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INTEROPERABILITY REQUIREMENTS STANDARD FOR BASELINE 2 ATS DATA COMMUNICATIONS, FANS 1/A ACCOMODATION (FANS 1/A – BASELINE 2 INTEROP STANDARD)

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Prepared by: SC-214
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FOREWORD

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- 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

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1 INTRODUCTION

This standard was developed to enable air traffic service providers (ATSPs) to interoperate with FANS 1/A data link equipped 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 for Baseline 2 Revision B ATS data communication services (B2 Rev B) ground system that provides B2 Rev B air traffic data link services to future air navigation system 1/A (FANS 1/A) aircraft in oceanic and continental airspaces.

NOTE: *Based on ED-78A/DO-264 [1], 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:

a. interoperability requirements for the B2 Rev B ATN ground system to provide FANS 1/A aircraft with B2 Rev B data link services, as defined by the SPR Standard [5]. See 1.2.1.

b. Interoperability requirements to ensure seamless transition of ATS communications for FANS 1/A & B2 Rev B ATN bilingual aircraft and for FANS 1/A & B2 Rev B ATN & ATN B1 trilingual aircraft. See 1.2.2.

NOTE:

1. *This standard provides a distinct set of requirements for each of these two capabilities, which can be implemented and qualified independently.*
2. *Some B2 Rev B ATN ATSUs may elect only to provide data link services to FANS 1/A aircraft (CHAPTER 3), only to provide seamless transfer to FANS airspace (paragraph CHAPTER 4) or to provide both (CHAPTER 3 and paragraph CHAPTER 4). Some FANS 1/A ATSUs may elect to provide seamless transfer to ATN airspace (paragraph CHAPTER 4).*
3. *FANS 1/A and B2 Rev B ATN bilingual aircraft may elect to support seamless transfer to ATN and FANS 1/A airspace (paragraph CHAPTER 4).*

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	Ground System		Aircraft System		
	B2 Rev B ATN	FANS 1/A	ATN	FANS 1/A	FANS 1/A & B2 Rev B ATN bilingual aircraft
§ 3 B2 Rev B ATN GROUND SYSTEM PROVIDING ATS DATA LINK SERVICES TO FANS 1/A AIRCRAFT	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
§ 4 SEAMLESS TRANSISTION FOR FANS 1/A & B2 REV B ATN BILINGUAL AIRCRAFTAND FANS 1/A & B2 REV B ATN & ATN B1 TRILINGUAL AIRCRAFT	Applicable	Applicable	Not Applicable	Not Applicable	Applicable

FIGURE 1-1 MIXED INTEROPERABILITY REQUIREMENTS APPLICABILITY

1.2.1 B2 REV B ATN GROUND SYSTEM PROVIDING ATS DATA LINK SERVICES TO FANS 1/A AIRCRAFT

This standard provides interoperability requirements for B2 Rev B ATN ground systems providing B2 Rev B data link services to FANS 1/A aircraft, as defined by the SPR Standard [5], taking into consideration ICAO material listed in paragraph 1.5. The following data link services are considered for the FANS 1/A aircraft:

- Data Link Initiation Capability (DLIC);
- ATC Communications Management (ACM);
- Clearance Request and Delivery (CRD);
- ATC Microphone Check (AMC);
- Departure Clearance (DCL);
- In-Trail Procedure (ITP);
- Information Exchange and Reporting (IER);
- Position Reporting (PR); and
- 4D Trajectory (4DTRAD).

NOTE:

1. *This standard addresses all the message elements and data types defined in the B2 Rev B CPDLC application (in ATS INTEROP document (Ref [b]) section 5) for the above services. See paragraph 3.2.2.7 for the uplink CPDLC message elements and paragraph 3.2.2.8 for the*

downlink CPDLC message elements. See paragraph 3.2.2.11 for message element parameters and data types.

