

ASAS MOPS 9 March08

MASTER COMMENT MATRIX

*Importance

CRITICAL (C):

SUBSTANTIVE(S):

EDITORIAL (E):

Comments of a serious nature.

Comments of substantial merit which are important, but not critical.

Comments that address items such as typographical, format or other grammatical errors.

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
1	James Maynard (JHM)		Various, including §2.3.1.1, §2.3.3.3,	E	SC-186 has previously agreed to follow the ICAO practice regarding the symbol for nautical miles: that is, to use “NM” rather than “nm” in our documents.	Throughout the document, search for “nm” (meaning nautical miles) and replace with “NM”. DONE <u>Several “nmi” found in App I and corrected in Table I-1 and I-2</u>
2	Jennings			C	Consider defining 2 equipment classes: systems operating with TCAS and those that don’t and provide a matrix of requirements that apply to each class.	DEFER MATRIX, BUT CHIP WILL PROVIDE WORDS FOR CD AND TCAS
6	Bulger		Best Target Selection	S	The MOPS will usually pick an ADS-B target over a TCAS target when correlating and displaying intruders. The problem is that even though ADS-B will likely have a better bearing, the TCAS could have a better range. Thus, is ADS-B really the best source? Rocky indicated that he’s more interested in the displayed bearing accuracy of a target, because its difficult for him to look out the window and tell whether traffic is 1.5 miles or two miles, but he can notice if the bearing is inaccurate.	DONE

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
7	Bulger		Target Correlation	C	Para 1.5.1.5: The spatial correlation requirements are not robust enough. Additionally the requirements are not specified for how often correlation must be successful. Section 2.2.2.3.2 implies no missed correlations or miss correlations. Need to have a testable requirement versus making passing a test the requirement.	ACTION ASSIGNED FOR DAN AND ROBERT FOR OBJECTIVE GOALS FOR SECTION 3 CHIP: REWORDING FOR 2.2.3.2 and subsequent
8	Bulger		Fusion Requirements	S	The MOPS allows Fusion, however it does not define any performance requirements for fusion. At a minimum the fusion requirement should be that it is as accurate as the underlying source.	DEAL WITH THIS IN NEXT VERSION
9	Bulger		TCAS Directionality during RA		Need to maintain directionality through the TA and RA.	DONE <u>but fixed oversight under alters</u>
10	Bulger		Degraded Definition	E	Need a comprehensive definition of what degraded mode means.	MIKE P <u>added to definitions</u>
11	Bulger		Symbol Sets	S-	Need a mandatory standard symbol set. This doesn't prevent manufacturers from getting deviations, but a standard needs to exist.	DEFERED TO NEXT VERSION
12	Petri		1.2.2	S	Suggested text to add to section 1.2.2 for TCAS integration (Replace current yellow text.)	In order to provide more complete traffic situational awareness, the TCAS display should be integrated with the CDTI on aircraft equipped with TCAS. This document provides requirements and guidance for integration of TCAS with ASAS. DONE
13	Petri		1.2.2.1	E	TCAS is integrated into ASAS, not combined with it.	Replace "combined" with "integrated" DONE

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
14	John Helleberg	3, 14	Figures 1-1 and 2-1	E	Barometric correction is not shown, but there is an "Other Inputs." Do we need to call out the Barometric Correction?	I think the "Other Inputs" box covers it, so no action is necessary. I just wanted to mention this. AGREE, NO ACTION
15	Bulger, Jeff Meyers	4	1.3.1	C	Conflict detection should have caveat to reflect that the requirement in this MOPS may not be sufficient to support the intended function as described in RTCA DO-289, appendix D. Additional requirements may be imposed at time of installation approval, particularly if interfaced with TCAS.	Add the following words to the Sec 1.3.1 Conflict Detection Description: (vetted with Sethu & Michael) The requirements included in this document for CD are based on the Conflict Detection application as described in the ASA MASPS (DO-289). Additional development and field experience is necessary to validate and verify this application, and may result in different and additional requirements. If an applicant chooses to implement CD, the requirements in this document may be referenced; however the CD requirements are not intended to be referenced by regulatory guidance. Make sure it meshes with comment #2 PLUG IT IN: CHRIS DONE
17	ACSS	4	1.3.1	S	Need to clearly identify which applications are optional and required as done in the first section of the CDTI requirements.	MIKE P ACTION Done
18	Petri		1.3.1	S	Current CD application description seems to be misinterpreted as a collision avoidance (ala TCAS I) system. Alter sentences as suggested to note that CD provides both conflict (separation) and collision alerts.	Conflict Detection (CD): The CDTI is used to alert the flight crew of situations where a loss of separation or collision are predicted. The conflict and collision alerts may prompt the flight crew to exercise see-and-avoid procedures or to contact ATC. DONE

