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**Safety, Performance and Interoperability
Requirements Document for the
ADS-B Non-Radar-Airspace (NRA) Application**

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Prepared by: SC-186
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FOREWORD

This document was prepared by the “ADS-B Requirements Focus Group” (RFG). The RFG was established through the EUROCONTROL/FAA Memorandum of Cooperation. The RFG operates as a joint EUROCAE and RTCA Special Committee 186 (SC-186) activity. This document was approved by the RTCA Program Management Committee (PMC) on December 13, 2006.

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Table of Contents

SECTION 1.	INTRODUCTION	1
1.1	Purpose	1
1.1.1	ADS-B-NRA	1
1.1.2	Use of EUROCAE ED-78A/RTCA DO-264	2
1.1.3	Use of Document for Approvals	2
1.2	Scope of the Document	3
1.2.1	ADS-B-NRA Context	3
1.2.2	Assumed Airborne & Ground Generic Functional Architecture	6
1.3	Structure of this Document	8
1.3.1	Document Organization	8
1.4	Relationship to Other Documents	9
1.4.1	ICAO Documents	9
1.4.2	Other RTCA/EUROCAE Documents	9
1.5	References	11
1.5.1	ICAO	12
1.5.2	EUROCONTROL	12
1.5.3	FAA	12
1.5.4	EUROCAE/RTCA	12
1.5.5	Miscellaneous	13
SECTION 2.	APPROACH AND METHODOLOGY	15
2.1	RFG Organization and Development Process	15
2.2	Methodology	16
2.2.1	Operational Services and Environment Description (OSD)	16
2.2.2	Safety and Performance Requirements (SPR)	17
2.2.3	Interoperability Requirements (INTEROP)	18
2.3	Key Terms	19
2.3.1	Assumptions	19
2.3.2	Mitigation Means	19
2.3.3	Requirements	20
2.3.4	Recommendations	21
SECTION 3.	SAFETY & PERFORMANCE REQUIREMENTS (SPR)	23
3.1	Background/Introduction	23
3.1.1	OPA process	23
3.1.2	OSA process	23

3.1.3	Risk Assessment process.....	23
3.1.4	SPR process.....	24
3.1.5	SPR Organization.....	25
3.2	Definitions of Terms Used In This Section.....	25
3.3	Assumptions.....	27
3.3.1	General Assumptions.....	28
3.3.2	Transmit Aircraft Domain Assumptions.....	31
3.3.3	Ground Domain Assumptions and Mitigation Means.....	31
3.4	Airborne domain Safety and Performance Requirements.....	32
3.4.1	Airborne Domain Functional Requirements.....	32
3.4.2	Airborne Performance Requirements.....	33
3.5	Ground Domain Requirements.....	38
3.5.1	Ground Functional Requirements.....	39
3.5.2	Ground Performance Requirements.....	40
SECTION 4.	INTEROPERABILITY REQUIREMENTS.....	45
4.1	Purpose of Interoperability Requirements.....	45
4.2	How to use the INTEROP requirements.....	45
4.2.1	Mandating and Recommendation Phrases.....	45
4.2.2	Organization of the INTEROP Requirements in this Document.....	46
4.2.3	References.....	46
4.3	Description and General Requirements for ADS-B-NRA.....	47
4.3.1	Main Components.....	47
4.3.2	Functions of the ADS-B-NRA Application.....	47
4.4	General requirements for ADS-B-NRA.....	48
4.4.1	Messages and Reports.....	48
4.4.2	Time Reference.....	48
4.5	Requirements for the ADS-B-NRA application specific information.....	49
4.5.1	Identity.....	49
4.5.2	Position.....	50
4.5.3	Emergency/Priority & SPI Indicators.....	52
4.5.4	Ground Velocity.....	53
Annex A	Operational Services and Environment Definition.....	55
A.1	Introduction.....	55
A.2	Environment Definition.....	55
A.2.1	Current Environment.....	55
A.2.2	Reference Environment.....	55

