

Working Group 6  
RTCA DO-242A ADS-B MASPS  
Minutes of 11th Meeting held in Seattle WA.  
January 28 – February 1, 2002

The attendees included:

Tom Foster, Rockwell Collins	Jonathan Hammer, Mitre/CAASD	James Maynard, UPS AT
Stuart Searight, FAA / ACT-350	Bill Harman, MIT/LL	Ken Staub, Trios Assoc.
Richard Barhydt, NASA Langley	Steve Heppe, ADSI, Inc.	Tony Warren, Boeing Air Traffic Mgmt.
Bill Flathers, AOPA	Gary Livack, FAA / AFS-400	

## Monday, 28 January

### 1. Introductory Remarks

- Tom Foster convened the meeting by thanking Tony Warren and Boeing for hosting WG6. Further remarks were kept very brief so that the group could focus on preparing for the impending telecon with members of WGs 3 & 5.

### 2. Review Agenda

- The agenda was approved as published with the caveat that things might need to be rearranged later in the week depending on the outcomes of the telecon with WG5 and the progress made on the review of the Intent revision proposals.

### 3. Review and Approve Minutes of Last Meeting

- There were three minor corrections requested of the minutes from the December WG6 meeting:
  - Meeting was 10<sup>th</sup> not 9<sup>th</sup>
  - Page 3, item 9, 4<sup>th</sup> bullet, 4<sup>th</sup> sub-bullet – change “Target Change Report” to “Trajectory Change Report”.
  - Page 5, “Note 7 of Table 3-4” bullet - Replace “principles” with “principals”.
- Minutes from the last meeting were approved without further comment.

### 4. Intent MASPS revisions (IP26) [T. Warren, R. Barhydt]

(242A-WP-11-01, 242A-WP-11-03, 242A-WP-11-04, 242A-WP-11-05, 242A-WP-11-09,)

- Telecon with WGs 3 & 5
  - The telecon began with a review of Tony’s proposal as documented in Section 3.3.3.1 of 242A-WP-11-01.
    - It was agreed to that TSR requirements for ranges greater than 40 nmi will be indicated as only desired.
    - There was a proposal from Stan Jones to not have separate requirements for when there is a change in intent. Tony and Richard were concerned that this would be too lax a requirement for TSRs inside of 2 minutes alert time.

- It was asked for how long must the tighter requirement for change of intent be broadcast. It was recommended that two update intervals would be appropriate, and was agreed to.
- It was agreed to include a note to indicate that the ranges shown in Table 3-4(b) are for airspace densities discussed in Tables 2-3 and 3-4(a).
- It was agreed to delete the column for 60 nmi since this is only an example value of the range formula for a particular range, and not a minimum or desired operating range for any equipage class.
- Agreements on TSR:
  1. Requirements for 90 and 120 nmi will be indicated as desired.
  2. Desired requirements for 90 and 120 nmi will be 45.5 and 54 seconds, respectively, regardless of if there is a change in intent information or not.
  3. There will be a requirement that the higher update rate required when there is a change in intent shall be maintained for at least a length of time equal to two update periods.
- Agreements on TCR:
  1. All requirements will be specifically for TCR+0
  2. TTG will no longer be a factor in determining the required update rate.
    - a. The last row of Table 3-4(b) labeled TTG > 150s will be deleted.
    - b. The conditional of TTG = 150 sec will be removed from the new last row, so that it now reads “TCR+0 nominal”.
  3. The requirements for TCR+0 with a state change at ranges of 90 and 120 nmi will be indicated as “desired”.
  4. As with TSRs, there will be a requirement that the higher update rate needed for a change in intent shall be maintained for at least a length of time equal to two update periods.
- Agreements on TCR+1:
  1. The update requirements for TCR+1 probably need to be related to TTG of TCR+0.
  2. This material will be in the intent appendix.
- It was proposed that for the applications being discussed, if TTG is greater than some threshold, perhaps the content of the report can be minimized to the minimum that is needed.
- It was agreed the columns in the table will include 20, 40, 50 (A2 desired), 90, and 120 (A3 desired).
- WG6 had a review of the agreements reached on the intent telecon.
  - It was agreed that the requirements are to be the given as formulas and associated text, and that the tables will be used to summarize those requirements and refer back to the text.
  - It was agreed the update requirements will state that the values from the formulas are to be rounded to the nearest whole second.
  - Bill Harman felt it was not agreed to remove the word “future” from the table title “ADS-B Update Requirements for Future Intent Reporting”. Most others felt this was agreed to in the telecon and that “future” should be removed for the final draft of DO-242A that will be distributed to plenary.