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
19	Jeff Meyers	6	1.5.	S	May need an assumption that the ASSA/FAROA applications assume that the EMD and AMMD meets the requirements of RTCA/DO-257A.	JEFF WILL PROPOSE REQUIREMENT DONE <u>I don't see anything for this ITS IN 1.5.2.6</u>
20	Jeff Meyers	6	1.5.1.1	S	Why not point to an RTCA standard (DO-236B) for RNP compliance, rather than ARINC.	WILL ADD DO-236B TO THE REQ DONE
21	ACSS	6	1.5.1.1	S	“It is assumed that ASSAP will compensate for latency in own-ship position.” And what types of compensation are we thinking; position extrapolating 600ms or is it covered by the limiting factors in the HFOMstp (HEPUstp) value? But the STP MOPS in section 2.2.4.1.1.3 says that an unsynchronized installation will limit HEPUstp to greater than 92.6m (NACp = 7) which does not qualify for ASSA/FAROA of meeting 74m. Is this compensation required for each application? Table 2-1 allows a maximum latency of 1 second for all the apps from A1 to B1. By the way this info should be moved to table 2-2 for own-ship, I don't think it applies for traffic?	Recommend removing this assumption and using HEPUul (ul = unlimited) since our applications allow for 1 second of maximum latency between A1 and B1. Need to consider this also for other own-ship limited data. May affect I/O section. TOM AND DON WILL WORK THIS OFFLINE

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
22	Bachman	7	1.5.1.4	S	I understand and support that ASSAP won't distinguish between duplicate address information, but I'm not sure this handles it. It looks like, if the receiver sends information it receives from the two aircraft, then ASSAP will send flip-flopping information to CDTI.	Re-word. Maybe make sanity checks. WE WILL ADD STRONGER DISCLAIMER AND EXPLAIN WHAT BAD STUFF HAPPENS DONE <u>This sentence had grammatical problems. I fixed it.</u>
	Bachman	7	1.5.1.5	S	I don't understand how we can assume that there will be changes to TCAS.	Re-work this. REWORKED <u>I edited this a bit.</u>
23	AIR-130 Bulger	7	1.5.1.7	S	TIS-B Service Status. This paragraph indicates that there are no requirements for TIS-B service status. Suggest making TIS-B service status on the UAT link a requirement.	THIS WOULD REQUIRE US TO HAVE A LINK SPECIFIC REQ'T WHICH WE HAVE TRIED TO AVOID IN ASSAP WG REC WE DEFER TO NEXT VERSION. NOTAMS MAY APPLY
24	AIR-130 Bulger	8	1.5.1.8	S	- There could be significant operational benefit to having surface TIS-B during early equipage. - I'm not sure that not knowing how the correlation would be accomplished prevents us from writing the performance requirement.	DEFER SURFACE SPATIAL CORRELATION REQUIREMENTS SINCE WE DON'T YET HAVE EXPERIENCE WITH DATA FROM A SURFACE SURVEILLANCE SYSTEM
25	AIR-130 Bulger	8	1.5.1.9	E	Throughout the document we use several different terms for the Participant address and ICAO Mode S Address. Suggest we standardize throughout the document. (Mode S Address, ICAO Address, 1090ES Address, 24 Bit Address)	CHRIS WILL MAKE SURE ITS ALL "PARTICIPANT ADDRESS" ADD TO DEFINITIONS. MAKE JUDGEMENT <u>Change to 24 bit address—all done except App C</u>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
27	ACSS	15	2.2.1	E	Figure 2-2 – Undefined superscript marks “1ADS-B/ADS-R/TIS-B Reports”, “2Correlation tags”, “3Uncorrelated TCAS Tracks”	Remove superscripts. FIGURE IS NOW GONE BUT CORRECT THE NEXT FIGURE CHECK TEXT ALSO FOR SUB AND SUPERSCRIPTS DONE
28	Bachman	13	2.2.1	E	Left out ADS-R	Add ADS-R to last sentence in first paragraph before note. DONE
29	Bachman	15	2.2.1	E	Why do we only send notification of TIS-B updates to inter-source correlation?	Explain. DONE <u>Not any change here. In section 2.3.1 we just added a reference to the appendix I think that is fine.</u>
30	Petri		2.2.2	S	One other input requirement agreed to with the CDTI subgroup is providing a flag that indicates if an airport map is available. No interface to the map drawing is included in this section.	Add mapping interface to text and drawing. CHRIS WILL MODIFY FIGURE AND ADD NEW REQ SECTION DONE <u>Drawing still needs to be fixed</u>
31	Petri		2.2.2	E	The standard acronyms are EVAcq and EVApp (no space after EV, such as EV Acq and EV App).	Make sure acronym is used properly (without the space) throughout the document. DONE
32	Petri		2.2.2.1.1	E	The traffic state data normally changes, but not rapidly. (For instance velocity and altitude are often stable for long periods of time.) Delete “rapidly”	aircraft state that is normally changing rapidly (e.g., position, altitude, and velocity). DONE

