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Minimum Operational Performance Standards (MOPS) for Airborne Area Navigation Equipment Using Multi-Sensor Inputs

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Prepared by: SC-137

F O R E W O R D

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1.0 PURPOSE AND SCOPE

1.1 Introduction

This document contains minimum operational performance standards for airborne area navigation equipment (2D and 3D) operated in the National Airspace System (NAS) using multi-sensor inputs. Performance standards for equipment operated in other airspace, such as the North Atlantic minimum navigation performance standard (MNPS), are contained in the respective guidance material for that airspace. The types and numbers of these sensors are not specifically defined in this document. An RNAV multi-sensor system is defined as an area navigation system which determines aircraft position using data derived from sensors of two or more generic types, or alternatively from VOR and/or DME facilities which may or may not include the reference station. Incorporated within these standards are equipment characteristics that should be useful to users, designers, manufacturers and installers of the equipment. This document defines the performance, functions and features for a 2D system which performs only lateral guidance and a 3D system which performs both lateral and vertical guidance. Equipment may be manufactured and tested to meet 2D or 3D requirements (or both) in the en route, terminal and approach modes (or any combination of).

Section 1.0 of this document provides information needed to understand the rationale for equipment characteristics and requirements stated in the remaining sections. It describes typical equipment applications and operational goals, as envisioned by the members of Special Committee 137, and forms the basis for the standards stated in Sections 2.0 through 4.0. Definitions and assumptions essential to proper understanding of this document are also provided in Section 1.0.

Section 2.0 contains the minimum performance standards for the equipment. These standards define required performance under standard operating conditions and stressed physical environmental conditions. It also details the recommended bench test procedures necessary to demonstrate compliance.

Section 3.0 describes the performance required of the installed equipment. Tests for the installed equipment are included when performance cannot be adequately determined through bench testing.

Section 4.0 describes the operational characteristics for equipment installations and defines conditions that will assure the operator that operations can be conducted safely and reliably in the expected operational environment.