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Final Report for Considerations of DO-178B "Software Considerations in Airborne Systems and Equipment Certification"

RTCA/DO-248B
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Prepared by: SC-190

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FOREWORD

This document was prepared by RTCA Special Committee 190 (SC-190). It was approved by the RTCA Program Management Committee on October 12, 2001.

RTCA, Incorporated is a not-for-profit organization formed to advance the art and science of aviation and aviation electronic systems for the benefit of the public. The organization functions as a Federal Advisory Committee and develops consensus-based recommendations on contemporary aviation issues. RTCA's objectives include but are not limited to:

- Coalescing aviation system user and provider technical requirements in a manner that helps government and industry meet their mutual objectives and responsibilities.
- Analyzing and recommending solutions to the system technical issues that aviation faces as it continues to pursue increased safety, system capacity and efficiency.
- Developing consensus on the application of pertinent technology to fulfill user and provider requirements, including development of minimum operational performance standards for electronic systems and equipment that support aviation.
- Assisting in developing the relevant technical material upon which positions for the International Civil Aviation Organization and the International Telecommunication Union and other interested international organizations can be based.

The organization's recommendations are often used as the basis for government and private sector decisions as well as the foundation for many Federal Aviation Administration Technical Standard Orders.

Since RTCA is not an official agency of the United States Government, its recommendations may not be regarded as statements of official government policy unless so enunciated by the U.S. government organization or agency having statutory jurisdiction over any matters to which the recommendations relate.

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1.0 INTRODUCTION

DO-178B/ED-12B, "Software Considerations in Airborne Systems and Equipment Certification," was published December 1, 1992, to provide recommendations for the production of software for airborne systems and equipment that performs its intended function with a level of confidence in safety that complies with airworthiness requirements. Since the date of publication, the aviation community has gained experience using DO-178B/ED-12B and has raised a number of questions regarding the document's content and application.

In order to address the questions of both the industry and certification authorities, RTCA Special Committee 190 (SC-190) and the European Organisation for Civil Aviation Equipment (EUROCAE) Working Group 52 (WG-52) was formed in 1996. This document represents the third and final report of the SC-190/WG-52 joint committee. It contains the same errata, frequently asked questions, and discussion papers from the second annual report (DO-248A/ED-94A). Additionally, documents approved by the SC-190/WG-52 through September 22, 2000 are included. This report contains all of the SC-190/WG-52 committee's work on clarification of DO-178B/ED-12B.

1.1 Purpose

The purpose of this document is to provide clarification of the guidance material in DO-178B/ED-12B. The clarification material may accomplish any or all of the following purposes:

- Resolution of content errors in DO-178B/ED-12B.
- Clarification of a specific section or topic of DO-178B/ED-12B.
- Resolution of an inconsistency between DO-178B/ED-12B and any other relevant civil aviation standards.

In order to accomplish these clarification purposes, the following products have been generated and are included in this annual report:

- Errata: The purpose of Errata is to provide a means of correcting errors in DO-178B/ED-12B (e.g., typographical errors). Errata contain no new or additional guidance material.
- Frequently Asked Question (FAQ): The purpose of a FAQ is to provide short and concise responses to questions that are frequently asked by industry concerning the material of DO-178B/ED-12B. These questions are frequently posed to certification authorities or others who provide interpretation of DO-178B/ED-12B. A FAQ contains no new or additional guidance material.
- Discussion Paper (DP): The purpose of a Discussion Paper is to provide clarification for certain sections of DO-178B/ED-12B in cases where the clarification requires more than a short answer to a question. A DP contains no new or additional guidance material.