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
33	Petri		2.2.2.1.1 c	C	Ground speed is part of the information required for Selected traffic.	Either: 1) alter item c to note that ground speed is required for selected traffic (if implemented), 2) add another requirement stating that ground speed is required for selected traffic, or 3) require ASSAP to receive ground speed all the time. WE LIKE 3 AND ALREADY DO 3 <u>The edited text still included "when on surface". I have deleted that from the sentence.</u>
34	John Helleberg	20	2.2.2.3.1	C	CDTI includes optional display of "Actual Altitude," but to display this, requires an ownship barometric correction. ASSAP does not currently receive a correction from ownship and therefore cannot pass it along to CDTI.	Add the following text to the end of the section as a new item "m." "If the CDTI uses Actual Altitude, the ASSAP function Shall [] receive the ownship barometric correction." DONE
35	Bachman	21	2.2.2.3.2	E	Re-word g.	"If ASSAP uses Vertical Position Integrity," at the beginning. Take out "(Optional)".
36	AIR-130 Bulger	20	2.2.2.3.2	E	Subparagraphs b-h all have the same typo: Recommend removing the first occurrence of the (HFOM _{STP}) abbreviation in each subparagraph. The requirement is to use ownship nav data or STP data. However these paragraphs say... Use ownship nav data (HFOM _{STP}) or STP data.	TOM WILL COVER AS EDITORIAL TOM WILL PULL OUT OWNSHIP REQUIREMENTS EXPRESSED IN STP LINGO <u>DONE</u>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
37	AIR-130 Bulger	20	2.2.2.3.2	E	<p>This section contradicts itself several times.</p> <ul style="list-style-type: none"> - The opening paragraph indicates that the data quality comes “directly from own-ship nav sensor” - Paragraph (a) states that the own-ship quality data shall be based on the STP. - I believe the requirement is supposed to read that the ownship quality data can come from either source. 	<ul style="list-style-type: none"> - Suggest Opening Paragraph to read: Own-ship quality data is very similar to traffic quality data; however, as the information comes directly from the own-ship navigation sensor or the STP it is not yet categorized into NIC, NAC and SIL values. The following own-ship quality data is required for ASSAP - Suggest Paragraph (a) to read: a. The received own-ship quality data shall be taken directly from the Navigational Position Source or from the Surveillance Transmit Processor (STP). <p>OBE</p>
38	Jeff Meyers	21	2.2.2.3.2	C	<p>For all of these “or”s in items a – h, if deriving their own accuracy and integrity values then there should be installation requirements, similar to STP. Alternatively it may be adequate to require (in the installation section) that the nav source be either GNSS or RNP compliant.</p> <p>Note: There are issues associated with RNP implementations utilizing DME/DME and VOR/DME updating modes that could result in misleading navigation. These issues are mitigated operationally for navigation approval, however may not be effective for mitigating for surveillance applications.</p>	COVERED BY #36
39	Bachman	21	2.2.2.4	E	First sentence is redundant to requirement.	Remove first sentence. DONE
40	Bachman	21	2.2.2.5.1	S	Does the note lock manufacturers into combining ASSAP and CDTI into a single box?	Either specify format or state that we are assuming they are in a single box. ARINC handles this

