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**Safety, Performance and Interoperability
Requirements Document for Enhanced
Traffic Situational Awareness on the Airport
Surface with Indications and Alerts (SURF IA)**

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FOREWORD

This document was prepared by RTCA Special Committee 186 (SC-186). It was approved by the RTCA Program Management Committee (PMC) on December 8, 2010.

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1 INTRODUCTION

This document provides the minimum Operational, Safety, and Performance Interoperability Requirements (SPR) for the implementation of Enhanced Traffic Situational Awareness on the Airport Surface with Indications and Alerts (SURF IA). The SURF IA application is fully defined in the Operational Services and Environment Definition (OSED) found in SPR Appendix A. A short description of the application can be found in Section 1.2.

All material in this document was developed by Working Group 1 as part of RTCA Special Committee 186.

This document was developed based on the criteria for SPR and interoperability documents set forth in RTCA DO-264/EUROCAE ED-78A, “Guidelines for Approval of the Provision and Use of Air Traffic Services Supported by Data Communications.” [7]. It provides the minimum SURF IA requirements—and allocations thereof—based on the results of a coordinated requirements determination process.

The requirements contained in this document are necessary to provide adequate assurance that the system operates as defined in the OSED and will perform its intended function in an acceptably safe manner.

1.1 Purpose of the Document

This document defines and allocates the set of minimum requirements for the end-to-end operational, safety, performance, and interoperability aspects for implementations of the SURF IA application. This document can be used as a component for approval processes including aircraft type design approval, and aircraft operator operational approval. The SPR can be used as a starting point for the development of Minimum Operational Performance Standards (MOPS), Technical Standard Orders (TSOs) or other material to support SURF IA system development or certification. States or regions implementing an application different to that specified in the OSED must take into account those difference in the operations or environment that affect the supporting analysis used to derive the safety, performance or interoperability requirements. The assessments and specifications in this document are not intended to be the sole basis for operational and airworthiness approval. Aircraft and avionics system designers should consider any additional specifications that may enhance the system supporting the SURF IA application in view of other future Airborne Surveillance Applications (ASA) so that systems designed for SURF IA will easily accommodate more demanding ADS-B enabled operations in the future.

The SURF IA SPR is also envisaged to be used along with those from other surveillance applications based on Automatic Dependent Surveillance-Broadcast (ADS-B) to develop minimum standards for avionic systems to assure that all subsystems perform their intended functions adequately for these applications.