



European Union Aviation Safety Agency  
**Comment-Response Document 2018-11**

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RELATED NPA: 2018-11 — RMT.0106 (21.039(e))

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## 1. Summary of the outcome of the consultation

There are 78 comments submitted to this NPA made on 38 segments by 16 users.

The responses, according to commentators and type of response, are as follows:

	Noted	Accepted	Partially accepted	Not accepted
DGAC France	1			
UK CAA	1			
AIRBUS	1		1	7
Airbus Helicopters		1		2
Dassault-Aviation		3	4	7
Embraer S.A.	1			
Lufthansa DO	6			2
Leonardo Training Academy	1	1	1	
Air France Industries	1			
Lufthansa Technik A.G.		3		
KLM engineering & maintenance			1	
IATA	1	5	2	1
EAMTC	7			2
FNAM	1			
Individuals	6	7		1
<b>Total</b>	<b>27</b>	<b>20</b>	<b>9</b>	<b>22</b>

The balanced option presented in the NPA is supported by all commentators except for AIRBUS. Diverse approaches still exist on minor and not relevant concepts, but the constructive comments, which improve some definitions of the OSD elements or clarify the structure of the syllabus, have been accepted and endorsed in the final text.

All detailed comments with the associated EASA's responses are presented in the following chapter.

## 2. Individual comments and responses

In responding to comments, a standard terminology has been applied to attest EASA's position. This terminology is as follows:

- (a) **Accepted** — EASA agrees with the comment and any proposed amendment is wholly transferred to the revised text.
- (b) **Partially accepted** — EASA either partially agrees with the comment, or agrees with it but the proposed amendment is only partially transferred to the revised text.
- (c) **Noted** — EASA acknowledges the comment, but no change to the existing text is considered to be necessary.
- (d) **Not accepted** — The comment or proposed amendment is not agreed by EASA.

<b>(General comments)</b>	-
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comment	4	<p>Thank you for the opportunity to comment on this NPA 2018-11, please be advised that there are no comments from the UK CAA.</p>	comment by: <i>UK CAA</i>
response	Noted		

comment	26	<p>The FNAM (Fédération Nationale de l'Aviation Marchande) is the French Aviation Industry Federation/ Trade Association for Air Transport, gathering the following members:</p> <ul style="list-style-type: none"> <li>• CSTA: French Airlines Professional Union (incl. Air France)</li> <li>• SNEH: French Helicopters Operators Professional Union</li> <li>• CSAE: French Handling Operators Professional Union</li> <li>• <b>GIPAG: French General Aviation Operators Professional Union</b></li> <li>• GPMA: French Ground Operations Operators Professional Union</li> <li>• EBAA France: French Business Airlines Professional Union</li> </ul> <p>And the following associated members:</p> <ul style="list-style-type: none"> <li>• FPDC: French Drone Professional Union</li> <li>• UAF: French Airports Professional Union</li> </ul> <p>The GIPAG (Groupement des Industriels et professionnels de l'Aviation Générale) is the French Association for General Aviation Professionnels representing all sectors in General Aviation such as :</p> <ul style="list-style-type: none"> <li>• <b>Maintenance</b></li> <li>• Aerial Work</li> <li>• Commercial Air Transport</li> </ul>	comment by: <i>FNAM</i>
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- Training
- Others services (insurances, manufacturers, etc.)

The comments hereafter shall be considered as an identification of some of the major issues that French industry asks EASA to discuss with third-parties before any publication of the proposed regulation. In consequence, the following comments shall not be considered:

- As a recognition of the third-parties consultation process carried out by the European Parliament and of the Council;
- As an acceptance or an acknowledgement of the proposed regulation, as a whole or of any part of it;
- As exhaustive: the fact that some articles (or any part of them) are not commented does not mean the FNAM and GIPAG have (or may have) no comments about them, neither the FNAM and GIPAG accept or acknowledges them. All the following comments are thus limited to our understanding of the effectively published proposed regulation, notwithstanding their consistency with any other pieces of regulation.

Plus, FNAM and GIPAG would like to remind that responsibilities are not defined and interpreted in the same way depending on the European country. For European countries with Latin laws, FNAM and GIPAG fear that this responsibility will rely on maintenance organizations because professional will be considered as “*knowing*” compared to owners or operators in associations which, themselves, will be considered as “*non-knowing*” by insurances and judges. Several privileges, through responsibilities, are provided to associations and owners for more flexibilities, but in reality, judges and insurance consider that the knowing entity is responsible in case of any issue. Therefore, FNAM and GIPAG would like to remind to EASA to soundly consider this issue for each and every change in European Regulations.

#### #Introduction

FNAM and GIPAG thank EASA for updating applicable European requirements to enhance safety through an improvement of Maintenance Certifying Staff training. EASA disposals propose to introduce technical and specific aircraft elements to Part-66 syllabus in Part-147 training centers. This approach may allow maintenance tasks to be more adapted to aircraft characteristics and may reduce globally maintenance errors. Nevertheless, proposed changes seem not to fit to current maintenance issues which are missing of Certifying Staff for each and every types of General Aviation aircraft due to lack of specific Part-147 training.

#### #Current Situation

The current State of the art on General Aviation Part-145 mechanics already underlines the lack of certifying personnel faced by General Aviation maintenance organizations, and in particular for Part-145 organizations:

- Young Part-66 mechanics:  
They have no type rating and will therefore need a complete Part-147



training for the first type rating training. After this training, they will need to gain experience before being elected as Certifying Staff;

- Middle-aged Part-66 mechanics (main population):  
They are highly qualified with in-depth experience on different types of aircraft; but most of them do not own a B1-1 license due to heavy economic and social constraints to start again long trainings. It is thus very difficult for them to be elected as Certifying Staff;
- Aged Part-66 mechanics:  
They are the main Certifying Staff since they are experienced for several types of aircraft and have benefited the grandfather rights for the mechanic license. However, they will soon be retired (within the next 2 to 3 years).

The Maintenance Regulation and EASA proposed disposals fit for large major maintenance organizations maintaining 1 or 2 types of aircraft but not for General Aviation Small and Medium Enterprises maintaining a lot of different types of aircraft. Due to the very large scope of aircraft types in General Aviation, it may therefore be difficult to have a Certifying Staff for each and every type of aircraft, in particular for 2 major reasons:

1. The maintenance qualification for each specific aircraft may be impossible to obtain or too costly to perform since it concerns too few owners and operators. Only Part-147 organizations are allowed to provide specific maintenance training. Moreover, it is really difficult for Part-145 organizations to know all European Part-147 organizations able to provide specific training.
2. General Aviation maintenance organizations are already running out of resources especially of Certifying Staff for old aircraft models. Each year, Part-145 organizations are losing Certifying Staff capable of releasing specific models of aircraft and they cannot train their new staff (cf. point 1).

EASA proposed disposals will therefore exacerbate point 1: Part-147 will have more complex syllabus to provide for each and every types of aircraft. More Part-147 resources should be allocated for one training dedicated to one type of aircraft. For logical economical reason, Part-147 centers will even more focus their resources on frequent types of aircraft training rather than rare aircraft, such as General Aviation aircraft. The cost of Part-147 training may also increase due to the additional work on the specific training for each type of aircraft. In consequence, in the coming years, General Aviation Part-145 organizations may not be able to maintain some type of aircraft, which will directly impact the flight safety.

#### #Potential Solutions

Current General Aviation maintenance organizations are missing of Certifying Staff for each and every types of General Aviation aircraft due to lack of specific Part-147 training. Two solutions may help to improve current situation:

- In PIA Maintenance 2019-2023, EASA suggests to introduce “special company authorization to certifying staff and support staff to those AML holder who, notwithstanding have not carried out the type rating training, have demonstrated an adequate understanding of the legacy aircraft”.



	<p>FNAM and GIPAG thank and encourage the implementation of this solution as soon as possible. This proposal should also be extended to all General Aviation aircraft with no Part-147 or Part 147 difficult to access (see above the justification in #Current Situation)</p> <ul style="list-style-type: none"> <li>Each Member State should be able to nominate specific mechanics which will be allow to: <ol style="list-style-type: none"> <li>Assess and provide approvals for all types of aircraft</li> <li>Advise and guide organizations in their implementation of regulations</li> </ol> </li> </ul> <p><b>#Conclusion</b></p> <p>EASA proposed disposals seem therefore not adapted for General Aviation operational reality. These disposals may even appear not aligned with GA roadmap's current works, such as EASA General Aviation Part-145 Taskforce. This Taskforce gathers General Aviation Part-145 stakeholders (IAOPA, ECOGAS, EASA, NAA) in order to find solutions on major issues for Part-145 organizations in General Aviation. The lack of Certifying Staff is one of these main identified issues. FNAM and GIPAG would therefore appreciate EASA to harmonize their points of view and areas of work in a comprehensive approach. Indeed, although Certifying Staff is the main topic of General Aviation Part-145 Taskforce, this NPA was never mentioned during exchanges. In order to ensure less impact as possible on General Aviation sector, FNAM and GIPAG suggests to focus the scope of this EASA proposal to large organizations working with few large aircraft such as Boeing and Airbus models (for Part-147 training center, new syllabus for dedicated Part-66 and Part-21 manufacturers).</p>
response	<p>Noted</p> <p>Thank you for the comments; however, they are not strictly pertinent to the scope of the NPA.</p> <p>OSD-MCS is a requirement established by Part 21 and made mandatory only for Group 1 aircraft (refer to point 66.A.5 'Aircraft groups' of Annex III (Part-66) to Commission Regulation (EU) No 1321/2014).</p>
comment	<p>31 <span style="float: right;">comment by: <i>LHT DO</i></span></p> <p>We recommend reviewing this document with EASA STC PCM. From our point of view, the perspective of the STC holder is not sufficiently taken into account in the text.</p>
response	<p>Noted</p> <p>Thank you for the comment; however, the role of the STC holder is to be considered analogue to the role of the TC holder. The STC holder has to evaluate the impacts of the changes to the existing OSD-MCS and then develop the appropriate adjustments or supplements. Please refer also to the proposed amendments to GM 21.A.91, which give indications for the classification of changes.</p>
comment	<p>48 <span style="float: right;">comment by: <i>AIRBUS</i></span></p>

The proposed CS-MCSD has not been prepared in coordination with RMT.0106 members and therefore does not represent a consensus of EASA and the industry. Airbus globally does not support the direction taken by EASA for the OSD-MCS. The MCSD required from the applicant in this draft CS-MCSD can only be developed with a Part 147/66 expertise (that TC holders typically do not have) and is not consistent with other OSD constituents like FCD or CCD. For TC holders that do not have a Part 147 AMTO, the application of the CS-MCSD will require additional costs as they will have either to contract an existing Part 147 AMTO in order to develop the OSD-MCS, or to develop a new expertise. This has not been taken into account in the Impact Assessment. This issue would exist also for STC applicant that will be required to assess the impact of a STC on the OSD-MCS, and to develop additional OSD-MCS. As expressed in the memorandum sent to EASA in October 2015, Airbus perception is that the main deficiencies of the Maintenance system are not specific to a type of airplane or operations. Therefore, it is our opinion that the proposed CS-MCSD does not address what is from our perspective the heart of the "Safety in Maintenance" issue.

