

**Clearance Record
DOCUMENT COMMENT LOG**

Originating Office: AIR-130	Document Description: AC 20-138D Consolidated Field Comments	Project Lead: Kevin Bridges	Reviewing Office:	Date of Review:
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Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
1. ACE-100	Page A8-2. Sec. A8-1e	The meaning of this sentence is unclear: “Applicants should consider concurrent airworthiness approval with their package.” - Ben Tyson 946-4174	Some applicants may not understand what “concurrent airworthiness approval” means. Also, what does “consider” and “with their package” mean?	Clarify terminology, or remove the statement.	Accepted. The sentence has been changed as follows: Applicants should consider concurrently applying for airworthiness approval when submitting data to add GLONASS as a non-TSO function.
2. ACE-100	P.110 Para. 17-2.b	Readability of the long sentence – “..Baro-VNAV equipment manufacturers must specify language in the installation instructions for an AFM(S)/RFM(S) limitation that flight crews/pilots must not rely solely on the baro-VNAV vertical path guidance for compliance to published altitude restrictions during SIDs, STARs and approach procedures. ”	Clarification and editorial.	Change “..specify..” to “..have..” – “..Baro-VNAV equipment manufacturers must have language in the installation instructions for an AFM(S)/RFM(S) limitation that flight crews/pilots must not rely solely on the baro-VNAV vertical path guidance for compliance to published altitude restrictions during SIDs, STARs and approach procedures. ”	Partially Accepted (now chapter 18). Made two sentences as follows: Baro-VNAV equipment manufacturers must include language for an AFM(S)/RFM(S) limitation on baro-VNAV vertical path guidance. The limitation is that flight crews/pilots must not rely solely on the baro-VNAV vertical path guidance for compliance to published altitude restrictions during SIDs, STARs and approach

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					procedures.
3. ACE-100	Appendix 9	Acronyms start in Table of Contents and continue through the AC. Many are not standard acronyms.	Clarification	Move Appendix 9 to new Page x.	Not Accepted. AIR-500 formatting dictates the Acronym list must be in the last appendix.
4. ACE-100	Appendix 7	All Figures in Appendix 7 are misnumbered.			Accepted. Numbers have been corrected.
5. ACE-100	Appendix 10, Para A.10-1.u and v	ACs have been replaced.	Correction	Change u to AC 23.1309-1E and change v to AC 23.1311-1C.	Accepted.
6. ACE-100	A2-4 Para A2-3(a)(2)	The AC requires the most current functional software. This wording may be too restrictive to comply with.	There should be a path in order to show compliance to operational software.	Change the phrase “the most current functional” to “compatible”.	Partially Accepted. The idea is to have operators install software updates that correct defects. But we don’t want to force expensive software updates that simply add new features. The paragraph has been changed as

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					<p>follows including a new note:</p> <p>(2) The TAWS must have the most current certified software version, and a current terrain and obstacle database to be acceptable for RNP AR approach operations. A program to continuously update the TAWS certified software with the latest version and maintain a current terrain and obstacle database is an operator responsibility necessary for continued airworthiness. Aircraft manufacturers must include TAWS update procedures as a continuing airworthiness item during the aircraft RNP AR qualification.</p> <p>Note: The intent behind the most current certified software version is to install updates that correct software defects. There is no intent to force</p>

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					installation of new functions or features.
7. ACE-100	A2-4 Para A2-3(a)(2)	Sentence #2 is a statement about instruction for continued airworthiness, but it is not stated clearly that this is the requirement.	To determine which airworthiness standards apply.	Indicate that for continued airworthiness (ICA) a program and method to update applicable databases must be approved.	<p>Partially Accepted. The second sentence is indicating that operators have to do the updates because, surprisingly, many aren't. But it is the third sentence where the ICA approval happens, i.e., during the OEM RNP AR qualification. The third sentence has been changed to:</p> <p>Aircraft manufacturers must include TAWS update procedures for approval as a continuing airworthiness item during the aircraft RNP AR qualification.</p>
8. ACE-100	Page A7-17	Last line, missing the note			Accepted.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
9. ACE-100	Page A7-17	Calls out Figure 6 and should be Figure 8 instead			Accepted.
10. ACE-100	General comment	This AC is growing with each revision to the point where it is difficult to manage as a reader. It also contains information for the TSO applicant, the installer, and the operator/user. It may be more usable if it was divided into three documents or organized into three distinct sections.		Divide into three documents - TSO applicant, installer, operator/user	Not Accepted. We understand the document is getting very big. But the desire is to consolidate all the guidance into one document rather than having to reference several documents. Additionally, guidance for the TSO applicant (and sometimes aircraft manufacturer), installer, and operator/user are inter-related. It is useful for each to understand the implications of decisions on the other.
11. ANM-100	Page 8 ¶ 2-2 a.(4) ANM-100D	Make it crystal clear that the database process assurance level must also support the design assurance level of the intended function.	Databases are often developed by suppliers who view databases as separate & distinct from software.	Add the following to the end of the sentence: “; and the data process assurance level.”	Accepted. The statement has been added to the end of the first sentence in the paragraph.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
12. ANM-100	Page 32 ¶ 11-3 ANM-100D	Make it crystal clear that database tool qualification must support the design assurance level of the intended function.	Databases are often developed by suppliers who view databases as separate & distinct from software.	<p>Insert the following as 11-4:</p> <p>11-4 Database Considerations</p> <p>a. AC 20-153 (latest revision) defines an acceptable means of qualifying aeronautical database processes. The applicant is encouraged to submit the Compliance Plan early in the development process. Early submittal will allow timely resolution of issues such as tool qualification and database process assurance levels.</p> <p>b. The data process assurance level needed to support the intended function of the installed equipment should be defined in the DQRs.</p> <p>c. Data process assurance levels are normally addressed during the LOA review; but, should be confirmed at installation to ensure the data process assurance</p>	Partially Accepted (now chapter 12). Inserted the suggested text as paragraphs 5-6.2.b and 6-6.2.b where database process qualification is described as part of the TSOA.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
				level, including tool qualification, is appropriate for the intended function of the installed equipment.	
13. ANM-100	Page 66, Section 10-1(b)(2) S. Ripple, ANM-100B	AC states, "Temperature compensation may be provided on segments outside of the final approach segment if the equipment includes a method for the flightcrew to inhibit the compensation function. Equipment manufacturers providing baro-VNAV temperature compensation outside of the final approach segment must specify language in the installation instructions/manual for an AFM(S)/RFM(S) <u>caution that the flightcrew/pilot must coordinate use of temperature compensation with ATC prior to employing this function.</u> The reason for an AFM(S)/RFM(S) caution is to ensure there's no loss of	Requirement to contact ATC may be more appropriate as an operating rule than an AFM cautionary note.	Consider an operational rule for temperature compensation and notification requirements with ATC.	Partially Accepted (now chapter 11). The issue the comment addresses is not in the rulemaking at this time. Rulemaking takes years to accomplish but temperature compensation for VNAV guidance outside the final approach fix is taking place today. AFS-470 is currently working this issue through the NTAP and updating the Aeronautical Information Manual as a means toward an operational resolution; particularly to educate the ATC workforce. However, AFS-470 needs the supporting equipment guidance for an AFM/RFM caution to support these actions.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		<p>separation between an aircraft employing temperature compensation and an aircraft not employing this function.</p> <p>Comment: This requirement sounds more like an operating rule than AFM caution.</p>			
14. ANM-100	Pg 79, 11-11(b)(1) ANM-110	<p>Philosophical: I've been debating whether "classic" and "modern" can be used without further definition. After reflection, I think they are clear enough for the target audience. Let's clarify the allowance, rather than a new distinction between cockpit types.</p>	<p>If an "old" airplane has a new Nav display added for this purpose, then either it ceases to be classic or the fact that it is a classic no longer matters.</p>	<p>Slightly revise text of (b)(1):</p> <p>"Classic" aircraft must <u>add, or have previously added</u>, a display capable...</p> <p><And></p> <p>"Classic" aircraft <u>that cannot demonstrate adequate display capability and clarity</u> must not include...</p>	<p>Partially Accepted (now chapter 12). The entire section was significantly revised and now addresses the concern. The one remaining instance where the term "classic" was used has been changed to "older."</p> <p>Integrating an RNAV (GPS) approach with LPV capability in "classic" cockpits an older cockpit design can be challenging when the onboard navigation database includes step-down fixes due to limited display capability and little or no labeling flexibility.</p>

