



FAS Topic Paper (FTP)		
<b>TITLE</b>	<b>REVISION</b>	<b>REVISION DATE</b>
FTP1039 Syntax and Semantics Definition for MBD Supplement	3	6-Jun-2024
<b>ABSTRACT/PURPOSE:</b>		
DO-331/ED-218 did not include definitions for “syntax” or “semantics” although they were used in the text. This paper provides clarification for these terms.		
<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 type="checkbox"/> DO-248C/ED-94C: Supporting Information <input type="checkbox"/> DO-330/ED-215: Software Tool Qualification Considerations <input checked="" 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		
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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”.

The FAS user group does not 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.

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### **Abstract / Purpose of the FAS Topic Paper:**

DO-331/ED-218 did not include definitions for “syntax” or “semantics” although they were used in the text. This paper provides clarification for these terms.

### **FTP Discussion:**

#### Question from Industry:

What is the definition of “syntax” and “semantics” as used in DO-331/ED-218?

#### Response from FAS:

DO-331/ED-218 Annex MB.B – Acronyms and Glossary of Terms does not contain definitions for syntax or semantics. It is the opinion of FAS that the definitions provided in DO-333/ED-216 could also be used when DO-331/ED-218 applies. Those definitions are provided below.

Syntax – Structure of expressions or the rules for putting symbols together to form an expression.

Semantics – The meaning of expressions or how they are evaluated when executed.

The definition of Semantics is applicable to DO-331/ED-218. The definition of syntax applies to DO-178C/ED-12C and DO-278A/ED-109A and therefore the rest of the supplements.