FAS Topic Paper (FTP)

TITLE	REVISION	REVISION DATE
FTP1018 DO-330/ED-215 Section 11.5 Dissimilar Tools	7	19 Jul 2017

ABSTRACT/PURPOSE:

Industry has raised questions about the use of dissimilar tools as an alternate method to tool qualification. This paper provides a summary of the discussion of the FAS Team on this subject.

RELATED DO/ED DOCUMENTS:

____ DO-178C/ED-12C: SW Airborne Sys & Equip
____ DO-278A/ED-109A:SW (CNS/ATM) Systems
____ DO-248C/ED-94C: Supporting Information
_**X**_ 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

For internal use only—This paper is based on internal FAS FTP1018 Revision 6

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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 (FTPs) 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".

The FAS user group <u>does not</u> have the authority to change the content of any approved RTCA/EUROCAE documents. Any publications of the FAS user group may be taken into consideration by a future RTCA/EUROCAE working group.

The text contained in this document is not to be construed as guidance, but is to be used for informational or educational purposes only.

Abstract / Purpose of the FAS Topic Paper:

Industry has raised questions about the use of dissimilar tools as an alternate method to tool qualification. This paper provides a summary of the discussion of the FAS Team on this subject.

FTP Discussion:

Question from Industry:

Is the use of dissimilar tools an alternate method to tool qualification?

Response from FAS:

Subsection 11.5 of DO-330/ED-215 (Alternative Methods for Tool Qualification) shows dissimilar tools as an alternative method for tool qualification example.

An alternate method to tool qualification is, once the applicable tool qualification level (TQL) is defined, to demonstrate the satisfaction of the DO-330/ED-215 objectives with a method or activities beyond those described in the document.

So, the answer to the question is no. The use of dissimilar tools should not be identified as an alternate method to the tool qualification. It is rather a modification of the need for tool qualification and the applicable TQL.

When tools are used in the software life cycle, the first step is to identify the need for tool qualification in application based on DO-178C/ED-12C subsection 12.2. The second step is to satisfy DO-330/ED-215 objectives for the tools that need qualification for the applicable TQL.

When dissimilar tools are used instead of a single one, the need for tool qualification still needs to be determined, followed by identification of the applicable TQLs. Then the second step (to satisfy the DO-330/ED-215 objectives) remains, but the objectives to be satisfied may not be identical as they depend on the new TQL applicable to this particular situation.

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