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15. ANM-100	Pg 66, Para 10-1.b ANM-110	Note for future change, that baro VNAV systems will need to meet temp comp requirements in 236C, appendix H.2 and H.3.	Notice of future change.	Incorporate in 20-138D or change 2. Probably should search document for reference to 236B, since it will be expiring in June time frame.	Accepted (now chapter 11). A new note is inserted as follows in all area referencing DO-236B for baro-VNAV: Note: RTCA/DO-236B is currently under revision. Revision 'C' is expected to address baro-VNAV temperature compensation in appendix H.2 and H.3.
16. ANM-100	Pg 69, Para 10-2.e(2) Table 7 ANM-110	For clarity, suggest deleting the word minimum in the first row and in the note following the table. Suggest changing "≥ 400" to "≤500 (see note 2)" since we do not want FSD > 500 feet. Add this note following table: <i>Note 2: This is the minimum standard for vertical deviation display scaling and does not preclude using a scale of other than +/- 500 ft. (e.g., large PFD display) provided that the scaling is suitable to control</i>	+/-500 ft is consistent with supporting existing operations and supports future VNAV operations outside of the final approach segment.	See comment.	Accepted (now chapter 11).

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		<i>the aircraft on the intended path.</i>			
17. ANM-100	Pg 69, Para 10-2.e ANM-110	Add para 10-2.e(4) “Scale change for the final approach shall be done in a manner that supports operational suitability for transitioning onto the final approach segment.”	No where do we define where the transition to approach scaling should occur (e.g., 2 nmi before FAF). This recommendation was designed to be flexible.	See comment.	Partially Accepted (now chapter 11). ‘Must’ was substituted for ‘shall’ in the suggested text.
18. ANM-100	Pg 69, Para 10-2.e ANM-110	We should add a para 10-2.e(5) that discusses angular scaling: Below is text we recently drafted for MASPS revision: Baro VNAV systems using angular vertical scaling shall meet the following: 1) The deviation scaling suitably supports the FTE monitoring and bounding (75 ft	No where do we define the requirements for baro VNAV systems intended to be flown like ILS (e.g.. FLS, IAN).	See comment.	Partially Accepted (now chapter 11). ‘Must’ was substituted for ‘shall’ in the suggested text.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		<p>deviation below path).</p> <p><i>Note: This may require limiting the length of the approach to exclude operating where the angular deviations no longer support monitoring and bounding of the FTE.</i></p> <p>2) The deviation limits are equivalent to the operational limits for glideslope deviations during an ILS approach</p>			
19. ANM-100	Pg 78, Para 11-11 ANM-110	Propose deleting note 2 or at a minimum the first sentence “ARINC 424 is not specified by any positioning or navigation TSO.”	This seems to imply that we have problems with ARINC 424. I do not think this note provides any value to anybody.	See comment.	<p>Partially Accepted (now chapter 12). Paragraph 11-11 is now paragraph 11-8. The note’s purpose was to inform the reader that ARINC 424 isn’t a required equipment standard to emphasize the point that step-down fixes are optional. The note has been changed as follows:</p> <p>Note 3: ARINC 424 is not specified by any positioning or navigation</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					TSO. Nor is there any TSO requirement to include step-down fixes in navigation databases for LNAV or LNAV/VNAV approach procedures.
20. ANM-100	Pg 79, Para 11-11.b.(1) ANM-110	Not sure what is meant by “classic” in the last paragraph. Are we really talking about vertical profile display” Just having a PFD, MFD does not solve the problem of displaying step down fixes unless we are talking about a vertical view.	Not sure what is meant by adequate display?	Propose changing “classic” and “modern” with “vertical profile displays or similar display that can distinguish step down fixes from waypoints in the flight plan”	<p>Partially Accepted (now chapter 12). Paragraph 11-11 is now paragraph 11-8. The entire section was significantly revised and now addresses the concern. The one remaining instance where the term “classic” was used has been changed to “older.”</p> <p>Integrating an RNAV (GPS) approach with LPV capability in “classic” cockpits an older cockpit design can be challenging when the onboard navigation database includes step-down fixes due to limited display capability and little or no labeling flexibility.</p>