Besides, this new CS-MCSD will create a business impact on Airbus by mandating that Airbus, as TCH, publish the know-how of its Maintenance Training Organisation to its competitors in the Maintenance Training area because of the obligation to provide the list of practical tasks as part of the Box 1. Airbus considers therefore that option 2 induces medium to high negative impact on TCH, without addressing the heart of the safety in maintenance issue.

Airbus opinion is that the Option 2 proposed by EASA imposes high burden on TC holder while not adequately addressing the maintenance safety issues. The proposed CS-MCSD is not aligned with the objectives of CS-FCD and CS-CCD. The existing certification specifications for OSD Flight Crew and OSD Cabin Crew requires TC holder to provide high-level training objectives, but not a detailed list of training exercises. Providing a detailed list of training exercises as prescribed by the proposed CS-MCSD requires knowledge and expertise that exists within a Part 147 AMTO, but not within a Part 21 approved design organization.

response

Not accepted

The proposal is fully supported by the other affected stakeholders: national aviation authorities and associations of European maintenance training organisations (the AIRBUS training organisation is included as a member of EAMTC).

EASA understands AIRBUS's concerns about the possible impact on its business model but the objective of RMT.0106 (21.039(e)) is to improve the level of safety. Without specific elements provided by the TC holder, the relevant information on the aircraft type may be missing in the final type-rating course. This gap may have a negative impact on the safety of the operation of the aircraft, resulting in incidents/accidents due to inadequate training. The type training would not capture the manufacturer's knowledge of the type and the lessons learned from the in-service experience acquired through the operating fleet, therefore a uniform and high-level standard for maintenance training cannot be reached.

The discussions about the RMT's scope have been lengthy and intense as regards the different ideas/interests involved and it was not possible to reach a consensus but,



in parallel, the use of CM-MCSD-01 (certification memorandum used/tested in the few ongoing OSD applications) suggested this balanced and intermediate option.

This option is considered within the capacity of the TC holder: it requires an equivalent level of skills necessary to produce the instructions for continuous airworthiness (ICAs) that are under the responsibility of the TC holder.

On the other hand, the option leaves enough room to end users to develop, organise and customise the final type-training course. The training organisations have to decide on the other didactical elements, e.g. training objectives, training levels, duration, tuition hours per day, teaching material, computer-based training, flight simulator training devices, etc.

comment 55 comment by: DGAC France

Please note that DGAC France has no specific comments on this NPA.

response Noted

comment 64 comment by: EAMTC

In order to improve continuously the knowledge and skills of the maintenance certifying staff to keep up with the technological progress the facts, which the TCH will provide by fulfilling Box 1 requirements as also an indication for need of updating Part-66 Modules.

RMT.0255 "Review of Part-66" shall consider this dependency.

response Noted

The update of the Part-66 modules is one of the objectives of RMT.0255 (MDM.059) 'Review of Part-66'.

## 2. In summary — why and what

p. 4

comment 30 comment by: Air France Industries

Air France Industries strongly supports the need for the minimum syllabus of maintenance certifying staff type rating training. Option 2 "Balanced OSD" is fully supported as the best possible way to improve quality and safety in training.

response Noted

### 2.1. Why we need to change the rules — issue/rationale

p. 4

comment 24 comment by: Airbus Helicopters

**1. PAGE 4 / PARAGRAPH 2.1 / SECTION Why we need to change the rules**

**COMMENT IS RELATED TO:**



“This minimum syllabus, together with the requirements contained in Appendix III to Annex III (Part-66) to Commission Regulation (EU) No 1321/20147, form the basis for the development and approval of Part-66 type training courses.”

**2. PROPOSED TEXT / COMMENT :**

“This minimum syllabus supersedes the standard described in point 3.2 and related AMC of Appendix III to Annex III (Part-66) to Commission Regulation (EU) No 1321/20147 and forms the basis for the development and approval of Part-66 type training course. It represents all relevant elements defined in the Maintenance Certifying Staff Operational Suitability Data established in Part-21.”

The original statement implies that two different sources have to be considered for the development and approval of Part-66 Type Training courses. In addition to Maintenance Certifying Staff Operational Suitability Data as established in Part-21, additional requirements as per Appendix III to Part-66 remain a mandatory aspect to be considered. That means that the process of development of such list becomes more complex and less adaptable to the specificities of the aircraft. Consequently, costs and efforts for AMTOs during development and NAAs during compliance verification of final TRT will remain on the same level or - more likely – even increase.

response

Not accepted

The OSD is a ‘minimum syllabus’ and it does not by itself constitute the final type-rating course and cannot replace the standard of Part-66 Appendix III. It shall be integrated with the other necessary information provided in Appendix III, such as the training duration, the training levels, etc.

Part-66 Appendix III 1(a)/(b)(ii) require that:

[...]

(a) Theoretical/Practical training/assessment and examination shall comply with the following requirements:

[...]

(ii) **Shall comply**, except as permitted by the differences training provided for in point (c), **with the standard set out in point 3.1** of this Appendix **and, if available**, the relevant elements defined in the mandatory part of **the operational suitability data** established in accordance with Regulation (EU) No 748/2012.

comment

65

comment by: *Rieder*

- In 2.1 (page 4) fifth paragraph, the sentence: “form the basis for the development and approval of Part-66 type training courses.” Part-66 should be replaced by Part-147.

response

Accepted

**2.2. What we want to achieve — objectives**

p. 4

comment

56

comment by: *EAMTC*



	<p>EAMTC agrees with EASA and strongly supports the need for the minimum syllabus of maintenance certifying staff type rating training, including the determination of type rating as the basis for the development and approval of a Part-66 type rating course.</p> <p>EAMTC also strongly recommends a balanced OSD option in order to empower all stakeholders, TCH and AMTO, to cooperate close to provide training in reference to best technical content and up to date didactic for the benefit of the maintenance certifying staff and therefore operational safety.</p>
response	Noted

<b>3.1. Proposed amendments to guidance material to Annex I (Part 21) to Commission Regulation (EU) No 748/2012</b>	p. 6-9
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comment	<p>6 <span style="float: right;">comment by: <i>Dassault-Aviation</i></span></p> <p><u>Text:</u> GM 21.A.91</p> <p>"A change to the MCSD should be classified as major, in particular but not only, when it modifies:</p> <ul style="list-style-type: none"> <li>- the aircraft maintenance configuration; or</li> <li>- the minimum list of practical tasks ; or</li> <li>- the MASE (Maintenance Area of Specific Emphasis)." <p><u>Comment:</u></p> <p>In response to PART 66 appendix III (§ 3.2 "Practical Element"), the list of practical tasks is rather in the scope of capability and responsibility of the Training Providers.</p> <p>However, considering that the practical tasks related to criticality, Safety, Difficulty, Novelty, Frequency, human factor and in service experience are systematically linked to MASEs, DA suggests to limit the scope of the "minimum list of practical tasks" that must be provided by the TCH to the "practical tasks linked to MASEs".</p> <p>(Refer to DA comments of CS MCSD 420 hereafter)</p> <p><u>Proposition:</u></p> <p>"A change to the MCSD should be classified as major, in particular but not only, when it modifies:</p> <ul style="list-style-type: none"> <li>- the aircraft maintenance configuration; or</li> <li>- the list of practical tasks linked to MASEs ; or</li> <li>- the MASE (Maintenance Area of Specific Emphasis)." </li></ul></li></ul>
response	<p>Not accepted</p> <p>EASA considers as 'major' the changes to the OSD mandatory elements that, by definition, are those included in Box 1.</p>



comment	32	comment by: <i>LHT DO</i>
	<p><u>21.A.91</u></p> <p>Please add a clarification which extent of change leads to a major change classification.</p> <p>Proposal: A change to the MCSD should be classified as major, in particular but not only, when it has <b>an appreciable effect on</b>:</p> <ul style="list-style-type: none"> <li>— the aircraft maintenance configuration; or</li> <li>— the minimum list of practical tasks; or</li> <li>— the maintenance area of special emphasis (MASE).</li> </ul> <p>Please also refer to our comment to CS MCSD. 410.</p>	
response	<p>Not accepted</p> <p>So far, a definition of ‘appreciable effect’ is not available.</p>	
comment	33	comment by: <i>LHT DO</i>
	<p><u>21.A.93</u></p> <p>Thank you, this table is helpful.</p>	
response	<p>Noted</p>	
comment	49	comment by: <i>AIRBUS</i>
	<p>In GM 21.A.91, Airbus suggests to modify the following section as follows:</p> <p>A change to the MCSD should be classified as major, in particular but not only, when it modifies:</p> <ul style="list-style-type: none"> <li>— it modifies the aircraft maintenance configuration in relation with a change to the type design classified major; or</li> <li>— the minimum list of practical tasks; or</li> <li>— it modifies the intent of an existing maintenance area of special emphasis (MASE); or</li> <li>— it introduces a new maintenance area of special emphasis (MASE).</li> </ul> <p><b>Rationale:</b></p> <p>The proposed GM identifies any change to the Box1 as a major change. A change to the content of the Box 1 would not necessarily meet the criteria of existing GM 21.A.91 section 3.4(d). As an example, a change to the aircraft maintenance configuration may be triggered by the inclusion in the aircraft basic design of an equipment or system that was previously optional, and this equipment or system may have been added to the type design via a minor change to the TC. The classification of a change as minor or major should be considered in relation with the risk associated to the non-identification of a non-compliance with the associated certification requirements. In particular, any change to the MCS that would be related to a component, equipment, system, the failure of which would not have</p>	