## Tuesday, January 29

Tom reconvened the meeting by informing everyone of a SC-186 Leadership Team telecon scheduled for the following day. Tom expressed his desire to have the Leadership Team reassert that the link MOPS are not obligated to comply with every requirement put forth in the MASPS. It is hoped that if this is understood, some of the concerns with WG6 plans for topics such as intent will be alleviated. Tom further suggested that it be proposed to the Leadership Team that the priorities for revision B of the MASPS be agreed to and documented. Stating now that DO-242B will have major goals of harmonizing with the ASA MASPS and European plans should allow WG6 to better justify the scope of DO-242A.

### 4. (continued) Return to review of Intent MASPS revisions

- The material from Richard Barhydt in Sections 2.1.2 and 3.4.3.5 of 242A-WP-11-01 was reviewed.
- Some reorganization of the material between sections 2 and 3 was agreed to for better understanding of the material and flow for the reader.
- Due to the scheduled telecon regarding Table 3-4 and the infamous Note 7, this topic was tabled until it is revisited as part of the review of 242A-WP-11-01. *(See item #11 of these minutes.)*

### 5. Table 3-4 and its associated notes (IP35 & IP46) [B. Harman, J. Hammer, S. Heppe, S. Jones] (242A-WP-11-08)

- After much discussion on the proposed “new note 7” and the concerns raised by Tom Foster and others that this replacement note was out of scope of IP35 and the intended clarification or deletion of the old note 7, it was agreed that IP35 will be resolved by deleting the old note 7 and a new Issue Paper will address the proposed “new note 7”. [AI 11-06] Steve Heppe will author a new Issue Paper on the need for a note that will relax the update requirements from 3 seconds to 5 seconds for aircraft pairs closer than 10 nmi that adhere to other geometrical constraints (such as not being within an extreme proximate range or converging within a less proximate range). The new note, which will be the resolution of this new Issue Paper, was conditionally agreed to by WG6 pending review by WG1 and WG4 at their upcoming joint meeting. It was further agreed to have this note be placed at the end of the Table 3-4 notes so that it is not note number 7. This will help have the note recognized as a new note on a new topic, and not confused as a replacement for the old note 7.
- Jonathan reported on Stan Jones’s request to have a figure or text explaining that the requirements of table 3-4 are a linear curve and not a step function. It was reported by Bill Harman that Stan has “lost” such arguments in both WG3 and the TLAT and that Table 3-4 can indeed be interpreted as a step function on the requirements. Jonathan sent an email to Stan informing him that this will not be done in revision A and that he should submit an issue paper on this topic for consideration in revision B.

### 6. Conditions for broadcasting ARV

- Tony began his proposal on adding new required conditions for when ARV should be broadcast by demonstrating he felt 1090 MHz could meet these if they slackened there twice per second reporting of position and velocity, which he felt they can do and still meet the 3 second requirement.

- The possible conditions Tony proposed for ARV broadcast are:
  1. Whenever TSRs are being broadcast or when an aircraft is in a climb or decent mode. This would help the ground side do real-time wind field surveillance.
  2. Whenever a specific service level that requires ARVs is in process. (Tony also said he thought perhaps aircraft will need to broadcast in the MS their current operating service level and the highest potential service level of the aircraft.)
  3. Implement an OC-RFI message which could be used to request that ARV be broadcast.
- After some lively discussion, it was decided by the group that no new requirements on the update of ARV data will be included in DO-242A. Tony repeated his disagreements with this position and said he will author an Issue Paper on this subject and possibly non-concur as a way to bring this issue to plenary. *(Note: WG5 had a request later in the week to slacken the requirement that ARV be updated at the same rate as SV when ground data is lost and ARV is required to be broadcast. This issue was taken to the leadership team and it was decided there was insufficient time to resolve this for revision A if the April schedule is to be met. Refer to items 9 and 10 of these minutes for more details.)*