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21. ANM-100	Pg 79, Para 11-11.b.(1) ANM-110	Insert a new item 11-11.b.(1)(i): “Insertion of step down fixes (as waypoints in the flight plan) must not interfere with LPV approach construction via the path point data record.”	Seems like there could be potential to interfere with FAS data block.	See comment.	<p>Accepted (now chapter 12). Paragraph 11-11 is now paragraph 11-8. The entire section was significantly revised the following sentence was added to the pertinent paragraph:</p> <p>Additionally, step-down fixes must not interfere with LPV path construction via the FAS datablock.</p>
22. ANM-100	Pg 79, Para 11-11.b.(3) ANM-110	Change “However, “modern” cockpits with a PFD and MFD can...” to “However, “modern” cockpits with a vertical profile display can ...”	Just having a PFD, MFD does not solve the problem of displaying step down fixes unless we are talking about a vertical view.	See comment.	<p>Partially Accepted (now chapter 12). Paragraph 11-11 is now paragraph 11-8. The entire section was significantly revised. Paragraph 11-8.a contains the following sentence:</p> <p>Showing step-down fixes on a vertical profile display can enhance flightcrew situation awareness, but can also introduce complicating installation issues (see paragraphs 11-8.b through 11-8.d).</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
23. ANM-100	Pg 79, Para 11-11.b.(3) ANM-110	Similar to the LPV statements regarding step down fixes, is the Baro VNAV systems that are intended to be flown like ILS. These systems should also not have step down fixes inserted in to the flight plan since step down fixes are not associated with ILS.		Propose inserting “Baro VNAV systems intended to be flown like ILS” for places where we discuss LPV.	Not Accepted (now chapter 12). Paragraph 11-11 is now paragraph 11-8. Baro-VNAV implementations can only be used during LNAV and LNAV/VNAV approaches where step-down fixes DO apply. Paragraph 17-2.b is specific to baro-VNAV for all operations, including step-down fixes during approaches. Therefore, baro-VNAV should not be flown like ILS where step-down fixes DO NOT apply.
24. ANM-100	Pg 79, Para 11-11.d ANM-110	In 2 nd sentence, change “attempt to place step down fixes on the LNAV/VNAV glidepath” to change “attempt to place step down fixes at or below the LNAV/VNAV glidepath”	Step down fixes should rarely be on the gligepath since that would not allow for the crew to use normal bracketing during the approach.	See comment.	Accepted (now chapter 12). Paragraph 11-11 is now paragraph 11-8.
25. ANM-100	Pg 79, Para 11-11.d ANM-110	In middle of paragraph, add the following lead in text: “Unless approved for primary means VNAV (VNAV flown like ILS), equipment manufacturers	The new text goes against how we approved FLS and IAN like approach functions.	See comment.	Not Accepted (now chapter 12). Paragraph 11-11 is now paragraph 11-8. The term “primary means” is obsolete and not used in the AC. Further,

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		must include language in their installation manual/instructions...”			<p>pilots must not rely on the VNAV guidance for compliance to step-down fix altitude restriction during an LNAV or LNAV/VNAV approach regardless of the approval category.</p> <p>This includes SBAS-based VNAV since a stand-alone LNAV/VNAV (no underlying LPV) path construction is the same as for baro-VNAV (i.e., no FAS datablock).</p>
26. ANM-100	Pg 110, Para 17-2.b. ANM-110	In 2 nd sentence, add the following lead in text: “Unless approved for primary means VNAV (VNAV flown like ILS), equipment manufacturers must specify language in the installation instructions...”	The new text goes against how we approved FLS and IAN like approach functions.	See comment.	Not Accepted (now chapter 12). The term “primary means” is obsolete and not used in the AC. Further, pilots must not rely on the baro-VNAV guidance for compliance to any altitude restriction regardless of the approval category.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
27. ANM-100	Page 116 ¶ 18-8 ANM-100D	Source of data needs to be expanded beyond the FAA.	The FAA is not the sole source of data used to generate databases.	Change “FAA” to “source”	Accepted (now chapter 19).
28. ANM-100	Pg A7-1, Appx 7 ANM-110	This appendix needs to be clearer about intent, and about why it exists. I think I understand, but applicants may not (or may not want to.)	<p>I am uncertain whether, and the draft AC does not say much about it in prior sections:</p> <p>Do we expect each applicant to build a real or virtual test track to demo their RF capability?</p> <p>Do we plan large (or minimal) allowances for use of simulators?</p> <p>This is probably most of an FTE demonstration. But we don't say so.</p>	<p>With those understood, let's say them clearly: What do we expect applicants to do, and how do we expect them to accomplish it.</p> <p>(With suitable distinction between expect or recommend, and “require” which we can't do in an AC.)</p>	<p>Accepted. Paragraph A7-1 has been changed (highlighted in yellow) as follows:</p> <p>Airworthiness applicants must demonstrate the aircraft's capability to perform all types of RF Turns that can be published on instrument procedures per the procedure design criteria. This appendix provides templates developed by the MITRE Corporation under contract to the FAA that are an acceptable method to demonstrate an aircraft's capability to perform RF Turns. Applicants may use engineering simulations and/or aircraft for the flight test demonstrations. The templates depict the...</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
29. ASW-100	Page 79 & Page A2-25	Page 79: it is unclear if “State” pertains to a foreign country or U.S. State. Page A2-25 use of “State” implies a foreign country. (LMP)	Ambiguous between domestic and foreign operations.	Possibly use another term for foreign country instead of “State”.	Accepted. Changed to read: “...in other <u>ICAO</u> States.”
30. ASW-100	Page A7-1	Page A7-1 references “figure 2”. Intention might have been to reference figure 4. (LMP)	Incorrect Figure reference.	Reference Figure 4 instead of Figure 2.	Accepted.
31. AFS-400	Pg 4, Para 1-4.d(2) AFS-470	Airman’s Information Manual should be Aeronautical Information Manual		<u>Aeronautical</u> Information Manual	Accepted.
32. AFS-400	Pg A7-1, Para A7-1.a note AFS-470	Since this Appendix can apply to AR and non-AR recommend adding “and AC 90-105” to this Note. Note: Simply completing an RF Turn Demonstration does not imply or confer any approval or qualification to conduct any procedure requiring RNP AR such as RNAV (RNP) approaches. See appendix 2 for guidance on aircraft		See appendix 2 for guidance on aircraft qualification and the latest revision of AC 90-101 AND AC 90-105 for guidance on aircrew approval.	Not Accepted. The note is specific to RNP AR aircraft certification so that nobody can misinterpret the guidance. Further, according to 90-105, Part 91 (other than subpart K) does not require an ops approval to do RF Turns. Chapter 7 in the AC contains a more detailed explanation of the ops approval relationship with