	<p>more than a major effect on the airworthiness of the aircraft in accordance with 25.1309 (when applicable), should be classified minor. In addition, the minimum list of practical tasks is proposed to be deleted from the requirement of CS-MCSD (refer to comment on GM2 MCSD.050 Scope).</p>
response	<p>Not accepted</p> <p>This elaboration is superfluous because, according to the definition in Part 21, only major changes to a TC can have an impact on the OSD.</p> <p>Refer to Figure 1 of GM No 1 to 21.A.93(c) Integration of changes to the type design and changes to OSD:</p> <p><i>'Changes to the type certificate (TC) that only include a minor change to the type design do not have an effect on the OSD. No dedicated assessment of the effects of the minor type design change on the OSD is needed in this case.'</i></p> <p>An optional system may be:</p> <ol style="list-style-type: none"> <li>1) part of the initial TC and thus identified in the OSD through the maintenance configuration or</li> <li>2) installed later with a change to the TC/STC. If the change is major, then the impact shall be considered for the OSD.</li> </ol>
comment	<p>66 <span style="float: right;">comment by: <i>Rieder</i></span></p> <p>- Tabel 1 (page 7), suggestion to add change/modification of inert gas system (ATA46) as an example of major type design change.</p>
response	<p>Accepted</p> <p>Change/introduction of inert gas system (ATA 47) will be made in the table as an example.</p>
comment	<p>67 <span style="float: right;">comment by: <i>Rieder</i></span></p> <p>Tabel 1 (page 7), general comment: Of course, system changes have an impact on the content of the training but we think this should not affect the syllabus itself.</p>
response	<p>Noted</p>

<b>3.2. Draft for new certification specifications for maintenance certifying staff data (CS-MCSD) and associated guidance material (Draft EASA decision)</b>	p. 10
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comment	<p>1 <span style="float: right;">comment by: <i>Barry Lewis</i></span></p> <p>Dear Sirs</p> <p>I am an EASA 66 B1 B2 engineer. Licence Number UK.66.420897H. I still use my licence regularly as a self employed contractor so am well aware of how the industry works around Europe with regards to aircraft reliability etc.</p> <p>I also instruct both theory and practical type training courses for a UK EASA 147 company.</p>
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	<p>I see that this NPA has been directed to the Aircraft manufacturers to specify the range, depth and duration of type training. Unfortunately they have little real understanding of the way the operational system works with the aircraft in service. <b>I would suggest that this NPA should seek guidance from the Licenced engineers who will eventually be maintaining the aircraft.</b></p> <p>A simple 'spreadsheet approach' of justifying the length and composition of a practical course isnt really effective in giving students the information they need to maintain the aircraft in a real maintainance enviroment.</p> <p>Regards Barry Lewis</p>
response	Noted

**GM 1 MCSD.050 Scope**

p. 10

comment	39		comment by: IATA								
		<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 30%;">Segment Description</th> <th style="width: 10%;">NPA Page</th> <th style="width: 55%;">Comment / Proposed Text / Rationale</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>under GM2 MCSD.050 Scope (a)</td> <td>10</td> <td> <p><u>Existing text: “The aircraft maintenance type ratings or variants as well as the maintenance licence endorsement designation are listed in Appendix I to AMC to Part-66”.</u></p> <p>The use of “variant” is not relevant since any certified model and variant will be under a type rating</p> <p>Suggested text: “The aircraft maintenance type ratings as well as the maintenance licence type ratings endorsement designations are listed in Appendix I to AMC to Part-66”.</p> </td> </tr> </tbody> </table>	No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale	1	under GM2 MCSD.050 Scope (a)	10	<p><u>Existing text: “The aircraft maintenance type ratings or variants as well as the maintenance licence endorsement designation are listed in Appendix I to AMC to Part-66”.</u></p> <p>The use of “variant” is not relevant since any certified model and variant will be under a type rating</p> <p>Suggested text: “The aircraft maintenance type ratings as well as the maintenance licence type ratings endorsement designations are listed in Appendix I to AMC to Part-66”.</p>	
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response	Accepted	<p>The text will be changed accordingly.</p>									

comment	50		comment by: AIRBUS
		<p>In GM2 MCSD.050 Scope, Airbus suggests to modify the text as follows:</p> <p>(a) The aircraft maintenance type ratings or variants as well as the maintenance licence endorsement designation are listed in the <b>TCDS. Appendix I to AMC to Part 66.</b></p> <p><b>(b) This list is periodically updated by the Agency.</b></p>	



	<p><b><u>Rationale:</u></b></p> <p>As the determination of the maintenance type ratings or variants with CS-MCSD is the responsibility of the TC applicant, the outcome of the process should be reflected in the TCDS. This is consistent with other OSD constituents. Furthermore, the Appendix 1 to AMC to Part 66 is updated each time a new TC is granted or a new model is certified. Having the list of maintenance type ratings or variants as well as the maintenance licence endorsement designation in the TCDS would allow to provide to Part 147 AMTO up-to-date information.</p>
response	<p>Partially accepted</p> <p>The text will be changed accordingly but reference to Part-66 Appendix I to AMC will be kept because the list shall cover also aircraft without OSD.</p>

**CS MCSD.100 Applicability**

p. 10

comment	7	comment by: <i>Dassault-Aviation</i>
	<p><u>Text:</u> CS MCSD.100 Applicability</p> <p><u>Comment:</u> By referring to CS FCD.100 "Applicability" and to clarify the document, DA suggests to add a brief presentation of the CS MCS chapters number and their location in associated Box : e.g: "Type rating determination process": -CS-MCSD-200 "Data required from the TCH applicant and mandatory for the en users (BOX1):" - CS-MCSD.4xx - CS-MCSD.4xy - CS-MCSD.4yy "Data required from the TCH applicant and non mandatory for the end users (BOX2)" - CS-MCSD.5xx - CS- MCSD.5xy "Data at the request of the TCH applicant and mandatory for the end users (BOX3)": - CS-MCSD.6xx - CS-MCSD. 6xy - CS-MCSD 6yy "Data at the request of the TCH applicant and non-mandatory for the end users (BOX4)": - CS-MCSD.7xx - CS-MCSD.7xy - CS-MCSD.7yy</p>	
response	<p>Not accepted</p> <p>This information is already provided in CS MCSD.110.</p>	



**CS MCSD.105 Definitions**

p. 10-11

comment 8 comment by: Dassault-Aviation

Text:  
 CS MCSD.105  
 "(d) Maintenance areas of special emphasis (MASE) means any element considered by the applicant as having a degree of novelty, specificity or uniqueness relevant to the maintenance of its aircraft. This could be a technical or operational feature that maintenance personnel need to be aware of and take into consideration."  
Comment:  
 To be in accordance with the full definition of the MASE in § CS MCSD.430 (refer to page 17/41) it is necessary to add at the end of (d):  
 "MASE are also knowledge, training and assessment areas that the applicant considers necessary to highlight because it is type-related and safety-related."

response Accepted

comment 40 comment by: IATA

No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale
2	under CS MCSD.105 Definitions	10	Existing text states: "(c) Candidate aircraft means another aircraft model or a certified model configuration subject to the OSD-MCS evaluation process". Proposed text to state: "(c) Candidate aircraft means a new aircraft model to be certified or a certified model new configuration subject to the OSD-MCS evaluation process".

response Partially accepted

EASA cannot exclude from the definition those candidate models that have been certified already. However, the definition will be changed to improve the meaning/role of the 'candidate aircraft'.

**CS MCSD.106 Abbreviations**

p. 11-12

comment 41 comment by: IATA

No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale



3	under CS MCSD.106 Abbreviations	11	Suggest to “capitalize” the words that constitute the source of abbreviations
response	<p>Not accepted</p> <p>The basic rule is that <i>proper nouns</i> have an initial capital but <i>common nouns</i> do not.</p>		

**CS MCSD.110 Status of provided data**

p. 12-13

comment	34	comment by: <i>LHT DO</i>
<p>Please amend that MCS data has to be marked in accordance with the box concept and made available to the end user.</p> <p>Please clarify whether the minor/major classification has to be made available to the end user upon changes.</p>		
response	<p>Not accepted</p> <p>The availability of the changes to the OSD are laid down in 21.A.108 or 21.A.120B under the responsibility of the TC or the STC holder.</p>	

**GM1 MCSD.110 Status of provided data — OSD box concept**

p. 13

comment	42	comment by: <i>IATA</i>								
<table border="1"> <thead> <tr> <th data-bbox="384 1384 443 1462">No.</th> <th data-bbox="443 1384 754 1462">Segment Description</th> <th data-bbox="754 1384 850 1462">NPA Page</th> <th data-bbox="850 1384 1390 1462">Comment / Proposed Text / Rationale</th> </tr> </thead> <tbody> <tr> <td data-bbox="384 1462 443 1630">4</td> <td data-bbox="443 1462 754 1630">under GM1 MCSD.110 Status of provided data – OSD box concept</td> <td data-bbox="754 1462 850 1630">13</td> <td data-bbox="850 1462 1390 1630">Missing identification of Box 4 below the diagram; please add below the drawing a Box 4 explanation in a format similar to Box 1,2 and 3</td> </tr> </tbody> </table>			No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale	4	under GM1 MCSD.110 Status of provided data – OSD box concept	13	Missing identification of Box 4 below the diagram; please add below the drawing a Box 4 explanation in a format similar to Box 1,2 and 3
No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale							
4	under GM1 MCSD.110 Status of provided data – OSD box concept	13	Missing identification of Box 4 below the diagram; please add below the drawing a Box 4 explanation in a format similar to Box 1,2 and 3							
response	<p>Accepted</p> <p>Text added.</p>									



comment	57	comment by: EAMTC
	EAMTC welcomes this clear concept for maintenance certifying staff training.	
response	Noted	

comment	68	comment by: Rieder
	- GM1 MCS.D.110 (page 13), status of provided data- OSD box concept; OSD Box concept diagram: The explanation for Box 4 at the bottom of the drawing is missing.	
response	Accepted Text added.	

