

DISPOSITION OF AUTHORITY COMMENTS

AC 21.101-1B, Establishing the Certification Basis of Changed Aeronautical Products

Commenter	Paragraph No.	Referenced Text	Question/Comment/Rationale	Suggested Change	Comment Resolution
ANAC	3.3.2	A “substantially complete investigation” of compliance is when most of the existing substantiation is not applicable to the changed product.	The word "required" is missing on the referenced text. This word was removed from the current version of this AC.	Replace with "A “substantially complete investigation” of compliance is required when most of the existing substantiation is not applicable to the changed product."	Agree. Amended as suggested.
ANAC	3.10	See paragraph 3.10 of this AC.	The text of paragraph 3.10 references the same paragraph (3.10).	The reference should be another paragraph or the text should be removed.	Agree. Amended to “paragraphs 3.10.1 and 3.10.2.”
ANAC	5.9.2.1	The FAA determines whether the design changes are significant or not significant, and this decision is documented on the Certification Project Notification according to FAA Order 8110.115, How to Establish the Certification Basis for Changed Aeronautical Products.	Order 8110.115 title is "Certification Project Initiation and Certification Project Notification", while Order 8110.48 title is "How to Establish the Certification Basis for Changed Aeronautical Products".	The text should be rewritten to reference the correct document.	Agree. Amended as suggested.
ANAC	Appendix A, Table A-5, Example 14	Comprehensive flightdeck upgrade, such as conversion from entirely federated, independent electro-mechanical flight instruments to highly integrated and combined electronic display systems with extensive use of software and/or complex electronic hardware.	Example 14 can be replaced by example 26 of page A-41.	Remove example 14 of section A2.2.	Partially agree. Examples 14 and 26 examples are duplicates. Removed Example 26 from the significant table. Example 14 is now Example 15 and the “Description of Change” is now: "A comprehensive avionics upgrade that changes a federated avionics system to a highly integrated avionics system."

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ANAC	Appendix A, Table A-6, Example 17	Flightdeck replacement of highly integrated and combined electronic display systems with another highly integrated and combined electronic display systems.	Example 17 is the same of example 14 of page A-49.	Remove example 17 of section A2.3.	Agree. We deleted both 14 and 17 as duplicates, and replaced with two new similar examples proposed by EASA.
ANAC	Appendix B, Table B-2	Table B-2. Application Chart for Changed Product Rule § 21.101(c)(1) Excepted Products	There is no § 21.101(c)(1).	Replace with "Table B-2. Application Chart for Changed Product Rule § 21.101(c)(1) Excepted Products".	Agree. Amended as suggested.
ANAC	Appendix G, Step 8	Ensure the proposed certification basis adequate.	The word "is" is missing on the referenced text.	Replace with "Ensure the proposed certification basis is adequate".	Agree. Amended as suggested.
ANAC	Appendix I, I.2	Order 8110.48, Certification Project Initiation and Certification Project Notification.	Order 8110.48 title is "How to Establish the Certification Basis for Changed Aeronautical Products".	Replace with "Order 8110.48, Certification Project Initiation and Certification Project Notification How to Establish the Certification Basis for Changed Aeronautical Products".	Agree. Amended as suggested.
ANAC	Appendix I, I.2	Order 8110.115, How to Establish the Certification Basis for Changed Aeronautical Products.	Order 8110.115 title is "Certification Project Initiation and Certification Project Notification".	Replace with "Order 8110.115, How to Establish the Certification Basis for Changed Aeronautical Products Certification Project Initiation and Certification Project Notification".	Agree. Amended as suggested.
EASA	1.5	Terms Used in this AC.	Unique definition of the words "type", "model", "variant", "series" is missing (linked to paragraph 3.2.1)	Introduce the definition of "type", "model", "variant", "series"	Partially agree. Made global change to AC to make reference to make and model.

