

PMA challenges in the EASA total aviation safety system

Pieter Ruitenber
(pieter.ruitenber@adse.eu)
San Diego, CA, USA



- **EASA Total Aviation Safety System;**
 - Changes in the regulations
 - International cooperation
- EASA Rules & Certification changes
- Impact and opportunities for PMA
- **Questions**

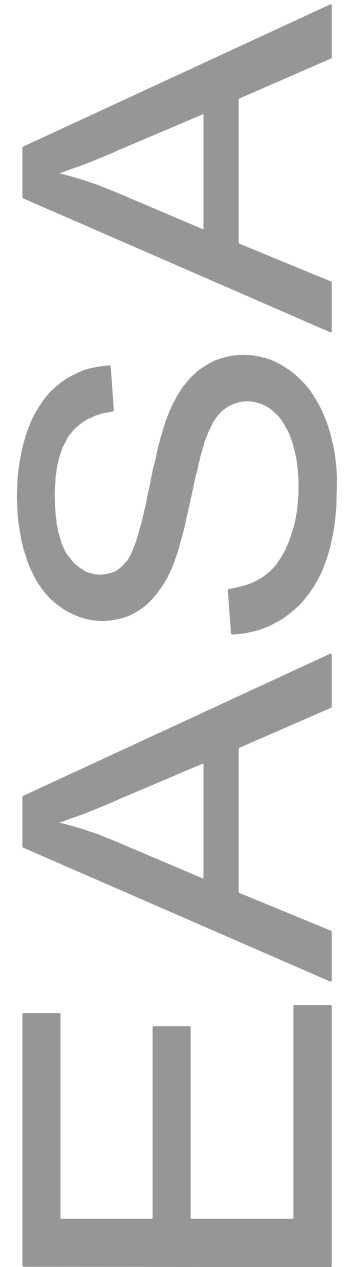
Changes at ADSE:

EASA approved Qualified Entity

Changes to the regulations:

- Basic regulation
- Airworthiness & Environmental Certification
- Continuing Airworthiness
- AMC & GM
- New regulations

- CS amendments



Changes to EC 216/2008:

Basic Regulation

(see http://www.easa.europa.eu/ws_prod/g/rg_regulations.php#BR)

- **EU 6/2013** (8 January 2013)
 - In Article 6 of Regulation (EC) No 216/2008, paragraph 1 is replaced:
‘1. Products, parts and appliances shall comply with the environmental protection requirements contained in Amendment 10 of Volume I and in Amendment 7 of Volume II of Annex 16 to the Chicago Convention as applicable on 17 November 2011, except for the Appendices to Annex 16.’

Airworthiness & Environmental Certification Implementing Rules

The new EC 748/2012 (03 August 2012) repealed the original regulation
EC 1702/2003

See: <http://easa.europa.eu/regulations/regulation-EC-748-2012.php>

Recent changes to the regulations

New IR Certification (Initial Airworthiness) EU 748/2012

- Summary highlights of the replacement of Regulation EC 1702/2003 by the Regulation EU 748/2012:
 - Possibility to deviate from airworthiness code in case of design changes ((S)TC)
 - Repair and design changes to ETSO (APUs) treated similar to products
 - New 21J requirements for applicants to establish certification programme for TC, changes to TCs & STCs. Extended DOA privilege to include a possibility to approve minor revisions to AFM
 - European Light Aircraft (ELA) process and standard changes and repairs
 - Article renumbered, new article 10, Issuance and function of AMC
 - Extended DOA privilege to approve flight conditions for Permit to Fly (1st flight)
 - Removed term “approved design data” from FORM 1
 - New Annex II, to list the repealed regulations
 - New Annex III, a table correlating the numbering of the new regulation with that of the repealed regulation
- More details about Summary highlights of the replacement of Regulation EC 1702/2003 by the Regulation EU 748/2012 can also be found here:
- <https://easa.europa.eu/regulations/regulations-structure.php>