**GM1 MCS.D.200 TR Determination process** p. 14

comment	43	comment by: IATA								
	<table border="1"> <thead> <tr> <th>No.</th> <th>Segment Description</th> <th>NPA Page</th> <th>Comment / Proposed Text / Rationale</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>under CS GM1 MCS.D.200 TR Determination process</td> <td>14</td> <td>                     The (*) note should emphasize that it is the Agency decision which will be applied by all Member States                       Existing text: (*) In some circumstances the official name can be replaced by the popular name                       Proposed text: (*) In some circumstances the Agency may decide to replace the official name with the popular name                 </td> </tr> </tbody> </table>		No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale	5	under CS GM1 MCS.D.200 TR Determination process	14	The (*) note should emphasize that it is the Agency decision which will be applied by all Member States  Existing text: (*) In some circumstances the official name can be replaced by the popular name  Proposed text: (*) In some circumstances the Agency may decide to replace the official name with the popular name
No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale							
5	under CS GM1 MCS.D.200 TR Determination process	14	The (*) note should emphasize that it is the Agency decision which will be applied by all Member States  Existing text: (*) In some circumstances the official name can be replaced by the popular name  Proposed text: (*) In some circumstances the Agency may decide to replace the official name with the popular name							
response	Accepted									

**CS MCS.D.210 Determination of a different type rating** p. 14

comment	9	comment by: Dassault-Aviation
	<p><u>Text:</u>                  "The following criteria determine when the candidate aircraft shall have a different type rating compared to the base aircraft:                  ...                  (c) the analysis of the candidate aircraft systems results in a substantial difference;                  or                  ..."</p>	



	<p><u>Comment:</u>                  Criteria (C) "" substantial difference" need to be clarified . DA suggest that for the MCS a " substantial difference" must be based on the following criteria:                  - Significant additional knowledge (this can be induced by more than 30% MSI but not only)                  and/or                  -significant additional /different ability and skills.</p> <p>refer to DA comment on GM1 to CS MCSD.210 "Determination of a different type rating"                  Note: DA comment is based on the studies performed for CRI A-MCDS 01 for F7X/F8X same type rating determination for MCS and F900C/F900EX same type rating determination for MCS.</p>
<p>response</p>	<p>Not accepted</p> <p>Some TC holders claim they do not have the competence to prepare a type training; therefore, they would not be able to carry out the analysis based on the identification of significant additional 'knowledge' or 'ability' or 'skills'. For this reason, the analysis is based on the aircraft design and maintenance procedures which the TC holder knows better than anybody else.</p>

<p>comment</p>	<p>44 <span style="float: right;">comment by: IATA</span></p>								
<table border="1"> <thead> <tr> <th data-bbox="384 1041 443 1126">No.</th> <th data-bbox="443 1041 687 1126">Segment Description</th> <th data-bbox="687 1041 767 1126">NPA Page</th> <th data-bbox="767 1041 1402 1126">Comment / Proposed Text / Rationale</th> </tr> </thead> <tbody> <tr> <td data-bbox="384 1126 443 2027">6</td> <td data-bbox="443 1126 687 2027">under CS MCSD.210 Determination of a different type rating</td> <td data-bbox="687 1126 767 2027">14</td> <td data-bbox="767 1126 1402 2027"> <p>The NPA should be clear that an applicant could refer to a base aircraft (i.e. it is a must when seeking to obtain approval for using an existing type rating) or could not refer any base aircraft (i.e. when from the initial get go the applicant is accepting that a new type rating would be used for the aircraft for which certification is sought); the present wording seems to imply that there is always a base aircraft the applicant has to refer to and this is not in the spirit of the OSD approach.</p> <p>Existing text: "The following criteria determine when the candidate aircraft shall have a different type rating compared to the base aircraft: (a) the candidate aircraft has a different type certificate; or (b) the candidate aircraft has a different airframe/engine combination; or (c) the analysis of the candidate aircraft systems results in a substantial difference; or (d) such a recommendation is made by the applicant and accepted by the Agency."</p> <p>Proposed text: "The following criteria determine when the candidate aircraft shall have a new type rating compared to the already certified aircraft and their existing type ratings: (a) the candidate</p> </td> </tr> </tbody> </table>	No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale	6	under CS MCSD.210 Determination of a different type rating	14	<p>The NPA should be clear that an applicant could refer to a base aircraft (i.e. it is a must when seeking to obtain approval for using an existing type rating) or could not refer any base aircraft (i.e. when from the initial get go the applicant is accepting that a new type rating would be used for the aircraft for which certification is sought); the present wording seems to imply that there is always a base aircraft the applicant has to refer to and this is not in the spirit of the OSD approach.</p> <p>Existing text: "The following criteria determine when the candidate aircraft shall have a different type rating compared to the base aircraft: (a) the candidate aircraft has a different type certificate; or (b) the candidate aircraft has a different airframe/engine combination; or (c) the analysis of the candidate aircraft systems results in a substantial difference; or (d) such a recommendation is made by the applicant and accepted by the Agency."</p> <p>Proposed text: "The following criteria determine when the candidate aircraft shall have a new type rating compared to the already certified aircraft and their existing type ratings: (a) the candidate</p>	
No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale						
6	under CS MCSD.210 Determination of a different type rating	14	<p>The NPA should be clear that an applicant could refer to a base aircraft (i.e. it is a must when seeking to obtain approval for using an existing type rating) or could not refer any base aircraft (i.e. when from the initial get go the applicant is accepting that a new type rating would be used for the aircraft for which certification is sought); the present wording seems to imply that there is always a base aircraft the applicant has to refer to and this is not in the spirit of the OSD approach.</p> <p>Existing text: "The following criteria determine when the candidate aircraft shall have a different type rating compared to the base aircraft: (a) the candidate aircraft has a different type certificate; or (b) the candidate aircraft has a different airframe/engine combination; or (c) the analysis of the candidate aircraft systems results in a substantial difference; or (d) such a recommendation is made by the applicant and accepted by the Agency."</p> <p>Proposed text: "The following criteria determine when the candidate aircraft shall have a new type rating compared to the already certified aircraft and their existing type ratings: (a) the candidate</p>						



			aircraft has a different type certificate; or (b) the candidate aircraft has a different airframe/engine combination; or (c) the analysis of the candidate aircraft systems results in a substantial difference; or (d) such a recommendation is made by the applicant and accepted by the Agency.”
response	Accepted		

<b>GM1 MCSD.210 Determination of a different type rating</b>	p. 14-15
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comment	3	comment by: <i>KLM engineering &amp; maintenance</i>	GM1 MCSD.210 Determination of a different type rating, page 14 The proposed text ‘A new type rating endorsement may be considered for the candidate aircraft if the analysis identifies differences in more than 30 % of the maintenance significant systems....’ is subject to multiple interpretation and requires clarification on how to quantify that more than 30 % of the maintenance significant systems is impacted by a change. In this context, please provide additional explanations about the relations between maintenance significant systems (ATA-chapters listed in this GM), the ATA-chapters listed in Appendix 1 to CS-MCSD Minimum Syllabus template, Appendix II to CS-MCSD – MASE identification checklist, the expected impact of major changes on MCSD as listed in Table 1 (page 7 of this NPA) and their impact on the determination of exceeding the above mentioned 30%. EASA is requested to provide examples that show how to quantify that more than 30 % of the maintenance significant systems are impacted by a change.
response	Partially accepted  ‘30 %’ is a percentage set to satisfy the need for a reference value, although it is difficult to discriminate an OSD change through exact values due to the variety of aircraft types and configurations involved; it is quite obvious that such assessment shall be supported by a qualitative justification.  The ‘30 %’ has been calculated considering the example of the engine installation, which significantly affects around 30 % of the principal ATA systems leading to a different type rating.  However, as per Guidance Material text, ‘30 %’ is not a binding threshold and the applicant can justify their analysis with alternative means. Text has been added to the GM in order to clarify this point.  Lastly, it is quite impossible for EASA to provide additional guidance on the relations among the ATA systems that could determine a different type rating since this analysis depends on the particular aircraft design and on a case-by-case basis.		

comment	10	comment by: <i>Dassault-Aviation</i>	
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Text:  
GM1 MCSD.210

Comment:  
DA agree with the list of Maintenance significant item in term of MASE, Architecture, functionality, purpose ,and so on...  
However and beyond the CS MCSD , a brief explanation in the RIA explaining the reason for the reference to "30% of he maintenance significant item", is necessary .

Proposition:  
DA considers that a detailed analysis must lead to identify 2 relevant main criteria justifying the need of a new type rating endorsement which are :  
- Significant additional knowledge and/or (this can be induced by more than 30% MSI but not only)  
-significant additional /different ability and skills.(this can be induced by more than 30% MSI but not only)  
As a consequence the "difference in more than 30% of the maintenance significant item " is helpful but must be considered as one of the inputs justifying the adjective "Significant" and no more.  
Note: DA proposition is based on the studies performed for CRI A-MCDS 01 for F7X/F8X same type rating determination for MCS and F900C/F900EX same type rating determination for MCS.

response

Partially accepted  
See responses to comments #3 and #9.

comment

45 comment by: IATA

No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale
7	under GM1 MCSD.210 Determination of a different type rating	14 and 15	<p>This provision should start by defining first what is understood by a “maintenance significant system”; thus, the present order is not flowing logically since the category of “maintenance significant systems” is used before being defined (later in the paragraph)</p> <p>A maintenance significant system should logically be any aircraft system for which maintenance actions exist (defined in the form of ICAs or otherwise in the TCH documentation). The existing text stating that: “In general, maintenance significant systems are ATA 21, 22, 24, 26, 27, 28, 29, 30, 31, 32, 34, 35, 36, 37, 42 through 46, 47, 51 through 57, 61 through 67, and 71 through 85” is seen as misleading and should be removed (e.g. promoting the idea that ATA 23 Communications or ATA 49</p>



			<p>APU are not maintenance significant systems is blatantly wrong). All ATA chapters existing in the particular type AMM should be considered as being potentially linked to “maintenance significant systems”</p> <p>It would be expected that maintenance significant systems are at least all systems which include maintenance significant items (MSI) as defined by the MRBR in support of scheduled maintenance. Moreover, the list of maintenance significant systems should additionally include also those for which maintenance actions are existing outside the scheduled maintenance framework</p> <p>While it is the MRBR which will provide the list of MSIs in view of scheduled maintenance, the list may require additions if the applicant defines maintenance actions which may be required in addition to scheduled maintenance. The applicant should always generate a complete “differences table” as applicable considering the MSI list extended as mentioned above</p> <p>The wording introducing the 30% threshold needs to be revised from stating that “...new type rating endorsement may be considered for the candidate aircraft if the analysis identifies differences in more than 30 % of the maintenance significant systems...” to state “...new type rating endorsement should be considered for the candidate aircraft if the analysis identifies differences of more than 30 % in several of the maintenance significant systems...”</p>
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response Partially accepted

The ATA chapters mentioned here as ‘significant’ are for general reference; the applicant has to identify those chapters they consider more relevant for the particular aircraft type. There is no correlation between the significant systems mentioned here (for training purposes) and the MRBR MSIs. Please keep also in mind that this exercise shall be applicable also for an aircraft type without an MRB process in place. However, this does not exclude the possibility for the applicant to decide to select also the MRBR MSI.



Text has been added to the GM in order to clarify this point.

comment

51

comment by: AIRBUS

Airbus proposes the following modification:

A comparison between base and candidate aircraft systems should be carried out. A new type rating endorsement may be considered for the candidate aircraft if the analysis identifies differences in ~~more than 30%~~ a large proportion of the maintenance significant systems, in terms of:

...

**Rationale:**

It is not explained if the proposed 30% comes from an analysis of previous exercises. As an example the A330-200F (freighter) and the A330-200 (PAX) share the same maintenance licence endorsement, whereas some significant design differences with impact on the maintenance activities exists between the two models. The GM should guide the applicant in a qualitative analysis.

response

Not accepted

See comments #9 and #45.

So far, there is no definition for 'a large portion' and it will be very challenging to reach an agreement during a discussion on an OSD approval process.