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
41	Petri		2.2.2.5.1	C	I believe that CDTI is expecting valid/invalid flags for data.	Include valid/invalid flags. ADD GLOBAL REQUIREMENT THAT INCLUDE VALID/INVALID STATUS FOR DATA ITEM TOM DONE
42	Jeff Meyers	22	2.2.2.5.1.2	C	Potential interference with TCAS operations since ASA warning have higher priority than TCAS TAs.	This priority schema could be simplified if CD (initially) is not allowed with TCAS. MIKE P TO PROVIDE NEW SPLIT SECTION. ISSUE ON PROX TRAFFIC AND GROUND STATUS <u>Done. Note that I split priority of prox traffic when alerts are not present into a lower priority. Chip and Jeff both agreed with this.</u>
45	AIR-130 Bulger	22	2.2.2.5.1.2	E	A separate comment proposed adding a requirement to display proximate traffic for ASAS targets as well as TCAS targets.	With this in mind, suggest removing the following info from bullet #5: (for systems integrated with TCAS) [Keep bullet #5] COVERED BY MIKE P ACTION <u>Done</u>
46	AIR-130 Bulger	22	2.2.2.5.1.2	S		Per 20 Feb Hellicon, change the Note to read: Additional targets should be sent to the CDTI based on existing TCAS prioritization defined in DO-185A or alternative criteria suited to the specific application. DONE

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
47	Petri		2.2.2.5.1.2 5	S	If we decide to include proximate traffic for all traffic (rather than just those with TCAS integrated), this should be reworded to remove the TCAS reference.	IF we decide to include proximate traffic in all installations, then change this: Proximate Traffic (for systems integrated with TCAS) WE KEEP THIS TEXT <u>Will be covered in action to split into two lists</u> Done
48	Petri		2.2.2.5.1.4	S	Selected traffic is also desired for CD application	Add CD to list in note. TOM WILL DEAL WITH THIS AS PART OF HIS ACTION DONE
49	Petri		2.2.2.5.1.5	S	Traffic Emitter Category is also included in selected traffic information	Add “and installations supporting selected traffic” as in 2.2.2.5.1.4. TOM WILL DEAL WITH THIS AS PART OF HIS ACTION DONE
50	Petri		2.2.2.5.1.4 and 2.2.2.5.1.5	S	The concept of selected traffic information does not seem to be included in the ASSAP section. As envisioned within the ASA MASPS, selecting a traffic element will bring up a data block with additional information – the selected traffic information. This includes several fields. These two sections note that these data fields are included in selected traffic information. It would probably be better to have some explanation of this elsewhere in the ASSAP section.	Perhaps change the section title of 2.2.2.5.1.17 to selected traffic, and add a note or explanatory text there. The current 2.2.2.5.1.17 could be made a subsection (2.2.2.5.1.17.1) Then the notes in 2.2.2.5.1.4 and 2.2.2.5.1.5 could be deleted. TOM WILL WORK THIS ALONG WITH COMMENTS 48 AND 49 ALSO <u>COVERED BY RESOLUTION TO ABOVE 2 COMMENTS</u> <u>I did some editing here to standardize the terminology to “selected traffic”, which is used in CDTI and defined in the definitions appendix</u>

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
51	Bachman	23	2.2.2.5.1.8 2.2.2.5.1.9	S	Isn't either ground speed or closure rate essential to do the application? If not available, can the operation proceed?	Take out "when available". TOM WILL LOOK AT THIS <u>TOM LEFT AS IS</u>
52	Eich		2.2.2.5.1.9			Recommendation: "Note: Traffic Closure rate is required for EVApp but may also be used for the EV Acq., CD, ASSA, and FAROA applications." General recommendation for other similar notes. TOM WILL WORK THIS ONE <u>DONE</u>
53	Petri		2.2.2.5.1.8 and 2.2.2.5.1.9	S	Same issue as 13-15. Required for selected traffic.	Add " and installations supporting selected traffic ". Alter 2 nd note, or delete in coordination with comment 15 resolution. TOM <u>DONE Modified by Petri</u>
54	Petri		2.2.2.5.1.8 and 2.2.2.5.1.9	S	I think that only one of these two fields is required.	Reword to require one or the other. OUR APPROACH WAS TO SEND BOTH--OK
55	Eich		2.2.2.5.1.11			Recommendation: Add to the end of note, "...as a backup." DELETED NOTE--DONE