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		qualification and the latest revision of AC 90-101 for guidance on aircrew approval.			ACs 90-101 and 90-105.
33. AFS-400	Pg A7-3, Para A7-2.1 figure 5 AFS-470	“Northwest Departure” appears to fly to the northeast.		Suggest renaming as “ALPHA Departure” and “BRAVO Departure”	Accepted. All procedure names have been made generic.
34. AFS-400	Pg A7-4, Para A7-2.1.b AFS-470	The “Southwest Departure” shown in Figure 4 ,Figure 6		Change to Figure 6	Accepted.
35. AFS-400	Pg A7-5, Para A7-2.2 AFS-470	The arrival is shown in Figure 4 Figure 7		Figure 7...might want to check the other Figures to make sure they match the text.	Accepted. All table and figure numbers have been corrected.
36. AFS-400	Pg 5, Para 1-4.f(2) AFS-450	The Answer needs to be further clarified.	As it is, the answer "Both." does not fully explain. The ensuing text explains the difference between RNAV and RNP, which leaves you asking the question, so how can RNAV be RNP if it does not have monitoring and alerting?	To eliminate this question, take the explanation from paragraph 5-1.a, insert it here, and also make reference to 5-1.a, i.e., rewrite 1.4.e(2) to say, "The answer is both because RNP is a subset of RNAV that includes a requirement	Partially Accepted. There is no need to reference paragraph 5-1.a since that information has been incorporated into 1-4.f.(2) per the suggestion, and 1-4.f(2) is a more detailed explanation.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
				to provide on-board navigation system accuracy performance monitoring and alerting. See paragraph 5-1.a. RNAV systems conform to....."	
37. AFS-400	Pg 78, Para 11-8.d AFS-450	Description of current procedure design criteria needs to be clarified	Disagree with the broad statement in general which says that we attempt to place altitudes "on the LNAV/VNAV glidepath". That implies a stepdown fix is applicable to an LNAV/VNAV approach, when it is really only applicable to the LNAV. The requirement in TERPS (paragraph 252c) is to "establish stepdown fixes at the lowest altitude possible...". So what we really try to do is to establish stepdown fix altitudes that are at or below the applicable VDA.	Change the 2nd sentence to read, "The current procedure design criteria establishes stepdown fixes at the lowest altitude possible, and at altitudes that are at or below the applicable VDA."	<p>Not Accepted (now chapter 12). There has been an on-going discussion with the procedure design group over this issue. As stated in the rationale, step-down fixes can be established at the applicable VDA. However, it is possible that errors in the baro-VNAV generated glidepath can take the aircraft <u>below</u> a step-down fix altitude that is on the VDA.</p> <p>Hence the historic airworthiness requirement repeated in this AC for a limitation to rely on the barometric altimeter for compliance with all step-down fixes for LNAV/VNAV minima.</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
38. AFS-400	A7-1 - 7-18 Appendix 7	There is no need to address RNAV (GPS) as non-RNP AR nor RNAV (RNP) as RNP AR.	<p>In paragraph 1-4.a(2), and again in paragraph 5-1.a, you have established the relationship between RNAV and RNP. And in the Introduction paragraph, you state, " The templates depict the various RF Turns procedure designers might use when constructing actual initial, intermediate, or missed approach segments for RNAV (GPS) or RNAV (RNP) approaches along with SIDs and STARs."</p> <p>So all that is required is to state RNAV (GPS) or RNAV (RNP), and eliminating the parenthetical expressions throughout this Appendix will make it more readable.</p>	Delete the references to non-RNP AR and RNP AR and use RNAV (GPS) and RNAV (RNP). So, for example, the first sentence in paragraph A-7.1.c would read, " It should be noted that the MITRE-developed templates are designed for use on both RNAV (GPS) and RNAV (RNP) procedures with RF Turns."	Not Accepted. There are many people confused by the procedure naming conventions adopted by the U.S.
39. AFS-400	Pg . 122, Para 22-3.2 AFS-420	Theodolite observations or measurement to ILS compares two different detected will not be from the designed path (linear vs curvilinear). The techniques are no longer used in flight check which uses the actual coded path and appropriate		Revise to reflect current path definition and technology used in checking techniques.	<p>Partially Accepted (now chapter 23). No specific change language submitted to clearly resolve comment.</p> <p>Changed paragraph 22-3.2.a as follows:</p> <p>This evaluation can be made by</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		path definition.			using the actual coded path and appropriate path definition.
40. AFS-400	Pg . 122, Para 22-3.2.b note 1. AFS-420			Modify note and paragraphs to reflect actual baro-VNAV path definition . Compares linear to curvilinear paths with different intercept points	<p>Partially Accepted (now chapter 23). No specific change language supplied with the recommendation.</p> <p>The differences between baro-VNAV and SBAS LNAV/VNAV are clearly documented in paragraph 17-5, but SBAS LNAV/VNAV is the closest other system to baro-VNAV.</p> <p>Added the following sentence to note 1:</p> <p>See paragraph 18-5 for a description of GPS/SBAS versus baro-VNAV differences.</p>
41. AFS-300	Pg 74, Para 11-7.a & b.	If the functions are removed or disabled will it still meet the TSO?	In other applications, we placard equipment and make entry in the limitations section of the AFM(S)/RFM(S) – for instance when IFR capable	Use placards and limitations in the AFM(S)/RFM(S) – (only IF the TSO would be affected).	<p>Partially Accepted (now chapter 12). If the TSO is affected there would have to be an approved deviation to the TSO and along with any limitations if needed.</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
			<p>Nav equipment is installed in a VFR aircraft – we state that the equipment is not authorized for IFR use.</p>		<p>The real concern being addressed is for optional functions permitted by TSO. So the paragraphs have been changed as follows:</p> <p>a. Positioning and navigation avionics might have optional TSO functions that are not supported at the aircraft level after installation. The avionics must have the functions inhibited through configuration settings (e.g., strapping, software, etc.) if the aircraft is not qualified to perform those functions. The AFM(S)/RFM(S) must contain an appropriate entry for any limitations.</p> <p>b. An example to illustrate the guidance in paragraph 11-7.a is avionics with the capability to perform RF Turns. The installed avionics might have approved RF Turn capability, but the aircraft</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					lacks some necessary capability. For that installation, the avionics would need to have the RF Turn capability inhibited.
42. AFS-300	Appendix 7.	The table and figure numbers in the text do not match up with the intended tables and figures. Also, the numbering system for tables and figures in the appendix should not be tied to the main document. That is, Appendix 7 and other appendices should restart the numbering and be specific to each appendix.			Partially Accepted. The numbering mismatch has been corrected. However, the numbering scheme is dictated by AIR-500 formatting requirements.
43. AIR-500	Global Change	Incorrect format.		When there is only one paragraph and no subparagraphs in a section; begin the paragraph text directly after the paragraph title.	Not Accepted. This is the same format carried forward from AC 20-138B and changing it does not add to the reader's understanding. More importantly, making the change suggested prevents incorporating a Microsoft Word automation feature that links the table of contents