A.2.3	Target Environment	55
A.2.4	Specific Environmental Conditions Used in Safety Assessment	56
A.3	Application Description	62
A.3.1	Introduction	62
A.3.2	Context	63
A.3.3	Objective	64
A.3.4	Procedure Description	65
A.3.5	Airspace Characteristics and Operational Environment	70
A.3.6	ADS-B-NRA Control Phases	72
A.3.7	Abnormal Modes	74
A.3.8	Use of Procedural Separation During Abnormal Modes	74
A.3.9	Requirements and Assumptions	75
Appendix A.1	An example of a mixed operations environment at Kiruna, Sweden	79
Appendix A.2	An example of a mixed operations environment in Australia	82
Appendix A.4	Definition of ADS-B terms	91
Annex B	Operational Performance Assessment	93
B.1	Introduction	93
B.1.1	Purpose	93
B.1.2	The CNS/ATM system	93
B.2	ADS-B-NRA OPA Approach	93
B.2.1	Scope of the ADS-B-NRA OPA	93
B.2.2	Comparative Approach and Reference Radar	94
B.3	Required Data Items At The Input Of The ATC Processing System	95
B.3.1	List of Required Surveillance Data Items	95
B.4	Definition and Specification of Performance Parameters	97
B.4.1	Update Interval and Update Probability	98
B.4.2	Position Accuracy	102
B.4.3	Data and System Integrity	107
B.4.4	Reliability	118
B.4.5	Other Surveillance Parameters	121
Appendix B.1.1	Introduction	128
Appendix B.1.2	Radar Time Characteristics	128
Appendix B.1.3	ADS-B Time Characteristics	129
Appendix B.2	Classes of Radar Errors	130
Appendix B.3	Radar Measurement Errors	131
Appendix B.3.1	Radar Error Models	131

Appendix B.3.2	Specification of Radar Plan Position Errors.....	135
Appendix B.3.3	Core accuracy.....	136
Appendix B.3.4	Radar Tail errors.....	137
Appendix B.3.5	Reconciliation between radar models and CAP surveillance risk analysis.....	137
Annex C	Operational Safety Assessment.....	139
C.1	Introduction.....	139
C.1.1	Annex Objectives.....	139
C.1.2	Annex Structure.....	139
C.1.3	OSA Purpose and Scope.....	139
C.1.4	Definition of Safety terms.....	139
C.2	Safety Assessment methodology.....	141
C.2.1	Identification and Operational Hazard Analysis Process.....	142
C.2.2	ASOR Process.....	148
C.2.3	Role of actors in OSA process.....	152
C.3	Operational Hazard Assessment (OHA).....	153
C.3.1	Operational Hazards identification.....	153
C.3.2	External Mitigation means used in the Assessment.....	156
C.3.3	Safety Objectives Assignment.....	156
C.4	Determination of ‘Pe’ values for All detected hazards OH1 to OH4.....	160
C.5	Determination of ‘PE’ Values for undetected hazard OH1.....	161
C.6	Determination of ‘PE’ Values for undetected hazards OH3 and OH4 - through the calculation of ‘Pe_Pca’ for Incorrect Horizontal Position and Quality Indicator Information.....	161
C.6.1	Introduction.....	161
C.6.2	Horizontal Position Error - “Case 1”.....	162
C.6.3	Horizontal Position Error - “Case 2”.....	162
C.6.4	Horizontal Position Error - “Case 3”.....	163
C.6.5	Summary of Pe_pca Values.....	163
C.7	Detailed analysis per OH.....	164
C.7.1	Foreword.....	164
C.7.2	OH 1: Sudden and Unexpected Loss of Position Information for a Single Aircraft Previously Identified in the Sector.....	166
C.7.3	OH2: Sudden and Unexpected Loss of Position Information for Multiple Aircraft Previously Identified in the Sector.....	174
C.7.4	OH3: Incorrect Position Information For Multiple Aircraft in a Wide-Area is Provided to Controller.....	178
C.7.5	OH4: Incorrect Position Information for One Aircraft Is Displayed on the CWP.....	200
C.7.6	Hazards Equivalent to Radar Environment Ones.....	222