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EASA	3.1.3, Figure 3-1, Note 2	2. Process and propose each requirement individually	Applicable requirements paragraphs could be linked together and should not be dissociated when assessing the certification basis	2. Process and propose each requirement individually. When requirements paragraphs are linked together , they should be assessed in a all	Partially agree. Amended Note 2 as indicated: "Process and propose each applicable requirement individually. If requirements are linked together, then they should be assessed together."
EASA	3.2.1	"...which model or series within that model..."	What does that sentence means the" Type and series in the Type" or the "series and models in the series" or the "model and variant in the model"		Agree. Amended as indicated: "3.2.1 <u>Identify the Type Design You are Changing (the Baseline Product)</u> . Prior to describing the proposed change(s), it is important to clearly identify the specific type design configuration you are changing."
EASA	3.2.2.1	Changes to a product can include physical design changes, changes to an operating envelope, and/or performance changes	the objective is to assess the change to the aircraft functional characteristics in addition to the physical changes For consistency purpose in the wording of the AC , use of that terminology is suggested (i.e. § 3.9)	Changes to a product can include physical design changes, changes to aircraft functional characteristics such as operating envelope, and/or performance changes.	Partially agree. Amended as indicated. "3.2.2.1 The purpose of this process step is to identify and describe the change to the aeronautical product. Changes to a product can include physical design changes and functional changes (e.g., operating envelope or performance changes). You must identify all changes and areas affected by the change, including those where you plan to use previously approved data. The FAA considers all of these changes and areas affected by the change part of the entire proposed type design and are considered as a

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					<p>whole in the classification of whether the proposed design change is substantial, significant, or not significant. The change can be a single change or a collection of changes. In addition to the proposed changes, consider the cumulative effect of previous relevant design changes incorporated since the last time the certification basis was upgraded. An applicant for a type design change must consider all previous relevant design changes and the amendment level of the certification basis used for these changes."</p>
EASA	3.2.2.3	<p>A 5 percent weight increase is currently being proposed, but a previous 10 percent and another 15 percent weight increase has been incorporated into this aircraft without upgrading the existing certification basis . In the current proposal for a 5 percent weight increase, the cumulative effects of the two previous weight increases that did not involve upgrade of the certification basis will now be accounted for as an approximately 30 percent increase in weight, for the purpose of making the substantial and/or significant</p>	<p>That example is confusing and is most probably coming from pre CPR rules .In accordance with Appendix A example , 10% of maximum take off weight increase already triggered the change to be significant.</p>	<p>Rewrite the example to better fit the Appendix A and not mixing Significant and Substantial change together</p>	<p>Agree. Amended as indicated.</p> <p>"An applicant proposes a 5 percent weight increase, but a previous 4 percent and another 3 percent weight increase was incorporated into this aircraft without upgrading the existing certification basis. In the current proposal for a 5 percent weight increase, the cumulative effects of the two previous weight increases that did not involve an upgrade of the certification basis will now be accounted for as an approximate 12 percent increase in weight. Note that the cumulative effects the applicant accounts for are only those</p>

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		decisions.			incremental increases since the last time the airworthiness requirements in the type certification basis applicable to the area affected by the proposed change were upgraded."
EASA	3.3.2	Last sentence of the paragraph "Also, extrapolation from previous data becomes unreliable or impossible, as the new product has changed to the extent that the baseline data is no longer relevant."	Such a statement is also applicable to the significant change when using the criteria " invalidate the assumption used for certification		Agree. Deleted the last sentence.
EASA	3.3.3	To address the question if a change is substantial at the beginning of the process, you must evaluate the total or combined effect of all the proposed changes identified in Step 1, including the cumulative effects of previous relevant design changes since the last update of the certification basis (as explained in Step 1).	The concept is applicable to the determination of significant design change For substantial design change , the cumulative effect of relevant previous design changes should be evaluated from the original certification basis of the product being changed	replace " since the last update of the certification basis by "since the original certification basis of the product being changed"	Disagree. Deleted this paragraph to eliminate confusion.
EASA	3.6.6.13.6.6.2	"The final certification basis may consist of a combination of the airworthiness standards ranging from the original aircraft certification basis to the most current regulatory amendments." "but not earlier than those that are recorded in the existing certification basis for the change or group of	The two paragraphs may induce some confusion as the certification basis may not contain all the requirements belonging to a given airworthiness standard	A unique reference should be introduced. <u>Proposed wording</u> "the final certification basis may consist of a combination of the requirements recorded in the certification basis ranging from the original aircraft certification basis to the most current	Agree. Amended as suggested (note new paragraph numbering due to deletion of a paragraph in this section: "3.6.5.1 Significant (§ 21.101(a)) : You must comply with the latest airworthiness standards for certification of the design change and areas affected