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					<p>page numbers directly to the paragraph in the body of the document. This automation feature is invaluable to readers given the size of the AC. That is, the ability for a reader to search the table of contents to find a specific topic, then with one click, go directly to the paragraph is extremely important when using a document of this size.</p> <p>Causing this useful automation feature to be disabled does have an adverse impact on the reader, so the suggested change will not be incorporated.</p>
44. AIR-500	Global Change	Reminder.		For all the pages that changed, make sure to include "Change 1" in the header.	<p>This comment is OBE. After consulting with AIR-500, AIR-130 management decided to make this document revision 'D' rather than 'Change 1.' The header on all pages have been updated from 'Change 1' to 'AC 20-</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					138D.'
45. AIR-500	Global Change	Reminder.		Remove all highlight from text during the final draft.	Accepted. The highlighting is a convenience requested by many reviewers during AC 20-138C review cycle to aid in finding the changes.
46. AIR-500	Global Change within Appendix 10	Incorrect labeling of "Appendix 10" in the header.	Delete "Appendix 1" found in the AC number.	Replace with "Appendix 10".	Accepted.
47. AIR-500	Header Section, Page I (Cover Page)	Incorrect year.	Delete the date "2/X/12".	Replace with 2/X/13".	Accepted.
48. AIR-500	Page Control Chart, Cover Page	Incorrect format.		Page numbers all changed, so all pages need to be replaced including Table of Contents.	Comment is OBE.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
49. AIR-500	Sub-paragraphs e(1) & f, Pages 5 & 6	Define the term “technical standard order” at the first usage.		Use the acronym “TSO” after the first usage.	Accepted.
50. AIR-500	Sub-paragraph g(2), 2 nd sentence, Page 7	Define the term “instrument landing system” at the first usage.		Use the acronym “ILS” after the first usage.	Partially Accepted. The term ILS is not used in paragraph g. The first use is in paragraph h.
51. AIR-500	Paragraph 4-1, last sentence, Page 17	Incorrect spacing.		There should be only two spaces between sentences.	Accepted.
52. AIR-500	Paragraph 4-1, Note 2, Page 17	The term “instrument landing system” should be defined at the first usage on page 7.		Use the acronym “ILS”.	Accepted.
53. AIR-500	Paragraph 10-2c, 2 nd sentence, Page 67	Missing capitalization.		Capitalize the term “Table”.	Partially Accepted (now chapter 11). Unable to find an incorrect capitalization. All uses of Table 6 are capitalized in this paragraph and all nearby paragraphs

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54. AIR-500	Paragraph 11-11, Page 78	Missing period.		Place a period after the term “databases” in the paragraph title.	Accepted (now chapter 12).
55. AIR-500	Paragraph 11-11b, Note Section, Page 79	Clarity.		Should the term “States” be used here? May want to reconsider word usage to “airworthiness authorizes”, “countries”, or “ICAO Member States”.	Accepted (now chapter 12).
56. AIR-500	Paragraph 11-11b(3), 1 st sentence, Page 79	Define the term for the acronyms “PFD” and “MFD” at the first usage.		Use the acronyms “PFD” and “MFD” after the terms have been defined.	Comment is OBE due to extensive paragraph revision.
57. AIR-500	Appendix A, Pages A2-1, A2-2, & A2-3,	Clarity.		A2-1, A2-2, and A2-3 are not paginated as in the current version. May need to “replace” the entire appendix.	Erroneous Comment. The pages do have page numbers.
58. AIR-500	Appendix 2, Sub-paragraphs (i) – (iv), Page A2-25	Incorrect format.		All text on the second line or beyond in a sentence or paragraph should return to the left margin or use left justify.	Accepted.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
59. AIR-500	Appendix 2, Note section, Page A2-25	Clarity.		Reconsider word usage when using the term “State/States”. You may reconsider using terms like “countries or ICAO Member States”.	Accepted.
60. AIR-500	Appendix 7, Page A7-1	Incorrect format.		Missing change marks in Appendix 7.	Accepted.
61. AIR-500	Appendix 7, Paragraph A7-1b, c, & Note Section Page A7-1	Clarity.		Is this figure 2 on page 6? Clarify where this figure is found.	Partially Accepted. The figure was mislabeled and now says figure 4. Figure 4 has been moved under the note to paragraph A7-1.b
62. AIR-500	Appendix 7, Paragraph A7-1d, 3 rd sentence, Page A7-1	Missing orders titles.		Place the orders title after the order number at the first usage.	Partially Accepted. FAA Orders should not be listed since they only apply to FAA employees. A concerted effort was made in previous revisions to eliminate all references to orders. The order numbers have been deleted so the sentence makes a generic reference to FAA orders.

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63. AIR-500	Appendix 7, Paragraph A7-1d, 3 rd sentence, Page A7-1	Missing period.		Place a period after the reference to “paragraph A7-1.c”.	Accepted.
64. AIR-500	Appendix 7, Paragraph A7-1e, 1 st sentence, Page A7-2	Missing abbreviation marking.		Rewrite to read: the text instrumental procedures are designed and located at a central U.S. airport with an...	Comment is OBE.
65. AIR-500	Appendix 7, Paragraph A7-2.1., last sentence, Page A7-3	Clarity.		Is this figure 3 on page A2-20? Clarify what page this figure is found on or is this figure 5.	Accepted. The figure numbering has been revised throughout the appendix.
66. AIR-500	Appendix 7, Paragraph A7-2.1., last sentence, Page A7-3	Missing capitalization.		Capitalize the term “Table”.	Accepted.
67. AIR-500	Appendix 7, Paragraph last sentence, A7-2.1., Page A7-3	Missing period.		Place a period after the reference to “Table 14”.	Accepted.

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68. AIR-500	Appendix 7, Paragraph A7-2.1b, 1 st sentence, Page A7-4	Typo.		This figure should be reference as “Figure 6” not “Figure 4”.	Accepted.
69. AIR-500	Appendix 7, Paragraph A7-2.1b, 2 nd ^t sentence, Page A7-4	Missing capitalization.		Capitalize the term “Table”.	Accepted.
70. AIR-500	Appendix 7, Paragraph A7-2.2, 3 rd & 4 th sentences, Page A7-5	Clarity.		Are figures 4 & 5 correctly reference in this paragraph or should figure 7 be reference here?	Accepted.
71. AIR-500	Appendix 7, Paragraph A7-2.2, 3 rd sentence, Page A7-5	Improper capitalization.		Remove capitalization from the term “table”.	Not Accepted. All previous comments were to capitalize “table” when it is used with a number as in “Table 16.” Comment is inconsistent with previous comments.
72. AIR-500	Appendix 7, Paragraph A7-2.3b, 1 st sentence, Page A7-7	Clarity.		Is figure 6 correctly reference in this paragraph or should figure 8 be reference here?	Accepted.

