

Industry Meeting: **SC-186 WG4 ASSAP MOPS**

| No. | Item | Assignee | Date Due | Open / Closed | Comments | Solution |
|-----|---|-----------------|--------------|---------------|--|----------|
| 1 | The location of databases/surface map is not focused on in DO-272A, DO-257, OASD, or ASAS MASPS. This concern is to be conveyed to the CDTI working group . | Bill ??? | | Open | The following was discussed at Group Meeting #2. The airport surface maps are external to the ASA system boundaries as defined in the MASPS. Bill volunteered to verify if ASSAP has to consider database input requirements for ASSA and FAROA. | |
| 2 | ACSS has an action to verify the use and origin, either ASSAP or CDTI, of the tag / cross reference flag with the CDTI group. | Tom Eich | Next Telecon | Open | Coordinate with the CDTI group on this issue | |
| 3 | Develop/discuss filtering constraints (e.g., number, range, altitude, vertical height) as relate to the LA Basin 2020 scenario and projected traffic densities. Note: Neither Mike Castle (APL) or Larry Bachman (APL) were in attendance. The individuals were volunteered without their knowledge or consent. | Tom Eich | 14-Jun-06 | Open | This issue was discussed at Group Meeting #2. No conclusions were made. Action items were created related to this issue. | |
| 4 | Determine the minimum number of tracks ASSAP will be required to send to the CDTI. The MASPS specified the CDTI will support a minimum of 30 tracks | Tom Eich | 14-Jun-06 | Closed | The following was discussed at Group Meeting #2. The group agreed that a minimum of 60 is a good starting point. | |
| 5 | Provide a white paper which discusses processing options related to the selection of ADS-B/TCAS tracks for tracks pairs that spatially correlate, do not spatially correlate. Scenarios to discuss the advantages/disadvantages of displaying TCAS/ADS-B, the advantage/disadvantages of providing ASA applications the ASAS track if not correlated with TCAS. | Tom Eich | 14-Jun-06 | Open | The following was discussed at Group Meeting #2. All agreed that when integrated with a TCAS system, you need to verify that the ADS-B track does not compromise the intended safety of the TCAS system. A spatial window was proposed. More discussion is needed on this issue. | |
| 6 | Assemble a proposal/strawman related to track selection based on SIL and NAC. | Joel Wichgers | 14-Jun-06 | Closed | During Group Meeting #2, the group agreed that this proposal is a good start and will have to be further analyzed when the applications are further addressed. | |
| 7 | Identify any inconsistencies and/or traceability problems between documents sources as they relate to ACL/TQL | All | 14-Jun-06 | Closed | During Group Meeting #2, the group agreed that TQL and ACL are not required until the advanced applications are addressed. | |
| 8 | Determine where the report consolidation/selection is to occur (ADSB/TISB Receive Subsystem/ ASSAP) when a system has the ability to receive an A/V report from multiple mediums (1090ES, UAT, VDL-4). | Roxaneh Chamlou | 06-Oct-06 | Open | Initial draft of an issue paper was sent out before the Aug '06 meeting but we ran out of time to fully discuss it at our meeting. | |

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| 9 | Due to time limitations the presentation was not completed. Slide 35 identified Latency/Performance Issues which are to be reviewed by the next ASSAP meeting in June. <ul style="list-style-type: none"> • Latency for the combination of ASSAP and the CDTI shall (R3.210) be less than 400 ms for targets that are used by coupled applications, targets against which there is an alert, and the 10 highest priority targets. • Latency for the combination of ASSAP and the CDTI shall (R3.210) be less than 1 second for targets which are not intended for coupled applications, have no active alerts, and are not included in the highest 10 priority targets. • Track estimation shall (R3.188) extrapolate all established tracks to a common time within one-second of delivery to ASA applications or the CDTI interface. • The tracking function shall (R3.178) terminate a track when the maximum coast interval has been exceeded for all of the applications for which the track is potentially being used. • The maximum latency of the navigation data outputs to the ASA system will be less than 2 seconds (ASA MASPS, Page 144) • Selected App, Selected Target, flight crew selections, etc. • TCAS availability when ASSAP is failed? | Jonathan Hammer & Joel Wichgers will Assist | 14-Jun-06 | Closed | R3.210 is open for modification in the ASA MASPS. An issue paper is needed to change these values since they are shall requirements in the ASA MASPS. | |