7. Report Reorganization MASPS Revisions (IP33) [J. Maynard] (242A-WP-11-01)

- Table 3.4.3.1 which defines the requirements for the State Vector report elements was examined, particularly the minimum resolutions required. There was concern with some of the resolutions and the inconsistency of required resolution from field to field (e.g. position needs accuracy to 20 ft, but velocity is 1 foot/second). It was noted that there is an action item [9-15] for WG4 to review stressing applications and the required resolution of the SV fields. Concern was expressed that this action item needs to be completed to justify any specification of resolution in the MASPS.
- Further examination led to the  $NAC_V$  categories defined in Table 2.1.2.13. While it was agreed that keeping 5 values for  $NAC_V$  would be consistent with the DO-242A, it was noted that no other requirement would have ADS-B systems reporting to the accuracy of  $NAC_V = 4$  (Horizontal Velocity error (95%) < 1.5m and Vertical Geometric Error (95%) < 1.5 feet/second). However, there is a benefit of eliminating a  $NAC_V$  value of 4 since it could then be a 2-bit field with values 0-3. [AI 11-7] Steve Heppe will author an Issue Paper on this request that will first be reviewed by WG6 and then passed on to WG4.

**Wednesday, January 30**

8. Issue Paper 51, “Temporary 24-bit address identifiable only to ATC” (242A-WP-11-06, 242A-WP-11-07)

- It was agreed by WG6 that IP51 needs to be discussed with the Extended Squitter community to find a way to make this work within ICAO policy. It was further felt that the resolution of IP05 “Anonymous Mode” of the address qualifier was still to be incorporated in DO-242A and that this field’s use could be expanded to signify that the ADS-B 24-bit address is a temporary address. IP51 will be deferred to a future revision of the MASPS.

9. 2<sup>nd</sup> Telecon with WG5

- A brief telecon was held with WG5. Among the issues raised:

- WG5 requested a relaxation of the requirement to update air-referenced data at the same rate as the state vector when it is required to be broadcast under the failure mode condition that ground data is lost. WG6 felt this would need analysis to validate and that it did not have the time to perform such analysis. It was agreed to bring this up in the SC-186 telecon that followed this telecon. (See item 10 of these notes.)
- It was requested that when data from both altitude sources is available and being broadcast, to allow for a lower update rate of one altitude source. As with the ARV request, WG6 felt this would need analysis to validate and that it did not have the time to perform such analysis and it was agreed to bring this up in the SC-186 telecon that followed this telecon. (See item 10 of these notes.)
- Clarification was asked on the Mode Status Report field “Surveillance Support Code”. Since nobody from either Working Group knew what the field represented or what it was for, it was agreed to remove it from MS for revision A.
- WG5 requested that the air-density model discussed in section 3.3.4 be replaced with a more relevant scenario such as LA2020 and/or Core Europe 2015. It was agreed that this decision should be made by the leadership team, so this topic was also tabled until the leadership telecon. (See item 10 of these notes.)
- A detailed review of the elements of TSR and TCR and when each of these fields is required was requested by WG5. It was agreed this would be better served with a sub-group conducting a telecon next week. The telecon was scheduled for Tuesday, February 5 at 1:00pm EST. Stan Jones will set up a phone bridge for a two hour call. Tony, Richard, Stuart, and Jim will be the WG6 participants.

