

RTCA Special Committee 186 Working Group 6

ADS-B / ASA MASPS Maintenance

Meeting #20

RTCA, Washington DC

9:00am – 5:00pm EST

14 – 16 December 2010

Proposed Table of Contents for the Combined DO-242B and DO-289

Super MASPS

Revision 1

Gary Furr, Engility Corporation and Tom Pagano, FAA

SUMMARY

This Working Paper reviews the proposed Table of Contents of the combined Super MASPS including parts of both DO-242B and DO-289 as it has been reviewed and revised during several WG-6 Meetings.

1. INTRODUCTION

The RTCA SC-186 Plenary has directed the newly reconvened Working Group 6 to review the ADS-B MASPS (working draft of DO-242B) and the ASA MASPS (DO-289, including Change 1) for the purpose of combining the two MASPS documents.

During discussions in several Teleconference and face-to-face Meetings that Working Group 6 has held since reconvening, it has been suggested that the two MASPS documents be combined into a newly minted RTCA publication which represented a combining and reorganizing of the materials in both MASPS documents.

This Working Paper serves to present the latest version of the proposed Table of Contents of the combined MASPS document in a format that will allow further modifications during this and future meetings and Teleconferences.

2.0 Initial Proposed Outline of Combined Document

| Sections numbers of DO-3xx | Title of DO-3xx Sections | Author | Comments |
|----------------------------|--|--------------|---|
| 1 | Purpose and Scope | Larry Kenney | Review Section 1 of both DO-242A and DO-289 and make recommendations on final content. |
| 1.1 | Introduction | | |
| 1.2 | System Overview | | |
| 1.3 | Operational Applications | | |
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| 2 | Functional and Operational Requirements | Dean Miller | Review Section 2 of both DO-242A and DO-289 and make recommendations on final content. |
| 2.1 | General Requirements | | Probably all of section §2.1.2 can be moved into the ADS-B section below into §3.2.1.3. §2.1.2.19 may specifically be moved into Appendix "I" and revised |
| 2.2 | Operational Requirement Descriptions | | Parts of DO-289 section 2.4 will be moved into §2.2. Need to review the need for the Operational descriptions in the new document. |
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| 3 | ADS-B and Airborne Systems Definition and Performance Requirements | | |
| 3.1 | System Scope and Definition of Terms | | |
| 3.1.1 | ASA System Scope and Definition of Terms | | |
| 3.1.2 | ADS-B System Scope and Definition of Terms | | |
| 3.2 | System Descriptions | | Includes the following items: (1) Air Systems, (2) Ground Systems, Need to include a section for Surface Vehicles. |
| 3.2.1 | Aircraft Systems | | |
| 3.2.1.1 | CDTI | | |
| 3.2.1.2 | ASSAP | Dave Elliott | |
| 3.2.1.3 | ADS-B Subsystem Description (Transmit and Receive) | Tom Pagano | Review Sections of both DO-242A and DO-289 and make recommendations on final content. |
| 3.2.1.4 | ADS-B Subsystem Requirements | Tom Pagano | |
| 3.2.1.5 | ADS-R Receive and Process | Rob Strain | |
| 3.2.1.6 | TIS-B Receive and Process | Rob Strain | |
| 3.2.2 | ANSP Systems | | |
| 3.2.2.1 | ADS-B (Ground Receive) (RAD, NRA, APT, ?GIM?) | | |
| 3.2.2.2 | TIS-B and ADS-R Service Description | Mike Garcia | |
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| Sections numbers of DO-3xx | Title of DO-3xx Sections | Author | Comments |
|----------------------------|---|--------------|--|
| 3.3 | System Requirements (and ACL) | | Parts of DO-289 §2.4 may be moved into §3.3. Top level summary and table of applications. |
| 3.3.1 | CDTI | Pete Stassen | |
| 3.3.1.1 | CDTI for ACL=1 | Pete Stassen | |