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73. AIR-500	Appendix 7, Paragraph A7-2.3b, last sentence, Page A7-7	Improper capitalization.		Remove capitalization from the term “table”.	Not Accepted. All previous comments were to capitalize “table” when it is used with a number as in “Table 17” and “Table 18.” Comment is inconsistent with previous comments.
74. AIR-500	Appendix 7, Paragraph A7-2.3c, 1 st sentence, Page A7-9	Clarity.		Is figure 7 correctly reference in this paragraph or should figure 9 be reference here?	Accepted.
75. AIR-500	Appendix 7, Paragraph A7-2.3c, 2 nd sentence, Page A7-9	Clarity.		Is figure 6 correctly reference here?	Accepted.
76. AIR-500	Appendix 7, Paragraph A7-2.3c, Figure 9, Page A7-10	Incorrect format.		Move the labeling of “Figure 9” to previous page to appear the actual figure.	Accepted.
77. AIR-500	Appendix 7, Paragraph A7-2.3d, 1 st sentence, Page A7-11	Clarity.		Is figure 8 correctly reference in this paragraph or should figure 10 be reference here?	Accepted.

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78. AIR-500	Appendix 7, Paragraph A7-2.3d, last sentence, Page A7-11	Improper capitalization.		Remove capitalization from the term “table”.	Not Accepted. All previous comments were to capitalize “table” when it is used with a number as in “Table 21” and “Table 22.” Comment is inconsistent with previous comments.
79. AIR-500	Appendix 7, Paragraph 7-3b, 1 st sentence, Page A7-14	Missing abbreviation marking on “U.S.”		Rewrite to read: The test instrument procedures are designed and located at central U.S. airport with...	Comment is OBE.
80. AIR-500	Appendix 7, Paragraph 7-3c, 1 st sentence, Page A7-14	Change wording.		Rewrite to read: The information in the following tables list test conditions such as generic...	Partially Accepted. The tables span more than one page which makes labeling the tables difficult to read and interpret. Instead, the table format has been converted into paragraph format and paragraph numbering has been retained.
81. AIR-500	Appendix 7, Paragraph 7-3c, Page A7-14	Reminder.		Refer to Tables 23 & 24 which will contain the information in the paragraphs. Make sure to update the “Table of Contents”.	See comment 39.

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82. AIR-500	Appendix 7, Paragraph A7-3.1, Page A7-15	Incorrect format.	Delete the paragraph labeling “A7-3.1”.	Replace and label figure as “Table 23”.	See comment 39.
83. AIR-500	Appendix 7, Paragraph A7-3.2, Page A7-16	Incorrect format.	Delete the paragraph labeling “A7-3.2”.	Replace and label figure as “Table 24”.	See comment 39.
84. AIR-500	Appendix 8, Page A8-1	Define the term for the acronym “GLONASS” in the appendix title.		Use the acronym “GLONASS” after the first usage.	Not Accepted. GLONASS is a <u>Russian</u> acronym for their satellite constellation. In ICAO and the <u>English</u> speaking world, GLONASS (capitalized) is used as a proper name for the constellation (similar to RADAR eventually becoming a proper name rather than an acronym). This is why GLONASS is not in the acronym list, but is in the definitions.
85. AIR-500	Appendix 9, Paragraphs A9-1 & A9-2, Pages A9-1 thru A9-3	Missing revision/change mark.		Place a revision/change mark beside the entire paragraphs A9-1 & A9-2.	Not Accepted. Appendix 9 and appendix 10 are not “new.” These appendices were merely displaced when Appendix 7 and 8 were added.