#### 10. SC-186 Leadership Telecon

- The Telecon focused on the issues facing WG6 and their attempts to complete DO-242A. Among the topics discussed:
  - Jonathan Hammer reported that he did not feel WG4 would be able to perform either analysis needed for the requested relaxing of requirements by WG5 (update rate for ARV for one altitude when both altitude sources are available and being broadcast). WG5 stated that if these requirements were not relaxed, it would lead to inefficiencies in the initial UAT system. The conclusion of the leadership team was that it did not want to endanger the schedule for DO-242A so these requirements will not be relaxed in revision A.
  - The traffic-density model in 3.3.4 was discussed. It was agreed to replace the model in DO-242 with a model used in the TLAT report (either LA 2020 or Core Europe 2015). WG5 agreed to lift the appropriate material from the TLAT report, format it for DO-242A, and provide it to WG6. *(Note: WG5 believed that both LA 2020 and Core Europe 2015 were to be included in DO-242A. WG6 felt, however, that only one – preferably LA 2020 would be inserted. A note was sent to WG5 on this matter.)*
  - Rocky Stone will provide a revision to Note “c” of Table 2-3 to clarify that 40-90 nmi operational ranges are meant to include airspace over more dense terminal areas. Upon reception of this note, Stuart will modify the “new note 14” for Table 3-4(a) so that they are consistent.
  - WG6 took an action item to provide WG4 with all of the data elements for which resolution and/or ranges need validation. Among the data elements to be examined are fields from the SV, MS, OC-ARV, TSR, and TCR reports.

## 11. Review of Proposed MASPS Text revisions from 242A-WP-11-01 [J. Maynard]

- 2.1.2.3 “Address and Address Qualifier” and its subparagraphs were reviewed and accepted by WG6 after minor revisions. This text will close IP05 on anonymity and be an opening towards a possible future resolution to IP51 which will be deferred from revision A.
- 2.1.2.4 “Participant Category was reviewed and accepted by WG6. Pending Ken Staub verifying the proper phraseology is used for obstacle categories (point, cluster, and line) [AI 11-08] This text will close IP06.
- 2.1.2.5 “Aircraft Size Code” and 2.1.2.6.2 “ADS-B Position Reference Point” were agreed to after slight modifications. This text will close IPs 4 and 14, respectively. (Still to be reviewed is appendix showing supporting analysis for Aircraft Size Code from Ken Staub. [AI 9-3])
- 2.1.2.7.2 “Altitude Rate” was reviewed. This led to a discussion of the uncertain status of how IPO2 was to be resolved for requiring barometric altitude rate when it is not available from the rate source and must be derived from the barometric altitude source. Changes were made to reserve 2.1.2.15 “Barometric Altitude Quality Code” for a future MASPS revision.
- 2.1.2.8 “Heading” was reviewed and accepted. It was agreed that the new text requiring heading to be broadcast if an aircraft’s size code is 1 or greater was closure for IP18.
- 2.1.2.9 “Capability Class (CC) Codes” and its subparagraphs were reviewed and agreed to.
  - The CC fields for “CDTI Capability” (2.1.2.9.1) and “TCAS/ACAS Installed and Operational” (2.1.2.9.2) are partial closures to IP12. (For further discussion on IP12 see Section 2.1.2.10.1.)
  - 2.1.2.9.3 “Service Level of transmitting A/V” will need some TBDs since WG4 will not be able to deliver possible definitions for DO-242A.
  - Sections were added for CC codes for TSR and TCR per plenary agreements.
- 2.1.2.10 “Operational Mode (OM) Codes”:
  - 2.1.2.10.1 “TCAS/ACAS Resolution Advisory Active Flag”: This OM Code combined with the CC codes for CDTI and TCAS/ACAS will close IP12.
  - 2.1.2.10.2 “TCR Cycle Number”: Text will be provided by Tony Warren. [AI 11-9]
  - 2.1.2.10.3 “Reserved for TCR transition flag”: This will be a reserved section for a future MASPS revision. Text will be provided by Tony Warren [AI 11-9]
  - 2.1.2.10.4 “IDENT Switch Active Flag”: This was a new proposed resolution for IP52. After minor editing it was agreed this will be the WG6 resolution to IP52.
  - 2.1.2.10.5 “Using ATC Services Flag”: This is a new proposed resolution for IP53.
- 2.1.2.11 “Navigation Integrity Category (NIC)” was reviewed. After filling in the TBDs in Table 2.1.2.11, the section was approved.
- 2.1.2.12 “Navigation Accuracy Category for Position (NAC<sub>p</sub>)” was reviewed and agreed to.
- 2.1.2.13 “Navigation Accuracy Category for Velocity (NAC<sub>v</sub>)” was reviewed and agreed to after noting that – pending acceptance from WG4 – the row for NAC<sub>v</sub>=4 will be deleted to resolve the Issue Paper to be authored by Steve Heppe per AI 11-7 (IP57).
- 2.1.2.14 “Surveillance Integrity Level (SIL)” was reviewed and agreed to after minor changes to heading row of Table 2.1.2.14.
- 2.1.2.15 “Barometric Altitude Accuracy Code (NAC<sub>baro</sub>)” was reviewed and agreed to after moving table 2.1.2.15 into the notes to clarify these values are for a future MASPS revision.

