



DESIGN & CERTIFICATION *newsletter*



**INDUSTRY
COMMUNICATION
AGENCY
CERTIFICATION NEWS
TECHNICAL INFORMATION
EXPERT TIPS**

3rd edition

Welcome to our latest EASA Design & Certification Newsletter, the third issue since the start of this initiative, all of which we hope helped to keep you updated on our latest certification news.

In this issue you will find some articles related to technical subjects as well as updates coming from recent certification events.

I would like to thank particularly Nicolas DUPREZ and Markus GOERNEMANN for their time and contribution to the articles in this edition.

We welcome your comments and suggestions.

Should you have further questions, please contact your PCM or DOA Team Leader.

Yours faithfully,

Rachel DAESCHLER



IMPORTANT!!!

If you wish to receive this bi-annual newsletter in the future you need to register via our website and click on news feed



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1

Ensuring sufficient audio quality following the installation of CVRs or other equipment



With the overall intention of raising awareness of concerned organisations on the importance of testing all installations functionally before the approval of

design changes and improving the availability and the quality of data recorded by flight recorders, we would like in particular to highlight the importance of ensuring sufficient audio quality of cockpit voice recorder (CVR) recordings and how this topic has been addressed in recent amendments of CS-25 (large aeroplanes) and CS-29 (large rotorcraft).

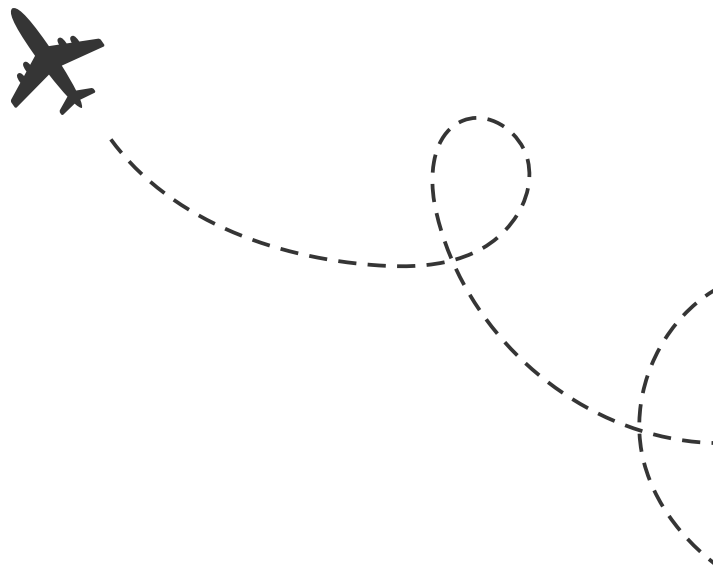
With ED Decision 2020/024/R published on 15 December 2020 amending CS-25 (Amendment 26) (<https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2020024r>) and ED Decision 2021/010/R published on 14 June 2021 amending CS-29 (Amendment 9) (<https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2021010r>), EASA amended the certification specifications (CS) and acceptable means of compliance (AMC) for the installation of flight recorders (CVR, FDR and data link recorder) on large aeroplanes and large rotorcraft.

A new paragraph has been introduced in AMC 25/29.1457 to explain how applicants should evaluate the CVR recording and demonstrate that the performance of a new or modified CVR system is acceptable and that the quality of the recording is acceptable. The new paragraph also provides examples of issues affecting a signal source and of a CVR audio quality rating scale.

Another paragraph was created which explains what kinds of failures should be addressed when developing the respective ICAs (i.e. failures that may affect the correct functioning of the CVR system or the quality of the recorded audio signals). Please take note of the amended AMC 25/29.1457 (final text and change information also in links above). This AMC can be used in the context of installation of other equipment that could have a detrimental effect on existing CVRs.

Concerned organisations are invited to become acquainted with this AMC as it sets the EASA expectations on methodology for showing of compliance of CVR systems, including the related design changes or installation of other equipment that could have a detrimental effect on the existing CVRs, since it has been demonstrated to be an effective means to ensure that CVR installations are complying with its intended functions.

As general recommendation, this article can be considered a reminder about the importance of verifying that any new equipment does not have a detrimental effect on existing equipment with which it has a direct interface.



2

COVID 19 crisis response – Transport of cargo in passenger cabin



Aircraft being prepared for the transport of goods in passenger cabin.

Airlines can take advantage of the possibilities for transport of cargo in the cabin of passenger aircraft. An update about the last developments.

The transport of goods in passenger cabins

The use of the cabin of a (fixed-wings) passenger aircraft for cargo transportation is not covered by existing certified configurations, compared to rotorcraft which in many cases have such configurations in their Type Certificate Data Sheet.

