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

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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-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”.

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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.