- 2.1.2.16 “Barometric Altitude Integrity Code (NIC<sub>baro</sub>)” was reviewed and agreed to after minor clarification.
- 2.1.2.17 “Emergency/Priority Status” was reviewed and agreed to. (Note: this final text will not incorporate the author’s recommended resolution of IPs 52 and 53. These IPs will instead be resolved with OM codes in 2.1.2.10.)
- 2.1.2.18 “Short Term Vertical Intent” was reviewed. It was agreed to reorganize this section by only listing the report elements and having their detailed definitions in Section 3. Also, introductory text that was reviewed for the first time underwent major edits.
- The discussion on the intent information and its organization led into an examination of the resolution of some of the fields in the SV report. Work was done on getting these values as best possible before turning them over to WG4 for consideration.

## Thursday, January 31

- The group began the day with a quick assessment of the upcoming meeting schedule and agreed it would be beneficial to push the February WG6 meeting back one week. The February meeting will now take place from Monday, February 18 through Friday, February 22, and still be in Arlington VA. The group also decided to have a planned meeting on April 12 after plenary to debrief and examine any action items from the balloting of DO-242A. A meeting to review the completion of any needed revisions to the final draft DO-242A was scheduled for May 7 (9:00am) through May 9 (1:00pm) at a location yet to be determined (Atlantic City??, Western VA??, Montana??)
- Tony Warren brought up an email he received from Ron Jones and an apparent mistake in the requirements for port and starboard ranges as defined in Note 3 of Table 3-4(a). [AI 11-10] Tony will author an issue paper on correcting the note and Appendix H. The proposed resolution of the IP will need review by Jonathan and/or Stan.

### 11. (continued) Review of 242A-WP-11-01.

- 3.4.3.1 “Airborne/Surface State Determination” was reviewed. Much reworking and consolidating of Table 3.4.3.1 was done. After a reexamination of the requirements it was decided the conditionals were probably best suited for computer language-like text. Jim will reevaluate the tables and probably replace them with text for the airborne/surface determination tests. Also, Jim will add text for a third condition of “don’t know” for participant categories that could be either airborne or on the surface in which all SV element for both airborne and surface participants will be broadcast.
- 2.1.2.18.2 “Short Term Horizontal Intent” and its subparagraphs were review and edited.
- 2.1.2.18.3 “Trajectory Change Intent (Current and Future)” and its subparagraphs were reviewed. The TCP and TCP+1 material will be evaluated and that which is to be kept will be moved into the TCR+0 and TCR+1 sections.
- The review moved to Table 3.4.3.8 “TCR Definition” to examine the report fields and determine which fields are to be reserved and which are to be defined in revision A.
- While looking at the Short Term Intent material, it was decided that air referenced velocity vectors needed to be introduced in 2.1.2.7 “Velocity Vector”. This lead to another lengthy discussion on reorganization of the material between sections 2 and 3. Jim will strive to have all text in section 2 merely define the required data and give brief explanations of the fields. Section

3 will have all requirements on the data itself (update rates, ranges, resolutions, conditions for broadcast, etc.). Richard will also try to follow this criteria for the intent information for sections 2 and 3.

- Update rates for Modes Status elements were discussed and edited.
- The update requirements for ARV, TSR, and TCR reports were discussed. It was agreed to try to place the requirements in text with the appropriate “shalls” and use the tables to summarize those requirements.