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
56	Bulger, Eich		2.2.2.5.1.16		<p>For the EV Acq. application, the traffic application capability is one of the following states (EV Acq. is for airborne traffic and for surface traffic when not overlaid over an airport map): Invalid: Traffic not displayed; traffic does not meet the minimum performance criteria for display. This traffic may not be sent to CDTI and may be replaced by an existing correlated TCAS track.</p>	<p>Suggest Change Traffic that does not meet criteria shall not be displayed and shall be replaced by a correlated TCAS track if available. DONE</p>
57	Eich		2.2.2.5.1.16		<p>Concur, but the (shall) requirement for removing the traffic from the display is in the associated application section therefore no shall is needed here.</p>	<p>Recommendation: <u>Invalid:</u> Traffic not displayed; traffic does not meet the minimum performance criteria for display. Note: Based on the Best Track Selection requirements, the traffic will be replaced with a correlated TCAS track if available. For an ADS-B, ADS-R, or TIS-B track not correlated with a TCAS track, the manufacture may choose to either not send the traffic to the CDTI since it does not meet the performance for the minimum required application (EV Acq.) or mark the traffic as invalid. DONE</p>

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
58	Petri		2.2.2.5.1.16	C	Missing optional degraded requirement (See also next comment) Also, current text below this does not include “degraded” for EVApp application.	<p>In item “b”: remove the word “either”. shall include that the traffic application capability is either Invalid or Valid ACCEPTED <u>Not previously done, though. Done here</u></p> <p>Add as item “c”: For installations supporting the ASSA, FAROA, and EVApp applications, the Traffic Application Capability may include that the traffic application capability is degraded quality. REJECT</p> <p>Change old item “c” to “d”. <u>REJECT</u></p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
59	Petri		2.2.2.5.1.16	S	<p>Items following “c” could be simplified to make more clear.</p> <p>Also, the text regarding invalid traffic for EVAcq is unclear. I believe the note should be made more clear about invalid data in this case. (see proposed resolution)</p>	<p>Delete rest of 2.2.2.5.1.16 following current item c (starting with For the EV Acq. application,)</p> <p>Replace with:</p> <ul style="list-style-type: none"> • Invalid: Traffic not qualified to support application. <p>Note: Traffic that is invalid for the EVAcq application is not displayed by CDTI unless correlate with TCAS (if equipped). This traffic will not be sent to CDTI unless replaced by an existing correlated TCAS track.</p> <ul style="list-style-type: none"> • Degraded Performance (Optional): Traffic qualified to support application, but with degraded performance. • Valid: Traffic qualified for application. <p><u>COVERED BY ANOTHER COMMENT</u></p> <p><u>This wasn't covered by another comment (only the degraded performance was). Suggested (editorial) revision of this section is included.</u></p>
61	Bachman	26	2.2.2.5.1.17	E	Note is redundant to requirement.	Remove note. OBE
62	Eich		2.2.2.5.1.17	s	For the initial 5 applications, ASSAP does not require knowledge of which traffic is selected. But a manufacturer may choose to manage the status of which traffic is selected in ASSAP therefore requiring feedback/acknowledgment back to the CDTI.	Recommendation: Since this is not a minimum requirement, I recommend deleted this requirement. DELETED

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
63	Bachman	27	2.2.2.5.1.18	E	First sentence in note is redundant to requirement.	Start note "Traffic Coupled Status may be important for..." OBE
64	Eich		2.2.2.5.1.18	S	Similar to the previous comment; but may be more important to state as it may affect the transmission of Traffic Closure Rate for EV App.	DELETED
65	Bulger		2.2.2.5.1.19	S		Change title to: Alert and Indication Output Requirements OBE
66	Bulger		2.2.2.5.1.19	S	Change wording to add indication	Will read as follows: The following subsections contain and alert and indication output requirements from the ASSAP function to the CDTI OBE
67	Bulger		2.2.2.5.1.19.1	S		Change 2.2.2.5.1.19.1 title to : Traffic ASA Application Indication and Alerts OBE
68	Bulger		2.2.2.5.1.19.1	S		Retain existing text as subparagraph a, and add subparagraph b b. For tracks that are not correlated with a TCAS track the ASSAP shall determine traffic proximity based on DO-185A requirements (6 nm, 1200 feet) and indicate the proximate nature of the traffic to the CDTI. SECTION 2.2.3.1 CHANGED Edited sentence
69	Petri		2.2.2.5.1.19.1	E	CD application is implemented, not alerting	Replace If CD alerting is with If the CD application is DONE

