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# Minimum Operational Performance Standards (MOPS) DGNSS Instrument Approach System: Special Category I (SCAT-I)

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# FOREWORD

This document was prepared by RTCA Special Committee 159 (SC-159). It was approved by the RTCA Technical Management Committee on August 27, 1993.

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# 1.0 PURPOSE AND SCOPE

## 1.1 Introduction

This document contains Minimum Aviation System Performance Standards (MASPS) for a system to support differential GNSS (DGNSS) special instrument approaches. Initial applications of this system are anticipated to support Special Category I (hereafter termed "SCAT-I") precision approaches, which are specially authorized approaches made to MLS/ILS Category I minima with DGNSS used to provide navigation guidance. DGNSS special instrument approaches must be authorized by the FAA, using appropriate airworthiness and operational approval processes, based upon an aircraft operator's demonstrated capability and equipment as well as the availability of approved ground equipment. Such authorizations are expected to be made for specific aircraft approaching specific airports. For air carriers, these authorizations are expected to be made through modification to the carrier's operational specifications. For general aviation, these approvals are planned to be made through the issuance of a certificate of authorization.

The development of standards for DGNSS Instrument Approach Systems (DIAS) and subsystems has followed the Required Navigation Performance (RNP) concept. Primary RNP parameters are accuracy, availability, integrity, and continuity. These parameters are specified herein at the approach system level and then allocated to subsystems in this MASPS using a "risk tree" methodology as explained in Appendix K. Although the specific values of RNP parameters used in this document have been chosen to support SCAT-I operations, the system design principles used herein can be adapted to support DGNSS-based instrument approaches with both more and less stringent minima. The term "DIAS" will be used in discussions generic to systems supporting DGNSS Instrument Approach Systems. The term "SCAT-I system" will be used for a DIAS system specifically developed to support the RNP required for Special Category I approaches.

Incorporated within these standards are equipment characteristics that should be useful to users, designers, manufacturers, installers, and operators of the equipment. Functional specifications are used where possible in order that implementers may have flexibility in developing the DIAS equipment. This document is intended to support initial operational SCAT-I approaches within the National Airspace System in late 1993 or 1994.

Consistent with FAA guidance and the recommendations of the RTCA GNSS Task Force Report dated September 1992, the standards in this document are specifically oriented toward supporting early operational implementation. For example, the DGNSS data links specified have been chosen on the basis of three