2. *This standard does not address the D-TAXI, IM and PTM services.*
3. *This standard addresses ADS-C by identifying the differences between the B2 Rev B ATN and FANS 1/A ADS-C protocols from the perspective of a ground system willing to provide ADS-C services to both types of aircraft.*

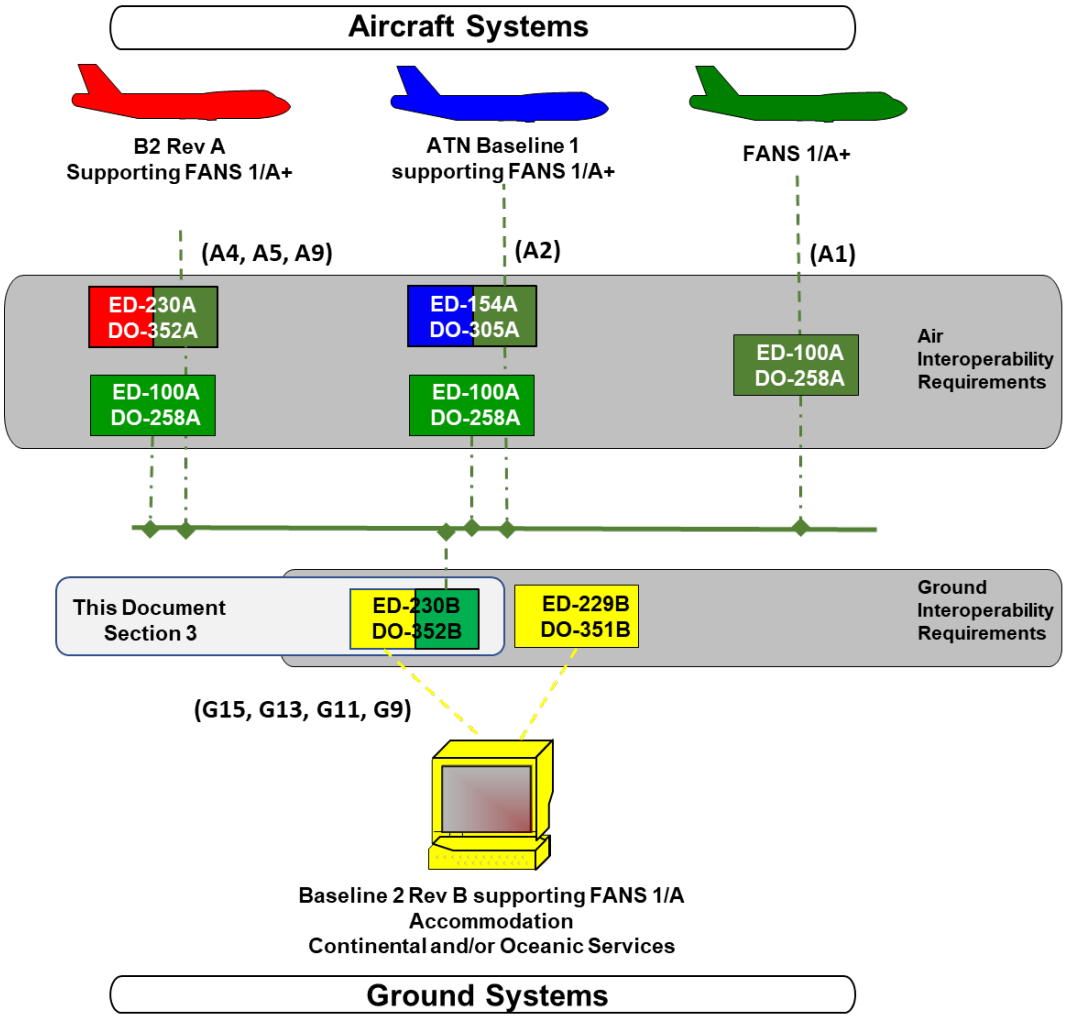


FIGURE 1-2 INTEROPERABILITY FOR B2 REV B ATN GROUND SYSTEM PROVIDING ATS DATA LINK SERVICES TO FANS 1/A AIRCRAFT

1.2.2 SEAMLESS TRANSITION FOR FANS 1/A & B2 REV B ATN BILINGUAL AIRCRAFT AND FANS 1/A & B2 REV B ATN & ATN B1 TRILINGUAL AIRCRAFT

This standard also provides interoperability requirements to ensure seamless transition of ATS communications when a transition between two adjacent airspaces requires the aircraft to switch between FANS 1/A and ATN ATS data link technologies. These requirements will apply only to aircraft with the capability to adapt the technology used for ATS Data

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link communications in avionics according to the flown area ("FANS 1/A & B2 Rev B ATN Bilingual aircraft" and "FANS 1/A & B2 Rev B ATN & ATN B1 Trilingual aircraft").

