EASA Examples of Certification Documents

Stefano Fico
Alexander Bohl

General Aviation and Remote Piloted Aircraft Systems (RPAS) Department

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Background and Link to GA roadmap

Certification Documents Examples

- The documents provide examples of how certification documents can be developed;
- This task is a “spin-off” of the WP1.2 task of the GA roadmap:

GA roadmap WP1.2:

- *”SIMPLIFY ADMINISTRATIVE AND OPERATIONAL PROCEDURES”*
- **Expectations:** To identify areas for improvements with respect to administrative and operational procedures, and present solution to mitigate the stake holders perception of GA related EASA activities

Aim of the documents (1)

- The documents have been developed under **EASA traineeship programme**, with the support of EASA PCMs and specialists;
- They are based on **CS-LSA** requirements;
- The documents are based on an "**invented" design**. Some preliminary design checks have been done, but **design "flaws"** might be present;
- They have undergone an **informal consultations** with NAA;
- They are intended for companies **without DOA**;
- They are "**living documents**": they will need **updates**;
- They will be published on **GA website**;

Aim of the documents (2)

- What the documents do:
  - They provide examples of how certification documents can be developed;
  - in some case they contain guidelines about how certain requirements should be understood, but **they are not AMC**;
  - In case of any doubt in their use, the PCM (or EASA) should be contacted.

- What the documents don't do:
  - They are not the only way of doing certification documents (not at all!!);
  - They are not aimed to suggest design solutions;
  - **They are not AMC;**
  - they do not substitute, in any of its parts, the prescriptions of Part-21 and its amendments;
  - They are not meant to be used as "forms to fill";

Disclaimer

- **<u>IMPORTANT</u>: All the statements and/or conclusions provided in the documents can be considered realistic and have a reasonable technical basis but the designer is solely responsible of each of the statements that he/she will provide;**

Status of the documents

Ready within November 2015 :

- Type Design description;
- Flight test programme;
- Electrical load analysis;
- Avionic System Description;
- Consolidated version of CS-LSA amd1.

Under development (estimated for Q1 2016)

- W&B;
- V-n envelope;
- Wing loads calculation;
- Wing static test plan;

Overview of the documents

Consolidated version of CS-LSA amd1

- It consolidates CS-LSA and the referenced ASTM, but;
- It is not an EASA official regulation (it is sole responsibility of the applicant to “merge” CS-LSA and the referenced ASTM).

Type Design description

- It is the backbone of the certification documents, it describes the main features of the design of the aeroplane;
- It is used by the EASA team to have an updated overview of the main design features/solution;

Electrical load analysis

- It describes the electrical system architecture;
- It shows how the electrical system is appropriately sized;

Overview of the documents

Avionic System Description

- It describes the avionic system of the aeroplane, and
- It follow the guidelines of an EASA Cert. memo for non ETSO EFIS (not published yet);
- It is based on a “simple” digital cockpit;

Flight test programme

- Test Schedule, flight envelope opening, safety of flight, flight test methods, etc.
- It is intended for company without DOA, so it addresses also aspects of the FTOM;
- Future developments will be to develop some flight tests cards/orders;

Overview of the documents

Weight and Balance

- it is a fundamental reference for most of the certification documents;
- Provides the aeroplane design weights (as required by ASTM) and shows how they are defined;

V-n Envelope (design speeds and load factors)

- it is a fundamental reference for most of the certification documents;
- Provides the aeroplane design speeds and load factors for manouevres and gusts (as required by ASTM) shows how they are defined;

Wing loads calculation

- Provides and example of how some of the design loads on the wing can be calculated;
- It is not based on the simplified criteria of ASTM are not used (they give conservative higher loads)

Overview of the documents

Wing static test plan

- It describes how a static test can be organized and executed in compliance to parts 21;
- It shows how the design critical loads can be selected;
- Not only design aspects are addressed, but also aspects of proper test execution according to 21.A.33 (Test article conformity, equipment calibration, test execution, etc.);

In the pipelines..

- Flight tests card/order to integrate in the flight test programme;
- Compliance Check List;
- Landing gear analysis and tests (ground vs static);
- Powerplant installation;
- Others?

Questions

EASA
European Aviation Safety Agency

End slide

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