**GM2 MCSD.210 Determination of a different type rating**

p. 15

comment

11

comment by: Dassault-Aviation

Text:

GM2 MCSD.210

Comment:

DA agree with the content of this guidance however DA considers that this guidance should be completed and illustrated by an exemple of process for determining if a different type rating is necessary or if a new variant is to be considered.

As an exemple DA suggests to add the following exemple of process illustrated thanks to two "tables"

- 1st Table : "Type rating determination tables" providing:

1. Systems impacted
2. differences between base aircraft and candidate aircraft for each system impacted
3. Impact on maintenance ((additional knowledge and/or additional or different ability and skills for the MCS, practical task, MASE.



	<p>- 2nd Table : "MCS Type rating determination criteria for part 66 aircraft maintenance licence tables" providing for each criteria (a, b, c, d) listed in CS.MCSD -200:</p> <ol style="list-style-type: none"> <li>1. The eligibility YES/NO for a different MCS type rating</li> <li>2. The main substantiation related to eligibility. (making reference to the "type rating determination table" for a detailed substantiation</li> </ol>
response	<p>Not accepted</p> <p>The applicant can select the most appropriate way to show the comparison.</p>

<b>CS MCSD.300 General</b>	p. 16
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comment	25	comment by: <i>Airbus Helicopters</i>
	<p><b>Comment</b> <span style="float: right;"><b>No.</b> <b>3:</b></span></p> <p><b>1. PAGE 16 / PARAGRAPH 3 / SECTION CS-MCSD.300 General COMMENT IS RELATED TO:</b></p> <p><i>"The minimum syllabus content applies to the type rating training of the base aircraft and its variants."</i></p> <p><b>2. PROPOSED TEXT / COMMENT:</b></p> <p><i>"The minimum syllabus content applies to the type rating training of the base aircraft and its variants. It forms the basis for the development and approval of Part-66 type training courses."</i></p>	
response	Accepted	

<b>CS MCSD.400 Box 1 Content</b>	p. 16
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comment	12	comment by: <i>Dassault-Aviation</i>
	<p><u>Text:</u> CS MCSD.400</p> <p><u>Comment:</u> DA suggests: - To replace the "minimum list of practical tasks" by : "The list of practical tasks linked to MASEs" ; (refer to comments to CS MCSD. 420 hereafter)</p>	
response	Not accepted	
	<p>The practical tasks are not exclusively linked to the MASE. The TC holder has to provide indications for the practical part of the training which, in case of a 'scarce' MASE, shall consider an adequate number of tasks.</p>	
comment	52	comment by: <i>AIRBUS</i>
	<p>In CS MCSD.400 Box 1 Content, Airbus proposes the following modification:</p>	

	<p>The Box 1 content is constituted by:                  (a) Aircraft maintenance configuration;                  (b) Minimum list of practical tasks;                  (b) Maintenance areas of special emphasis (MASE).</p> <p><b>Rationale:</b>                  In order to establish a minimum list of practical tasks, an applicant would need to use the knowledge and skills owned by a Part 147 AMTO and to perform a detailed training need analysis. This would induce additional costs for applicants that do not have a Part 147 AMTO. For TC holder with a Part 147 AMTO, this would mean to provide to its competitors the outcome of the training need analysis. Consequently, other Part 147 AMTO would have an unfair advantage over TC holder AMTO. In addition, providing a minimum list of practical tasks would not enhance the safety as:</p> <ul style="list-style-type: none"> <li>- Appendix III to Part 66 states that the content of the MCSD supersedes the standard described in point 3.2 of the Appendix, consequently some AMTO may only rely on the TC holder published minimum list, and thus missing to perform an adequate TNA.</li> <li>- Some AMTO may be unable to perform a prescribed task, due to the lack of specific tools or simulation means,</li> <li>- The publish list would not raise the mechanics' knowledge of basic practices and therefore would not adequately address the maintenance errors that are observed.</li> </ul>
response	<p>Not accepted</p> <p>EASA disagrees with this opinion because it believes that the TC holder has the full capability to identify those maintenance tasks that are relevant to the particular aircraft type.</p> <p>In addition, the text of Part-66 Appendix III point 1(a) and (b) now states the following:</p> <p>'(a) Theoretical/practical training and examination shall comply with the standard set out in point 3.1 of this Appendix and, if available, the relevant elements defined in the mandatory part of the operational suitability data established in accordance with Regulation (EU) No 748/2012' as amended by Regulation (EU) 2018/1142. Not the other way around.</p>

<b>CS MCSD.410 Aircraft maintenance configuration</b>	p. 16
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comment	<p>35 <span style="float: right;">comment by: LHT DO</span></p> <p>Please detail what changes to the aircraft maintenance configuration lead to a major change. A general requirement that any change of the manuals or documents listed in GM1 to MCSD.410 results in a major classification is not acceptable and does not lead to an increase in safety.</p> <p>We understand that we would only assess our change against MCSD.410 if we have a change to the ICA identified during the certification process.</p>
response	<p>Noted</p> <p>Examples of major changes are mentioned in the proposed amendments to Part 21 (refer to GM No 1 to 21.A.93(c)).</p>



comment	46	comment by: IATA		
	No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale
				Existing text: "The aircraft maintenance configuration is a list of chapters which describe the aircraft and its systems."
				The aircraft maintenance configuration can not be a list of chapters but rather a list of MSIs covered by the chapters. Two aircraft models belonging to the same type, while both having the same respective ATA chapters, could have different engines and, thus, we deal with different "aircraft maintenance configurations" (e.g. Airbus A330 (GE CF6), Airbus A330 (PW 4000), Airbus A330 (RR Trent 700) or Boeing 787-8/9/10 (GEnx), Boeing 787-8/9/10 (RR RB 211 Trent 1000)).
	8	under CS MCS D.410 Aircraft maintenance configuration	16	Proposed text: "The aircraft maintenance configuration, for the purpose of the CS MCS D, is a description of the aircraft and the aircraft systems for which maintenance actions are identified by the TCH in the design process documents (primarily, but not limited to, ICA)."
				Please note the proposed introduction of the wording "for the purpose of the CS MCS D" which is considered necessary to avoid a potential misunderstanding since in the industry practice the expression "bringing the aircraft in maintenance configuration" is currently used to define the status of the aircraft systems as required for the maintenance action (e.g. electrically powered or not, element deployed / extended / retracted etc) and it could be not only a pure technical requirement for enabling the maintenance action but also a safety issue linked to executing a certain maintenance action; this should not be confused with the aircraft configuration to be maintained which would be the sense of usage of "aircraft maintenance configuration" in this NPA
response	Accepted			

comment	53	comment by: AIRBUS		
In CS MCS D.410, Airbus proposes the following modification:				



The aircraft maintenance configuration is a list of chapters which describe the aircraft and its systems. It shall be detailed at aircraft subsystem level ~~and at component/unit level in cases when the novelty or other characteristics of the component justify/require such a detail.~~ The list is in accordance with the aircraft type design and shall be covered by the type rating training.

**Rationale:**

In Airbus experience, training objectives are not defined at component/unit level.

response Not accepted

It could be the case if a non-conventional or newer component is introduced, e.g. an electrical braking actuator instead of the traditional hydraulic one.

**GM1 MCSD.410 Aircraft maintenance configuration**

p. 16

comment 2 comment by: *Barry Lewis*

No Mention of Fault Reporting Manual (FRM). This is essential to build an accurate fault code to be used in the Fault isolation manual (FIM).

response Accepted

The 'FRM' will be added to the TSM/FIM.

**CS MCSD.420 Minimum list of practical tasks**

p. 17

comment 13 comment by: *Dassault-Aviation*

Text:

GM MCSD.430

"...The minimum list of practical tasks is a list of maintenance tasks that are relevant to the aircraft type and important for practical training purposes. These tasks should address training information that cannot adequately be explained by theoretical training alone. The tasks shall be representative of the aircraft and systems both in complexity and in the technical input required to complete that task. While relatively simple tasks may be included, other more complex tasks should also be incorporated and undertaken as appropriate to the aircraft type. Practical task selection shall also take into consideration the MASE."

Comment:

As a TCH, DA considers that the practical tasks related to criticality, Safety, Difficulty, Novelty, Frequency, Human factor and in service experience must be called by MASEs and are linked to MASEs.

As a consequence DA suggests to consider only the "practical tasks linked to MASE"

Indeed, The other tasks subjects that are important for practical training purpose are already provided by PART 66 appendix III (§ 3.2 "Practical Element") and are in the scope of capability and responsibility of the Training Providers.

response Not accepted

See comment #12.



comment	<p>23 <span style="float: right;">comment by: Airbus Helicopters</span></p> <p><b>1. PAGE 17 / PARAGRAPH 3.2 / SECTION GM1 MCSD.420 Minimum list of practical tasks</b></p> <p><b>COMMENT IS RELATED TO:</b>  <i>“The practical tasks selection shall be complemented with clear instructions for appropriate integration with the requirements of Appendix III to Part-66.”</i></p> <p><b>2. PROPOSED TEXT / COMMENT :</b>  <i>“The practical tasks selection could be complemented with instructions for appropriate integration of the applicable requirements of Appendix III to Part-66. The practical tasks selection does not need to comply with the standard described in point 3.2 and related AMC of Appendix III to Part-66 as per paragraph 1. (b)(ii) of the of Appendix III to Part-66.”</i></p> <p>The original statement implies that two different sources have to be considered in the development of the ‘List of practical tasks’. In addition to manufacturer’s analysis of the specific aircraft requirements, the inclusion of the related requirements of Appendix III to Part-66 becomes mandatory. That means that the process of development of such list becomes more complex and less adaptable to the specificities of the aircraft.</p>
response	<p>Not accepted</p> <p>See comment #24.</p> <p>Some degree of flexibility has been introduced here for the end user because the TC holder identifies only the ‘minimum’ required.</p>
comment	<p>36 <span style="float: right;">comment by: LHT DO</span></p> <p>Please detail how a DOA without Part 145 expertise should make a statement if the Part 145 mechanic needs practical training for a new or changed practical task.</p> <p>We understand OSD MCSD that only new/changed training information for the implementing organization has to be made available by the design organization. A mere editorial change, an application of a known task to other areas, or a change of sequence of task does not require a new training of the Part 145 staff. Therefore, it does not constitute a major change to MCSD.</p> <p>We currently do not read this in the CS- MCSD. Could you please add a clarification?</p>
response	<p>Noted</p> <p>The scope of CS-MCS D is to define the certification requirement for the OSD and not to provide the procedure for a change.</p> <p>The STC holder should consider the impact on the OSD-MCS as they do when they evaluate the impact on the ICAs.</p>
comment	<p>54 <span style="float: right;">comment by: AIRBUS</span></p>