## Friday, February 01

### 11. (continued) Review of 242A-WP-11-01.

- The group began the day with reviewing Stuart’s proposed text for the TSR and TCR requirements and that text’s effects on Table 3-4(c). After some editing, these words and the table were agreed to. The group then worked the ARV requirements in Table 3-4(b). Stuart will provide the text for this table similar to that done for Table 3-4(c). Stuart will incorporate this material into Jim’s 242A-WP-11-01A before distributing it participants of next week’s telecon on TSR and TCR content requirements, and posting it on the web site.
- The group examined another iteration of Jim’s 242A-WP-11-01A and the way Jim reorganized the sections per yesterday’s discussions.

### 12. Aircraft Size Characteristic Code Appendix (242A-WP-11-11) [K. Staub]

- The group reviewed the draft Appendix P on the 4 bit Aircraft Size Code. It was agreed to delete some of the tables. Ken will perform some updates per the groups feedback.

### 13. Review of new Appendices:

- The following are the planed new Appendices for DO-242A and their authors:
  - N: Intent White Paper material (Tony and Richard)
  - O: Encounter Scenario for Intent Data Rate requirements (Tony and Stan)
  - P: 4-bit Aircraft Size Code (Ken)
  - Q: Future ARV conditions (Richard)

### 14. DO-242 Review Assignments

- The group looked at DO-242 and determined all of the sections which were not directly edited by any of the Issue papers being addressed by revision A. From that review, the following assignments were given to review and provide any editing needed to make the entire document consistent and up-to-date:
  - Forward : Ken Staub
  - Section 1: Tom Foster
  - 2.0 – 2.1.1.4: Tom Foster
  - 2.2 – 2.2.3.3.2: Tom Foster
  - 3.0 – 3.3.2: Stuart Searight
  - 3.3.3.2: Ken Staub
  - 3.3.4 – WG5

- 3.3.5: Stuart Searight
- 3.3.6: Stuart Searight:
- 3.5: Stuart Searight
- 3.6: Stuart Searight
- 4.0 – To be done after all requirements are labeled
- Appendix A: Gary Livack
- Appendix B: Gary Livack
- Appendix C: Tony Warren
- Appendix D: Bill Flathers
- Appendix E: Bill Flathers
- Appendix F: Ken Staub
- Appendix G: Tom Foster
- Appendix H: Ken Staub (Warren input)
- Appendix I: Tom Foster
- Appendix J: Jonathan Hammer
- Appendix K: Stan Jones
- Appendix L: Stan Jones
- Appendix M: Stuart Searight (Hammer input)

15. Review of Action Item Status [et al]

- The action items were reviewed without comment.

16. Review Date and Place of Next Meetings [et al]

- As agreed to earlier, the February meeting is pushed back one week, and extend to 5 days.
- Also, a May meeting was scheduled with a location still to be determined.

Current schedule for Working Group 6 meetings:

February 18-22	Rockwell Collins, Arlington, VA 9:00am Monday thru 1:00pm Friday
April 8-9&12	RTCA, Washington DC 9:00am Monday thru 5:00pm Tuesday
April 10-11	SC-186 Plenary: RTCA, Washington DC
May 7-9	Location, TBD* 9:00am Tuesday thru 3:00pm Thursday

*\* tentative meeting locations*

17. Action Items

- See Table on following pages.