Recent changes to the regulations

New IR Certification (Initial Airworthiness) EU 748/2012

- Changes to EU 748/2012:
 - (see http://www.easa.europa.eu/ws_prod/g/rg_regulations.php#BR)
- **EU 7/2013 (8 January 2013)**
 - Coordination of design and production (21.A.4(a), Subpart A) is replaced by 21.A.122, 21A.130(b)(3) and (4), 21.A.133 and 21.A.165(c)(2) and (3))
 - Additional Statement of conformity requirements (21.A.130(b) (Subpart F) is replaced)
 - Determine that other products, parts or appliances are complete, conform and are in condition for safe operation before issuing EASA Form 1
 - Determine that the completed engine is in compliance with emission requirements on the date of manufacture of the engine
 - Determine that the other product, parts or appliances conform to applicable data before issuing an EASA Form 1

Recent changes to the regulations

New IR Certification (Initial Airworthiness) EU 748/2012

- EU 748/2012 (10 September 2012) is replacing
- EC 1702/2003 (24 September 2003) with the following changes
 - [Commission Regulation \(EC\) No 381/2005](#)
 - [Commission Regulation \(EC\) No 706/2006](#)
 - [Commission Regulation \(EC\) No 335/2007](#)
 - [Commission Regulation \(EC\) No 375/2007](#)
 - [Commission Regulation \(EC\) No 287/2008](#)
 - [Commission Regulation \(EC\) No 1057/2008](#)
 - [Commission Regulation \(EC\) No 1194/2009](#)
- A complete overview of all amendments to EU 748/2012 can be found here:
 - <http://easa.europa.eu/regulations/regulations-structure.php>

Recent changes to the regulations

AMC and GM to IR Certification (Initial Airworthiness)

- The new issue 2 of “AMC and GM to Part 21” document (Acceptable Means of Compliance and Guidance Material to Part 21) (30 October 2012) repealed the initial issue of 17 October 2003 with all amendments.
- The new “AMC and GM to Part 21 Issue 2” can be found here:
 - <http://easa.europa.eu/agency-measures/acceptable-means-of-compliance-and-guidance-material.php>
- The new “AMC and GM to Part 21 Issue 2 Change Information” with the detailed change information can be found here too:
 - <http://easa.europa.eu/agency-measures/acceptable-means-of-compliance-and-guidance-material.php>

Recent changes to the regulations

IR Continuing Airworthiness

- IR Continuing Airworthiness Regulation EC 2042/2003 (20 November 2003)
 - The following table lists the changes / amendments which are applicable to the initial issue of EC 2042/2003 and which are published as a consolidated version by EASA
 - [Commission Regulation \(EC\) No 707/2006](#)
 - [Commission Regulation \(EC\) No 376/2007](#)
 - [Commission Regulation \(EC\) No 1056/2008](#)
 - [Commission Regulation \(EU\) No 127/2010](#)
 - [Commission Regulation \(EU\) No 962/2010](#)
 - [Commission Regulation \(EU\) No 1149/2011](#)
 - [Commission Regulation \(EU\) No 593/2012](#)
- A complete overview of all IR Continuing Airworthiness amendments can be found here:
 - <http://www.easa.europa.eu/regulations/regulations-structure.php>

Recent changes to the regulations

IR Continuing Airworthiness

- EU 593/2012 (05 July 2012)
 - in Article 2, point (k) of EC 2042/2003 is replaced by the definition of ELA 1 aircraft
 - Changes to EC 2042/2003 Annex I (Part-M):
 - M.A.302(d) is replaced by new requirements of showing compliance within aircraft maintenance programme M.A.304 “Data for modifications and repairs” is replaced by new requirements: Damage shall be assessed and modifications and repairs shall be carried out with approved data
 - M.A.502 is amended with update and new requirements for Maintenance of components
 - M.A.613(a) is replaced by new issuance requirements for component certificate of release to service
 - M.A.614(b) is replaced by new distribution requirements for component certificate of release to service
 - M.A.710(a) is replaced by new requirements for satisfactory airworthiness review
 - M.A.802 (b) is replaced by new requirements for EASA Form 1 constitutes the component certificate of release
 - M.A.902 (b) is replaced by new requirements for not flying Aircraft

Recent changes to the regulations

IR Continuing Airworthiness

- **EU 593/2012 (05 July 2012)**
 - Changes to EC 2042/2003 to Annex II (Part-145))
 - Components classification
 - Component installation
 - Requirements for component certificate of release to service
 - Update maintenance procedures, taking into account human factors, human performance to ensure good maintenance practices and compliance with this Part, clear work order or contract such that aircrafts and components may be released to service in accordance with point 145.A.50