C.7.7	Main Assumptions	225
C.7.8	Internal Mitigation Means	227
C.7.9	Safety Requirements	229
Appendix C.1	Determination of Mitigation Means For ADS-B Horizontal Position Errors	233
Appendix C.1.1	Modelling of ADS-B Horizontal position Error	236
Appendix C.1.2	“Case 1” - Determination of ‘P_undet’ and ‘Pe_Pca’	237
Appendix C.1.3	“Case 2” - Determination of ‘P_undet’ and ‘Pe_Pca’	244
Appendix C.1.4	Case 3 - Determination of ‘P_UNdet’ and ‘Pe_Pca’	250
Appendix C.2	Notes on Symbols used in the Fault Trees	252
Annex D	Summary of recommendations for ground systems	254
D.1	Introduction	254
D.2	ATC specific Guidance from OSA AND OPA	254
D.3	Ground System recommendations from interoperability specification	255
D.3.1	Recommendations for ADS-B Messages and reports (Section 4.4.1)	255
D.3.2	Recommendations for the use of identity information (Section 4.5.1)	255
D.3.3	Recommendations for Quality Indicators (Section 4.5.3)	255
D.3.4	Recommendations for emergency Indicators (Section 4.5.3.1)	256
D.3.5	Recommendations for Special position Indicators (Section 4.5.3.2)	256
D.3.6	Other miscellaneous recommendations	256
Annex E	SURVEILLANCE RISK AND QUALITY CONSIDERATIONS FOR ADS-B	258
E.1	Introduction	258
E.2	Reference Radar Models	258
E.3	Surveillance Risk and Close Approach Probability CALCULATION	259
E.4	Comparative radar Baselines vs ads-b For TMA (3NM) Separation	261
E.5	Comparative radar Baselines vERSUS ads-b For EN-ROUTE (5NM) Separation	262
E.6	ADS-B Position Errors	264
E.7	CAP For ADS-B quality indicatorS	264
E.8	effects of ADS-B Asynchronous Updates	265
E.8.1	Use of Velocity Information to Time Register Positions	266
E.8.2	No Time Registration	266
E.9	Relevance of Results to OSA	267
E.10	Summary of the assumptions made	267
Annex F	MAPPING BETWEEN NUC _p AND NIC/ NAC _p FOR ATC SEPARATION SERVICE	272
F.1	INTRODUCTION	272
F.2	QUALITY INDICATOR ENCODING and Summary of Separation Requirements USING NIC/NAC _p	272

F.3	NUC _p REQUIRED VALUES FOR 5NM/3NM SEPARATION	273
Annex G	ANALYSIS OF NUC _p USE RISK	274
G.1	Introduction	274
G.2	Further mitigations	276
G.3	Other considerations	276
Annex H	ADS-B-NRA INTEROPERABILITY REQUIREMENTS FOR 1090 MHz Extended Squitter	279
H.1	General Information on 1090 MHz Extended Squitter ADS-B	279
H.1.1	Broadcast Message Characteristics	279
H.1.2	Formal definition	281
H.1.3	Set of parameters	281
H.1.4	Parameter Rules	283
Annex I	TIME-TO-ALERT CONSIDERATIONS	287
Annex J	ACRONYMS	290
Annex K	LIST OF PARTICIPANTS	293

List of Tables

Table 1: Airborne Accuracy and Position Integrity Requirements for 5 NM Separation in En Route Airspace	35
Table 2: Airborne Accuracy and Position Integrity Requirements for 3 NM Separation in Terminal Airspace	36
Table 3: ADS-B Airborne Equipment Integrity, Continuity & Latency Requirements.....	38
Table 4: Ground Receive Subsystem Integrity Requirements	41
Table 5: Ground Timing Requirements	42
Table 6: Ground Update Intervals and Reception Time Requirements for 5 NM En Route Separation	43
Table 7: Ground Update Intervals and Reception Time Requirements for 3 NM Terminal Separation	44
Table 8: NRA Environment Definition in Controlled Airspace	57
Table 9: NRA Environment Definition in Uncontrolled Airspace	60
Table 10: OSED - ADS-B-NRA Control Phases.....	73
Table 11: OPA - Required Data Items at the Input of the ATC Processing System.....	96
Table 12: OPA - Update Interval and Update Probability Comparisons	100
Table 13: OPA - Summary of ADS-B Update Requirements.....	102
Table 14: OPA - Accuracy Performance Comparison.....	105
Table 15: OPA - Summary of ADS-B Accuracy Requirements.....	107
Table 16: OPA – Data Integrity of Position Information Requirements Comparisons	110
Table 17: OPA – Summary of Data Integrity Requirements for Position Information	112
Table 18: OPA – Identification and Status Integrity Comparisons.....	114
Table 19: OPA – Summary of ADS-B System Integrity Requirements for Identification and Status Information	116
Table 20: OPA – Track Integrity Performance Comparisons.....	117
Table 21: OPA – Summary of ADS-B Requirements for Track Integrity.....	118
Table 22: OPA - Reliability Performance Comparisons.....	120
Table 23: OPA – Summary of ADS-B Reliability Requirements.....	121
Table 24: OPA - Other Performance Requirements Comparisons	124
Table 25: Summary of ADS-B Timing Requirements.....	126
Table 26: Summary of System Capacity Requirements	127
Table 27: OPA - Radar Model Parameters	135
Table 28: OPA - Single Plot Error Threshold Distances for $L= 10^{-7}$ to 10^{-3} per plot	137
Table 29: OSA - Definition of Safety Terms.....	140
Table 30: OSA - ED-78A/DO264 Hazard Classification Matrix	145
Table 31: OSA - Risk Classification Scheme	147
Table 32: OSA - Roles of OSA Actors	152
Table 33: OSA - List of ADS-B-NRA Operational Hazards – From Expert Analysis.....	155

