emissions
  - Volume III – CO<sub>2</sub> emissions
  - Volume IV – CORSIA



International Standards  
and Recommended Practices



This edition supersedes, on 1 January 2018, all previous editions of Annex 16, Volume I.  
For information regarding the applicability of the Standards and Recommended Practices, see the Foreword.

INTERNATIONAL CIVIL AVIATION ORGANIZATION

# 1. Aircraft noise certification

- Noise certification is an integral part of aircraft type certification
- EASA noise experts are involved in the entire noise compliance demonstration:
  - Review of noise test plans
  - Witnessing of noise tests
  - Approval of final noise reports
  - Establishment of certification noise levels
- EASA publishes the **Type Certificate Data Sheets for Noise (TCDSN)** together with the issuance of the Type Certificate Data Sheet for aircraft
  - Around 300 TCDSN currently published on the EASA website
  - Around 30 TCDSN amended or added every year

## TYPE-CERTIFICATE DATA SHEET FOR NOISE

No. EASA.A.004

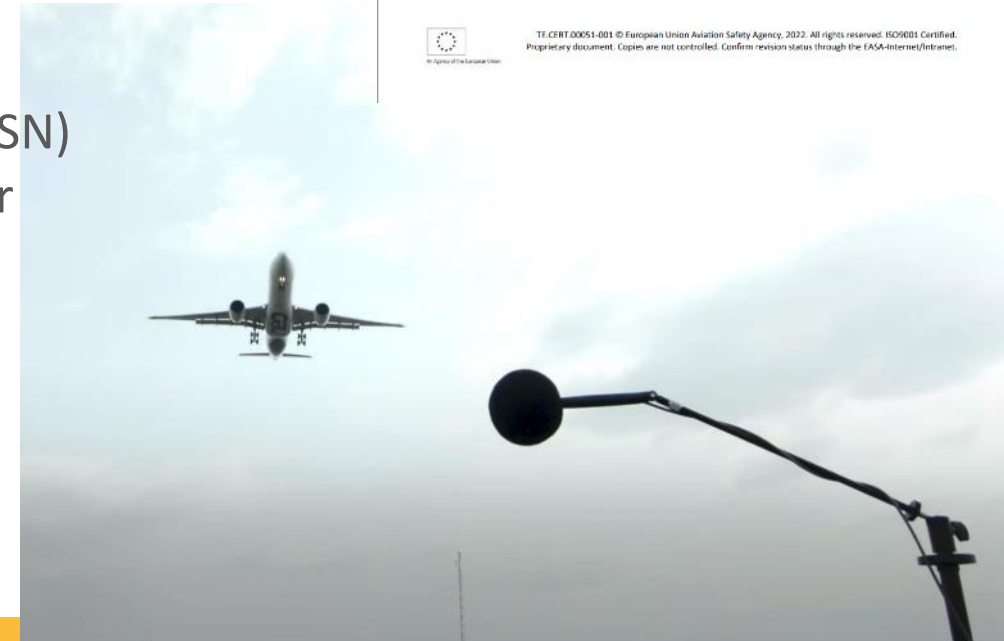
for

AIRBUS A330

Type Certificate Holder:  
Airbus S.A.S.  
2 Rond-point Emile Dewoitine  
31700 Blagnac  
France

For models:

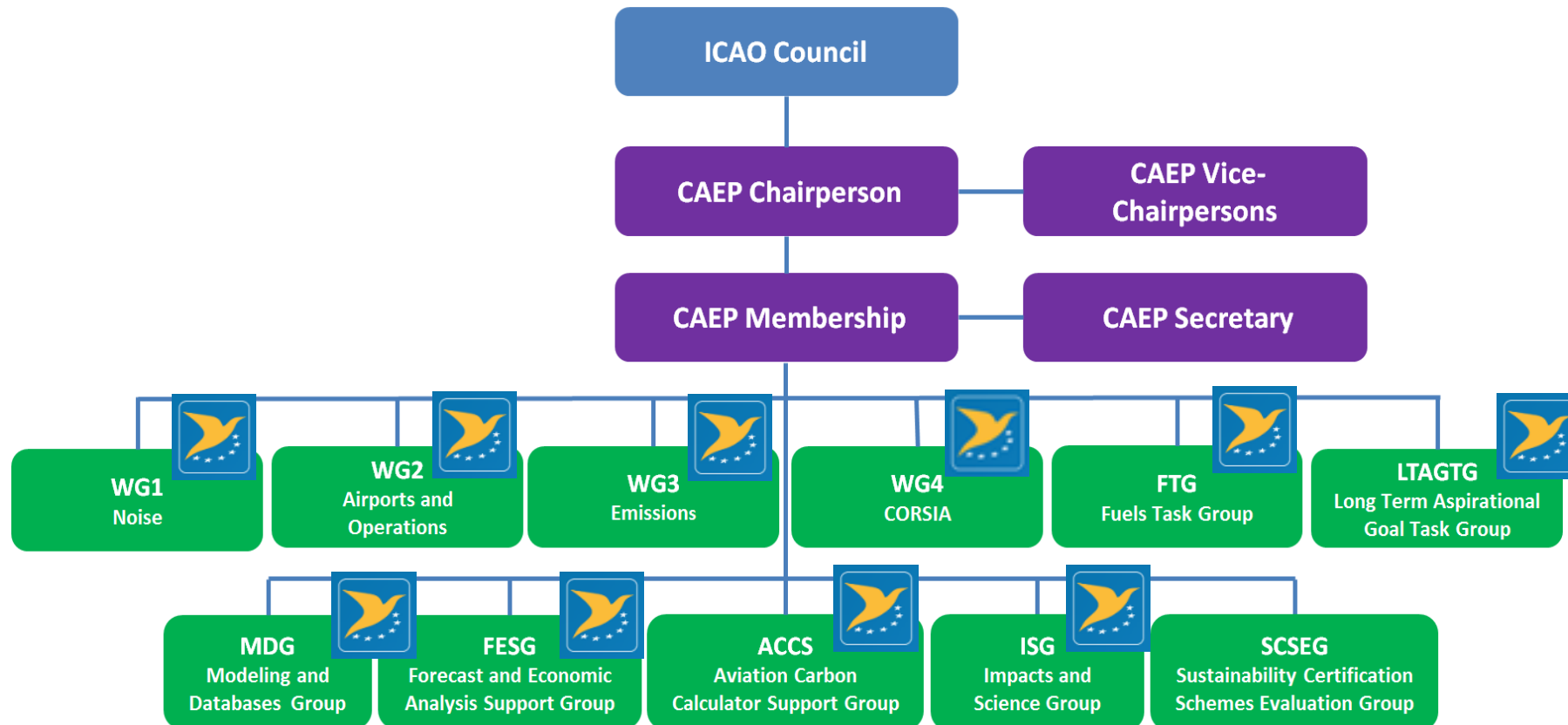
A330-201	A330-341
A330-202	A330-342
A330-203	A330-343
A330-223	A330-743L
A330-223F	A330-841
A330-243	A330-941
A330-243F	
A330-301	
A330-302	
A330-303	
A330-321	
A330-322	
A330-323	



## 2. Update of existing noise standards

EASA co-leads or actively contributes to several working groups of the ICAO Committee on Aviation Environmental Protection (CAEP) responsible for the maintenance of Annex 16