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		related changes being evaluated"		regulatory amendments"	<p>by change, unless you justify use of one of the exceptions provided in § 21.101(b)(2) or (3) to show compliance with earlier amendment(s). The final certification basis may consist of a combination of the requirements recorded in the certification basis ranging from the original aircraft certification basis to the most current regulatory amendments.</p> <p>3.6.5.2 Not Significant (§ 21.101(b)(1)): You may comply with the existing certification basis unless the standards in the proposed certification basis are deemed inadequate. In cases where the existing certification basis is inadequate or no regulatory standards exist later requirements and/or special conditions will be required, see paragraph 3.11 of this AC for a detailed discussion."</p>

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EASA	3.6.5.6.1 and 3.6.5.6.2	"The final certification basis may consist of a combination of the airworthiness standards ranging from the original aircraft certification basis to the most current regulatory amendments." "but not earlier than those that are recorded in the existing certification basis for the change or group of related changes being evaluated"	The wording is not clarifying the case when the requirements recorded in the certification basis do not contain those that are applicable to the design change	The specific case should be addressed	Disagree. No need to add anything to the AC as the certification basis includes all requirements at a particular amendment level.
EASA	3.8.3	You may comply with a specific airworthiness requirement or a subset of airworthiness requirements at later amendments. In such a case, you should consult with the FAA to ensure the certification basis includes other airworthiness requirements that are directly related.	Before consulting the Authorities , the applicant should propose the appropriate certification basis including any other requirements that are directly related together	<u>Proposed resolution</u> replace "In such a case, you should consult with the FAA to ensure the certification basis includes other airworthiness requirements that are directly related." by " In such a case, any other airworthiness requirements that are directly related should be included in the certification basis for the change. "	Agree. Amended as suggested. Note that the new paragraph number is 3.8.2.
EASA	3.9	As part of preparing your proposed certification basis list, you must identify areas, systems, components, equipment, or appliances of the product that are affected by the design change and the corresponding regulatory standards associated with these areas. For each group, you must assess the physical and/or functional effects of the change on other areas ,	What is the meaning of "other areas"		Noted. Amended as follows. "...For each group, you must assess the physical and/or functional effects of the change on any areas, systems...."

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		systems...			
EASA	3.9.4.2	Another example is the addition of a fuel tank and new fuel conditioning unit. This change affects the fuel transfer and fuel quantity indication system resulting in the airplane's unchanged fuel tanks being affected. Thus, the entire fuel system (changed and unchanged areas) becomes part of the affected area due to the change in functional characteristics	Not understood. A change at system level is not a product level change What is product level, is it the increase of fuel capacity range etc.What are the unaffected areas identified there	Replace last sentence by: For the existing tanks, changed areas are part of the affected areas, while unchanged areas are not.	Disagree. Unchanged areas may be affected. Amended as indicated: "...(changed and uncharged areas) may become part of...."
EASA	3.10	Pursuant to § 21.101(a), compliance with the latest airworthiness standards is required. However, exceptions may be allowed pursuant to § 21.101(b)(3). Acceptable justification to support your rationale for the application of earlier amendments must be provided for areas affected by a significant change....	It is obvious that Justifications have to be accepted by the authorities.	remove the word "Acceptable"	Agree. Amended as suggested: "...However, exceptions may be allowed pursuant to § 21.101(b)(3). The applicant must provide justification to support the rationale for the application of earlier amendments for areas affected by a significant change...."