Changes to the regulations

AMC and GM to IR Continuing Airworthiness

- Decision **2012/004/R** amending AMC/GM to Part-145, Part-66, Part-M (19 April 2012)
 - “Time limit for demonstrating compliance with knowledge and experience requirements”
 - “Privileges of B1 and B2 aircraft maintenance licences”
 - “Type and group ratings”
 - “Type rating training”
 - “Aircraft maintenance licences for non-complex aircraft”

Changes to the regulations

AMC and GM to IR Continuing Airworthiness

A complete overview of all amendments to IR-CA AMC/GM can be found here:

- http://www.easa.europa.eu/ws_prod/g/rg_amcgm.php#AMCPart-M
- http://www.easa.europa.eu/ws_prod/g/rg_amcgm.php#AMCPart-145
- http://www.easa.europa.eu/ws_prod/g/rg_amcgm.php#AMCPart-66
- http://www.easa.europa.eu/ws_prod/g/rg_amcgm.php#AMCPart-147

EASA regulations How to read amendments?

- Amendments to Essential Requirements and Implementing Rules are now published as **consolidated versions**
 - Partly available on the EASA website with more to come.
 - http://easa.europa.eu/rulemaking/docs/technical-publications/EASA_Part-145.pdf
 - http://easa.europa.eu/rulemaking/docs/technical-publications/EASA_Part-M.pdf
 - Downloads are free of charge.
 - Printed version can be ordered at € 18,--
- Amendments are “cumulative”:
 - Original issue of regulation
 - All subsequent amendments of that regulation +
 - Current version of a regulations
 - PART 21 consolidated version available at Eur-lex
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2003R1702:20091228:EN:PDF>

CS amendments:

- **2012 / 012 / R** **CS 23** Amendment 3
- **2012 / 008 / R** **CS 25** Amendment 12
- **2012 / 021 / R** **CS 27** Amendment 3
- **2012 / 022 / R** **CS 29** Amendment 3
- **2013 / 002 / R** **CS 34** Amendment 1
- **2013 / 003 / R** **CS 36** Amendment 3
- **2012 / 009 / R** **CS ETSO** Amendment 7

AMC 20 amendments:

- Amdt. 9 (Decision 2012/014/R) dated 24 September 2012
- *(AMC-20 not published as consolidated version following this Decision)*
 - Airworthiness Approval and Operational Criteria for on board equipment related to Area Navigation for Global Navigation Satellite System approach operation to Localiser Precision with Vertical guidance minima using Satellite Based Augmentation System

- See for all CS and AMC documents

<http://easa.europa.eu/agency-measures/certification-specifications.php>

Future changes

A
S
A
E

EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

Home - Sitemap - Website feedback

Citizens & General Information | Aviation Professionals & Industry | Authorities & Institutions

Standardisation
Standardisation overview

Technical Training
Technical training overview

Operators
SAFA

Institutional Affairs
EASA Members / Links
Management Board

Legislation
Agency Decisions
Rulemaking Regulations
Standardisation Regulation
Fees and Charges Reg.
Opt-Outs to Regulations
Official Publication

Rulemaking
Rulemaking directorate
TORs, NPAs & CRDs
Opinions
Archives
Export Certificate of Airworthiness
Third Country Operators

Environmental protection
International cooperation
Consultative bodies
Rulemaking - FAQ

EASA Home » Rulemaking Directorate

Rulemaking

- Rulemaking Directorate
- Rulemaking programme
- TORs - NPAs - CRDs
- Opt-outs to Regulations
- Consultative bodies
- International cooperation
- Rulemaking environmental activities
- Part-66 Type Ratings
- Studies and research activities
- Procedures and Work Instructions
- Export Certificate of Airworthiness
- NPAs & CRDs archive
- Rulemaking - FAQ

Publications

- Technical publications

Rulemaking programme

This section contains the adopted 4-years Rulemaking Programme.