| 3.3.1.2 | CDTI for ACL=2 | Pete Stassen | |
| 3.3.2 | ASSAP | Dave Elliott | |
| 3.3.3 | ADS-B Subsystem Requirements | Tom Pagano | |
| 3.3.3.1 | ADS-B Surveillance Coverage | Tom Pagano | |
| 3.3.3.2 | ADS-B Information Exchange Requirements by Equipage Class | Tom Pagano | |
| 3.3.3.3 | ADS-B Data Exchange Requirements | Tom Pagano | |
| 3.3.3.4 | ADS-B Network Capacity | Stan Jones | |
| 3.3.3.5 | ADS-B Medium | Stan Jones | |
| 3.3.3.6 | ADS-B System Quality of Service | Dean Miller | |
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| 3.4 | Messages and Reports | Gary Furr | The Intent Info can be removed IP12-ASA needs to be reviewed as part of this editing. Add broadcast of TCAS RA Message for TCAS equipped aircraft. |
| 3.5 | Subsystem Requirements and Assumptions | Rudy Johnson | Section 3.4 of DO-289 should be reviewed and included as necessary |
| 3.6 | Functional Level Requirements | | No shall statements in this section of DO-242A |
| | | | |
| 4 | ADS-B IN System Applications Requirements | Taji Shafaat | |
| 4.1 | Enhanced Visual Acquisition (EVACQ) / ATSA-AIRB (Reference only in DO-3xx) | | |
| 4.2 | Conflict Detection (CD) (individual reference only) | | |
| 4.3 | Airport Surface Situational Awareness (ASSA) (Reference only in DO-3xx) | | |
| 4.4 | Final Approach and Runway Occupancy Awareness (FAROA) (agreed to be included) | | |
| 4.5 | Enhanced Visual Approach (EVAPP) / ATSA-VSA (Reference only in DO-3xx) | | |
| 4.6 | ATSA – SURF (Reference only in DO-3xx) | | |
| 4.7 | In Trail Procedure (ITP) (Reference only in DO-3xx) | | |
| 4.8 | SURF IA (reserved for future revisions) | | |
| 4.9 | Flight Deck Interval Management – Spacing (FIM-S) (Reference in DO-3xx and add Appendix “I” for intent) | | |
| 4.10 | Ground-Based Interval Management (reserved for future revisions) | | |
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| Sections numbers of DO-3xx | Title of DO-3xx Sections | Author | Comments |
|----------------------------|---|--------------------------|----------|
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| Appendix A | Acronyms and Definitions of Terms | Gary Furr | |
| Appendix B | Bibliography and References | Gary Furr | |
| Appendix C | Derivation of Link Quality Requirements for Future Applications | | |
| Appendix D | Design Tradeoff Considerations (update old 242A-App_G) | Tom Pagano | |
| Appendix E | Receive Antenna Coverage Constraints (update old 242A-App_H) | Tom Pagano Stan Jones | |
| Appendix F | Integrity Considerations for ADS-B Applications (rewrite and retitle old 242A-App_I) | | |
| Appendix G | Latency and Report Time Error Data (update old 242A-App_K) | Tom Pagano | |
| Appendix H | Derivation of Track Acquisition and Maintenance Requirements (update old 242A-App_L) | Tom Pagano | |
| Appendix I | Intent Guidance Material for Future ADS-B Intent Broadcast (update or rewrite old 242A-App_N) | | |
| Appendix J | L/W and Position Offset Coding (old 242A-App_P, renamed and updated with GPS Antenna and L/W Changes) | | |
| Appendix K | Future Air-Referenced Velocity (ARV) Broadcast Conditions (update old 242A-App_Q) | | |
| Appendix L | Determining the Navigation Accuracy Category for Velocity (NAC _v) (rewrite starting with revised Appendix from Link MOPS) | | |
| Appendix M | Compatibility of ASA MASPS with ADS-B Standards and Fielded Systems (update of old 289-App_AE) | | |
| Appendix N | MASPS / Link MOPS Compliance Matrices (alternatively could be published as new Appendices in Changes to DO-260B and DO-282B) | | |
| Appendix O | Need to re-review the old 242A-App_J for relevance | Tom Pagano | |
| Appendix P | | | |
| Appendix Q | | | |
| Appendix R | | | |