| 10 | Determine NASA involvement and/or availability related to the validation of requirements. | Sheila Conway | | Open | | |
| 11 | Distribute revised ASSAP MOPS development schedule. | Roxaneh Chamlou | | Closed | Distributed by Roxaneh via E-Mail | |
| 12 | Distribute revised ASSAP MOPS document outline. | Roxaneh Chamlou | | Closed | Distributed by Roxaneh via E-Mail | |
| 13 | Determine the tracking capacity based on supporting the ASA applications. The CD application desires 90 NM. | Tom Eich | 06-Oct-06 | Open | This issue was discussed at Group Meeting #2. No conclusions were made. Action items were created related to this issue. | |
| 14 | Which applications are included in this version of ASSAP? | All | 14-Jun-06 | Closed | During Group Meeting #2, The group agreed to focus on the first 5 applications and consider other applications such as the advanced applications once they are further defined. | |
| 15 | How do we define the minimum requirements for Application Processing? | Don Walker | 06-Oct-06 | Open | | |
| 16 | Is the selection of an application external to the ASSAP? | All | 06-Oct-06 | Open | | |
| 17 | Is the ICAO address received via 1090 MHz unique? | All | 01-Jan-07 | Open | The following was discussed at Group Meeting #2. Action items were assigned to assess the probability and safety implications of this issue. This issue has also been brought up to plenary. For now, ASSAP will assume that all addresses are unique for ADS-B and TCAS tracks. | |
| 18 | When is a TCAS symbol shown on the CDTI? | All | 01-Jan-07 | Open | | |
| 19 | Do we need to compensate for TIS-B latency? | All | 01-Jan-07 | Open | | |
| 20 | What level of validation is required for ASSAP? | All | 01-Jan-07 | Open | | |
| 21 | Duplicate address issue. Provide some probability estimates regarding two or more aircraft having the same address in the same vicinity. | Bill Thedford | 01-Jan-07 | Open | Ref AI#17 | |

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| 22 | Duplicate address issue. Contact Stu to see if the RFG group has performed a risk assessment for EVA/VSA regarding displaying or not displaying a target such as when two or more aircraft have the same address. | Roxaneh Chamlou | 14-Jun-06 | Open propose to close | Ref AI#17; Stu's response: "The RFG has yet to do any risk assessments for the air-to-air applications. I hope the group will begin looking at the Visual Spacing on Approach application this fall. Please do let them know if any of your ASSAP work identifies areas the RFG should consider during its safety assessments." | |
| 23 | Duplicate address issue. Determine if the FAA has an opinion regarding the severity of not displaying a target for EVA when two or more aircraft have the same address. | Allen Branch | 01-Jan-07 | Open | Ref AI#17 | |
| 24 | Duplicate address issue. Check the ASA MASPS safety analysis for not displaying a track. This information will help understand the case of not displaying a track when duplicate addresses exist. | Ruy Brandao | 07-Nov-06 | Open | Ref AI#17 | |
| 25 | Study and read about the CD and EVA applications defined in the ASA MASPS | All | 22-Aug-06 | Closed | | |
| 26 | Provide the authors of the ASA applications in DO-289 as a resource to questions | Roxaneh Chamlou | | Closed | a. Randy Bone and Bob Hilb were the main attendees of the working group. b. EV Acquisition, EV Approach – Dave Spencer (Lincoln Labs) c. ASSA and FAROA – Joel W. d. CD – Lee Etnyre, Wang | |
| 27 | Provide the number and types of traffic in the LA2020 scenario within 12 Nmi and +/-4000ft. | Larry Bachman | 06-Oct-06 | Open | | |
| 28 | Investigate the plan for equipage of surface vehicles. This information will help validate how many ground vehicles ASSAP will have to monitor and track. | Allen Branch | 06-Oct-06 | Open | | |