2013

2013-2016 Rulemaking Programme 04/09/2012

- [4-Year RMP 2013-2016 - Reader Instruction](#)
- [Cover to the 4-year RMP 2013-2016](#)
- [4-Year RMP 2013-2016](#)
- [Annex I - Horizontal tasks](#)
- [Annex II - SESAR tasks](#)

The 4-year Rulemaking Programme 2013-2016 lists the tasks to be completed in 2013 and the advance planning for 2014-2016. The programme was officially adopted by the [ED Decision 2012/013/R](#) of 04 September 2012 and supersedes earlier published RMP programmes.

The Rulemaking Programme is built on the principle that the planning of the first year is a commitment and the planning for the following years might be subject to changes depending on changing priorities and availability of resources. Following this principle, the present 4-year Rulemaking Programme 2013-2016 commits the Agency to the rulemaking tasks planned for

EASA has published the 2013 – 2016 rulemaking program

Affected EASA rules (A)	Driver (B)	Task No. (old no.) (C)	Old numbering (C')	Title (D)	Description (E)	R2 Environmental Protection R3 Flight standards R4 Product Safety R5 ATM/Airports (F)	Work method (G)	Task leading to (H)	Starting date (I)	End date (J)	Changes from RMP 2012-2015 to RMP 2013-2016 (K)	Pre-RIA score (L)	Horizontal task (M)
Part M	Legal Requirements	RMT.0521	New task. No old number	Review of airworthiness review process		PS	Group	Opinion	2013	2015	New task		
Part M	Level playing field	RMT.0537	New task. No old number	Privilege for CAMOs to issue Flight Conditions and a Permit to Fly		PS	Agency	Opinion	2014	2015	New task		
Part-145	Level playing field	RMT.0097 (145.024)	145.024	Functions of B1 and B2 support staff and responsibilities	Link with sign off	PS	Group	Opinion	2011	2015	End date changed from 2014 to 2015	B7	
Part-21 AMC&GM	Level playing field	RMT.0023 (21.046)	21.046	Replacement parts	Introduction of provisions allowing approval of replacement parts taking into account acceptance of PMA parts under the bilateral agreement with the US	PS	Group	Opinion	2013	2015		pre-RIA old format	
Part-21 AMC&GM	Legal requirements	RMT.0106 (21.039 e)	21.039 (e)	Elaboration and adoption in the Community framework of additional airworthiness specifications for a given type of aircraft and type of operation.	Envisaged deliverable: CS-WCS - CS-maintenance certifying staff type rating training (importation of 66-011)	PS	Group	Decision	2007	2015	End date changed		
Part-21 AMC/GM	Level playing field	RMT.0012 (21.010)	21.010	21A, 3B Airworthiness Directives (AD's)	This paragraph will be reviewed in the light of discussions with NAAs and industry and to better align with the distribution of responsibilities as stipulated in the in the Basic Regulation also taking into account the amendment of the Basic Regulation.	PS	Agency	Opinion	2012	2015		pre-RIA old format	
Part-21; Part-M; Part-145	Level playing field	RMT.0571 (21.026)	21.026	Installation of parts and appliances that are released without an EASA Form 1 or equivalent.	Revision of 21A.307 to establish an appropriate legal basis.	PS	Group	Decision	2012	2015	New task		
Part-66 AMC/GM	Proportionality	RMT.0165 (66.027 b)	66.027 (b)	Subject 1: Adapt the current B2 licensing requirements for maintenance of avionic and electrical systems to the lower complexity of light aircraft. Subject 2: Propose a simple and proportionate system for the licensing of certifying staff involved in the maintenance of aircraft other than aeroplanes and helicopters and in the maintenance of ELA1 aeroplanes.	B2L and L licence	PS	Group	Decision	2012	2015	Title changed	pre-RIA old format	
Part-66 AMC/GM	Level playing field	RMT.0542	New task. No old number	List of type ratings This task has for objective to regularly update this living AMC, which is used as a reference for issuing type ratings. Envisaged deliverable: A decision updating Appendix I of AMC to Part-66.	Repetitive task - No ToR issued.	PS	Agency	Decision	n/a	2015	New task		
Part-CAT, AW, PART-ARO	Proportionality	RMT.0232 (MDM.031 a)	MDM.031 (a)	Commercial Air transportation aeroplane operations Single Engine IMC	Development of the Implementing Rules for the airworthiness and operational approval.	FS	Group	Opinion	2012	2015	End date changed to 2015	Exception issued - no pre-RIA drafted	X
Part-CAT, Part-NCC, Part-SPO	Level playing field	RMT.0515 (27&29.027)	27&29.027	Helicopter H-V Limitation		FS	Group	Opinion	2012	2015	Start date changed		
RMT.0023 (21.046)		21.046		Replacement parts	Introduction of provisions allowing approval of replacement parts taking into account acceptance of PMA parts under the bilateral agreement with the US	PS	Group	Opinion	2013	2015			

