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**Safety, Performance and Interoperability
Requirements Document
for
ADS-B Airport Surface Surveillance Application
(ADS-B-APT)**

RTCA DO-321
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Prepared by: SC-186
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FOREWORD

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CHAPTER 1 INTRODUCTION

This standard provides the minimum operational, safety and performance requirements (SPR) and interoperability requirements (INTEROP) for the implementation of the Automatic Dependent Surveillance-Broadcast Airport Surface Surveillance Application (ADS-B-APT). The ADS-B-APT application is fully defined in the Operational Services and Environment Definition (OSED) found in Annex A.

This document was developed based on the criteria for SPR and INTEROP 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" [14]. It provides the minimum ADS-B-APT application requirements - and allocations thereof - based on the results of a coordinated requirements determination process, performed by the ADS-B Requirements Focus Group (RFG).

The RFG was established through the EUROCONTROL/FAA Memorandum of Cooperation. It operates as a joint EUROCAE and RTCA activity assuming the responsibility for the SPR and INTEROP standard material contained in this document. All material in this document was developed jointly by EUROCAE Working Group 51 and RTCA Special Committee 186.

The requirements contained in this document are necessary to provide adequate assurance that the appropriate aspects of the relevant Communication Navigation Surveillance and Air Traffic Management (CNS/ATM) system, when operating together, will perform their intended function in an acceptably safe manner for the operations defined in the OSED.

Whilst all detailed SPR related assessments are found in Annexes to this document, Chapter 3 presents the outcome of the reconciliation process of all of these results into a single set of underlying Safety and Performance Requirements. This process retains the most stringent requirements for those attributes or parameters commonly treated by both the safety and performance assessments. Traceability of those requirements back to the corresponding assessment(s) is (are) provided.

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 ADS-B-APT application. Allocation of these requirements is done by this SPR/INTEROP to the necessary domains of the CNS/ATM system, i.e. at Transmit ADS-B Mobile Domain level (referred to simply as the Mobile Domain, where a Mobile designates a transmitting aircraft or vehicle and Receiving ADS-B Ground Domain level (referred to simply as the Ground Domain).

These requirements can be used as a component for approval processes including aircraft type design approval, aircraft operator operational approval and Air Traffic Services (ATS) provider operational approval. This SPR/INTEROP document is also written to support system specific standards (e.g. Minimum Operation Performance Standards - MOPS, Technical Standards Order - TSOs) which will be required for many airspace regulators.