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EASA	3.10.1	Note: Compliance with later requirements would not be required where the amendment is of an administrative nature and has been made only to correct inconsequential errors or omissions, consolidate text, or clarify an existing requirement.	In the EASA domain we are not publishing individual amendments of the airworthiness requirements, but rather consolidated version of CS. In case of significant changes, this implies referencing the applicable requirement at the latest published CS amendment, although the requirement itself may not have changed since the original version	comment	Noted.
EASA	5.13	If you intend to accomplish a product change by incorporating several design changes in a sequential manner, this should be identified to the FAA up front when the first application is made.	What if this is not declared upfront to the Authority at the time of the initial application, and only later either the applicant or the Authority makes the decision or the applicant determines that a series of changes are aimed at accomplishing a product change?	Introduce provisions to account for the cases in which the product change is not declared to be pursued in staged changes	Agree. Added the following text to the end of the paragraph: "...If the FAA determines that the current application is part of a sequence of related changes, then the FAA will re-evaluate the determination of significance and the resulting certification basis as a group of related changes."
EASA	Appendix A, Table A-1, Example 3	Increase in the number of engines from one to two	This example is limitative	rewrite the example to read: Increase in the number of engines	We agree but suggest going further and stating: "A change in the number of engines."
EASA	Appendix A, Table A-2, Example 21	Replacement of an aviation gasoline engine with an engine of approximately the same horsepower utilizing diesel fuel.	To introduce the arising new engine technology , rewording of the example is proposed	rewrite the example to read: Replacement of an aviation gasoline engine with an engine of approximately the same horsepower utilizing e.g. diesel, hybrid or electrical power.	Agree. This example is now Example 20. The example to reads: "Replacement of an aviation gasoline engine with an engine of approximately the same horsepower utilizing, e.g., diesel, hybrid, or electrical power."

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EASA	Appendix A, Table A-5, Example 3	Conversion—passenger or combination freighter/passenger to all freighter, including cargo door, redesign floor structure and 9g net or rigid barrier.	The example is addressing the conversion only in one direction and it seems to exclude the other case where the initial a/c is a completely certified cargo with no equivalent passenger version. The example can also be linked to example #20 and #22	It is proposed to expand the example to the conversion where the initial a/c is a completely certified cargo with no equivalent passenger	<p>Agree. Modified Example 22 and renumbered it as Example 24 as follows. (Note that proposed Examples 20 and 22 are now Examples 22 and 24 in the final AC.)</p> <p>EXAMPLE: Changing the floor from passenger carrying to cargo carrying capability.</p> <p>Configuration: No</p> <p>Principles of construction: No</p> <p>Assumptions changed: No</p> <p>NOTES: Completely new floor loading and design. Redistribution of internal loads, change in cabin safety requirements, system changes. If a cargo handling system is installed, it would be a related change.</p>
EASA	Appendix A, Table A-5, Example 10	Typically, an increase in design weight of more than 10 percent.	What is the intended meaning of the word "typically"? Is there included any allowance?	Remove the word "typically" or specify what is intended same remark for example 17	<p>Agree. This example is now Example 11. Changed example to:</p> <p>"An increase in design weight of more than 10 percent."</p>

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EASA	Appendix A, Table A-5, Example 13	Change in type or number of emergency exits or an increase in the maximum certificated number of passengers.	Changes involving exit deactivation shall not be classified as significant: the new emergency egress certification specification does not exceed those previously substantiated because the certificated number of passengers demonstrated is reduced. This comment was made in the frame of the EASA rulemaking task RMT.0264 (MDM.066) related to Executive Interior Requirements, and was agreed with all participants, including Industry and FAA representatives.	Proposed resolution Add in Table A-6 "not significant" the following additional example: Change in type or number of emergency exits by deactivating existing emergency exits. See below	Partially agree. Example 13 has been retained as Example 14 in the "significant" table. However, we added new Example 18 to the "not significant" table (Table A-6) as follows: "Changes in the type or number of emergency exits by de-rating doors or deactivating doors with corresponding reduction in passenger capacity. Configuration: No Principles of construction: No Assumptions changed: No NOTES: The new emergency egress does not exceed that previously substantiated because the certificated number of passengers is reduced.