Action Number	Action Item Description	Assigned to	Status
11-1	Write Appendix N with justification and background information on intent requirements and to include current best proposals for TCR+1 update requirements. This appendix will be based largely on the revised Intent White Paper.	Tony Warren Richard Barhydt	
11-2	Write Appendix O to fully describe the scenarios on which the intent update requirements are based.	Tony Warren Stan Jones	
11-3	Write a non-normative Appendix "Q" on OC-ARV and possible future conditions that will require its transmission.	Richard Barhydt	
11-4	Review Appendix L and determine what changes are needed as a result of the new intent requirements.	Stan Jones	
11-5	Incorporate agreements on how to represent Intent requirements originally proposed in section 3.3.3 and represent them in text form with summarization in tables. Distribute prior to February WG6 meeting.	Stuart Searight	Completed (242A-WP-11-01a)
11-6	Author an Issue Paper on the request, need, and justification for the "New Note 7."	Steve Heppe	
11-7	Author an Issue Paper requesting that NAC <sub>v</sub> only have values [0..3], for consistency with resolution requirements and reducing NAC <sub>v</sub> to a 2-bit field.	Steve Heppe	Completed (IP57)
11-8	Verify the proper phraseology is used for obstacle categories (point, cluster, and line) is used in 2.1.2.4 of 242A-WP-11-01A.	Ken Staub	
11-9	Provide text for 2.1.2.10.2 "TCR Cycle Number" and 2.1.2.10.3 "Reserved for TCR Transition Flag" subparagraphs	Tony Warren	
11-10	Author an Issue Paper on the apparent error in Note 3 of Table 3-4(a) and Appendix H, and send that Issue Paper to Stan Jones and Jonathan Hammer for review.	Tony Warren	
10-1	Write a formal Issue paper for the IDENT request provided by Capstone and propose MASPS language for this capability.	Ken Staub	Completed (IP52)
10-2	Author Issue Paper requesting ADS-B capability to transmit code which distinguishes whether or not the flight is under ATC control (analogous to squawking 1200).	Bill Flathers	Completed (IP53)
10-3	Supply text for remaining TBDs for TSR and TCR requirements to Jim Maynard for incorporation into 242A-WP-11-01.	Richard Barhydt	Completed (01/24/02)
10-4	Incorporate material from 242A-WP-10-10 into next draft of the SV, MS, and OC Report Reorganization paper (242A-WP-11-01)	Jim Maynard	Completed (242A-WP-11-01)
10-5	Facilitate another round of discussion on Note 7 of Table 3-4 (IP35) with Stan Jones, Jonathan Hammer, Steve Heppe and Bill Harman and set up a telecon for the 3 <sup>rd</sup> week in January with the goal of bringing this to closure.	Stuart Searight	Completed (242A-WP-11-08)
10-6	Request Stan Jones to author an Issue Paper on user population requirement proposal in 242A-WP-10-05.	Stuart Searight	Done (IP55)
10-7	Write an Issue Paper on the request from Capstone for the ability to stop transmitting altitude upon request for situations when pressure altitude is.	Jim Maynard	Completed (IP54)
10-8	Write an Issue Paper on the request from Capstone for ability to switch to "no squawk" or receive only mode. (The 1090 requirement for "Stand-by Mode" in section 4.4.6 of DO-260. will be sighted.)	Jim Maynard	

Action Number	Action Item Description	Assigned to	Status
10-9	Incorporate obstacle definitions into MASPS glossary upon receiving the Airport Mapping document from Rudy Riana at RTCA.	Stuart Searight	OBE (No definitions in provided document)
9-1	Edit letter to SC-181 (242A-WP-9-08) and draft letter to SC-159 regarding availability of integrity and accuracy components for PVT data.	Tom Foster	
9-2	Provide definitions on navigation reference point and ???? for inclusion in Appendix B	Ken Staub	
9-3	Develop and appendix from 242A-WP-5-04 to justify aircraft size coding requirements being added to DO-242A	Ken Staub	Completed (242A-WP-11-11)
9-4	Develop definitions for determining on-ground and airborne status from the perspective of when ADS-B systems need to transmit specific data similar to the approach taken in DO-260.	Jim Maynard	Completed (242A-WP-11-01)
9-8	Write an Issue Paper regarding the analysis needed to address the accuracy and latency requirements for altitude rate in a future MASPS revision.	Tom Foster	
9-10	Author an Issue Paper stating the need to have the ASA MASPS service levels carried into the ADS-B MASPS.	Jonathan Hammer	
9-11	Review the WG6 minutes and provide a list of "Coordination Issues" identified between WG6 and WG4.	Stuart Searight	Completed (MASPS Resolutions.doc)
9-12	Propose refinements to 2.1.2.10 of 242A-WP-9-01a to define the conditions for when a TCR needs to be re-issued. (This criteria will not just be a change in the TCP sequence as written in 242A-WP-9-01, but will also be set for "major" changes in the data set, which Tony will define. These changes will be reflected in the White Paper as well so that they are consistent.)	Tony Warren	
9-15	Examine the most demanding application for which they currently have understanding of provide the requirements for resolution (in meters) for the state vector report of horizontal position (lat/lon) for both airborne and on-ground aircraft. (This work might start in Appendix G.) Also requested are required SVR resolutions for geometric altitude, ground speed while on the surface, and vertical rate. (See table 3.4.3.1 of 242A-WP-9-01a)	Jonathan Hammer (WG4)	
9-16	Verify that 9 bits is a typo and should read 19 bits for amount of bits needed to support airborne applications in G.2.1 of Appendix G.	Jonathan Hammer	Typo Confirmed. Tom Foster needs to correct.
9-17	Provide mathematical argument for arriving at required resolution for heading while on ground.	Jim Maynard	
9-19	Write and Issue Paper questioning the need for Report Mode in the State Vector Report. (site text at bottom of page 96 of DO242) Perhaps such a field is needed to convey what is known about a target, and whether it has yet been acquired.	Stuart Searight Jim Maynard	
9-20	Write up summarization of the discussion on coasting, and element validity being based message reception requirements.	Tom Foster	
8-1	Review and comment on proposed resolutions (LSBs) for TCR elements	Jonathan Hammer (WG4)	To be added to WG4/WG6 coordination list
8-6	Pull definitions for VFOM, HFOM, HPL, VPL, and EPU from GPS and/or RNP documents	Stuart Searight Jim Maynard	

