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**Minimum Operational Performance Standards for the Depiction of
Navigational Information on Electronic Maps**

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RTCA DO-257A

Prepared by: SC-181
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Foreword

This report was prepared by Special Committee 181 (SC-181) and approved by the RTCA Program Management Committee (PMC) on June 25, 2003.

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1.0 Purpose and Scope

1.1 Introduction

This document contains minimum operational performance standards (MOPS) for the graphical depiction of navigation information on electronic map displays (EMDs) used to improve the flight crew awareness of the aircraft/ownership position relative to other items depicted on the EMD. It includes requirements for electronic map displays depicting in-flight, airport surface, and vertical (profile) information.

Navigation information, as used in this document, is information intended to be used to assist the pilot to identify the aircraft's position with respect to flight plans, ground reference points, and navaid fixes (such as VORs, NDBs, etc.) as well as items on the airport surface. The requirements defined within this MOPS are not sufficient for the EMD to be used as the basis for maneuvering. Additionally, it assumes no changes to operational requirements. These standards may be applied to vector or raster based moving map displays (see definitions in [section 1.8](#)). These standards specify equipment characteristics that should be useful to designers, manufacturers, installers, and users of the equipment.

Compliance with these standards is recommended as the means of assuring that the equipment will perform its intended function(s) (see [Intended Function\(s\)](#) in [section 1.4](#)) satisfactorily under all conditions normally encountered in routine aeronautical operations. Any regulatory application of these standards is the sole responsibility of the appropriate governmental agencies.

[Section 1.0](#) of this document provides information on purpose and scope needed to understand the rationale for equipment characteristics and standards stated in the remaining sections. It describes typical equipment applications and operational goals as well as establishes the basis for the standards stated in [sections 2](#) through [3](#).

[Section 2.0](#) contains general guidance and minimum performance standards for the equipment. These standards specify the required performance under standard operating and environmental conditions. Also included are recommended bench test procedures necessary to demonstrate equipment compliance with the stated minimums. [Section 2.1](#) and [2.2](#) provide requirements for all EMDs addressed in this document, including in-flight, airport surface, and vertical (profile) information displays. Requirements in [section 2.3](#) apply only to airport surface map displays. Requirements in [section 2.4](#) apply only to vertical (profile) map displays.

[Section 3.0](#) describes the requirements for installed equipment performance. Tests for the installed equipment are included when performance cannot be adequately determined through bench testing, as described in [section 2](#).

[Appendix A](#) is a list of abbreviations recommended for use with EMDs and associated documents. [Appendix B](#) contains a glossary of terms and acronyms, while [Appendix C](#) contains a bibliography and a list of all references cited in this document. [Appendix D](#) has a list of all "shall" requirements in the body of the document (summarized for the convenience of the applicant and test team). [Appendix E](#) contains color guidance. [Appendix F](#) is devoted to Raster Aeronautical Charts (RAC), while [Appendix G](#)