

[For detailed instructions on how to fill out the columns below, please see the Instructions sheet.](#)

<b>Comments Submitted By:</b>		AIRBUS						
<b>Organization:</b>								
<b>Phone:</b>								
#	Document Name	Page Number	Paragraph Number	Referenced Text	Comment/Rationale or Question	Proposed Resolution	Comment Type (Conceptual, Editorial, or Format)	Disposition/Response to Comment
1	Draft TSO-C132a	2	3.b(2)	<p>Paragraph 3.b(2) states that:</p> <p><i>“Loss of the function defined in paragraph 3.a of this TSO is a minor failure condition.</i></p> <p><b><i>Oceanic/remote area operations are classified as minor hazards for both primary and secondary communication systems .</i></b></p> <p><i>Satellite communication is a supplemental service operation, with high frequency (HF) radio required for primary communication. The loss of satellite communication is mitigated by availability of a second dissimilar subnetwork.”</i></p>	<p>Based on this statement <b>“Oceanic/remote area operations are classified as minor hazards for both primary and secondary communication systems”</b>, AIRBUS understand that the MIN classification would be also applicable for aircraft equipped with SATCOM system(s) used as primary &amp; sole means of communications.</p>	AIRBUS request confirmation from the FAA on this interpretation.	Request for clarification	Loss of a single SATCOM is a Minor failure condition, as stated in the TSO. However, this TSO is only intended to support Satcom equipment used as supplemental LRCS, not as primary and sole means of communication. We have revised paragraph 3.b to clarify this intent. Complete loss of all long range communication capability during oceanic/remote operations requires further assessment as to its failure effects in light of the evolving operating environment, particularly reductions in oceanic/remote area separation standards. The FAA will seek a recommendation on this matter from the PARC Communications Working Group.

<b>Comments Submitted By:</b>		Boeing						
<b>Organization:</b>								
<b>Phone:</b>								
#	Document Name	Page Number	Paragraph Number	Referenced Text	Comment/Rationale or Question	Proposed Resolution	Comment Type (Conceptual, Editorial, or Format)	Disposition/Response to Comment
2	Draft TSO-C132a	2	3.e.	" If the article includes software, develop the software according to RTCA, Inc. document RTCA/DO-178C, Software Considerations in Airborne Systems and Equipment Certification, dated December 13, 2011, including referenced supplements as applicable, to at least the software level consistent with the failure condition classification defined in paragraph 3.b of this TSO. ...	We believe that the omission of a reference to RTCA/DO-254 in this TSO may have been an error. We consider that our suggested revision to include requirements for DO-254 compliance is a necessary addition to the TSO. The need for DO-254 compliance is equivalent to software compliance with DO-178 as the paragraph 3.e. suggests. New satellite communication designs are known to include airborne electronic hardware (AEH) components, and these aspects of new design should be subject to industry-level AEH design development guidance and control.	We suggest that the FAA add an additional sub-paragraph after the current paragraph 5.c. We recommend adding a new sub-paragraph 5.d. to read as follows (and renumber the following consecutive sub-paragraphs appropriately): "c. If the article includes software: a plan for software aspects of certification (PSAC), software configuration index, and software accomplishment summary. d. If the article includes simple or complex custom airborne electronic hardware (AEH): a plan for hardware aspects of certification (PHAC), hardware verification plan, top-level drawing, and hardware accomplishment summary (or similar document, as applicable)."	Conceptual	Nonconcur, no change. This section is written per template language. The use of this paragraph applies when the condition classification defined in paragraph 3.b of this TSO is major, hazardous or catastrophic. Loss of a single SATCOM is a Minor failure condition, as stated in the TSO. This paragraph isn't required since the failure condition classification in paragraph 3.b. is minor.

<b>Comments Submitted By:</b>		Boeing						
<b>Organization:</b>								
<b>Phone:</b>								
#	Document Name	Page Number	Paragraph Number	Referenced Text	Comment/Rationale or Question	Proposed Resolution	Comment Type (Conceptual, Editorial, or Format)	Disposition/Response to Comment
3	Draft TSO-C132a	4	Para: 5.c	If the article includes software: a plan for software aspects of certification (PSAC), software configuration index, and software accomplish summary.	Similar to the software aspects of certification (PSAC), the software configuration index, and the software accomplishment summary, the AEH has similar artifacts. These artifacts are the hardware aspects of certification (PHAC), hardware verification plan, top-level drawing, and hardware accomplishment summary. We consider it important and necessary that the AEH aspects of all the mentioned artifacts be added to this document.	We suggest that the FAA add an additional sub-paragraph after the current paragraph 5.c. We recommend adding a new sub-paragraph 5.d. to read as follows (and renumber the following consecutive sub-paragraphs appropriately): "c. If the article includes software: a plan for software aspects of certification (PSAC), software configuration index, and software accomplishment summary. d. If the article includes simple or complex custom airborne electronic hardware (AEH): a plan for hardware aspects of certification (PHAC), hardware verification plan, top-level drawing, and hardware accomplishment summary (or similar document, as applicable)."	Conceptual	Nonconcur, no change. This section is written per template language. The use of this paragraph applies when the condition classification defined in paragraph 3.b of this TSO is major, hazardous or catastrophic. Loss of a single SATCOM is a Minor failure condition, as stated in the TSO. This paragraph isn't required since the failure condition classification in paragraph 3.b. is minor.
4	Draft TSO-C132a	5	6.g	If the article includes software, the appropriate documentation defined in RTCA/DO 178B or RTCA/DO-178C specified in paragraph 3.e of this TSO, including all data supporting the applicable objectives in RTCA/DO 178B Annex A, Process Objectives and Outputs by Software Level.	We believe that the omission of a reference to RTCA/DO-254 in this TSO may have been an error. We consider that our suggested revision to include requirements for DO-254 compliance is a necessary addition to the TSO. The need for DO-254 compliance is equivalent to software compliance with DO-178 as the paragraph 6.g. suggests. New satellite communication designs are known to include airborne electronic hardware (AEH) components, and these aspects of new design should be subject to industry-level AEH design development guidance and control.	We recommend adding a new sub-paragraph 6.h. to read as follows (and re-number the following consecutive sub-paragraphs appropriately): h. If the article includes complex custom airborne electronic hardware (AEH), the appropriate hardware life cycle data in combination with design assurance level, as defined in RTCA/DO-254, Appendix A, Table A-I."	Conceptual	Nonconcur, no change. This section is written per template language. The use of this paragraph applies when the condition classification defined in paragraph 3.b of this TSO is major, hazardous or catastrophic. Loss of a single SATCOM is a Minor failure condition, as stated in the TSO. This paragraph isn't required since the failure condition classification in paragraph 3.b. is minor.