	Airbus proposes to delete CS MCSD.420 and the associated GM1 MCSD.420.
	<b>Rationale:</b> Please refer to Airbus comment on CS MCSD.400
response	Not accepted See response to comment #52.
comment	58 <span style="float: right;">comment by: EAMTC</span> EAMTC supports the concept of the minimum list of practical tasks.  Nevertheless the tasks must be accompanied by a clear teaching point / training objective with reference to the aircraft and systems but not limited to an execution with mandatory training devices set by the TCH.
response	Not accepted  The ‘balanced OSD solution’ considers that the setting of the training objectives is a prerogative of the training organisation; therefore, the Part-147 ATOs have the final responsibility to define them.
<b>GM1 MCSD.420 Minimum list of practical tasks</b> <span style="float: right;">p. 17</span>	

comment	20 <span style="float: right;">comment by: Lufthansa Technik A.G.</span> 1) Ref. GM1 MCSD.420 Minimum list of practical tasks Comment: In line with Part-66 Appendix III paragraph 3.1.(e) Module 51 (Level 3 for B1 MCS), the proposed CS-MCSD should emphasize the need to further build the MCS’s structural damage assessment skills during type-rating training in theoretical lecture and practical exercise (such as, but not limited to introduction to the structural buildup (stingers, frames, ribs, spars, metallic versus composite, etc.), practical usage of SRM and interpretation of allowable damage limits, inspection techniques and aides, recording and reporting of damage, minor/cosmetic repairs). Damage Assessment on structures may be challenging (e.g. different structural configurations covered within an SRM, complexity of allowable damage limits, interchangeability of structural parts between types/models/series, document data format and presentation (e.g. page-block-based versus task-based, etc.)); these statements are applicable to all types of aeroplanes. Moreover, damage assessment on composite aircraft requires understanding of specific material characteristics and design philosophies (ref. AMC 20-29 and CS25.603), and frequently encompass the need to use specific non-destructive inspection techniques (such as, but not limited to, Airbus LineSizing, Dolphitech Dolphicam, Olympus 35RDC Ramp Damage Checker) designed for usage by maintenance staff (other than NDT inspectors). These tools and their applicability are frequently type specific (which is why these should be considered in type rating training). Even though such techniques are also addressed by AMC 145.A.30.(f).(8), structural damage assessment techniques should preferably become part of the type-rating training, as also suggested by AMC 20-29 Paragraph 10.D (“Additional training for specific skill building”).
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Please be aware that SAE CACRC is currently working on a new (draft) document SAE AIR 6825 “Identification and Assessment for Damage to Composite Aircraft Structures”, which in our opinion would complement the purpose of CS-MCSD.420. This document is still in draft status, but it is expected to be published in 2019. Despite SAE AIR 6825 is not yet published at the time the comment period to NPA 2018-11 closes, we strongly recommend that EASA considers this document for the final opinion, at least as a contingency (assuming SAE AIR 6825 is published prior NPA 2018-11 is converted into a decision). SAE AIR 6825 explicitly recognizes aircraft type specific elements.

Recommendation: We recommend to amend GM1 MCSD.420 as follows:  
*“The objective of the practical tasks training is to gain the required competence in performing safe maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks, for example troubleshooting, **structural damage assessment, allowable damage limits and deferrable defect rectification**, repairs, adjustments, replacements, rigging and functional checks. It includes training on the use of all technical literature and documentation for the aircraft, the use of specialist/special tooling and test equipment for **performing inspections, damage assessment**, removal and replacement of components and modules unique to type.*

The list may encompass:

- Location of systems, subsystems, units and components;
- Operation, Control and Indicating: normal/abnormal/emergency conditions.
- Removal & Installation procedure (Open/close of accesses, Deactivation/Reactivation, Use of Test-Support Equipment, Use of safety devices, Cleaning, Flushing)
- **Routine Inspection/Checks (GVI, DVI, SDI-NDT)**
- **Non-Routine Inspection/Checks, Damage Assessment, Applicability of allowable damage limits and deferrable defect rectification; for composite structure in accordance with AMC 20-29 and SAE AIR 6825**
- Aircraft groundhandling (Storage, Parking, Mooring, Lifting, Jacking, Shoring, Towing...)
- Servicing (Lubrication, Hydraulic/Oil/Gas replenishing, Gas charging/discharging, preserving/depreserving, data loading, fuelling/defuelling, de-icing/anti-icing, fluid draining...)
- Testing (Operational, Functional, BITE...)
- Fault Isolation/Trouble Shooting
- Job Set-up/Close-up
- MMEL maintenance dispatch conditions.”

response Accepted

comment

54 ❖

comment by: AIRBUS

Airbus proposes to delete CS MCSD.420 and the associated GM1 MCSD.420.

**Rationale:** Please refer to Airbus comment on CS MCSD.400

response

Not accepted

See response to comment #52.



comment	70	comment by: <i>Rieder</i>
	GM1 MCSD.420 (page 17), minimum list of practical tasks seems not to be in line with the requirements in Part-66 3.2 practical element (table). It shows more different types of tasks.	
response	Noted	
	3.2 states also the following: [...] Although the list details the minimum practical training subjects, <b>other items may be added where applicable to the particular aircraft type.</b>	

**CS MCSD.430 Maintenance areas of special emphasis (MASE)**

p. 17

comment	71	comment by: <i>Rieder</i>
	- GM1 MCSD.430 MASE (page 18), The item mentioned in b) seems to be the same as in f). Suggestion to combine the use of a complex tool and special test and tools/equipment. Furthermore the items listed in c) are design related but for a), f) and e) there is a relation with the maintenance organizations.	
response	Accepted	
	Text reworded.	

**GM1 MCSD.430 MASE**

p. 18

comment	14	comment by: <i>Dassault-Aviation</i>
	<p><u>Text:</u> GM1 MCSD.430</p> <p><u>Comment:</u> One of the main criterion is missing that is : "specificity to the type aircraft" or "uniqueness" DA proposes : - To add "specificity to the type aircraft" or "uniqueness" as one of the first creterion - To include "Human factor"(5) and "Special tests and tools" (6) in the criterion "Difficulty" (2) - To add the "In service experience" in the list - To cancel the criterion "Frequency of maintenance" (otherwise this criterion must be clarified)</p> <p><u>Proposition:</u> As a consequence and based on DA experience regarding the OSD F2000 and F7X/8X , DA propose the following list of criteria : 1/ first criteria for identification: - Novelty - Specific to the type aircraft/ uniqueness 2/second criteria:</p>	



	<ul style="list-style-type: none"> <li>- Safety / Criticality</li> <li>- Difficulty</li> <li>- In service experience</li> </ul>
response	<p>Partially accepted</p> <p>Text reworded.</p>

<b>CS MCSD.500 Box 2 Content</b>	p. 19
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comment	<p>15 <span style="float: right;">comment by: <i>Dassault-Aviation</i></span></p> <p><u>Text:</u> CS MCSD 500</p> <p><u>Comment:</u> DA considers that the issue of an entire logical training sequence is out of the skills of a TCH but is rather in the scope of capability and responsibility of the Training Providers. as a consequence DA disagree with the location of the "logical training sequence" in box 2 However and due to the architecture or novelty of the aircraft systems, a partial "logical training sequence" could be mandated, or recommended by the TCH and in this case DA proposes the following locations in boxes: - To allocate the "logical training sequence" to BOX 3 When the TCH considers that there is no-alternate means to comply with. In this case the following sentence will be added to the CS-MCSD: "If the TCH does not mandate any entire or partial Logical Training Sequence, the end user (training provider) will organise the training sequencing in accordance with the PART 66 requirements" and - To allocate the "logical training sequence" to BOX4 When the TCH considers that there is alternate means to comply with.</p>
response	<p>Accepted</p> <p>'Logical sequence' moved to Box 3.</p>

<b>CS MCSD.600 Box 3 Content</b>	p. 19
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comment	<p>16 <span style="float: right;">comment by: <i>Dassault-Aviation</i></span></p> <p><u>Text:</u> GM1 MCSD.600 "Examples: (a) Student's prerequisites (knowledge, experience, qualification) for the particular a/c type training, such as:     (1) a previous exposure to and type of a/c maintenance experience;</p>
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(2) aircraft type maintenance related elements for composite repair and bonding and appropriate knowledge, experience, and awareness in accordance with AMC 20-29, SAE AIR 5719.

(3) an introductory course on a generic or specific information technology

(b) Minimum syllabus for customer options corresponding the type rating.  
..."

Comment:

BOX 3 content proposed by DA:

1/ Student prerequisite: DA agree with the student prerequisite in BOX 3

2 / Logical training sequence: DA suggests to allocate the Logical Training Sequence to BOX 3 When the TCH considers that there is no-alternate means to comply with.

3/ MCSi and LTA: DA suggests:

- To allocate the MCSi and LTA to BOX3

- To attach the information of MCS involvement MCSi and level of technical Ability (LTA) to each system (refer to CRI A MCSD 01 for F7X/F8X).

response Accepted

Box 3 content is left almost open for the TC holder to insert binding information if they consider it necessary.

comment 72 comment by: *Rieder*

GM1 MCSD.600 Box 3 content (page 19), examples" it is mentioned : 1) "a previous exposure to and type of a/c maintenance experience". What does this mean? Do you receive credits, less training required? Is this up to the TC holder to decide?

response Noted

This is the case when the TC holder recommends that the student should be familiar with a specific aircraft technology (e.g. fly-by-wire).

**GM1 MCSD.600 Box 3 Content**

p. 19

comment 17 comment by: *Dassault-Aviation*

Text:

GM1 MCSD.700

Comment:

With regard to the content of BOX 4 , DA suggest to add the " Logical Training Sequence" to box 4 when the TCH considers that there is alternate means to comply with.

response Accepted

comment 21 comment by: *Lufthansa Technik A.G.*



Comment: With the increasing use of composites in transport category airplane PSE structure exposed to accidental damage, there is a growing industry concern that damage may be inadequately reported, identified or assessed. This concern is under discussion in various organizations and working groups, such as the SAE CACRC and the EAMTC: Once an event is reported, it is the responsibility of the MCS to start the damage identification and assessment process (“first responders”), including the final judgement on the airworthiness of the aircraft (“Go/No-Go/Go-with-restrictions”-decision). Damage Assessment on metallic structures may already be challenging. For composite structures it is even more critical, since the material characteristics are substantially different to metal; and many of the individuals working around composite aircraft today may have little or no specific training or familiarity with composites. This is mainly due to limited representation of composites in past and current Part-66 basic and type rating training content. Some of the key factors for composite structure safety - Composite Awareness, Material Characteristics and Differences to Metallic and other Non-Metallic Materials, Composite Construction (e.g. Sandwich versus Monolithic) and Structural Design (e.g. Bonded versus Bolted Stringers/Stiffeners), Identification of typical types of damage to composite structures, Applicable Inspections techniques (e.g. visual versus non-destructive), Composite Abnormal Events Awareness (e.g. GSE impact) should therefore eventually receive the appropriate emphasis by amending Part-66 Basic Knowledge Requirements, Appendix I applicable Modules 6.3.1, 11.2.(b), 11.3, 7.14, 7.18, 7.19. accordingly. We strongly recommended to cover these aspects by extending the scope of RMT.0255 (ref. also EPAS 2019-2023). Consequently, many of the aspects mentioned in GM1 MCSD.600 Box 3 Content should ideally already be covered in the Basic Knowledge i.a.w. Part-66 Appendix I (which requires future amendment of that appendix) in the future and refreshed during type training. CS-MCSD should focus also on further specific skill building for required maintenance tasks as mentioned in AMC 20-29 Para. 10.D. SAE AIR 5719’s main purpose is to standardize a syllabus for composite awareness trainings; specific skill-building is excluded from the its scope. It is therefore a suitable, but not the only source for determination of the minimum syllabus. The scope of CS-MCSD should go beyond this, and particularly include type specific maintenance tasks, see also our comments to GM1 MCSD.420.