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EASA	Appendix A, Table A-5, Example 14	An avionics upgrade that changes a federated avionics system to a highly integrated avionics system	<p>Change to aircraft configuration NO</p> <p>Change to principles of construction NO</p> <p>Assumptions used for certification are invalidated YES</p> <p>Note This change refers to the avionics system that feeds the output to displays and not the displays themselves</p>	replace example 14 by this example	<p>Partially agree. This example is now Example 15. Changed example description to:</p> <p>“A comprehensive avionics upgrade that changes a federated avionics system to a highly integrated avionics system.”</p> <p>And changed the Note to:</p> <p>“This change refers to the avionics system that feeds the output to displays and not the displays themselves.” As part of preparing your proposed certification basis li</p>
EASA	Appendix A, Table A-5, Example 14 and 26	Comprehensive flightdeck upgrade affecting avionics and electrical systems integration, architecture concepts, and design philosophies. Example: Conversion from entirely federated, independent electromechanical flight instruments to highly integrated and combined electronic display systems	<p>Example 14 and 26 are identical since they both address the conversion from entirely federated independent electromechanical flight instruments to highly integrated and combined electronic display systemsIt seems that the new developed avionics examples present into the helicopter section have not been captured in the large airplane section of this ACIt is proposed to replace the examples 14 and 26 by the three examples below extracted from Page A-59 and to have it in cascade in the LA table instead of dissipating them on different pages</p>	It is proposed to replace the examples 14 and 26 by the three examples below extracted from Page A-59 and to have it in cascade in the LA table instead of dissipating them on different pages	<p>Partially agree. These two examples are duplicates. Removed Example 26 from the “not significant” table, and modified proposed Example 14, which is now Example 15 as follows:</p> <p>"A comprehensive avionics upgrade that changes a federated avionics system to a highly integrated avionics system."</p>

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EASA	Appendix A, Table A-5, Example 17	Typically a thrust increase of more than 10 percent or for turbofans increase of the bypass ratio by more than 50%.	<p>Change to aircraft configuration NO</p> <p>Change to principles of construction NO</p> <p>Assumptions used for certification are invalidated YES</p> <p>Note Requires re substantiation of powerplant installation, and has a marked effect on aircraft performance and flying qualities. Augmentation of the bypass ratio induces a nacelle diameter increase with airframe level effects.</p>	update the example	<p>Partially agree. This example is now Example 19 and has been revised as shown below. The rationale for the new wording is explained in the note section.</p> <p>EXAMPLE: Maximum continuous or takeoff thrust or power increase of more than 10 percent or, for turbofans, an increase of the nacelle diameter.</p> <p>NOTES: A thrust or power increase of more than 10 percent is significant because it does have a marked effect on aircraft performance and flying qualities, or requires re-substantiation of powerplant installation. An increase of the nacelle diameter as a result of an increase in the bypass ratio is significant because it results in airframe level effects on aircraft performance and flying qualities. However, a small increase of the nacelle diameter would not have such an airframe-level effect and would not be considered a significant change.</p>

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EASA	Appendix A, Table A-5, Example 19	Installation of a new fuel tank, (horizontal stabilizer tank or auxiliary fuel tank in the fuselage outside the wing in conjunction with increased maximum takeoff design-weight and takeoff thrust).	This example is too restrictive. It refers to take off thrust increase but there is no direct link between the installation of a fuel tank and an engine thrust increase. It also introduces the notion of MTOW which could be extended to maximum design weights	Proposed resolution: Replace "take off weight " by "design weight" and remove the sentence "and take off thrust"	<p>Partially agree. The certification assumptions at the product level (airplane level) have been invalidated, regardless of whether the design weights are increased or not. Agree that the takeoff thrust increase is not directly linked to the fuel tank. This example is now Example 21 and is reworded as follows:</p> <p>EXAMPLE: Installation of a new fuel tank, e.g., an installation of an auxiliary fuel tank in a cargo bay or installation of an auxiliary fuel tank that converts a dry bay into a fuel tank (such as a horizontal stabilizer tank).</p> <p>NOTES: Requires changes to airframe, systems, and AFM. Results in performance changes. These changes typically affect the fuel tank lightning protection, fuel tank ignition source prevention, and fuel tank flammability exposure.</p>

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EASA	Appendix A, Table A-5, Example 1X	An avionics upgrade that changes independent display to integrated displays	<p>Change to aircraft configuration NO</p> <p>Change to principles of construction NO</p> <p>Assumptions used for certification are invalidated YES</p> <p>Note Typically, this involves a change from independent electro mechanical or independent electronic displays to an electronic display that integrates multiple displays.</p>	add this new example	<p>Partially agree. This example is now Example 15 in the "significant" table. Changed "avionics upgrade" to "comprehensive avionics upgrade."</p> <p>EXAMPLE: A comprehensive avionics upgrade that changes a federated avionics system to a highly integrated avionics system.</p> <p>Configuration: No</p> <p>Principles of construction: No</p> <p>Assumptions changed: Yes</p> <p>NOTES: This change refers to the avionics system that feeds the output to displays and not the displays themselves.</p>