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
70	Petri		2.2.2.5.1.19.2	E?	Items a and b seem to be the same thing. Item b seems to indicate that the alerts come from the traffic source, even though the ADS-B alerts will come from ASSAP.	Delete section b. TOM DECIDE AND CORRECT <u>DONE</u>
71	John Helleberg	28	2.2.2.5.2.X	C	CDTI includes optional display of "Actual Altitude," but to display this, requires an ownship barometric correction. ASSAP does not currently receive a correction from ownship and therefore cannot pass it along to CDTI.	Add a subsection to section 2.2.2.5.2.4 that reads. "If the CDTI uses Actual Altitude, the ASSAP function Shall [] provide the ownship barometric correction to the CDTI." DONE
72	Petri		2.2.2.5.2.2	E	Not CD. Is required for Selected traffic (see comments above)	Replace start of sentence with: For the EVApp application and installations supporting selected traffic, MIKE P TO ADDRESS <u>Done</u>

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
73	Petri		2.2.2.5.3.1 Should→Shall	S	<p>Application status is required for all applications.</p> <p>The status is partially based on the own-ship's data meeting individual application requirements, and also the equipment status.</p>	<p>Replace as follows:</p> <p>The ASSAP function shall provide the ASA Application Status for all installed applications to the CDTI. This status is based upon own-ship's data meeting individual application requirements, and the equipment status.</p> <p>The ASA Application Status shall include that the ASA Application is one of the following five states: On, Available to Run, Unavailable to Run, Unavailable – Fault, or Not Configured.</p> <p>The ASSAP function should provide the ASA Application Status for the EV Acq., CD, ASSA, FAROA, and EV App. applications. The ASA Application Status is one of the following states: DONE</p>
74	Bachman	29	2.2.2.6	C	Where did 2.0 seconds come from?	<p>Explain origin of requirement.</p> <p>REFERENCE ADDED TO A NEW APPENDIX JL DON W TO PROVIDE DONE</p>
75	AIR-130 Bulger	30	2.2.3		<p>Surveillance Processing: Realize its too late for this revision of the MOPS, however suggest adding requirements for fusing surveillance sources (if fusing implemented).</p>	DEFER

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
76	AIR-130 Bulger	31	2.2.3.1	E	Subparagraph's a, d, and f deal with correlation requirements. Consider placing these in the correlation paragraph (2.2.3.2.)	DONE
77	AIR-130 Bulger	32	2.2.3.1 (d)	S	<p>The requirement in 2.2.3.1 d seems duplicative to the requirements in 2.2.3.2. (ie the other para says there will be no missed correlations)</p> <p>Additionally, the requirements for distinguishing tracks, correlation, and track initiation should be defined/testable (i.e. quantifiable)</p> <p>- Unique tracks shall be distinguished OR - Unique tracks shall be distinguished from other tracks x percent</p> <p>- Miscorrelations shall not occur. OR - Miscorrelations shall not occur more than once every x number of correlations or possibly x number of flight hours.</p> <p>New Tracks shall be initiated upon receipt of ADS-B, ADS-R, and TIS-B tracks.</p>	<p>CHIP WILL ADDRESS AS PART OF ANOTHER ACTION</p> <p>DON DAN AND ROBERT TO WORK THIS</p>

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
78	ACSS	31	2.2.3.1	E	Item e. Prioritization in the referenced section 2.2.2.5.1.2 calls out TCAS tracks. Item e states that These requirements do not include TCAS tracks.	Remove “These requirements do not include TCAS tracks.” DONE
79	ACSS	31	2.2.3.1	E	Associated test section says, “Step 3 and Step 4 apply only to UAT installations.” Need a note in the requirements section of 2.2.3.1.	Recommend a note stating that duplicate addresses are only addressed for UAT. DONE