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86. AIR-500	Appendix 10, Paragraph A10-1h, Page A10-1	Missing revision/change mark.		Place a revision/change mark beside paragraph 10-1h.	Accepted.
87. EASA	Table 7, 1 st row, first column	This seems a bit contradictory, i.e. a minimum full scale deflection that is greater than or equal to. Also, the SC-227 is setting the FSD limit at 500 ft.	In the SC-227/WG-85 discussion, we are focusing on a full scale of 500 ft. to support future VNAV concepts. Is there a particular reason why 400 ft. was chosen? And if so, should SC-227/WG-85 consider 400 ft. instead of 500 ft.?	Change the text to: ≤ 500 ft.	Accepted.
88. EASA	Table 7, Note	The values for the display scaling have been chosen so that these are appropriate to steer the aircraft on the intended flight path and allow for monitoring of the FTE boundaries at half-scale. It may be beneficial to add wording to the AC that reflects the above.	There is merit in standardizing the displays for Baro-VNAV operations across the fleets. Allowing exceptions doesn't typically help with achieving this. Considering the difficulties associated with changing existing displays, I'd suggest that standardization is required for new display installations, allowing deviations for existing displays only.	Clarify note to indicate that new displays must be standardized for display scaling while allowing deviations for older displays.	<p>Partially Accepted.</p> <p>Standardizing on a fixed value of 500' and 150' is a good goal, but SC-227 was not able to get industry consensus to adopt it. We cannot mandate a fixed scaling if other alternatives have been shown adequate such as for large PFDs.</p> <p>The note has been changed as follows:</p> <p>Note 1: This is the minimum standard for</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					<p>vertical deviation display scaling and does not preclude using a scale of other than +/- 500 ft. (e.g. large PFD display) provided that the scaling is suitable to control the aircraft on the intended path.</p> <p>Note 2: Other values of full-scale deflection for approach may be acceptable provided the proposed value is found satisfactory by an engineering evaluation.</p>
89. EASA	Pg 93, Para 14-5, RF turn example	Although I very much like the example for its simplicity, I am a bit concerned that the example may be misinterpreted by applicants, i.e. that the function and a display will provide for an acceptable means of compliance.			<p>Accepted (now chapter 15). Changed the wording to be less open to misinterpretation, though 14-5 now references 11-7.</p> <p>11.7.a states: An example to illustrate the point is avionics with the capability to perform RF Turns. The installed avionics may have approved RF Turn capability, but the aircraft lacks one or more</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					necessary capabilities such as a roll-steering autopilot or displays able to depict RF Turns.
90. EASA	Pg 94, Para 14-7.2.c	Should an AFM limitation even be necessary if these procedures cannot be selected from the database?			Not Accepted (now chapter 15). An AFM limitation is needed to describe equipment installed performance limitations; particularly when a TSO required capability is not provided (i.e., there is a TSO deviation). The limitations are necessary to ensure the flight crew understands the equipment/aircraft capabilities.
91. EASA	Pg 106-107, Para 15-5, 1 st sentence	This appears a bit contradictory. If the function is to be disabled, then what is the purpose of the AFM(S)/RFM(S) limitation?			Not Accepted (now chapter 16). An AFM limitation is needed to describe equipment installed performance limitations. The limitations are necessary to ensure the flight crew understands the equipment/aircraft capabilities.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
92. EASA	Pg A2-4, Para A2-3.a(1)	Does this apply to A/C that do not need to be fitted by TAWS by OPS rule as well?			Not Accepted. It is highly unlikely there will be an applicant for RNP AR operations that isn't required by rule to have Class A TAWS. However, all RNP AR applications are individually reviewed so that any future applicant not required to carry TAWS would have to demonstrate an equivalent level of safety.
93. EASA	Pg A2-4, Para A2-3.a(2)	We are aware that an FAA study showed that some airlines never bothered to update the TAWS software and /or terrain database, but from my own airline experience, we know that some airlines carefully study the changes provided with each software or database update and determine the applicability of the changes to their own operation on a case-by-case basis, based on the route structure etc. Another aspect to consider is that many S/W updates require a	We therefore wonder if this requirement isn't putting undue burden on those operators who have such a process in place. For example, if the database change only adds a minor runway in Cameroon that an airline does not operate to and doesn't use as an alternate, why would it be obliged to put in the effort of updating it's fleet for the sake of operating AR approaches in the US?		Accepted. The following note is added for clarification: Note: The intent behind the most current operating software version is to install updates that correct software defects. There is no intent to force installation of new functions or features.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		certification effort before these can be installed on the aircraft.			
94. EASA	Pg A2-4, Para A2-3.a(4)	<p>The sentence states: “It is recommended that the TAWS use altitude that is compensated for local pressure and temperature effects (e.g., corrected barometric and [emphasis added] Global Navigation Satellite System (GNSS) altitude).”</p> <p>Should this not be ‘or’ GNSS Geometric Altitude need not be compensated for temp and barometric errors.</p>		Replace ‘and’ with ‘or’.	Accepted.
95. EASA	Pg A2-25, Para A2-8.c(1)(d)(iv)	The US has RNP-AR procedures with multiple lines of minima, where using the RNP AR 0.3 instead of the <0.3 minima may an option. Many approaches however do not have multiple lines of minima, in which case this			<p>Accepted. Clarified the sentence by changing it to:</p> <p>Instead, the operator must plan to use RNP AR 0.3 if that line of minima exists for the procedure.</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		instruction is not very useful.			
96. EASA	Pg A2-25, Para A2-8.c(1)(d)(iv) Note	It is assumed that an operator is granted operational approval by the state of registry to conduct AR approaches. In other words, a US operator approved by the FAA to conduct AR approaches may do so in Europe, with limited involvement of the state publishing the approach. Should each state publish RAIM requirements on the approach chart?			<p>No Change Necessary. The note simply states that our guidance only applies to the U.S. and that other States might have different operational requirements that operators must comply with.</p> <p>What is the suggested change to better clarify?</p>
97. EASA	Pg A7-1, Para A7-1.c	Should it therefore not be better to have separate templates for AR and non AR?			<p>Not Accepted. The templates were originally created for RNP AR demonstrations, but the difference is minimal for non-RNP AR.</p> <p>This paragraph simply points out the fact that using the templates for</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					non-RNP AR is conservative, but isn't unduly burdensome. It isn't worth the cost to create separate templates with the minor changes that are needed.
98. EASA	Pg A7-1, Para A7-1.e	The concept of providing templates seems promising. Just out of curiosity: Was climate a factor in the decision to use a 'central US airport'? If so, would it be worthwhile to elaborate more on these aspects to better inform applicants what a suitable location is?			<p>Partially Accepted. Climate was not a criteria for the templates, nor is it important that the template uses an airport in the Central U.S. The templates are designed to match the procedure design criteria.</p> <p>The sentence was changed to: "The test instrument procedures are designed and located at an airport with an elevation of approximately 1500 ft MSL.</p>
99. EASA	Pg A7-3, Para A7-2.1.a	The second sentence states: "One of the procedures mimics a conventional design at Boston Logan that has proven difficult for some higher performing aircraft to use."		Suggest re-wording.	Accepted. Changed "higher performing" to "high performance".

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		This may be subject of misinterpretation: A higher performing airplane does not necessarily perform better on an RF leg.			
100. EASA	Pg A7-15, Para A7-3.1 3 rd row.			Suggest moving note under condition A003 since that is what it refers to.	Partially Accepted. The format was changed from a table to paragraph format in response to another comment.
101. EASA	Pg A7-16, Para A7-3.1 last row.			Suggest making the last paragraph under the condition column a note.	Accepted.
102. EASA	Pg 5, Para 1-4.e(2)(c) last two sentences. Bonillo- Martinez	Discussion on the content of the database and final responsibilities regarding this content			No Change Necessary. Not sure what the comment means.
103. EASA	Pg 7, Para 1-4.f(2)(a) third sentence. Bonillo- Martinez	The sentence in question states: This specific situation is addressed in the policy on integrated modular avionics, AC 20-170 (latest revision)	This is focused on a functional TSO on IMA. My understanding is that the incomplete system cannot be authorized under any TSO-C129, TSO-C145/6 or TSO-C196 even if not to be		Not Accepted. Incomplete TSOs are authorized provided they can be installed as an independent unit and provide a subset of the required TSO functionality. The sentence

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		Integrated Modular Avionics Development, 100. EASA Verification, Integration, and Approval Using RTCA/DO-297 and Technical Standard Order-C153.	intended as part of an IMA.		in question is specifically addressing the idea of a circuit card assembly which does not qualify for an incomplete system TSO because it cannot be installed as an independent unit.
104. EASA	Pg 21, Para 5-1.a second sentence Bonillo-Martinez	The sentence states that RNP is a subset of RNAV. Doesn't RNP cover all requirements of RNAV?			No change necessary. The full sentence already states this fact, particularly when taken in context with the first sentence. There has been much confusion about RNAV versus RNP and whether <u>GNSS is an RNAV or RNP system. The answer is both</u> because RNP is a subset of RNAV that includes a requirement to provide on-board navigation system accuracy performance monitoring and alerting.
105. EASA	Pg 27, Para 5-3.2.e last sentence. Bonillo-Martinez	This part of the AC is giving sensor reqs.	In my opinion this is not the correct place in the AC to cover installation aspects (chapter 11 and following).		No change necessary. Having the last sentence completes the guidance for the paragraph thereby making it easier for the TSO applicant (who may