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EASA	Appendix A, Table A-5, Example 1X	An avionics upgrade that changes the method of input from the flightcrew, which was not contemplated during the original certification	<p>Change to aircraft configuration NO</p> <p>Change to principles of construction NO</p> <p>Assumptions used for certification are invalidated YES</p> <p>Note A change that includes touch screen technology typically does not invalidate the assumptions used for certification.</p> <p>A change that incorporates voice activated controls or other novel human-machine interface would likely invalidate the assumptions used for certification.</p>	add this new example	<p>Agree. Added new Example 16 to “significant” table:</p> <p>EXAMPLE: An avionics upgrade that changes the method of input from the flightcrew, which was not contemplated during the original certification.</p> <p>Configuration: No</p> <p>Principles of construction: No</p> <p>Assumptions changed: Yes</p> <p>NOTES: A change that includes touch screen technology typically does not invalidate the assumptions used for certification. A change that incorporates voice activated controls or other novel human-machine interface would likely invalidate the assumptions used for certification.</p>
EASA	Appendix A, Table A-5, Example 1X	Comprehensive flight-deck upgrade, such as a conversion from one avionics supplier’s integrated flight deck suite to another supplier’s integrated flight suite, resulting in comprehensive system architectural design changes, including software and/or complex electronic hardware as well as extensive redesign of flight crew interfaces, system status indications and alerting	<p>Change to aircraft configuration NO</p> <p>Change to principles of construction NO</p> <p>Assumptions used for certification are invalidated YES</p> <p>Note Affects avionics and electrical systems integration and architecture concepts and philosophies. This drives a reassessment of the human interface machine , flight-crew workload and re evaluation of the original design flight deck assumptions</p>	new example	<p>Disagree. The certification assumptions at the product level have not been invalidated purely due to installing another supplier’s integrated flight deck suite.</p>

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		schemes.			
EASA	Appendix A, Table A-6, Example 14 and 17	Flightdeck replacement of highly integrated and combined electronic display systems with another highly integrated and combined electronic display systems	Example 14 and 17 are identical It seems that the new developed avionics examples present into the helicopter section have not been captured in the large airplane section of this AC It is proposed to replace the examples 17 by the two examples below extracted from Page A-67	Keep the example 14 and add the two new examples below Numbering the examples sequentially	Agree. We deleted both 14 and 17 as duplicates, and replaced with two new similar examples proposed by EASA.
EASA	Appendix A, Table A-6, Example 16	Extending limit of validity (LOV) pursuant to § 26.23.	In accordance with § 2.2.2.2 and 5.8 , it is understood that CFR Part 26 provisions are mandatory independently of FAR 21.101 (b) Is there a need to have that example 16 ?		Disagree. This example is now Example 15. Industry requested clarification, and this example is directly from FAA Policy Statement, <i>Application of Extending the Limit of Validity for Part 25 Transport Airplanes Under Title 14, Code of Federal Regulations (14 CFR) 21.101</i> . This policy statement says, "This memorandum provides guidance on extending the LOV for part 25 transport airplanes and explains how this guidance will be clarified in the next revision of AC 21.101-1A.

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EASA	Appendix A, Table A-6, Example 20	An avionics change from federated electro-mechanical displays to federated electronic displays.	Change to aircraft configuration NO Change to principles of construction NO Assumptions used for certification are invalidated NO Note Changing an electro-mechanical display to an electronic display on a single avionics display is not considered significant	add this example	Agree. Added new Example 19 to “not significant” table: EXAMPLE: An avionics change federated from electro-mechanical displays to federated electronic displays. Configuration: No Principles of construction: No Assumptions changed: No NOTES: Changing an electro-mechanical display to an electronic display on a single avionics display is not considered significant
EASA	Appendix A, Table A-6, Example 21	An avionics change replacing an integrated avionics system with another integrated avionics system.	Change to aircraft configuration NO Change to principles of construction NO Assumptions used for certification are invalidated NO Note The assumptions used to certify a highly integrated avionics system should be the same for another highly integrated avionics system.	add this example	Agree. Added new Example 20 to “not significant” table: EXAMPLE: An avionics change replacing an integrated avionics system with another integrated avionics system. Configuration: No Principles of construction: No Assumptions changed: No NOTES: The assumptions used to certify a highly integrated avionics system should be the same for another highly integrated avionics system.