### CAEP structure (CAEP/13)

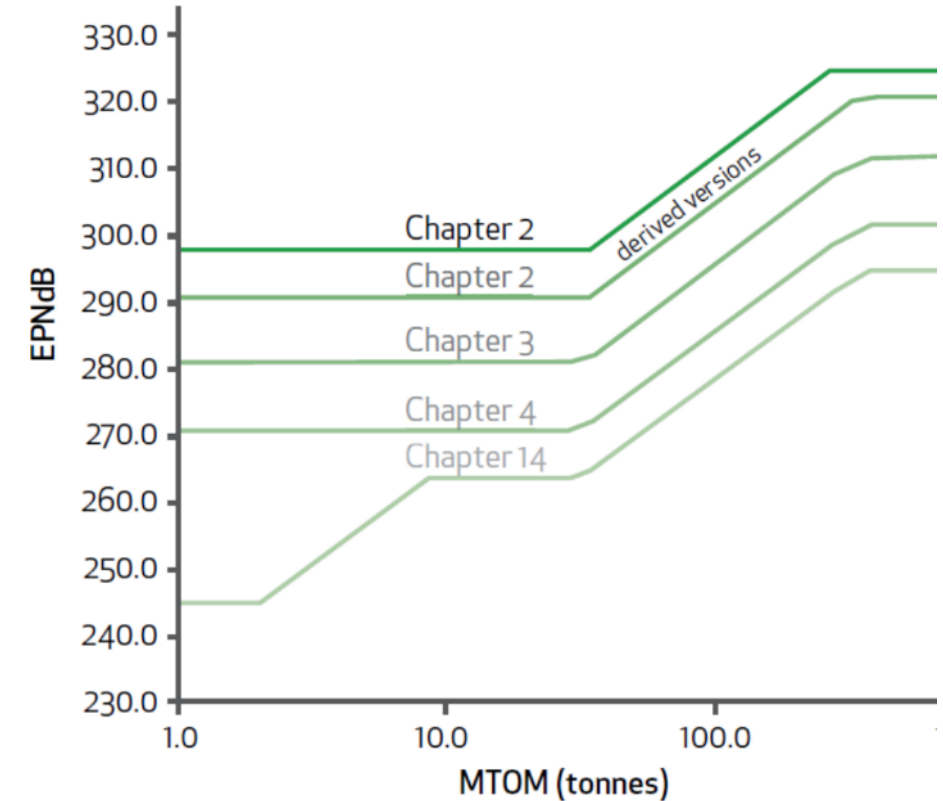
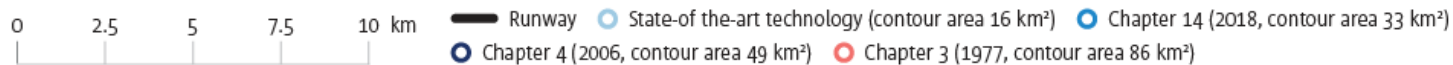


## 2. Update of existing noise standards

- Over time noise certification standards for large aeroplanes have been undergoing several stringency increases
- In the CAEP/13 cycle a new noise stringency is being investigated in combination with a new CO<sub>2</sub> standard
- Tradeoffs with other engine emissions will be taken into account
  - NOx emissions, as well as UHC, CO, or nvPM



Single landing and take-off 80 dB noise contours for a single-aisle aircraft

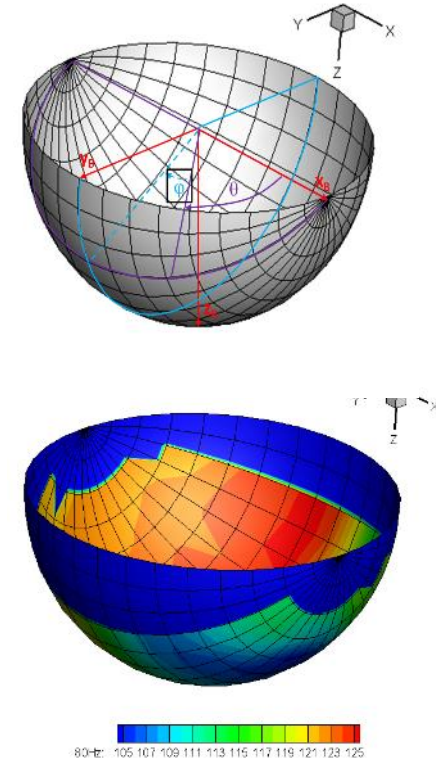


# 3. Development of noise standards for new entrants

- EASA published draft requirements for the landing and take-off noise certification of supersonic aeroplanes (see A-NPA 2022-05)
- EASA published first noise measurement guidelines for drones in the low and medium risk category of the specific class (below 600 kg)
- EASA develops project-specific noise requirements for eVTOL (on-going)
- EASA commissions noise trials, studies and research including psychoacoustic investigations

→ See the NORAH project:

<https://www.easa.europa.eu/en/research-projects/environmental-research-rotorcraft-noise>





# 4. Publication of aircraft noise data

- EASA updates the databases of certification noise levels approximately every 3 months

<https://www.easa.europa.eu/en/domains/environment/easa-certification-noise-levels>

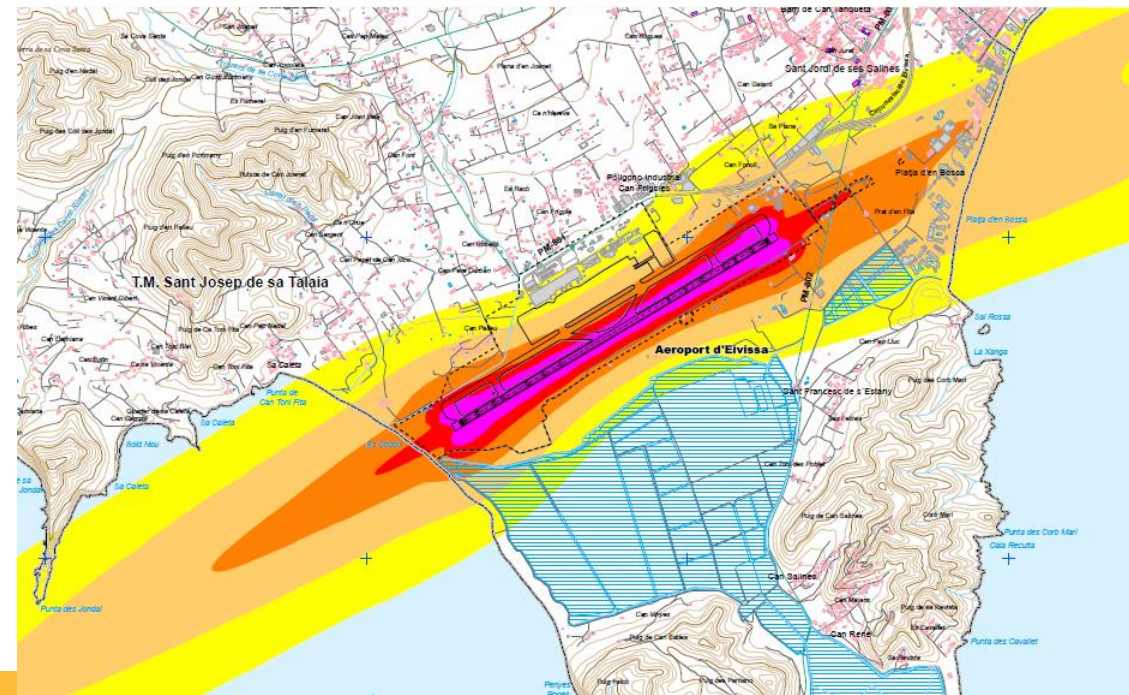
- EASA maintains a repository of noise certificates for aircraft operating in the EU, as mandated by the Balanced Approach Regulation (EU) 598/2014

- EASA collects, verifies and publishes aircraft noise and performance data used to generate noise contours around airports (Directive 2002/49/EC Annex II)

<https://www.easa.europa.eu/en/domains/environment/policy-support-and-research/aircraft-noise-and-performance-anp-data>

## Downloads

-  **Heavy propeller driven aeroplanes noise database**  
*Issue 39 of 27 February 2023*
-  **Jet aeroplanes noise database**  
*Issue 41 of 27 February 2023*
-  **Light propeller driven aeroplanes noise database**  
*Issue 41 of 27 February 2023*
-  **Rotorcraft noise database**  
*Issue 40 of 27 February 2023*



