



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

10A TECHNICAL UNIT

MAY 8 1987

DOT LIBRARY M493.2

# Advisory Circular

Subject: Radio Technical Commission for  
Aeronautics Document RTCA/DO-178A

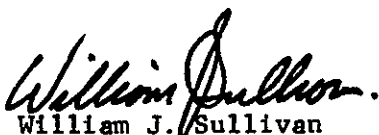
Date: 8/12/86

Initiated by: AWS-120

AC No: 20-115A

Change:

1. PURPOSE. This advisory circular calls attention to the Radio Technical Commission for Aeronautics (RTCA) Document RTCA/DO-178A, "Software Considerations in Airborne Systems and Equipment Certification," issued March 1985. It discusses how the document may be applied with Federal Aviation Administration technical standard order (TSO), type certification (TC), and supplemental type certification (STC) authorizations.
2. CANCELLATION. Advisory Circular 20-115, Radio Technical Commission for Aeronautics (RTCA) Document DO-178, dated September 3, 1982, is cancelled.
3. RELATED FEDERAL AVIATION REGULATIONS (FAR). FAR Parts 21, 23, 25, 27, 29, and 33.
4. BACKGROUND. RTCA Document RTCA/DO-178A was developed to establish software considerations for developers, installers, and users when the aircraft equipment design is implemented using microcomputer techniques. It is expected that current and future avionics designs will make extensive use of this technology. The RTCA document outlines verification, validation, documentation, and software configuration management and quality assurance disciplines to be used in microcomputer systems.
5. USE OF RTCA/DO-178A PROCEDURES. An applicant for a TSO, TC or STC authorization for any electronic equipment or system employing digital computer technology may use the considerations outlined in RTCA Document RTCA/DO-178A as a means, but not the only means, to secure FAA approval of the digital computer software. The FAA may publish advisory circulars for specific FAR's, outlining the relationship between the criticality of the software-based systems and the appropriate "software level" as defined in RTCA/DO-178A. Those may differ from and will take precedence over the application of RTCA/DO-178A.
6. AVAILABILITY OF RTCA DOCUMENT RTCA/DO-178A. Copies may be purchased from the Radio Technical Commission for Aeronautics Secretariat, One McPherson Square, 1425 K Street NW., Suite 500, Washington, DC 20005.

  
William J. Sullivan

Deputy Director of Airworthiness