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EASA	Appendix A, Table A-6, Example 1X	Change in type or number of emergency exits by deactivating existing emergency exits.	<p>Change to aircraft configuration NO</p> <p>Change to principles of construction NO</p> <p>Assumptions used for certification are invalidated NO</p> <p>Note the new emergency egress certification specification does not exceed those previously substantiated because the certificated number of passengers demonstrated is reduced</p>	add this example	<p>Partially agree. Instead of adding note, added new Example 17 to "not significant" table:</p> <p>EXAMPLE: Changes in the type or number of emergency exits by de-rating doors or deactivating doors with corresponding reduction in passenger capacity.</p> <p>Configuration: No</p> <p>Principles of construction: No</p> <p>Assumptions changed: No</p> <p>NOTES: The new emergency egress does not exceed that previously substantiated because the certificated number of passengers is reduced.</p>
EASA	Appendix A, Table A-11		The header "Turbine Engines" is missing.	Add header "Turbine Engines".	Agree. Amended as suggested.

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Committer	Paragraph No.	Referenced Text	Question/Comment/Rationale	Suggested Change	Comment Resolution
EASA	Appendix A, Table A-11, Example 7	Novel and new materials and /or novel and new material processes introduced to primary or critical component or structure.	This example was previously not significant, not affecting the general configuration, the principles of construction, the assumptions used for certification. EASA do not find a good justification that a new material alone can affect the principles of construction or the assumptions. Consistent with paragraph 3.6.3, a design change cannot be classified or re-classified as a significant change on the basis of the importance of a later amendment level. A definition would be needed for "primary component" and "critical component". This example contradicts table A-12 (not significant) example 1.	Leave this example in the non-significant table.	Partially agree. This example is now Example 6 in Table A-11. We revised the example description in response to this comment. The revision clarifies that the change is a product level change, and we retained this example in the significant table. Also, we removed the term "primary," which is not in use for engines. As revised, this example is similar to significant examples in Appendix A for parts 23, 25, 27, 29, and 35.

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Commenter	Paragraph No.	Referenced Text	Question/Comment/Rationale	Suggested Change	Comment Resolution
EASA	Appendix A, Table A-11, Example 8	Changes to the engine affecting its bird ingestion capabilities including but not limited to changes that would result in significantly less centrifuging and, therefore, more material entering the core; or changes that would reduce the downstream compressor stages' tolerance to foreign material.	EASA is reluctant to adopt this new example which contradicts paragraph 3.6.3: "A design change cannot be classified or re-classified as a significant change on the basis of the importance of a later amendment level". Changes to the general configuration, the principle of construction, or the assumptions used for certification are assessed at the product level. In applying the automatic criteria, the applicant should focus on the design change itself. Consideration of only the regulatory importance or safety benefit of the latest amendment level is not a justification by itself to cause a design change to be classified or re-classified as a significant change. Introducing this example would make a new safety significant rule retroactive, this could make industry reluctant to agree to such safety improvements in future.	Remove this new example, or revise it to define the product level changes that would justify compliance with new amendment level.	Agree. This example was deleted. The intent of this example is already covered under proposed Examples 3 and 6 of Table A-11, now Examples 2 and 5 of Table A-11. We rolled into Examples 2 and 5 the bird ingestion example and deleted the proposed Example 8. This example was recommended by the ARAC working group for bird ingestion in their report titled <i>Turbofan Bird Ingestion Regulation Engine Harmonization Working Group Report</i> , dated February 19, 2015.

