



**SUBMIT**

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**Advisory Circular**

Subject: Airborne Software Assurance  
Date: 07/19/2013  
Initiated by: AR-120  
AC No: 20-115C  
Revised by: AR-120  
Initiated by: AR-120  
AC No: 20-115C

**WHAT IS THE PURPOSE OF THIS ADVISORY CIRCULAR?**

1. This advisory circular (AC) provides guidance for the use and follow-on development of software tools used in the development and certification of aircraft systems. The AC also provides guidance for the use of software tools in ground testing. Ground testing must be conducted in accordance with the applicable requirements of the aircraft system's type certificate (AC). The provisions of this AC do not apply to Title 14 of the Code of Federal Regulations (14 CFR), Part 25.1303, which specifies the minimum performance requirements for aircraft systems with respect to ground testing.

2. This AC is intended to serve as a document of record. The AC is not a regulation, but for the most part, it is a compilation of existing regulations, guidelines, and recommendations. The AC is not intended to be a replacement for any existing regulations, guidelines, or recommendations. The AC is intended to be a reference document for the use of software tools in the development and certification of aircraft systems.

3. The AC provides guidance intended for new aircraft. This AC is intended to complement the existing software assurance process, which is described in the aircraft system's type certificate (AC) or aircraft equipment type certificate (AETC).

**WHO DOES THIS AC AFFECT?**

The AC is applicable to software assurance aspects of aircraft system development and certification. The AC is not applicable to aircraft system development and certification under aircraft system type certificate (AC) or aircraft equipment type certificate (AETC).

**Advisory Circular**

Subject: Airborne Software Assurance Date: 07/19/2013 AC No: 20-115C  
Initiated by: AR-120 Change:

- 1. Purpose of this Advisory Circular (AC).**
- a. This AC describes an acceptable method, but not the only means, for showing compliance with the applicable airworthiness regulations for the software aspects of airborne systems and equipment configurations. This AC is not mandatory and is not a regulation. Other ACs may describe alternative means.
  - b. We, the Federal Aviation Administration (FAA), wrote this AC to recognize the following RTCA, Inc. documents (RTCA DO):
    - (1) RTCA DO-17C, *Software Considerations in Airborne Systems and Equipment Certification*, dated December 13, 2011
    - (2) RTCA DO-330, *Software Tool Qualification Considerations*, dated December 13, 2011
    - (3) RTCA DO-331, *Model-Based Development and Verification Supplement to DO-17C and DO-274A*, dated December 13, 2011
    - (4) RTCA DO-332, *Object-Oriented Technology and Related Techniques Supplement to DO-17C and DO-274A*, dated December 13, 2011
    - (5) RTCA DO-333, *Formal Methods Supplement to DO-17C and DO-274A*, dated December 13, 2011
- Note: RTCA DO is hereafter referred to as DO.
- c. References to use of DO-17C in this AC include use of supplements and DO-330 as applicable.
- d. This AC also establishes guidance for transitioning to DO-17C when making modifications to software previously approved using DO-17B, DO-17A, or DO-17B.

**Advisory Circular**

Subject: Airborne Software Assurance Date: 07/19/2013 AC No: 20-115C  
Initiated by: AR-120 Change:

**2. Who does this AC affect?**

The AC is applicable to software assurance aspects of aircraft system development and certification. The AC is not applicable to aircraft system development and certification under aircraft system type certificate (AC) or aircraft equipment type certificate (AETC).

11/20/07

AC No. 120-94  
Appendix C**MODULE D**  
**HOUSEKEEPING**

1. Airplane external contamination sources
  - a. De-icing fluids
  - b. Water and rain
  - c. Snow and ice
  - d. Miscellaneous contamination (e.g. cargo / beverage spillage)
  - e. Air erosion
2. Airplane internal contamination sources
  - a. Hydraulic oils
  - b. Engine and auxiliary power unit (APU) oils
  - c. Fuel
  - d. Greases
  - e. Contaminants from galleys and toilets
  - f. Lint/dust
  - g. Bleed air and hot areas
  - h. Hazardous materials
3. Other contamination sources
  - a. Paint
  - b. Corrosion inhibitor
  - c. Metal shavings/Swarf
  - d. Foreign objects (screws, washers, rivets, tools, etc.)
  - e. Animal waste
4. Contamination protection planning
  - a. Have a plan – types of plans / area mapping
  - b. Protection and caution recommendations
  - c. Procedures
  - d. Keep cleaning