| 29 | Determine the availability of 1 Nm HPL for existing TSO-C129 sensors. | Don Walker | 22-Aug-06 | Closed | This issue is related to the EVA application requiring a NIC of 5 (1 Nm). Don presented the availability of 1 Nm HPL during the August 22nd group meeting. | |
| 30 | Present overall architecture at the next telecon since many of the attendees at group meeting #2 were not present at group meeting #1. | Roxaneh Chamlou | June/July telecons | Closed | Presentation titled: "Strawman Functional Architecture for Airborne Surveillance and Separation Assurance Processing (ASSAP)" | |
| 31 | Propose a way to scale the NIC based on the integrity containment risk (SIL). | Joel Wichgers | 22-Aug-06 | Closed | Presentation titled: "ASSAP Action Item #31: Propose Scaling / Tradeoff of NIC and SIL to Meet Application Requirements" | |
| 32 | It was recommended that the track filters are not requirements but possibly MOPS guidance. The requirements should be performance based and testable. An action was taken to define the performance requirements for tracking. | Larry Bachman | 06-Oct-06 | Open | | |
| 33 | Remove the following requirement in the presentation, "The new track ID be set to the report ID". This is a design requirement that should be left up to the manufacturer. | Roxaneh Chamlou | 01-Jan-07 | Open | | |
| 34 | Provide a corrected slide due to a typo with one of the equations. | Ganghuai Wang | 06-Oct-06 | Open | | |

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| 35 | Don mentioned that the Capstone program considers traffic degraded when the accuracy is worse than 0.5Nm. Also, traffic is never removed from the display based on accuracy or integrity. The EVAq application in the ASA MASPS requires traffic to be removed when the bearing uncertainty is greater than 60 degrees based on accuracy (NACp) and range. The ASSAP MOPS group request someone from the Capstone project provide background information regarding their traffic requirements. (Post meeting editorial note from Roxaneh: ASA MASPS guidance was not available when Capstone implemented the CDTI.) | someone from Capstone project | | Open | Q: Since ASA MASPS guidance was not available when Capstone implemented the CDTI, how relevant is this? | |
| 36 | Don's presentation included an analysis explaining how Honeywell transponders (DO-260 version 0) meet the minimum integrity requirements defined in the ASA MASPS. The ASSAP group request that other transponder manufacturers present a similar analysis and explain how NUCp is encoded on their current transponders. | Tom M. from Garmin, Bob S. from Collins, Tom E. from ACSS, etc | 06-Oct-06 | Open | | |
| 37 | Peter will provide the group a list of technical difference between DO-260 and DO-260A. | Peter Skaves | 06-Oct-06 | Closed | Paper titled "Associated Techniccal Variances Between RTCA DO-260 / DO-260A | |
| 38 | Verify if the TCAS track priority is based on TAU (i.e., time to CPA) or closest in range. For example, if it is based on TAU, then ASSAP will change the ASSAP track priority to the following: RA alerts, TA alerts, ASA Application Alerts, Coupled traffic, Selected traffic, and then those with the smallest time to CPA . | Don Walker and Tom Eich | 06-Oct-06 | Open | | |
| 39 | Determine how TCAS defined their tracking capacity and how it was evaluated. This information will be helpful in the determination of ASSAP's tracking capacity. | Don Walker | 06-Oct-06 | Open | | |
| 40 | Randy said that there are 200 aircraft within 12 Nmi and +/- 4000' from the LA2020 scenario; the ASSAP group requested to know the distribution of aircraft types (Surface, Airborne, GA, etc.) for the 200 aircraft. | Randy / APL | 06-Oct-06 | Open | | |
| 41 | How was the coverage volume of 45 NMI and +/- 15,600' determined for the CD application? This information will be helpful in the determination of ASSAP's tracking capacity. | Jonathan | 06-Oct-06 | Open | | |
| 42 | Randy mentioned that Garmin may have a CD application. The ASSAP group requested to know how Garmin defined their tracking capacity to support their CD application. This information will be helpful in the determination of ASSAP's tracking capacity. | Tom M. / Garmin | 06-Oct-06 | Open | | |
