



FAS Topic Paper (FTP)		
TITLE	REVISION	REVISION DATE
FTP1015 DO-330/ED-215 Annex A Table T-10 TQL 5	1	03-Dec-2020
ABSTRACT/PURPOSE:		
<p>This FTP clarifies the following:</p> <ul style="list-style-type: none"> • In DO-330/ED-215 Paragraph 10.1.2, the Tool Qualification Plan (TQP) is requested only for Tool Qualification Level (TQL)-1, 2, 3 and 4, not for TQL-5. This is consistent with Annex A <u>Table T-1</u>, but not with Annex A <u>Table T-10</u>, Objectives 1 and 2. Even if the note indicates that the TQP may be included in the Plan for Software Aspects of Certification (PSAC), DO-330/ED-215 does not identify the information to be provided in the TQP for TQL-5. • A similar situation exists for the Tool Accomplishment Summary (TAS) and Tool Configuration Index (TCI), as this data is requested only for TQL 1, 2, 3 and 4 in DO-330/ED-215 Paragraph 10.1.15. However, Annex A <u>Table T-10</u> Objective 3 identifies it also for TQL-5. Nevertheless, the content of the Tool-Specific Information in the Software Accomplishment Summary (SAS) is correctly addressed for all levels in DO-330/ED-215 Paragraph 10.1.16. 		
RELATED DO/ED DOCUMENTS:		
<p>___ DO-178C/ED-12C: SW Airborne Sys & Equip ___ DO-278A/ED-109A: SW (CNS/ATM) Systems ___ DO-248C/ED-94C: Supporting Information <u>X</u> DO-330/ED-215: Software Tool Qualification Considerations ___ DO-331/ED-218: Model Based Development & Verification Supplement ___ DO-332/ED-217: OO Technology and Related Techniques Supplement ___ DO-333/ED-216: Formal Methods Supplement ___ Other</p>		
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FAS Team Definition and Goals:

The FAS user group monitors and exchanges information on the application of the following “software document suite” that was developed by joint RTCA/EUROCAE committee SC-205/WG-71:

- DO-178C/ED-12C - Software Considerations in Airborne Systems and Equipment Certification
- DO-278A/ED-109A - Software Integrity Assurance Considerations for Communication, Navigation, Surveillance and Air Traffic Management (CNS/ATM) Systems
- DO-248C/ED-94C - Supporting Information
- DO-330/ED-215 - Software Tool Qualification Considerations
- DO-331/ ED-218 - Model Based Development & Verification Supplement
- DO-332/ED-217 - Object Oriented Technology and Related Techniques Supplement
- DO-333/ ED-216 - Formal Methods Supplement

The goals of the FAS user group are as follows:

1. To share lessons learned in the use of the RTCA/EUROCAE “software document suite” and to encourage good practices and promote the effective use of RTCA’s and EUROCAE’s publications.
2. To develop FAS Topics Papers (FTP) relative to RTCA’s and EUROCAE’s publications or other related aeronautical software industry topics. These FTPs may include clarification to the “software document suite” or a discussion on a new topic.
3. To identify and record any issues or errata showing the need for clarifications or the need for modifications to the “software document suite”.

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Abstract / Purpose of the FAS Topic Paper:

This FTP clarifies the following:

- In DO-330/ED-215 Paragraph 10.1.2, the Tool Qualification Plan (TQP) is requested only for Tool Qualification Level (TQL)-1, 2, 3 and 4, not for TQL-5. This is consistent with Annex A Table T-1, but not with Annex A Table T-10, Objectives 1 and 2. Even if the note indicates that the TQP may be included in the Plan for Software Aspects of Certification (PSAC), DO-330/ED-215 does not identify the information to be provided in the TQP for TQL-5.
- A similar situation exists for the Tool Accomplishment Summary (TAS) and Tool Configuration Index (TCI), as this data is requested only for TQL 1, 2, 3 and 4 in DO-330/ED-215 Paragraph 10.1.15. However, Annex A Table T-10 Objective 3 identifies it also for TQL-5. Nevertheless, the content of the Tool-Specific Information in the Software Accomplishment Summary (SAS) is correctly addressed for all levels in DO-330/ED-215 Paragraph 10.1.16.

FTP Discussion:

Question from Industry:

Is a TQP required for TQL-5 tools?

Response from FAS:

No, but there is TQP-related data that must appear in the PSAC in absence of a TQP.

DO-330/ED-215 Paragraph 10.1.2 provides the list of items to be provided as part of a TQP for TQL-1, 2, 3 or 4. However Annex A Table T-10 Objectives 1 and 2 are applicable to all TQL, and the outputs for these objectives include the TQP. Additionally in Annex A Table T-10, a note is attached to the TQP to consider that for TQL-5 these objectives may be satisfied by the Tool Specific information of the PSAC. However, this is acceptable only if the Tool Specific information of the PSAC provides the information necessary for TQL-5, which is typically provided as part of the TQP.

As a minimum this information should include:

- a. A functional overview of the tool and its interfaces.
- b. Tool qualification data to be produced.
- c. Any additional considerations that may affect the qualification process, for example, COTS tools, reuse, alternate means of qualification, tool service history, and means to ensure the determinism of the tool per the last paragraph of DO-330/ED-215 Section 2.0.



d. Organizational responsibilities within the tool life cycle processes.

For TQL-5 tools, it is up to the applicant to provide a TQP including the information identified above or to include this information in the PSAC, in addition of those already identified in DO-330/ED-215 Paragraph 10.1.1.

As indicated in Annex A Table T-10, similar data organization is applicable between

- Tool Accomplishment Summary and Tool-Specific Information in the Software Accomplishment Summary
- Tool Configuration Index and Tool-Specific Information in the Software Life Cycle Environment Configuration Index

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