FAS Topic Paper (FTP)

TITLE	REVISION	REVISION DATE
FTP1016 DO-330/ED-215 Developer – TQP Clarification	4	19Jul2018

ABSTRACT/PURPOSE:

This FTP provides clarification on the utilization of the developer-Tool Qualification Plan (TQP) by the tool user.

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 FTP1016 Revision 2

Any FAS Topic Papers released by FAS have been coordinated among the members of the FAS group and have been approved by the FAS executive management committee for release.

These papers do not constitute official policy or position from RTCA / EUROCAE or any regulatory agency or authority. These documents are made available for educational and informational purposes only

The present document was jointly developed by the EUROCAE / RTCA User Group 'Forum for Aeronautical Software' (FAS) and as such remains the exclusive intellectual property of EUROCAE and RTCA.

In order to maximize the use of the document and the information contained, the material may be used without prior written permission in an unaltered form with proper acknowledgement of the source.

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

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:

This FTP provides clarification on the utilization of the developer–Tool Qualification Plan (TQP) by the tool user.

FTP Discussion:

Question from Industry:

For commercial-off-the-shelf (COTS) software tools, how may the preliminary data provided in the developer-TQP be used by the tool users?

Response from FAS:

For COTS tools, the tool qualification activities are typically performed by two entities: the tool user and the tool developer. DO-330/ED-215 subsection 11.3 proposes a typical work-sharing between the two entities.

The tool developer provides a set of preliminary tool qualification data appropriate to the tool qualification level (TQL). This preliminary data constitutes a large part of the qualification data. The tool user then completes the information based on the user's intended use, mainly for the validation activities.

DO-330/ED-215 subparagraph 11.3.2.2 explains the following:

> "The developer-TQP should have the same content as specified in section 10.1.2, but should be limited to those activities allocated to the tool developer."

Typical work-sharing between the two entities may be adapted as described in DO-330/ED-215 subsection 11.3. So it may not be straightforward for a tool user to clearly identify the remaining activities to be performed to satisfy all the qualification objectives for the applicable TQL.

As a result, DO-330/ED-215 subparagraph 11.3.2.2 provides further explanation:

> "Additionally, the developer-TQP should describe how the preliminary qualification data may be used by a tool user."

This means that the developer-TQP should provide to the user all information necessary to understand those activities that are under the tool developer responsibilities and how to perform them. Typical information may include, but is not limited to:
- Objectives not satisfied by the tool developer activities
- Availability of data to perform review (for example, developer-Tool Operational Requirements (TOR) assessment)

_____

- Verification activities (for example, review, analysis, and tests) not performed by the tool developer due, for example, to lack of representativeness of the verification environment

Based on the analysis of this information, the tool user will identify some complementary activities to be performed to achieve the qualification.