



EASA
European Aviation Safety Agency

MAKING AIRWORTHINESS (SAFELY) AFFORDABLE



UPDATE
2018

Flying in the EU

Background information



The EASA General Aviation Roadmap aims to simplify the certification of aircraft and modifications. This leads to a noticeable reduction in cost and effort to certify a new product or modify an existing one. In turn, this enables manufactures to develop modern and safe products and operators to retrofit modern equipment at cost affordable to the pilots. There are four initiatives through which to achieve that:

1. Simplified Airworthiness Procedures
2. Standard Changes and Repairs (CS-STAN)
3. CS-23/Part-23 reorganisation and International Harmonisation
4. Technology for safety (T4S)

Simplified Airworthiness Procedures



We intend to drastically simplify the airworthiness system for the low end of GA with small aircraft and low risk operation by developing simplified entry levels into the EASA system. The basic principle is to apply a risk based approach and to use qualified entities¹ and associations for oversight or practically combine organisational approvals, while relying on industry standards endorsed by EASA.

For these changes to happen, more flexibility for GA needs to be allowed in the EASA Basic Regulation. Part-21 - which contains the airworthiness procedures - can only be changed when the Basic Regulation has been amended. In this process, EU Member States have found an agreement at the end of 2017. It will then take a number of years to change this set of rules (first the Basic Regulation and then Part-21).

EASA has therefore initiated a short term fix within the constraints of the current rule. This fix will consist of dedicated Part-21 means of compliance for small companies accompanied by templates for manuals.

Experience has shown that it is particularly difficult for small companies to obtain a production organisation approval (POA). Therefore, new acceptable means of compliance (AMC) for small companies applying for a POA are being developed. These AMC focus on showing that the actual produced aircraft, engine or propeller are in accordance with the approved design. There will be less procedures and organisational checks.

The plan to have these dedicated AMC and templates for manuals available in 2017 turned out to be overambitious and the topic was delayed. The outcome is however available close to this AERO and we can start applying them in pilot cases.

In parallel, the concept for a drastically simplified airworthiness system will be developed in cooperation with our stakeholders. This concept can be implemented once the Basic Regulation's changes are in place.

¹ Such as Training Organisations or Operators



The Standard Changes / Standard Repairs (CS-STAN)



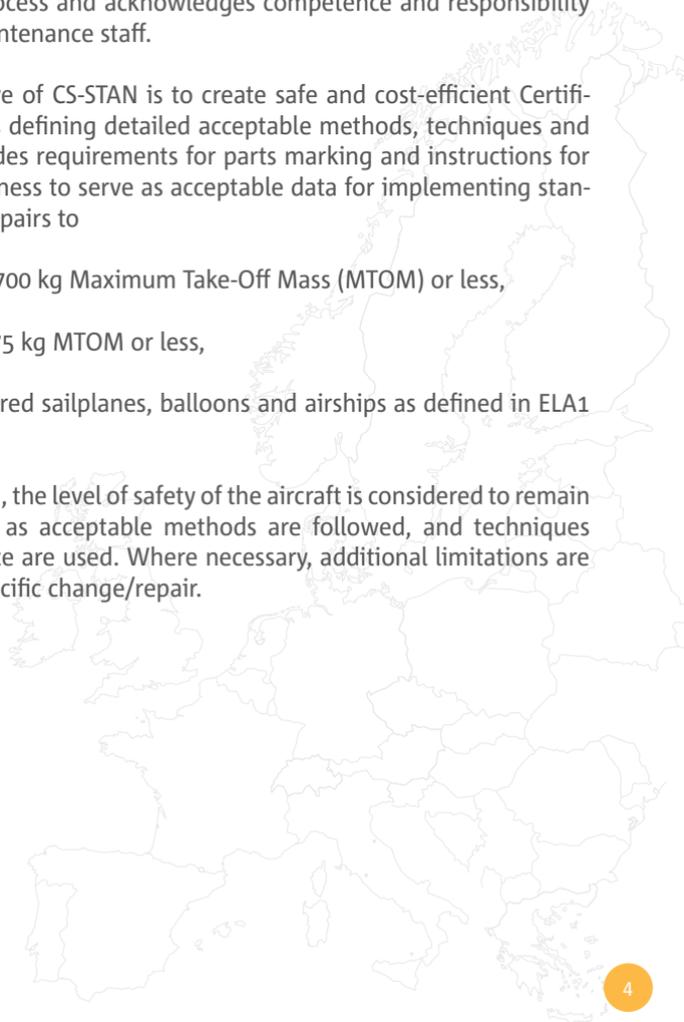
The concept of Standard Changes and Standard Repairs (CS-STAN) is another part of EASA's efforts to reduce regulatory burden and encourage the installation of safety equipment.

