



<b>FAS Topic Paper (FTP)</b>		
<b>TITLE</b>	<b>REVISION</b>	<b>REVISION DATE</b>
FTP1009 Qualification of Tools Used to Develop or Verify a Software Tool	6	5 Dec 2017
<b>ABSTRACT/PURPOSE:</b>		
This FTP addresses the question of whether DO-330/ED-215 requires that the tools used to develop or verify a software tool require qualification.		
<b>RELATED DO/ED DOCUMENTS:</b>		
<input type="checkbox"/> DO-178C/ED-12C: SW Airborne Sys & Equip <input type="checkbox"/> DO-278A/ED-109A:SW (CNS/ATM) Systems <input checked="" type="checkbox"/> DO-248C/ED-94C: Supporting Information <input checked="" type="checkbox"/> DO-330/ED-215: Software Tool Qualification Considerations <input type="checkbox"/> DO-331/ED-218: Model Based Development & Verification Supplement <input type="checkbox"/> DO-332/ED-217: OO Technology and Related Techniques Supplement <input type="checkbox"/> DO-333/ED-216: Formal Methods Supplement <input type="checkbox"/> Other		
<i>For internal use only—This paper is based on internal FAS FTP1009 Revision 5</i>		

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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’s) relative to RTCA’s and EUROCAE’s publications or other related aeronautical software industry topics. These FTP’s 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 addresses the industry question of whether DO-330/ED-215 requires that the tools used to develop or verify a software tool require qualification.

### **FTP Discussion:**

#### Question from Industry:

Does DO-330/ED-215 require qualification of the tools used to develop or verify a software tool?

#### Answer from FAS:

Yes, for tool qualification level (TQL)-1 through TQL-4 tools where a tool's output is not being verified.

DO-330/ED-215 subsection 4.4.e states:

"An assessment on all the tools used in the framework of the tool life cycle processes should be conducted in order to identify the need for qualification of these tools. Qualification of these tools is needed when processes of this document are eliminated, reduced, or automated by the use of a tool without its output verified as specified in section 6. For a tool that can introduce an error in the outputs of a tool, the applicable TQL is the same as the tool being developed. For a tool that cannot introduce an error in the output of the tool, but may fail to detect an error in the tool life cycle data, the applicable TQL is TQL-5"

The Tool Qualification Plan (TQP) should describe tool qualification of other tools used to develop or verify the tool. DO-330/ED-215 paragraph 10.1.2.h states that the TQP should include:

"Any additional considerations that may affect the qualification process, for example ... tool qualification (of other tools used to develop or verify the tool)".

It should be noted that DO-330/ED-215 subsection 4.4.e is part of the additional considerations that need to be addressed for TQL-1 to TQL-4 as identified in Annex A Table T-1 objective 4. In consequence, the qualification of tools used in the scope of another tool qualification process is not required if this other tool is qualified at TQL-5.