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					<p>also be an airworthiness applicant) to understand the implication.</p> <p>Paragraph 14-7.2.c in the GPS/SBAS LP installation considerations section also has similar language in case the reader skips to the airworthiness section.</p>
106. EASA	Pg 33, Para 5-6.b third sentence. Bonillo-Martinez	See comment 16.			Not Accepted. Not sure what the comment means.
107. EASA	Pg 34, Para 6-2.b second sentence. Bonillo-Martinez	See comment 16.			Not Accepted. Not sure what the comment means.
108. EASA	Pg 66, Para 10-1.b(2) last two sentences. Bonillo-Martinez	Is this not discharging the responsibility to ATC? What about aircrafts using different T. compensation (e.g. incorrect T. selection)?			Not Accepted (now chapter 11). The purpose of the guidance is not “discharging the responsibility to ATC.” The purpose is to inform ATC that temp comp is being applied outside of the

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					<p>FAF. The capability already exists in some aircraft and ATC is currently unaware that it is being applied during descents. Normally, there is no issue since descents are at pilot discretion or at an expected 500' per minute descent rate. If ATC needs aircraft at a certain altitude by a certain time they will issue instructions to that effect.</p> <p>More importantly, as stated in the note, some States do not permit temp comp outside of the FAF. This is why crews should inform ATC if they are using it so that ATC can inform them to stop.</p>
109. EASA	Pg 74, Para 11-7.a second sentence. Bonillo-Martinez	See comment 16.			Not Accepted (now chapter 12). Not sure what the comment means.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
110. EASA	Pg 74, Para 11-7.b last sentence. Bonillo-Martinez	The proper way to solve the issue is to disable RF turn capability.			<p>Accepted (now chapter 12). Paragraphs ‘a’ and ‘b’ have been changed as follows:</p> <p>a. Positioning and navigation avionics might have optional TSO functions that are not supported at the aircraft level after installation. The avionics must have the functions inhibited through configuration settings (e.g., strapping, software, etc.) if the aircraft is not qualified to perform those functions. The AFM(S)/RFM(S) must contain an appropriate entry for any limitations. An example to illustrate the point is avionics with the capability to perform RF Turns. The installed avionics may have approved RF Turn capability, but the aircraft lacks one or more necessary capabilities such as a roll-steering autopilot or displays able to depict</p>

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					<p>RF Turns. For this installation, the avionics would need to have the RF Turn capability inhibited.</p> <p>b. Particular attention should be paid to the specification of the data quality requirements as part of the airworthiness approval documentation described in AC 20-153 (latest revision) and RTCA/DO-200A, section 2.3.2 and appendix B. The database configuration should be consistent with the aircraft qualification unless other methods are used to prevent incompatible installed performance.</p> <p>c. As noted in AC 20-153 (latest revision), the ultimate responsibility to ensure data meets the data quality requirements for the intended application rests with the end-user of the data. Airworthiness</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					approval holders are responsible for stating any aircraft-level limitations not supported as part of the data quality requirements specified in the airworthiness approval documentation. The reason is for the end-user to properly identify their database requirements.
111. EASA	Pg 78, Para 11-11.a (new paragraph number is 11-8) fourth sentence. Bonillo-Martinez	The sentence states: Including approach procedure step-down fixes in the equipment <u>navigation database is entirely optional</u> . Avionics manufacturers and airworthiness applicants may discharge responsibility in terms of database content.			Not Accepted (now chapter 12). Not sure what this comment means, but the guidance simply states that including step-down fixes in nav databases is a manufacturer choice because it is not required.
112. EASA	Pg 80, Para 11-11.d note, first sentence Bonillo-Martinez	The sentence states: “Paragraph 11-11.d is analogous to using the primary barometric altimeter during an ILS approach to confirm the aircraft altitude when crossing the final approach fix .			Not Accepted (now chapter 12). There is no guarantee that an ILS glideslope is always correct or that a false glideslope hasn’t been captured. The point of the note is to provide an easily understood relationship for

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
		I disagree with this statement. In the case of ILS is only a cross-check while in this case there is no guarantee that the generated glidepath comply with altitude restrictions.			why the altimeter is used to check the vertical path. For both ILS at the FAF and baro-VNAV at step-down fixes, the altimeter is being used to ensure the glideslope/glidepath doesn't place the aircraft below or above where it should be.
113. EASA	Pg A2-4, Para A2-3.a(3) note Bonillo-Martinez	The note says: "There is no intent to exclude a Kalman filtered position taken directly from a tightly-coupled GNSS/inertial sensor." I'm not really sure of understanding the intent of this note. If the GNSS position is used by the TAWS and a Kalman GNSS/inertial is used to conduct RNP AR, is that acceptable?			No change needed. The note is there to ensure everyone understands a Kalman filtered tightly coupled GNSS/inertial position solution is acceptable for the TAWS during RNP AR.
114. EASA	Pg A2-4, Para A2-3.a(4) first sentence. Bonillo-	The sentence says: "It is recommended that the TAWS use altitude that is compensated for local pressure and temperature effects (e.g., corrected		Or instead of and?	Accepted.

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
	Martinez	barometric <u>and</u> Global Navigation Satellite System (GNSS) altitude.”			
115. EASA	Pg A2-25, Para A2-8.c(1)(d)(iv) last sentence. Bonillo-Martinez	The sentence states: “Instead, the operator must plan to use RNP AR 0.3 .” but supposed to comply with (ii)?			<p>Not Accepted. To place in context, paragraph A2-8.c(1)(d)(iv) states: “A pre-departure RNP prediction must be conducted prior to dispatch for accuracy values below RNP AR 0.3 (i.e., RNP AR < 0.3). If no RNP prediction capability is available (either external to the aircraft or within the navigation system), then the operator must not plan to use RNP AR < 0.3. Instead, the operator must plan to use RNP AR 0.3.”</p> <p>A2-8.c(1)(d)(ii) is about SBAS and says that an operation limited to RNP AR 0.3 using SBAS as the navigation source does not have to do a RAIM check.</p> <p>There is no conflict</p>

Comment Number	Page & Paragraph	Comment	Rationale for Comment	Recommendation	Disposition
					between the two paragraphs.