Table 34: OSA - ADS-B-NRA External Mitigation Means List	156
Table 35: Safety Target for NRA hazards	157
Table 36: Summary of Severity, Safety Target, Safety Objectives and Pe for OH1 (Sudden and unexpected loss of position information for a single aircraft previously identified in the sector).....	158
Table 37: Summary of Severity, Safety Target, Safety Objectives and Pe for OH2 (Sudden and unexpected loss of position information for multiple aircraft previously identified in the sector.).....	158
Table 38: Summary of Severity, Safety Target, Safety Objectives and Pe for OH3 (Incorrect position information for multiple aircraft in a wide area is displayed on the CWP).....	159
Table 39: Summary of Severity, Safety Target, Safety Objectives and Pe for OH4 (Incorrect position information for one aircraft is displayed on the CWP).....	160
Table 40: Summary ‘Pe pca’ (“Case 1 to 3”).....	163
Table 41: ADS-B NRA Functions List.....	165
Table 42: OH1d Basic Causes and Safety Requirements	169
Table 43: OH1u Basic Causes and Safety Requirements	173
Table 44: OH2d Basic Causes and Safety Requirements	177
Table 45: OH3d1 Basic Causes and Safety Requirements	181
Table 46: OH3u1 Basic Causes and Safety Requirements	185
Table 47: OH3d2 Basic Causes and Safety Requirements	188
Table 48: OH3u2 Basic Causes and Safety Requirements	192
Table 49: OH3d3 Basic Causes and Safety Requirements	195
Table 50: OH3u3 Basic Causes and Safety Requirements	199
Table 51: OH4d1 Basic Causes and Safety Requirements	203
Table 52: OH4d1 Basic Causes and Safety Requirements	207
Table 53: OH4d2 Basic Causes and Safety Requirements	210
Table 54: OH4u2 Basic Causes and Safety Requirements	214
Table 55: OH4d3 Basic Causes and Safety Requirements	217
Table 56: OH4u3 Basic Causes and Safety Requirements	221
Table 57: OH9 Safety Requirements	225
Table 58 OSA Environment Conditions and External Mitigation Means List	226
Table 59: OSA - ADS-B-NRA Internal Mitigation Means List	228
Table 60: OSA - ADS-B-NRA Safety Requirements List.....	229
Table 61: Summary Detection Means Horizontal Position Error “Case 2”	246
Table 62: Summary Horizontal ‘Pe_pca’ calculation	250
Table 63: Showing Required ADS-B Accuracy and Integrity Quality Values.....	265
Table 64: NIC, NAC _p , NUC _p and Containment Bounds	273
Table 65: Type Code Definition	280

Table 66: Minimum Requirements for ADS-B-NRA Application	281
Table 67: Additional Requirements for ADS-B-NRA Application	282
Table 68: Requirement for Specific Airspace.....	282

List of Figures

Figure 1: ADS-B Functional Architecture	6
Figure 2: Relationship between RFG and Other RTCA/EUROCAE Deliverables	11
Figure 3: RFG Working Process.....	16
Figure 4: Method of Derivation of Safety and Performance Requirements	18
Figure 5: Traceability scheme.....	21
Figure 6: Functional Architecture Scope for ADS-B-NRA	24
Figure 7: ADS-B-NRA Surveillance Environment Illustration.....	71
Figure 8: Kiruna TMA with ADS-B sectors for step 2 of the ADS-B implementation.....	80
Figure 9: OSED – High-level Phase diagram	85
Figure 10: OSED – Phase 1 ADS-B Data Acquisition	86
Figure 11: OSED – Phase 2 Initiation of ADS-B Based Services	87
Figure 12: OSED – Phase 3 Provision of ADS-B Based Services	88
Figure 13: OSED – Phase 4 Alerting.....	89
Figure 14: OSED – Phase 5 Termination of ADS-B Based Services.....	90
Figure 15: OPA - Radar Measurement Errors	131
Figure 16: Measurement data for USA Monopulse SSR (Mode S) radar (Model B).....	133
Figure 17: Measurement data for USA Sliding Window SSR (Mode S) radar (Model C).....	134
Figure 18: OPA – Position Error Distributions.....	135
Figure 19: Radar 95% accuracy against range and ADS-B accuracy indicator (NAC) values.....	136
Figure 20: OSA process overview	142
Figure 21: OSA - OHA Steps	143
Figure 22: OSA - Pe for hazard-effect pair.....	146
Figure 23: OSA - ASOR Steps	149
Figure 24: OSA - <i>Example of Fault Tree structure</i>	150
Figure 25: Functional Description for NRA	164
Figure 26: OH1d Fault Tree.....	168
Figure 27: OH1u Fault Tree.....	172
Figure 28: OH2d Fault Tree.....	176
Figure 29: OH3d1 Fault Tree.....	180
Figure 30: OH3u1 Fault Tree.....	184