Two paths were thus defined by EASA to enable such operations:

- the exceptional process leading to the issuance of an “Exemption” by the National Certification authorities. Given the technical complexity of the topic, a set of guidelines was raised in April 2020 and has been regularly updated (issue 5 was published on November 23rd 2020)
- the regular initial airworthiness process leading to the issuance of a “Supplemental Type Certificate” by EASA. Given the impossibility to comply with all applicable requirements, a Deviation Certification Review Item (updated on September 21st 2021) needs to be raised for each project.

Since the beginning of this effort, more than a dozen of STC certificates were issued to various EASA DOA organisations for the transport of cargo in passenger cabins.

Ensuring a strong level of safety

It was deemed neither safe nor fair to grant the possibility of unlimited approvals for this kind of operations. The guidelines for the issuance of exemptions as well as the above-mentioned Deviation CRI implement then time limitations for the validity of those exemptions and approvals.

EASA has determined that it is reasonable and sufficiently conservative to allow each affected aeroplane to fly until July 31st 2022. The operating limitation applicable to the number of flight hours remains unchanged.

How to update the time limitation of STCs and design changes initially limited to 31st December 2021

The certificate holder solely needs to ask the PCM in charge of the original certification process for an update of the calendar limitation shown on the certificate.



In case you need support with the EASA guidelines or requirements, please contact nicolas.duprez@easa.europa.eu.

3 DOA and Certification Workshop



Certification & DOA Workshop 2021

Virtual Conference 30th November



On the 30th November 2021 we held our first virtual version of the DOA & Certification Workshop 2021. The COVID-19 crisis has challenged our industry in many different ways. It has triggered a number of important EASA developments, activities and best practices in the certification and design domains. This workshop combines the former STC and DOA workshops to offer you an important update on a wide range of topics, covering Rulemaking, International activities, STC & product certification, remote test witnessing and remote auditing, EPAS, DOA and technical matters.





List of Pre-recorded technical presentations:

1. The European Plan for Aviation Safety (EPAS)
2. DOA update - Technical presentations
3. EASA Experience regarding the systematic risk based EASA Level of Involvement (LOI)
4. Experience with remote test witnessing and remote auditing
5. Update on International developments
6. Innovation at EASA
7. Environmental Protection
8. Modifications and Alterations Affecting Composite Parts and/or Structures
9. Task Force Software (SW) & Airborne Electronic Hardware (AEH) "Abstraction Layer"
10. Certification Memorandum S-013 on Large Antenna Installations
11. Remotely Piloted Aircraft System (RPAS)

In case you were unable to attend the live stream or wish to view the technical pre-recordings, please use these links:



Live stream of our workshop can be viewed on our YouTube channel at the following [link](#).



Pre-recorded technical presentations can be viewed on our YouTube channel at the following [link](#).



All the Power Point presentations related to the above technical pre-recordings can be also viewed separately [here](#).

Answers to the most voted Sli.do Q&As that could not be addressed during the event can be found under "Event Materials".

Looking forward to meeting you in 2022!

4 Rotorcraft and VTOL Symposium 2021



Rotorcraft and VTOL Symposium 2021

During EUROPEAN ROTORS 16th till 18th Nov 2021



You can already
save the date
in your agendas for this year's edition
that will be held from:
**The 7th till the 10th November
2022**

EUROPEAN ROTORS

From the 16th till the 17th of November 2021 we held our first Rotorcraft and VTOL Symposium 2021 at the Cologne Trade Fair Centre in the context of the EUROPEAN ROTORS show. This new yearly event was organised by the European Helicopter Association (EHA) in collaboration with EASA.

The event was a great success and most importantly a unique forum in Europe to discuss the latest rotorcraft and VTOL developments from a safety perspective. The Symposium gave the opportunity to share and exchange ideas with Authorities, Industry, Operators, Pilots, Safety Investigators, Researchers. All under one roof and with the same goal !! Improve rotorcraft safety worldwide!!



In case you were unable to attend the Rotorcraft and VTOL Symposium 2021 or wish to view the technical pre-recordings, please use these links:



List of Pre-recorded technical presentations:

1. iConspicuity and U-space airspace
2. Evolution of System Safety requirements and AMCs for Rotorcraft (RMT.0712)
3. International Cooperation: What's in it for you?
4. VTOL trajectories and vertiports
5. Helicopter Ditching: Rulemaking and Research
6. Helicopter Hoists NPA
7. EASA AI Roadmap update
8. Path to Design Verification
9. FSTD capability signature
10. Safety recommendations (SRs) overview
11. Pilot training

Live stream of our workshop can be viewed on our YouTube channel at the following link.



All the Power Point presentations given during Rotorcraft and VTOL Symposium 2021 can be also viewed under "Event Proceedings" at the following link.

Pre-recorded technical presentations can be viewed on our YouTube channel at the following link.