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Commenter	Paragraph No.	Referenced Text	Question/Comment/Rationale	Suggested Change	Comment Resolution
EASA	Appendix A, Table A-11, Example 9	Changes to the engine affecting its induction system icing capabilities, including but not limited to changes that affect fan and core flow path design; compressor/combustor changes affecting engine surge or flameout, material changes affecting ice adhesion; and engine controls changes affecting compressor air bleeds, vane schedules.	Same comment than for Table A-11 Example 8.	Remove this new example, or revise it to define the product level changes that would justify compliance with new amendment level.	Agree. This example was deleted. The intent of this example is already covered under Examples 2 and 5 of Table A-11. We rolled the induction system icing example into Examples 2 and 5, and deleted the proposed Example 9. The wording addressed in this comment no longer exist.
EASA	Appendix A, Table A-11, Example 13	A change in principal physical properties and mechanics of load transfer of a material of primary structure or highly loaded components. For example, change from traditional metal to either an exotic alloy or a composite material on a highly loaded component.	This example was previously not significant, not affecting the general configuration, the principles of construction, the assumptions used for certification. EASA do not find a good justification that a new material alone can affect the principles of construction or the assumptions. Consistent with paragraph 3.6.3, a design change cannot be classified or re-classified as a significant change on the basis of the importance of a later amendment level.	Leave this example in the non-significant table.	Partially agree. This example is now Example 10 in Table A-11. We revised the example description in response to this comment. The revision clarifies that the change is a product level change, and we retained this example in the significant table. An example for a material change that is not significant is already provided in Example 25 in Table A-12 for piston engines. As revised, this example is similar to significant examples in Appendix A for parts 23, 25, 27, 29, and 35.

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Commenter	Paragraph No.	Referenced Text	Question/Comment/Rationale	Suggested Change	Comment Resolution
EASA	Appendix B, Table B-1		Those tables are extracted from the EASA Guidance Material 21.A.101 Appendix C However the Figure 4 of the EASA GM 21.A.101 has not been introduced into the draft AC. It is suggested to introduce it. In that way both guidance Material will be harmonized	It is suggested to introduce Figure 4 into the FAA AC. In that way both guidance Material will be harmonized	Agree. Added Figure 4 under paragraph 3.5.1 as new Figure 3-2.
EASA	Appendix C, Table C-2	Installation of winglets - impacted areas	the description is to detail . If the wing box is affected this already includes spars and skins	delete Spars and skins since they are part of the wing box	Partially agree. Removed "wing box," but retained wing spars and skins.
EASA	Appendix C, Table C-4	Example of a Combined List of Physical and Functional Changes with Applicable Airworthiness Requirements	table C-4 proposed to combine physical and functional changes but the example proposed in the table is only physical.	provide another example	Agree. Added "wing loads."
EASA	Appendix D, D.2	For example, if a passenger seat fitting is changed, the structure of the seat is affected, and thus the amendment level for §§ 25.561 and 25.562, along with other applicable structural requirements, would be at the amendment level on the date of application (unless an exception is granted). However, the seat fabric is not affected, so the amendment level for § 25.853 (flammability) may remain at the existing certification basis, and a new compliance would not be required.	For clarity purpose, such an example should be associated to a significant change. Changing the seat fitting is not significant in itself	identify the significant change to the aircraft	Partially agree. Amended as indicated: "For example, if a passenger seat fitting is changed as part of a significant change, then the structure of the seat is affected, and thus, the amendment level for...."

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Commenter	Paragraph No.	Referenced Text	Question/Comment/Rationale	Suggested Change	Comment Resolution
EASA	Appendix F, F.3.2.1	Determine the differences between the regulation in the existing certification basis and the regulation as amended, and the effect of the change in the regulation. The existing certification basis of the airplane that is being changed is the initial release of part 25. Amendment 25-40 added requirement § 25.1141(f), which mandates that power assisted valves must have a means to indicate to the flightcrew when the valve is in the fully open or closed position, or is moving between these positions.	That example is extracted from the current AC 21.101-A. However the risk addressed by the rule has disappeared in this draft AC wording	Add a sentence identifying the hazard The addressed hazard would be risk of APU fire due to fuel accumulation caused by excessive unsuccessful APU start attempts” to be added	Agree. Added the following to the end of the paragraph: "The addressed hazard would be risk of APU fire due to fuel accumulation caused by excessive unsuccessful APU start attempts."