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
80	Petri		2.2.3.1 e	C	<p>This section needs to be rewritten.</p> <p>First off, it includes a requirement that only seems to apply to the CD application as a starting point. It should start off with the minimum system, and then mention CD. (See proposed resolution)</p> <p>Secondly, the final sentence, “These requirements do not include TCAS tracks” is not clear. I assume this means that TCAS tracks must be maintained in addition to these numbers (60 and 130).</p>	<p>Clarify text to whatever it is supposed to mean. I’m guessing it’s supposed to say something like this:</p> <p>ASSAP shall be capable of maintaining at least 60 source tracks; in this case priority will determine which tracks are maintained when more than 60 unique reports are presented to ASSAP. Track prioritization is described in Section 2.2.2.5.1.2.</p> <p>If the CD application is implemented, ASSAP shall be capable of maintaining at least 130 source tracks. Priority will determine which tracks are maintained when more than 130 unique reports are presented to ASSAP.</p> <p>In ASSAP installations supporting TCAS, ASSAP shall be capable of maintaining an additional XX (whatever TCAS needs) TCAS source tracks. ADOPTED ABOVE PROPOSED TEXT DONE</p>
81	AIR-130 Bulger	32	2.2.3.1 (f)	S	The requirement for distinguishing source reports with duplicate addresses should be defined.	<p>NOTE ADDED FOR UAT <u>This note needs rewording. Duplicate addresses are addressed ??? Note is now under 2.2.3.1 (h) “Duplicate addresses are only addressed for UAT” This makes little sense.</u></p>

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
82	AIR-130 Bulger	33	2.2.3.2.1	S	<p>- During the Ad Hoc group meeting there was a discussion regarding not using TIS-B in TCAS equipped aircraft while airborne.</p>	<p>- Per that discussion, recommend adding the following text as a note or possibly a requirement somewhere in 2.2.3: - It is not a requirement for TCAS equipped aircraft to process TIS-B messages while airborne. This is because TCAS equipped aircraft will see transponder equipped traffic, and TIS-B only presents transponder equipped aircraft. If a TCAS equipped aircraft does process TIS-B reports while airborne then the correlation requirements throughout section 2.2.3 apply. All ASAS equipped aircraft should process TIS-B messages on the ground.</p> <p>Or add the following requirement: "Aircraft with Certified TCAS systems shall not utilize TIS-B messages of airborne traffic. This alleviates the need to correlate TIS-B tracks and TCAS tracks." DONE in 2.2.3.2.3</p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
83	AIR-130 Bulger	33	2.2.3.3	S	<p>How does the Best Source Selection deal with DO-260 (NUC) targets? Here's the concern: A target aircraft is equipped with 260(NUC). The 260A equipped ownship receives the 260 target's ADS-B transmission. The ownship also receives a TIS-B message on the 260 target. The ADS-B message only has NUC, where as the TIS-B message will have NACp. The way the best source selection is written the TIS-B track would be chosen because it has a valid NACp. This ADS-B (260) track, which is probably more accurate, wouldn't be used.</p>	<p>CHRIS WILL DEAL WITH NUC AND ADD ASSUMPTION UP FRONT TO THAT EFFECT <u>DONE</u></p>
84	AIR-130 Bulger	34	2.2.3.3	S	<p>Recommend changing the highlighted "mays" to shalls</p> <p>When the selected source has not been updated and the maximum data age is exceeded, the next highest quality source may be selected. The maximum data age is different from application to application (see <u>Table 2-1</u>). When running multiple applications, the maximum data age of the most stringent application running may be used.</p>	<p>WITHDRAWN</p>

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
85	Various		2.2.3.3. May→Shall		<p>Best Source Selection When the selected source has not been updated and the maximum data age is exceeded, the next highest quality source may be selected.</p>	<p>Bulger: This sounds like a requirement Bachman: “May” is ok. Moody: Make it shall or specify all acceptable alternatives Eich: Disagree. The minimum requirement is to select the TCAS track when the other correlated tracks don’t meet the requirements for EV Acq. which has a data age requirement of 25 seconds which is the least stringent application. The Traffic Application Capability requirements will mark the traffic as either valid or invalid for each associated application based on their specific data age requirements. Beyond this, a manufacture may try other methods by examining the data ages based on the most stringent application or other fancy means. I think it is too immature to make these firm requirements at this time without more actual experience. Also this should only happen in corner cases; most of the time you should not have multiple sources such as ADS-B, ADS-R, and TIS-B on the same traffic. NO CHANGE</p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
86	Various		2.2.3.3 May→Shall		Best Source Selection When running multiple applications, the maximum data age of the most stringent application running may be used.	<p>Bulger: This Sounds like a requirement. Bachman: “May” is ok. Moody: Make it shall or specify all acceptable alternatives Eich: Disagree. The minimum requirement is to select the TCAS track when the other correlated tracks don’t meet the requirements for EV Acq. which has a data age requirement of 25 seconds which is the least stringent application. The Traffic Application Capability requirements will mark the traffic as either valid or invalid for each associated application based on their specific data age requirements. Beyond this, a manufacture may try other methods by examining the data ages based on the most stringent application or other fancy means. I think it is too immature to make these firm requirements at this time without more actual experience. Also this should only happen in corner cases; most of the time you should not have multiple sources such as ADS-B, ADS-R, and TIS-B on the same traffic.</p> <p>NO CHANGE</p>

