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Future Air Navigation System 1/A — Aeronautical Telecommunication Network Interoperability Standard (FANS 1/A — ATN B1 Interop Standard)

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FOREWORD

This guidance document was jointly prepared by Special Committee 214 (SC-214) and the European Organization for Civil Aviation Equipment (EUROCAE) Working Group 78 (WG-78) and approved by the RTCA Program Management Committee (PMC) on March 21, 2012.

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- analyzing and recommending solutions to the system technical issues that aviation faces as it continues to pursue increased safety, system capacity and efficiency;

- developing consensus on the application of pertinent technology to fulfill user and provider requirements, including development of minimum operational performance standards for electronic systems and equipment that support aviation; and

- assisting in developing the appropriate technical material upon which positions for the International Civil Aviation Organization and the International Telecommunication Union and other appropriate international organizations can be based.

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1 INTRODUCTION

This standard was developed to enable air traffic service providers (ATSPs) to interoperate with data link equipped aircraft, regardless of which technology is installed on the aircraft. The standard is intended to support the goal of converging oceanic and continental data link applications.

1.1 Purpose

This document provides the interoperability requirements for an aeronautical telecommunication network baseline 1 (ATN B1) ground system that provides air traffic data link services to future air navigation system 1/A (FANS 1/A) aircraft in continental airspace.

Note: Based on DO-264/ED-78A, INTEROP and SPR standards provide recommendations intended for government organizations, conference of governments, or agencies having statutory jurisdiction over the use and provision of air traffic services supported by data communications. These recommendations are for use by such government organizations to enunciate official policy, related to such matters, in aeronautical information publications (AIPs), notices to airmen (NOTAMs), airplane flight manuals (AFMs), and operator specifications.

1.2 Scope

This standard provides:

- interoperability requirements for the ATN B1 ground system to provide FANS 1/A aircraft data link services, as defined by the Continental SPR Standard. See § 1.2.1.
- interoperability requirements to ensure seamless transition of ATS communications for bilingual aircraft (i.e. aircraft equipped with FANS 1/A and ATN B1 data link technologies) transitions from a FANS 1/A ground system to an ATN B1 ground system or vice versa (e.g. FANS 1/A ground system providing data link services in an oceanic airspace and an ATN B1 ground system providing data link services in a domestic airspace).See 1.2.2

Note 1: This standard provides a separated set of requirements for each of these two capabilities, which can be implemented and qualified independently.

Note 2: Some ATN B1 ATSUs might elect to comply with §3 only, with §4 only or with both §3 and §4.

Some FANS 1/A ATSUs might elect to comply with §4.

FANS 1/A and ATN B1 bilingual aircraft might elect to comply with §4.

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1.2.1 ATN B1 Ground System Providing ATS Datalink Services to FANS 1/A Aircraft

This standard provides interoperability requirements for the ATN B1 ground system to provide FANS 1/A aircraft data link services, as defined by the Continental SPR Standard, taking into consideration ICAO material listed in paragraph 1.5. The following continental data link services are considered for the FANS 1/A aircraft:

- Data Link Initiation Capability (DLIC)
- ATC Communications Management (ACM)
- ATC Clearance (ACL)
- ATC Microphone Check (AMC)

This standard also considers the FANS 1/A aircraft emergency data communication capability.

Note 1: This standard considers message elements of the CPDLC application that are included in the "version 1" message set as defined by the ATN B1 INTEROP Standard to support the ACM, ACL, and AMC data link services and the FANS 1/A aircraft emergency data communication capability. See paragraph 3.2.2.8 for the uplink CPDLC message elements and paragraph 3.2.2.9 for the downlink CPDLC message elements considered within the scope of this document.

Note 2: This standard only considers message element parameters and data types of the CPDLC application that are included in the ATN B1 INTEROP Standard for the message elements in the "version 1" message set. See paragraph 3.2.2.12 for message element parameters and data types considered within the scope of this document.

Note 3: This standard does not consider the Departure Clearance (DCL) Service, Downstream Clearance (DSC) Service, Flight Plan Consistency (FLIPCY) Service, and Data Link – Automatic Terminal Information Service (D-ATIS), as defined in the Continental SPR Standard.

Note 4: General guidance for use of the Automatic Dependent Surveillance (ADS) application is provided at Appendix A.

Note 5: This standard does not consider the Flight Information Service application.

Note 6: The scope of this document has been determined based on the need at the time this standard was developed. This standard may be revised at a later time as experience is gained, and to expand the scope as the need arises to include, for example, the interoperability requirements for using ADS to provide continental data link services to aircraft in a mixed technology environment, and the interoperability requirements for the FANS 1/A ground system to provide oceanic data link services to ATN aircraft.

1.2.2 Ground Systems Providing ATS Datalink Services to Bilingual Aircraft

This standard also provides Interoperability Requirements to ensure seamless transition of ATS communications when a transition between two adjacent airspaces requires the

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