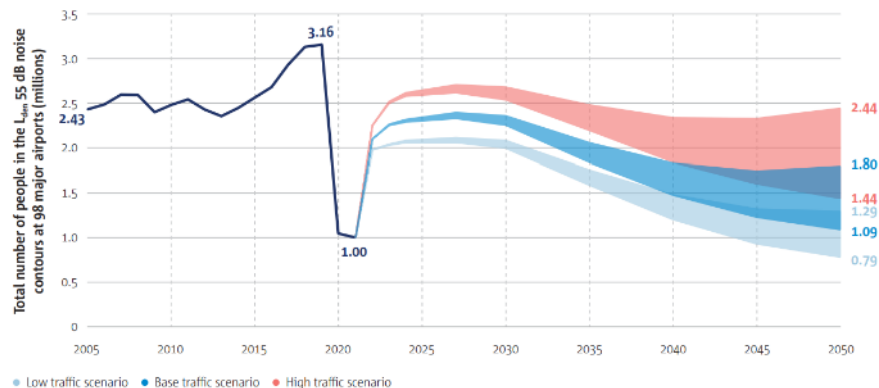
# 4. Publication of aircraft noise data

- EASA publishes the European Aviation Environmental Report every 3 years
- The report contains various indicators related to aircraft noise:
  - trends in aircraft noise exposure around major European airports ( $L_{den}$ ,  $L_{night}$ ,  $N_{50A70}$ )
  - trends in certification noise levels
  - average margins to noise standards of new aircraft deliveries
  - share of airport operations by aircraft noise level
- The data underpinning the charts is available for download.

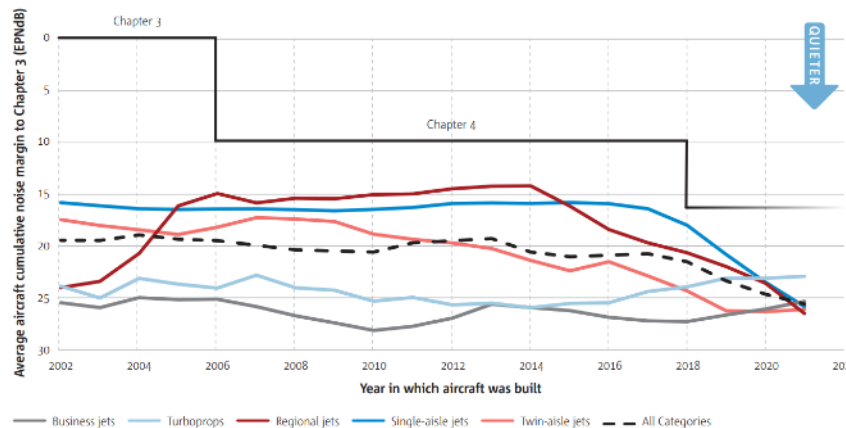
<https://www.easa.europa.eu/eco/eaer/>



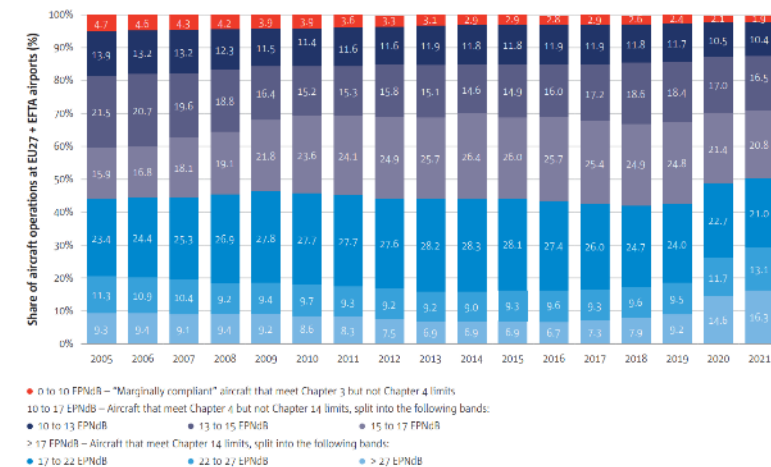
**Figure 1.8** Noise exposure was reduced by two-thirds between 2019 and 2020 and may stay below 2005 levels after recovery from the COVID-19 outbreak



**Figure 3.3** Average cumulative noise margin to Chapter 3 for in-service aircraft within the current European fleet



**Figure 6.3** Share of operations by cumulative margin to Chapter 3 limits at EU27+EFTA airports



*Thank you for your attention!*

**Your safety is our mission.**