For cases where the Agency acknowledges that there is little added value in a formal design approval process, CS-STAN allows modification and repairs without the need of approving a modification to the aircraft type design by EASA or a 'Design Approved Organisation' (DOA). This is quite a radical simplification of the process and acknowledges competence and responsibility of the releasing maintenance staff.

The specific objective of CS-STAN is to create safe and cost-efficient Certification Specifications defining detailed acceptable methods, techniques and practices. This includes requirements for parts marking and instructions for continued airworthiness to serve as acceptable data for implementing standard changes and repairs to

- aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less,
- rotorcraft of 3 175 kg MTOM or less,
- sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.

When using CS-STAN, the level of safety of the aircraft is considered to remain unchanged as long as acceptable methods are followed, and techniques proven by experience are used. Where necessary, additional limitations are given within the specific change/repair.



The Standard Changes / Standard Repairs (CS-STAN)

CS-STAN is in place since July 2015 and was significantly revised in March 2017 to improve and expand the modifications. Now containing 34 standard modifications and 4 standard repairs.

CS-STAN will be further regularly amended on the basis of lessons learnt and proposals submitted by affected stakeholders, as well as industry technological innovations, which can bring safety benefits in a cost-efficient manner (Use CS-STAN reporting on the EASA website). The next revision of CS-STAN is in progress and publication expected early 2019.



CS-23/Part-23 reorganisation and International Harmonisation



Although there is a lot of innovation and new technologies developing, these are rarely applied to new general aviation aeroplanes that are certified to CS-23/Part-23. Instead, micro-lights and US LSA aeroplanes, for example, do feature the latest technologies. As a consequence, certified general aviation is hardly renewing itself and is struggling to survive.

In order to revive certified general aviation, the Agency is participating in an international effort and cooperation with the FAA (and others) to reorganise the CS-23/Part-23 Certification Specifications.

The objective of this reorganisation of CS-23/Part 23 can be seen in two steps. First of all to change the structure of CS-23/Part 23 by:

- Separating the design aspects from the safety intent in the rules
- Consolidate the existing design specific requirements in new industry consensus standards
- Re-write the safety objectives in a new CS-23/Part 23.

In the second step new technologies can be introduced in the new industry consensus standards. Of course, these new technologies do need to meet the safety objectives. A very important aspect of this reorganisation is that the new safety objective rules allow proportionality with the risks and differentiate in safety levels. The aim is to acknowledge that risks and safety levels for a basic two-seat aeroplane are not the same as for, i.e., a 19 passenger turbine powered aeroplane.

Where we are today

The FAA published their reorganisation of Part-23 (Amendment 64) late 2016, followed by EASA who published the reorganised CS-23 (Amendment 5) in the first quarter of 2017. EASA was the first to publish the supporting Acceptable Means of Compliance (AMC) in December 2017. These AMC contain consensus standards that are developed in coordination with authorities and industry. Today, a number of projects have started to use the new concept for certification. The objective high level rules have clearly opened the door for the certification of innovative products.

'Technology for Safety' (T4S)



At EASA, we employ many active GA pilots and run a GA flying club spanning different disciplines to keep at the pace of time. In context of our 'GA Roadmap', EASA wants to actively promote innovation. This is why in our T4S initiative, all is about the entry of modern technology in light General Aviation (including retrospectively in operational aircraft), not classified as complex motor-powered aircraft, notably in this category:

- aeroplanes of 2 730 kg maximum take-off mass (MTOM) or less;
- rotorcraft of 1 200 kg MTOM or less, certified for a maximum of up to 4 occupants; and
- other ELA2 aircraft (including sailplanes and balloons).

For this purpose, EASA has composed an international advisory group, tasked with developing concepts for facilitating the use of contemporary technology (including for simplified certification, installation and maintenance). To date, five main T4S objectives are endorsed:

1. Identify technological potential mainly for personal and instructional sectors of light General Aviation with emphasis on improving safety;
2. Facilitate a responsible use of affordable, safety-enhancing equipment on new and legacy General Aviation fleet by regulation and otherwise;
3. Identify need for safety promotion material;
4. Facilitate technology with a span broader than installed equipment only; and
5. Identify existing regulatory and technical standards barriers hampering the introduction of new technologies.

Facilitating the use of modern technology which could reduce key accident factors, thereby making flying in this category effectively safer at large, is the overarching T4S ambition. In particular, there are currently the following focal topics for applications of contemporary technology:

- Situational Awareness (traffic avoidance, weather, airspace, terrain and obstacles);
- Loss of Control (human factors, pilot workload, basic flying skills); and
- Propulsion (i.e., fuel supply).

'Technology for Safety' (T4S)



Practical applications could materialise, e.g., in affordable retrofits of digital auto pilots, wireless sensors enabling stall prevention, flight attitude representation or accurate determination of remaining fuel on board, or in transparent information displays in the pilot's line of sight. And there may be many more.



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