For details see: <http://easa.europa.eu/agency-measures/docs/agency-decisions/2012/2012-013-R/4-Year%20RMP%202013-2016.pdf>

International Cooperation

A
S
A
E

Recent changes to the regulations

Working Arrangements

- Working Arrangements - International Bilateral Cooperation
- A complete overview of all Working Arrangements can be found here:
- <http://easa.europa.eu/rulemaking/international-cooperation-working-arrangements.php>
-
- New Working Arrangements

State	Working Arrangements	Issue date #
China	Working Arrangement between EASA and CAAC on validation by CAAC of an EASA Supplemental Type Certificate No. 10035677	9-Feb-2012
China	Working Arrangement between EASA and CAAC on validation by CAAC of an EASA Supplemental Type Certificates No. 10017156 Rev.4 and No.10017259 Rev.3	9-Feb-2012
China	Working Arrangement between EASA and CAAC on validation by CAAC of an EASA Supplemental Type Certificate No. A.S.03127	9-Feb-2012

Recent changes to the regulations

Working Arrangements

- New Working Arrangements (continued)

State	Working Arrangements	Issue date #
China	<u>Working Arrangement between EASA and CAAC on validation by CAAC of an EASA Supplemental Type Certificate LBA No. 21E2.TA0311</u>	31-Jan-2012
China	<u>Working Arrangement between EASA and CAAC on validation by CAAC of an EASA Supplemental Type Certificate 10029547</u>	16-May-2012
China	Working Arrangement between EASA and CAAC on validation by CAAC of an EASA STC Project <u>No.10011424</u> and <u>No.10011829</u> (STC holders Lufthansa Technik AG and GCT Design Organisation GmbH, respectively)	16-May-2012
China	<u>Working Arrangement between EASA and CAAC on validation by CAAC of an EASA Supplemental Type Certificate EASA STC No. TA0304</u>	09-Aug-2012

Recent changes to the regulations

- New Working Arrangements (continued) *Working Arrangements*

State	Working Arrangements	Issue date #
China	<u>Working Arrangement between EASA and CAAC on validation by CAAC of the Supplemental Type Certificate No. 10038094</u>	17-Sep-2012
China	<u>Working Arrangement between EASA and CAAC on the validation by CAAC of an EASA Supplemental Type Certificate (Project No. 0010016005-001 - STC holder, Lufthansa Technik AG</u>	08-Oct-2012
China	<u>Working Arrangement between EASA and CAAC the validation by CAAC of certificates issued by EASA on GE Aviation Czech s.r.o. engines</u>	24-Sep-2012
China	<u>Working Arrangement between EASA and CAAC on the validation by CAAC of the EASA STC No. A.S.02556 (STC holder, Lufthansa Technik AG - VIP completion Bombardier) 10038094</u>	25-Oct-2012

Recent changes to the regulations

Working Arrangements

- New Working Arrangements (continued)

State	Working Arrangements	Issue date #
China	<u>Working Arrangement between EASA and CAAC on the validation by CAAC of an EASA STC (Project Number 0010018243-STC holder Aerotec A330 Wi-Fi installation)</u>	26-Nov-2012
Hong Kong - China	<u>Working Arrangement between HKCAD and EASA on cooperation in Supplemental Type Certification and ETSO Authorisation activities</u>	05-Oct-2012
Japan	<u>Updated version of Appendix C - List of Products (from <u>Working Arrangement between the Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism Japan (JCAB) and EASA</u>)</u>	19-Mar-2012