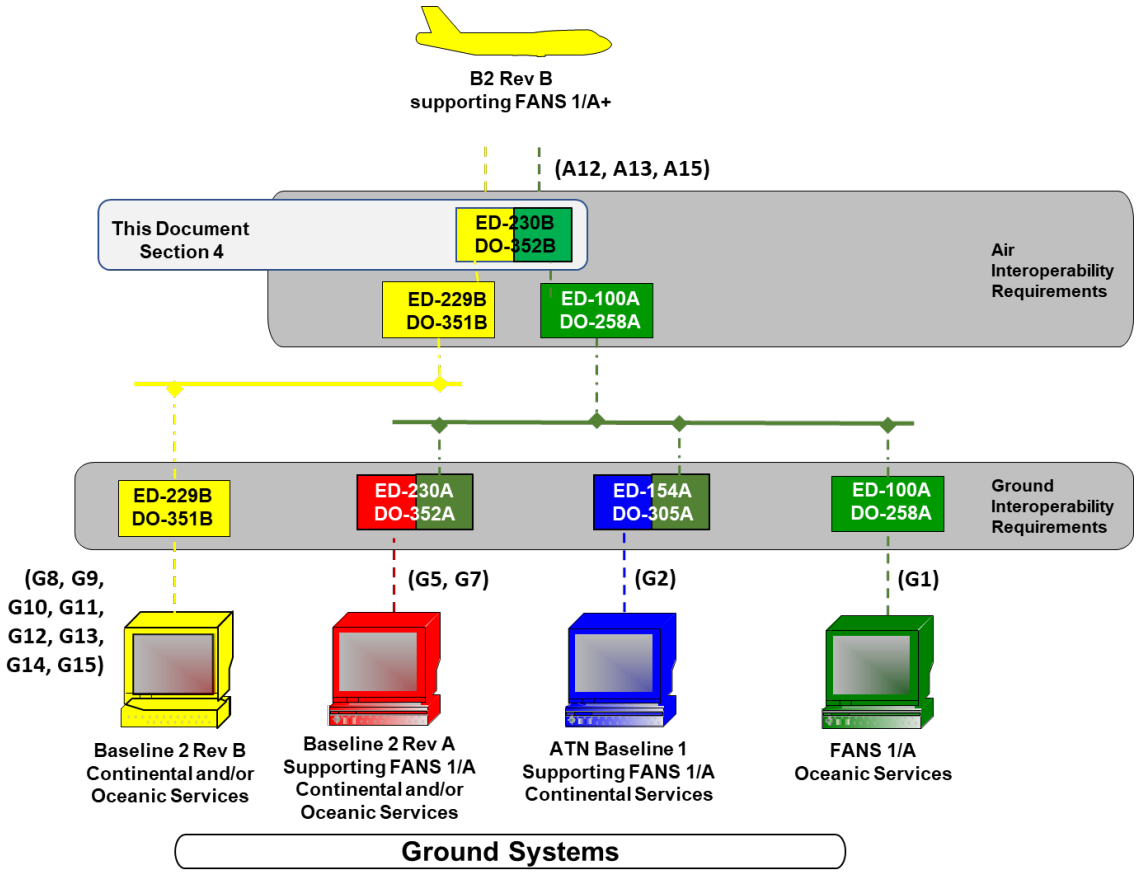


FIGURE 1-3 INTEROPERABILITY FOR SEAMLESS TRANSITION FOR B2 REV B AIRCRAFT SUPPORTING FANS 1/A & B2 REV B ATN BILINGUAL AIRCRAFT AND FANS 1/A & B2 REV B ATN & ATN B1 TRILINGUAL AIRCRAFT

1.3 Relationships to Other Documents

FIGURE 1-2 and FIGURE 1-3 illustrate the relationships between the ATN and FANS 1/A standards. In addition, this standard is intended for use in conjunction with the documents identified in Section 1.5.

ED-78A/DO-264 [1] provides guidance material for implementation and approval of air traffic data link services.

This INTEROP standard is developed in accordance with the guidelines of ED-78A/ DO-264 [1]. For the B2 Rev B ATN ground system intending to provide data link services to FANS 1/A aircraft, this INTEROP standard can be used as evidence of the interoperability assessment using a mixture of FANS 1/A and B2 Rev B ATN Services Data Link technologies.

This document (EUROCAE ED-230B / RTCA DO-352B) supersedes EUROCAE ED-230A / RTCA DO-352A.

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