Figure 31: OH3d2 Fault Tree.....	187
Figure 32: OH3u2 Fault Tree.....	191
Figure 33: OH3d3 Fault Tree.....	194
Figure 34: OH3u3 Fault Tree.....	198
Figure 35: OH4d1 Fault Tree.....	202
Figure 36: OH4u1 Fault Tree.....	206
Figure 37: OH4d2 Fault Tree.....	209
Figure 38: OH4u2 Fault Tree.....	213
Figure 39: OH4d3 Fault Tree.....	216
Figure 40: OH4u3 Fault Tree.....	220
Figure 41: ATCo CWP track refresh cycles depicting an oscillating position quality over time	223
Figure 42: State diagram to render incorrect position and quality indicator.....	233
Figure 43: Probabilities leading from an Incorrect Position Hazard to a Collision	235
Figure 44: From Positioning Error to Incorrect Aircraft Position.....	236
Figure 45: Scenario Definitions	239
Figure 46: Example Trajectory for Monte-Carlo Model (Based on Scenario C-1)	240
Figure 47: Probability distribution of bias errors given an integrity monitoring failure.....	242
Figure 48: Distributions of closest points of approach for scenarios C1 – C4.....	243
Figure 49: Distributions of closest points of approach for scenarios P1 – P3	244
Figure 50: Horizontal Position Error “Case 2” Detection Modelling	246
Figure 51: Error Area in Absolute Plan Position	249
Figure 52: Close Approach Footprints Relative to Problem Aircraft	249
Figure 53: Fault Tree Symbology	252
Figure 54: Showing characteristics of error probability distribution.....	259
Figure 55: Showing the collision risk situation due to surveillance errors	259
Figure 56: Showing CAP values for radar models at selected ranges versus ADS-B with selected quality indicators for TMA (3NM) application.	261
Figure 57: Showing CAP values for radar models at selected ranges versus ADS-B with selected quality indicators for en route (5NM) application.	263
Figure 58: Time sequence concerning Time-To-Alert.....	288

SECTION 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 (ADS-B) application “Enhanced Air Traffic Services in Non-Radar Areas using ADS-B surveillance” (ADS-B-NRA). This application is fully defined in the Operational Services and Environment Definition (OSED) found in Annex A.

This document was developed based on guidance for SPR and INTEROP standards contained in RTCA DO-264/EUROCAE ED-78A, “Guidelines for Approval of the Provision and Use of Air Traffic Services Supported by Data Communications.” [18]. This document provides the minimum ADS-B-NRA requirements - and allocations of these requirements to both air and ground domains.

The requirements contained in this document are necessary to provide adequate assurance that the elements of the relevant Communication, Navigation, and Surveillance / 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.

This requirements definition is based on the results of a 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^{1,2}.

1.1 Purpose

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-NRA application. Requirements are allocated to the necessary domains of the CNS/ATM system, i.e., at aircraft and ground domain level.

These requirements can be used for approval processes including aircraft type design approval, and operational approvals for aircraft operators and Air Traffic Services Providers (ATSP).

In addition, this document also provides guidance to determine the levels of design assurance and performance that are needed for the aircraft domain systems and ground domain systems, to support the ADS-B-NRA application.

The ADS-B-NRA SPR and INTEROP standards are envisaged to be used along with SPR and INTEROP standards from other surveillance applications based on ADS-B to develop minimum standards for avionics systems. These standards will assure that all subsystems perform their intended functions adequately for ADS-B applications.

1.1.1 ADS-B-NRA

The ADS-B-NRA application is designed to support and enhance Air Traffic Services in both En-route and TMA airspaces in non-radar areas (NRA).

¹ More specifically, the work was conducted under the Terms of References of RTCA SC-186 and EUROCAE WG53.

² The EUROCONTROL CASCADE Programme acted as the European Reporting Authority for the OSED part of this document.