Recent changes to the regulations

Working Arrangements

- New Europe-Non EU
- New Working Arrangements between EASA and several Civil Aviation Authorities of ECAC-non-EU Member States on collection and exchange of information on the safety of aircraft using community airports and the airports of the relevant country

State	Working Arrangement	Issue date #
Turkey	Working Arrangement on collection and exchange of information on the safety of aircraft using EU airports and airports of non-EU States	06-July-2012
Monte-negro	Working Arrangement	15-May-2012
Croatia	Repealed Working Arrangement	27-Nov-2012
Bosnia-Herzegovina	Working Arrangement	17-Aug-2012
Armenia	Working Arrangement	07-May-2012

Recent changes to the regulations

Working Arrangements

- New Europe-Non EU
- New Working Arrangements between EASA and several Civil Aviation Authorities of non EU Member States in the framework of the transition of the Joint Aviation Authorities

State	Working Arrangement	Issue date #
Russia	<u>Implementing Procedure on European suppliers of parts and appliances to be installed on Russian Aircraft</u>	24-Feb-2012

Recent changes to the regulations

Working Arrangements

- New Working Arrangements between EASA and several Civil Aviation Authorities in the framework of Mediterranean Aviation Safety Cell (MASC)

State	Working Arrangement	Issue date #
Tunisia	<u>Working Arrangement between EASA and Tunisia DGAC on technical cooperation in the field of civil aviation safety</u>	10-Oct-2012
Jordan	<u>Working Arrangement between EASA and Jordan CARC on technical cooperation in the field of civil aviation safety</u>	03-May-2012
Israel	<u>Working Arrangement between EASA and the Civil Aviation Authority of israel on technical cooperation in the field of civil aviation safety</u>	28-Nov-2012

BASA changes

EASA - FAA

New BASA agreement 8312/09 signed 15 March 2011

- **Effective from May 01 2011**
 - Institutional File 2007/0110 (ACC) and 2007/0111 (ACC) of the Council of the European Union (BASA)
 - Technical Implementation Procedures for Airworthiness and Environmental Certification (TIP)
 - Maintenance Annex Guidance (MAG)

- **Executive Management**
 - Bilateral Oversight Board
 - Certification Oversight Board
 - Joint Maintenance Coordination Board

- **BASA only applicable for the EU Countries under EASA**
 - A letter to be established per non EU country working under EASA to define the conditions

BASA unchanged; appendices updated.

- With new Revision 2 from 22-Oct-2012 of **Appendix 1** to agreement: **Technical Implementation Procedures** for Airworthiness and Environmental Certification (TIP) which can be found under:
<http://easa.europa.eu/rulemaking/docs/international/united-states/bilateral-agreements/TIP%20Revision%202-22102012.pdf>
- With new change 2 from 31-Oct-2012 of **Appendix 2** to agreement: **Maintenance Annex Guidance** (MAG) which can be found under:
http://easa.europa.eu/rulemaking/docs/international/united-states/bilateral-agreements/MAG_Change-2.pdf
- **A consolidated text of the bilateral agreement (BASA)** can be found here:
[Consolidated text of the Agreement between the USA and the EU on cooperation in the regulation of civil aviation safety](#)

A detailed view of an aircraft cockpit, showing the instrument panel, control yokes, and side consoles. The cockpit is equipped with multiple displays, including a primary flight display (PFD) and a multi-function display (MFD). The background shows a runway and a green field under a clear sky.

Questions?

Thank you for your attention

Information:

Info@adse.eu

or

Pieter.ruitenber@adse.eu

This document and all information contained herein is the sole property of ADSE B.V. No intellectual property rights are granted by the delivery of this document or the disclosure of its content. This document shall not be reproduced or disclosed to a third party without the express written consent of ADSE B.V. This document and its content shall not be used for any purpose other than that for which it is supplied.

The statements made herein do not constitute an offer. They are based on the mentioned assumptions and are expressed in good faith. Where the supporting grounds for these statements are not shown, ADSE B.V. will be pleased to explain the basis thereof.

ADSE consulting and engineering AG

Christoph Merian-Ring 11
CH-4153 Reinach BL, Switzerland
Tel. +41-(0)61-7178236 – Fax +41-(0)61- 7178788
E-mail: pieter.ruitenberq@adse.eu ; Website: www.adse.eu