| 43 | Provide a white paper justifying the minimum number of traffic required to track based on discussions during the group meeting. The proposed minimum number of aircraft for ASSAP to track was about 120 aircraft. | Randy / APL | 06-Oct-06 | Open | | |
| 44 | The ASSA and FAROA applications require a minimum of 30 closest surface traffic to be tracked and displayed. Discussions took place regarding if this is satisfactory for traffic of concern around the active runway. The ASSAP group requested to know how many aircraft with transponders exist today on an airport. This information will be helpful in determining approximately how many aircraft may be transmitting ADS-B data on the surface in the future. | Don Walker | 06-Oct-06 | Open | | |

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| 45 | Peter will provide flight phase definition to the ASSAP group based on Boeing aircraft. This information may be used as a resource for determining the ANSD value automatically based on phase of flight. | Peter Skaves | 06-Oct-06 | Closed | See paper titled "Boeing Phase Flight.doc" | |
| 46 | Perform ADS-B availability studies in regards to NIC and SIL. | MITRE | 01-Feb-07 | Open | | |
| 47 | Joel will provide some preliminary NIC/NAC/SIL threshold values for the initial 5 ASA applications based on his proposed alternative 3. | Joel Wichgers | 06-Oct-06 | Open | | |
| 48 | Roxaneh to update the schedule out to March '08. Also update the outline and schedule taking into account the current issues. | Roxaneh Chamlou | 06-Oct-06 | Open | | |
| 49 | Provide a list of ADS-B anomalies based on Cascade and APL studies. This action is related to how long ASSAP should wait until establishing a track. Based on the types of anomalies ASSAP may decide not to establish a track until more than one report is received. | Jonathan H. for Cascade; Randy for APL | 06-Oct-06 | Open | | |
| 50 | Roxaneh will send Sethu a description regarding the TIS-B service status from a RTCA document. | Roxaneh Chamlou | 06-Oct-06 | Closed | See paper titled "Interim Guidance for UAT Avionics Operating with Safe Flight 21 ADS-B, TIS-B and FIS-B Ground Infrastructure" | |
| 51 | Roxaneh will investigate the issue of mismatched traffic between the CDTI and what the ground controllers are seeing. | Roxaneh Chamlou | 06-Oct-06 | Open | | |
| 52 | The CDTI and ASSAP group agreed that the application selection issue needs further discussion. Two proposals from Jonathan and Sethu will be further discussed. | Jonathan, Sethu | 06-Oct-06 | Open | | |
| 53 | ASSAP to consider turning CD off below some altitude threshold; for example, TCAS inhibits RAs below 1000'. | ?? | | Open | | |
| 54 | The CDTI group will provide the minimum number of traffic required to display to the ASSAP group. This number will drive the minimum number of traffic required for ASSAP to send to the CDTI. | CDTI Group | 01-Jan-07 | Open | | |
| 55 | Create a white paper to deviate from Table 3-21 requiring display range / map scale and display orientation. Also check if there are other parameters in question. Some of the parameters may only be optional. Also, ACL and TQL are not expected for the initial release of the ASSAP MOPS. | Tom, ACSS; Randy, APL | 06-Oct-06 | Open | | |
| 56 | Own-ship information to the CDTI is missing in Table 3-21 of the ASA MASPS such as lat/lon, ground speed, etc. Review the data from the STP document and propose which parameters need to be sent to the CDTI. | Tom, ACSS; Randy, APL | 06-Oct-06 | Open | | |
| 57 | CDTI and ASSAP group should review the interface parameters in Table 3-21 in the ASA MASPS and decide which ones are optional versus required. | | 01-Jan-07 | Open | | |
| 58 | Coordinate MOPS document assembly issues between the ASSAP and CDTI group. | Roxaneh Chamlou; Tom Eich | 01-Jan-07 | Open | | |
| 59 | The ASSAP group will propose some latency requirements between ASSAP and the CDTI. A white paper will also be written to resolve requirements that deviate from the ASA MASPS. | ??? | 01-Jan-07 | Open | | |
| 60 | Provide some preliminary NIC/NAC/SIL threshold values for the initial 5 ASA applications based on his proposed alternative 3. | Joel Wichgers | 06-Oct-06 | Open | | |
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