Action Number	Action Item Description	Assigned to	Status
7-1	Consider from an operational point of view whether a change in value which improves NIC or NAC needs to be updated at the same rate as the state vector just like a detrimental change does, or if it can be update at the lower update rate of the Mode Status report.	Jonathan Hammer (WG4)	To be added to WG4/WG6 coordination list
7-6	Incorporate into Appendix J the supporting study on altitude rate that demonstrated that geometric was the best altitude source followed by barometric, and then derived barometric.	Jonathan Hammer	
7-11	Tighten the wording in the State Vector requirements, that both barometric and geometric altitude shall be reported when available, and clarify what is meant by "when available". (IP42)	Jim Maynard	
7-14	Determine what changes are needed for removal of Turn Indication as a required SV element	Stuart Searight	Completed (242A-WP-11-02)
7-15	Implement proposed changes for IP 36	Stuart Searight	Completed (242A-WP-11-02)
7-17	Reword Issue Paper 19 to reflect the broader context of runway incursion alerting this paper now represents.	Gary Livack	
6-4	Search entire MASPS for instances of "NUC", "integrity", and "accuracy" to assure NIC/NAC changes are complete.	Stuart Searight	
6-5	Clarify Tables 2-2 and 2-3 and all text referencing these tables. (This material is not ADS-B requirements, but is rather "anticipated application requirements".)	Stuart Searight	
6-11	Clarify or change wording in proposed MASPS changes for IP05 so that anonymous addresses will be reset if duplicate addresses are detected.	Ron Jones	Closed (OBE – no specific anonymous mode procedures will be added, just Address Qualifier.)
6-18	Review the proposed revision of Table 3-5 in 242A-WP-6-11 and determine if it adequately resolves IP29 on the reporting of both geometric and barometric pressure altitude.	Steve Heppe	
5-1	Write an Issue Paper documenting the issues and concerns related to passive ranging. This Issue Paper will <u>not</u> be addressed in Rev A.	Jim Maynard	
5-3	Author a proposed footnote to the definition of ADS-B which talks to the link flexibility and protocol issues in response to the groups discussion on IP30.	Dan Castleberry	
5-20	Coordinate about work being done to resolve IP23 and IP32 regarding a way to map ADS-B capabilities, applications, features, and intended functions to the draft Advisory Circular on Guidelines to the Operational Approval for ADS-B Avionics.	Gary Livack Jim Maynard	
3-6	Write White Paper on backward compatibility subject	Tom Foster	
3-9	Write comments to IP15 explaining rationale for rejecting	Dan Castleberry	
2-16	Write ad hoc group's response to issue #3 of IP7 that will put issue in broader context and serve as proposal to WG#4 for consideration in the ASA MASPS.	Dan Castleberry	