Recommendation: We recommend to amend GM1 MCSD.600 as follows:

*“Examples:*

*(a) Student’s prerequisites (knowledge, experience, qualification) for the particular a/c type training, such as:*

*(1) a previous exposure to and type of a/c maintenance experience;*

*(2) aircraft type maintenance related elements for composite **damage detection, assessment, repair, and bonding, and appropriate knowledge, experience, and awareness in accordance with AMC 20-29, SAE AIR 5719 and SAE AIR 6825.***

*(3) ...”*

response Accepted

comment 27

comment by: *Leonardo Training Academy*

*Examples:*

*(a) Student’s prerequisites (knowledge, experience, qualification) for the particular a/c type training, such as:*



- (1) a previous exposure to and type of a/c maintenance experience;  
~~(2) aircraft type maintenance related elements for composite repair and bonding and appropriate knowledge, experience, and awareness in accordance with AMC 20-29, SAE AIR 5719.~~  
 (3) an introductory course on a generic or specific information technology

Recommend to remove this for the GM section and add it to:

Page 31 Appendix II to CS MCSD – MASE identification checklist

#### Reference

– CS 25.603

Materials

– AMC No.1 to CS 25.603

Composite Aircraft Structure

– AMC 20-29 Composite Aircraft Structure no-growth design concept

– AMC 20-29, SAE AIR 5719

– CS 29.573

#### Rationale

Box 3 according to *GM1 MCSD.110 Status of provided data - OSD box concept "OSD BOX CONCEPT DIAGRAM"* on page 13 of NPA 2018-11 is at the request of the TC applicant.

The GM given for box 3 on page 19 is therefore an optional example.

Page 31 *subject, Scheduled Maintenance (Composites)* is part of the Box 1 mandatory syllabus.

This can only be achieved if the basic knowledge on composites is present. *AMC 20-29, SAE AIR 5719* covers this. In reality AIR 5719 is already covered by the MASE identification checklist as CS 25.603 is included, which in turn refers to AMC 20-29 and in turn refer to AIR 5719. Therefore AIR 5719 cannot be both GM and mandatory. Implementing AMC 20-29, SAE AIR 5719 to page 31, will result in a common approach to composites basics.

response

Partially accepted

Reference will be added to Appendix II.

EASA prefers to keep the text in Box 3 as a good example of knowledge prerequisite for the student before attending the type training. Appendix II is also GM.

comment

29

comment by: *Leonardo Training Academy*

NPA 2018-11 will only cover MCS.

AIR5719 mentioned in NPA 2018-11 is not only applicable for MCS but also for composite structural repair technicians as stated in AMC 20-29.

" (1) All technicians, inspectors and engineers involved in damage disposition and repair"

Currently most structural repairs are being performed by structural composite repair technicians approved through a MRO internal approval. If the EASA wishes to implement mandatory measures for the level of knowledge for MCS like stated on *Page 31 Appendix II to CS MCSD – MASE identification checklist* it makes sense to do



the same for structural composite repair technicians (In this case RMT.0275 (MDM.075) specialised tasks), inspectors and engineers. This issue has been addressed before in CRD to NPA 2009-06 comment 75.

Comment

*10. Continued Airworthiness.*

*Par. d. - Damage Detection, Inspection and Repair Competency.*

*There seems to be a mismatch with Part-66. On the one side, the NPA indicates that all personnel involved should have the necessary skills, but on the other side no details are given for AMC/GM to Part-66 what should be required for the Certifying Staff in respect with composites. Most of composites knowledge is concentrated in the composites repair shop who work 24/7 on composites. By contrast, in general Certifying Staff in Line Maintenance is far less acquainted with composites, however he/she has the ultimate responsibility when releasing for service. It is recommended to involve Part-66 in this NPA.*

Response

*Noted*

*The Agency agrees with the points in the comment. However, this AMC is part of a number of activities intended to better link composite certification activities. Regarding Part-66, the Agency plans to revise this to **require** certifying staff to have at least a minimum level of composite knowledge, e.g. per recently produced SAE AIR 5719.*

Recommend EASA to take action on this and included structural composite repair technicians, inspectors and engineers to follow similar requirements set for MCS and make it a requirement as mentioned in CRD to NPA 2009-06 comment 75.

response

Noted

SAE AIR Standards 5719 and 6825 are mentioned in CS-MCSD for reference only. The TC holder may use them to transfer to maintenance staff the necessary information that is considered relevant for the training. This is not to be interpreted as a request for a specific qualification requirement for the MCS.

On the other hand, the Part-66 basic knowledge modules will be amended through RMT.0255 (MDM.059) 'Review of Part-66' in order to include these topics.

**GM1 MCSD.700 Box 4 Content**

p. 20

comment

73

comment by: *Rieder*

GM1 MCSD.700 Box content (page 20) d) (14) cargo loading. CAA-NL questions if cargo loading is considered a maintenance task for which specialized training is necessary.

response

Noted

Box 4 is the receptacle of supplementary syllabus, at recommendation level, that the TC holder may indicate if considered necessary. In this specific case, if the TC holder



considers that the maintenance of the cargo loading system (CLS) is sophisticated enough to require specific training, then they can provide the required training syllabus for that.

**Appendix I to CS-MCSD – Minimum Syllabus template**

p. 21-28

comment	18	comment by: <i>Dassault-Aviation</i>
	<p><u>Text:</u> Appendix 1 to CS-MCSD</p> <p><u>Comment:</u> To improve the interest of this topics with regard to the end user's needs (e.g: issuance of TNA ), DA suggests to attach the information of MCS involvement (MCSi) and level of technical Ability (LTA) to each system (refer to CRI A MCSD 01 for F7X/F8X/ Annexe II ).</p>	
response	<p>Not accepted</p> <p>Appendix I contains a template on how to provide the mandatory information (Box 1); however, the applicant can modify the table according also to the information they add in the other boxes.</p>	
comment	37	comment by: <i>LHT DO</i>
	<p>We understand that this table is to be used by the TC holder only. For the STC holder the use of this table in use would be overdone, as the change to design does not cover all ATA chapters.</p>	
response	<p>Noted</p> <p>The STC holder can use the same table, working only on those ATA chapters that are affected by the change.</p>	
comment	74	comment by: <i>Rieder</i>
	<p>- Appendix I to CS-MCSD (page 21) Minimum syllabus template; 20-00 Standard practices airframe. We would like to add "only type particular" as is mentioned in the table in par. 3.2 of Part-66 for clarification.</p>	
response	<p>Accepted</p>	
comment	75	comment by: <i>Rieder</i>
	<p>Appendix I to CS-MCSD (page 21) Minimum syllabus template; ATA 45-00 is referred to as Central Maintenance System (CMS). In Part-66 the term On-board maintenance system is used.</p>	
response	<p>Noted</p> <p>Appendix I uses the iSpec 2200 standard as an example.</p>	



comment	76	comment by: <i>Rieder</i>
	Appendix I to CS-MCSD (page 21) Minimum syllabus template; General comment: Part-21 design organizations are not familiar with the development of a training. The minimum syllabus is prescribed in too much detail with a possible consequence that the duration of the type training becomes longer. The development of the type training should be left to the Part-147 training organizations because they have the experience in this area.	
response	Not accepted	

<b>Appendix II to CS MCSD – MASE identification checklist</b>
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p. 29-35
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comment	19	comment by: <i>Dassault-Aviation</i>
	<p><u>Text:</u> Appendix II to CS.MCSD</p> <p><u>Comment:</u> 1 / With the experience gained from OSD MCS for F2000/F7X/F8X DA considers that other aircraft systems (e.g: ATA35, ATA 38) can be subject to MASE as a consequence this guidance should address lines for other systems (as necessary) 2/In accordance with DA comments of GM to CS MCSD.430 , DA suggests a new template for : " Reasons for MASE" in identification check-list :</p> <p>A/ first criteria for identification:</p> <ul style="list-style-type: none"> <li>- Novelty</li> <li>- Specific to the type aircraft/ uniqueness</li> </ul> <p>B/second criteria:</p> <ul style="list-style-type: none"> <li>- Safety / Criticality</li> <li>- Difficulty</li> <li>- In service experience</li> </ul>	
response	Partially accepted  See response to comment #14.	

comment	22	comment by: <i>Lufthansa Technik A.G.</i>
	<p>Comment: The proposed criteria for MASE identification related to Scheduled Maintenance for Metallic and Composites are not consistent. For example, the requirements for reporting of damage and documentation of damage rectification are essentially identical, regardless of the material. CS25.571 and AMC 20-20 are applicable to composite structure also. It should be noted that some of the maintenance actions mentioned are not typically considered as "scheduled" maintenance, for example damage assessment and rectification. On the other hand, damage assessment and rectification may also be required following non-routine (conditional) inspections.. Some contents are duplicated, e.g. Scheduled Maintenance (Metallic) b and f (Protective Treatments); Protective treatments may be required for composite structures as well to avoid moisture ingress or galvanic corrosion.</p>	



A rearrangement of this table in a Scheduled and a Non-Scheduled Section for Structures might be more precise.

It should be noted that impact damage may impose a serious threat to the continued airworthiness of composite structure and therefore this scenario should be explicitly mentioned under “Unscheduled Maintenance (General)”.