All Picture's courtesy of Philippe Stabenau







**The Rotorthon with EUROAVIA
(The European Association of
Aerospace Students)**

The Agency has made some great progress in 2021 with some major publications affecting the VTOL community listed below:

- Publication of the Special Condition VTOL Means of Compliance
- Publication of the Special Condition Gyroplane
- Publication of guidelines for the design verification of drones operated in the 'specific' category SAIL III and IV
- Publication UAM Study
- Publication NPA 2021-11 'Enhancement of the safety assessment processes for rotorcraft designs'
- Publication NPA 2021-10 Prevention of catastrophic accidents due to rotorcraft hoist issues
- First usable guidance for Level 1 machine learning applications
- Publication of the Special Condition Gas Airships

Our aim for 2022 is to prepare for the safe operation of eVTOL in Europe, setting up operational and licensing regulatory framework.

Looking forward to meeting you in 2022!

5 EASA-FAA Industry-Regulator AM Event

From the 8th till the 12th of November 2021 we held our annual Industry/Regulator Additive Manufacturing (AM) Event. This initiative started in 2018 in collaborating with the FAA (hosted in 2020 by the FAA), this annual harmonised event was hosted virtually by EASA in 2021.



The event is intended for individuals directly representing organisations engaged in aviation related AM supply chain processes, including material suppliers, AM Machine Manufacturers, R&D, design, production, and continued airworthiness organisations.

In response to the industry's interest and rapid expansion in the use of Additive Manufacturing (AM) methods in aviation products, we now offer annual workshops focused on qualification and certification (Q&C) of AM parts in order to promote the technical dialogue and knowledge sharing between the key stakeholder groups, including government agencies, industry, public standards organizations and academia.

The presentations and outputs of this event and associated publications, are readily available under "Event proceedings" using the following **link**.

List of presentations available:

1. EAAMIRG AM Update (Neil Mantle / Rolls Royce), John Van-Doeselaar / Airbus)
2. Applicant Specific Guidance Memorandum for Additive Manufacturing (Bob Grant / FAA)
3. WG 1 Qualification of Additive Manufacturing (AM) Parts of No, or Low, Criticality (Simon Waite / EASA, Mitch Rife / Delta, Omiros Kastanis / EASA)
4. WG2 Progress and Meeting Plan - Fatigue and Damage Tolerance (F&DT) and Non-Destructive Inspection (NDI) Considerations for Metal AM (Michael Gorelik /FAA, Andreas Fischersworing-Bunk / MTU)
5. WG3 AM Machine Makers and End Users – Key Process Parameters (KPPs), Qualification, Requalification, and the Ideal ‘End State’ (Richard Mellor / Rolls Royce), Don Godfrey / SLM)
6. Standards at FDA &CDRH (Centre for Devices & Radiological Health) Performance based regulation (Terry Woods / Food and Drug Administration (FDA))
7. Digital Twin & Digital Thread – Definition, Value & Relevance to Certification (Olivia Pinon / GEORGIA TECH)
8. Simulation of additive Manufacturing Process (Pedro De la Calzada / ITP)
9. Computationally Enhanced Probabilistic Fracture Mechanics for AM parts (Javier Gómez-Escalonilla Martín / Airbus)
10. Thoughts on Fatigue Certification of Metal Additive Manufacturing for Aircraft Structures’ (Loris Molent /Molent.com Consultant - DSTO - Australia \retired)
11. Performance based regulation and the SDOs (Simon Waite / EASA & Roland Dutton / Arctos)
12. Coordination/Collaboration across the SDOs, AMSC roadmap Potential themes: development of supporting M&P specs; mechanisms for better coordination / collaboration; Data generation, databases, guidelines Potential themes: equivalence, acceptance of external M&P specs, etc... (Racheal Andrulonis, Royal Lovingfoss / CMH-17/NCAMP), Bill Mohr / AWS), Doug Hall / MMPDS), Don Godfrey / SLM), Mark Shaw / GE), Jesse Boyer / ASTM), Hector Sandoval / SAE)
13. Considerations for the Expanding Use of Computational Materials Capabilities in Additive Manufacturing (Michael Gorelik / FAA)

14. Effective and pragmatic introduction of simulation and CM into AM certification activities (Doug Wells / NASA)
15. Potentials of model-based data analytics in manufacturing (Tommy Venek / Fraunhofer)
16. ESA strategy for additive manufacturing technology (Thomas Rohr / European Space Agency (ESA))
17. Defining acceptance limits for Ni-AM powder using materials simulation (Casper Schwalbe / MTU Aero Engines AG)
18. NDT for AM (Ben Dutton / MTC)
19. EASA AI Roadmap : challenges and opportunities for use of AI in Aviation (Guillaume Soudain / EASA)
20. Additive Manufacturing Research activities contributing to the Cleansky2 flagship demonstrators. (Antonello Marino & Vittorio Selmin / CLEANSKY2)
21. WG Summaries (WG Co-chairs)
22. Regulators Panel Session (Moderator: Roland Dutton)



Looking forward to meeting you in 2022!

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