Recommendation: We recommend to amend GM1 MCSD.600 as follows:

***“Scheduled Maintenance (Structures General):***

*Any significant information to be emphasized regarding:*

- a) Material specific characteristics and typical related structural design constructions for metallic, composite and other non-metallic structures***
- b) Methods and procedures of inspection of the critical structures for fatigue damage, accidental damage, and environmental degradation (including, but not limited, to corrosion, erosion, moisture ingress, exposition to radiation and extreme temperatures)***
- c) Cleaning of inspection areas prior inspection, and (re-)application of protective treatments to the structure after inspection***
- d) A corrosion prevention and control programme (CPCP) for metallic structures, including basic corrosion inspection task, task areas, defined corrosion levels***
- e) Report of findings***

***Reference: CS 25.571, AMC 25.571(a), (b) and (e), AMC 20-20, CS 25.603, AMC No.1 to CS 25.603, AMC 20-29, CS 29.573***

*[...]*

***Unscheduled Maintenance (General)***

*Any significant maintenance information to be emphasized in case of conditional inspections. Here are some examples:*

- a) [...]***
- z) Impact on ground by foreign vehicles or objects, ground service equipment or in-flight by parts departing from aircraft***
- aa) Others***

*[...]*

***Unscheduled Maintenance (Structures)***

- a) Typical damage scenarios***
- b) Damage detection, identification and assessment, including usage of specific inspection tools (see also Standard Practices Airframe)***
- c) Removal, rework or repair of structural damage***
- d) Usage of allowable damage limits and deferrable defect rectification***
- e) Documentation, Recording and Reporting”***

Alternatively, EASA may opt to combine the proposed category “Unscheduled Maintenance (Structures)” with the category “Standard Practices Airframe”.

response Accepted

comment 28 comment by: Leonardo Training Academy

Page 31 Appendix II to CS MCSD – MASE identification checklist

***Reference***

***— CS 25.603***



	<p><i>Materials</i></p> <p><del>— AMC No.1 to CS 25.603</del></p> <p><i>Composite Aircraft Structure</i></p> <p><del>— AMC 20-29 Composite Aircraft Structure no-growth design concept</del></p> <p><del>— CS 29.573</del></p> <p>AMC No.1 to CS 25-603 has been deleted by NPA 2009-06 See page 19 of CS-25 Amendment 22</p> <p>Recommend to remove <i>AMC No.1 to CS 25.603</i>. It has been replaced by <i>AMC 20-29</i>.</p> <p><i>AMC 20-29</i> is already mentioned in CS 25.603. <i>Composite Aircraft Structure no-growth design concept</i> does not clearly define what section of AMC 20-29 is applicable to this. This is misleading and open to interpretation.</p> <p>Recommend to clarify/specify or remove, as CS25.603 already refers to the whole document AMC 20-29.</p> <p>Note: NPA 2009-06 page 10 suggested that AMC 20-29 would be inserted to CS 29.603 This has not been implemented.</p>
response	Accepted
comment	<p>38 <span style="float: right;">comment by: LHT DO</span></p> <p>We appreciate the wording “any significant information”. This wording should also be reflected in the article 21.A.91 and the applicable CS.MCSD articles.</p> <p>Please clarify for the STC holder “any significant new/changed information”.</p>
response	Noted

#### 4. Impact assessment (IA)

p. 36

comment	<p>48 ❖ <span style="float: right;">comment by: AIRBUS</span></p> <p>The proposed CS-MCSD has not been prepared in coordination with RMT.0106 members and therefore does not represent a consensus of EASA and the industry. Airbus globally does not support the direction taken by EASA for the OSD-MCS. The MCSD required from the applicant in this draft CS-MCSD can only be developed with a Part 147/66 expertise (that TC holders typically do not have) and is not consistent with other OSD constituents like FCD or CCD. For TC holders that do not have a Part 147 AMTO, the application of the CS-MCSD will require additional costs as they will have either to contract an existing Part 147 AMTO in order to develop the OSD-MCS, or to develop a new expertise. This has not been taken into account in the Impact Assessment. This issue would exist also for STC applicant that will be required to assess the impact of a STC on the OSD-MCS, and to develop additional OSD-MCS. As expressed in the memorandum sent to EASA in October 2015, Airbus perception</p>
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	<p>is that the main deficiencies of the Maintenance system are not specific to a type of airplane or operations. Therefore, it is our opinion that the proposed CS-MCSD does not address what is from our perspective the heart of the “Safety in Maintenance” issue.</p> <p>Besides, this new CS-MCSD will create a business impact on Airbus by mandating that Airbus, as TCH, publish the know-how of its Maintenance Training Organisation to its competitors in the Maintenance Training area because of the obligation to provide the list of practical tasks as part of the Box 1. Airbus considers therefore that option 2 induces medium to high negative impact on TCH, without addressing the heart of the safety in maintenance issue.</p> <p>Airbus opinion is that the Option 2 proposed by EASA imposes high burden on TC holder while not adequately addressing the maintenance safety issues. The proposed CS-MCSD is not aligned with the objectives of CS-FCO and CS-CCD. The existing certification specifications for OSD Flight Crew and OSD Cabin Crew requires TC holder to provide high-level training objectives, but not a detailed list of training exercises. Providing a detailed list of training exercises as prescribed by the proposed CS-MCSD requires knowledge and expertise that exists within a Part 147 AMTO, but not within a Part 21 approved design organization.</p>
response	<p>Noted</p> <p>See responses to the General Comments.</p> <p>EASA would welcome further quantification and evidence supporting these views. Please note that the analysis already mentions that Part-147 AMTOs ‘might face a low negative impact’ (also reflected in the table on page 39 of the NPA).</p>

**4.1.1. Who is affected** p. 36

comment	<p>77 <span style="float: right;">comment by: <i>Rieder</i></span></p> <p>- 4.1.1 (page 36); The applicability for his NPA is not clear. In 4.1.1 on page 36 it is mentioned that all applicants for a new TC or RTC are affected by this NPA. But there is also a reference to Part 21.A.91 (changes) in 2.1 (page 4). Is the CS-MCSD also applicable to a STC holder after introducing a change to the design? Who is responsible of adapting the minimum syllabus content in the case of changes?</p>
response	<p>Accepted</p> <p>The NPA is applicable also to STC holders that shall first evaluate the impacts of their changes to the existing OSD-MCS and then make the OSD changes available to the end user of the OSD as per Part 21 point 21.A.120B ‘Availability of operational suitability data’ .</p>

**4.4.1. Safety impact** p. 37-38

comment	<p>59 <span style="float: right;">comment by: <i>EAMTC</i></span></p>
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EAMTC fully supports Option 2 “Balanced OSD” as the best possible way to improve quality and therefore safety with training. It is also understood that the TCH will provide as a minimum all elements of BOX 1 for this option.

EAMTC disagrees with the opinion of a high positive impact of Option 3 because this rigid way would leave no room for AMTO to contribute with their experience in training for the benefit of safety. AMTO are naturally closely linked with operators participating from their experience. In addition their daily work with certifying staff as students in a pedagogical context is a valuable platform to continuously improve training quality. Being limited to a given “must use” full type training course from the TCH would create a “one way street” of training provided with a unhealthy delay when didactical updates are needed.

It is also understood that the TCH support the entry into service at best and the OSD process will improve this even more in a structured way. But operators, MRO and AMTO experience shows that they can react faster with necessary improvements in training while the aircraft is in operation. Here the option 3 would decrease the safety level with its rigid way while Option 2 provides a helpful base for a close cooperation/network between all parties.

**Therefore Option 3 is in our understanding with the safety impact lower than Option 2!**

response

Noted

EASA believes that Option 3 has a higher safety impact because the TC holder provides the full information required for the type rating meeting the initial idea of the OSD.

On the other hand, Option 3 reduces a little the freedom for the end user to develop the final type training.

**4.4.2. Economic impact**

p. 38

comment

47

comment by: IATA

No.	Segment Description	NPA Page	Comment / Proposed Text / Rationale
9	under 4.2.2 Economic Impact	38	<p>The argument in Option 2 “TCHs who hold a Part-147 AMTO might face a low negative impact as their Part-147 competitors would have an easier access to the type training know how” is not validly worded: the so called easier access is not to the “know how” it is pure and simple the “know what” provided by the TCH via the OSD Boxes</p> <p>The argument in Option 3 “TCHs who hold a Part-147 AMTO might face a medium to high negative impact as their Part-147 competitors would have an easier access to the full type training know how” is not validly worded: the so called easier access is not to the “know</p>



			how” it is pure and simple the “know what” provided by the TCH via the OSD Boxes
response	Noted		
comment	60	comment by: EAMTC	
	<p>EAMTC disagrees with the rating in Option 3 of a high negative impact for the TCH while the Part-147 have easier access to the full type training know how and therefore less costs in implementing the training.</p> <p>Running a set type rating training without being able to utilize own capabilities at its best is on also costly as well as it is wasting resources.</p>		
response	<p>Not accepted</p> <p>The negative economic impact is on those TC holders that hold a Part-147 approval. The negative economic impact is relatively greater than that of Option 2.</p>		

#### 4.5. Conclusion

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comment	5	comment by: Embraer S.A.
	Embraer agrees and supports Option 2 (Balanced OSD) proposed by EASA.	
response	Noted	

#### 4.5.1. Comparison of options

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comment	61	comment by: EAMTC
	<p>EAMTC sees Option 2 “Balanced OSD” as it is shown.</p> <p>We disagree with the shown rating of the impacts in Option 3 “Large OSD”. As previous described we rate the safety impact with a maximum of “++” while we see the Part-147 AMTO with a rating of “-”.</p> <p>The economic impact on the Part-147 AMTO in Option 2 is rated “+” therefore EAMTC is assuming that there will no substantial fee for purchasing OSD from the TCH. If this is not the case and charges are left to the TCH's, economic restraints of some independent AMTO's may most definitely cause an impact on safety.</p>	
response	<p>Noted</p> <p>As regards Option 3: For the safety impact, please refer to the response to comment #59; for Part-147 AMTOs, EASA assumes you refer to the economic impact: EASA would welcome further clarification on the score proposed.</p>	



As regards Option 2: Noted.

#### 4.6. Monitoring and evaluation

p. 39

comment

62

comment by: EAMTC

EAMTC welcomes the proposed measures.

In addition we recommend monitoring the feedback from the Part-147 AMTO experts to the applicability of the CS-MCSD in practical use while delivering training for maintenance certifying staff in order to ensure a high level of competence in maintenance.

How to monitor: During the routine audits of the competent authorities in the AMTO  
Who should monitor: the competent authority overlooking the AMTO

This evaluation would also be most beneficial for the TCH and EASA in order to continuously improve the process with all criteria's and in consequence keep the training level at the highest standard for the benefit of all stakeholder, safety and economic.

response

Noted

#### 6. References

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comment

63

comment by: EAMTC

In order to improve continuously the knowledge and skills of the maintenance certifying staff to keep up with the technological progress the facts, which the TCH will provide by fulfilling Box 1 requirements as also an indication for need of updating Part-66 Modules. RMT.0255 "Review of Part-66" shall consider this dependency.

response

Noted

The update of the Part-66 modules is one of the objectives of RMT.0255 (MDM.059) 'Review of Part-66'.