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
87	Various		2.2.3.3 May→Shall		<p>Best Source Selection If the update rate of a data source is less frequent than the maximum allowed data age for an application, a manufacturer may choose to exclude that data source from selection for that application. That may prevent periodic interruption of the application.</p>	<p>Bulger: This Sounds like a requirement. Bachman: Shall Moody: Shall Eich: Disagree. The minimum requirement is to select the TCAS track when the other correlated tracks don't meet the requirements for EV Acq. which has a data age requirement of 25 seconds which is the least stringent application. The Traffic Application Capability requirements will mark the traffic as either valid or invalid for each associated application based on their specific data age requirements. Beyond this, a manufacture may try other methods by examining the data ages based on the most stringent application or other fancy means. I think it is too immature to make these firm requirements at this time without more actual experience. Also this should only happen in corner cases; most of the time you should not have multiple sources such as ADS-B, ADS-R, and TIS-B on the same traffic. CHIP WILL PROVIDE TEXT</p>
88	Petri		2.2.3.3 (3 rd paragraph from end)	E	<p>The paragraph is somewhat confusing. I <u>think</u> that the problem is that the first sentence should be moved to the end of the paragraph, as shown in the proposed resolution.</p>	<p>Reorder first sentence to the end, so that the paragraph reads: The maximum data age is different from application to application (see <u>Table 2-1</u>). When running multiple applications, the maximum data age of the most stringent application running may be used. When the selected source has not been updated and the maximum data age is exceeded, the next highest quality source may be selected. DONE</p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
89	Petri		2.2.3.3. (last paragraph)	S	This paragraph is also confusing. If the update rate doesn't meet the application requirements, it shouldn't be used, right? Also, I would assume that switching to a different source shouldn't interrupt the application, assuming that the second source was capable of supporting the application.	Does this paragraph say anything? OBE
90	Petri		2.2.3.3	S	It may be useful to mention in the note that the Traffic Application Capability is likely to be altered when traffic source is switched. If an Coupled application can no longer be supported, the Coupled status will be lost with application	Add note: Switching the traffic source may result in altered Traffic Application Capability. If traffic no longer supports a Coupled application, the Coupled status is terminated. INCORPORTATED
91	ACSS	35	2.2.4	S	Figure 2.7 called out in the requirements is missing. (i.e., Table 2-1 calls out Figure 2-1). This is a global comment.	Should be Figure 2-4? DONE

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
92	Petri		2.2.4 figure 2-6	S	<p>The figure is specific to the current (initial) applications. Aside from some concerns about the accuracy of this figure, I think a more generic figure might be preferred. (Or include both a generic figure, and then this specific figure [corrected] for the initial applications.)</p> <p>For example, selected traffic may be identified during any application (if traffic selection is implemented). Traffic coupling and setting of application-specific parameters may be used in future applications. Future applications may also have alerts.</p>	<p>Genericize figure to replace the EVApp and CD stuff with an “application-specific processing” block. Include inputs to that block for coupled traffic and application parameters (from CD). Show application-specific outputs (including alerts and information blocks) are provided in the track file sent to CD.</p> <p>ONLY CHANGE IS TO DELETE “SELECTED”</p>
93	Bulger		2.2.4 Table 2-1 Note 3		<p>In some limiting cases with high maneuver rates, the error may exceed NACp of 5 for several seconds at the end of the Maximum Data Age period.</p>	<p>Possible Change</p> <p>This is relieving the requirement in limited cases, however the limited cases are not well defined. How much can it exceed? What is “several” seconds. Does “end of the max data age” mean when the max data age has been exceeded?</p> <p>CLARIFIED</p>
94	Eich		Table 2-1 Note 3		<p>May need to improve the note. 25 seconds was based on the traffic exceeding 0.5 NM of position error based on a typical 0.5 g turn. The note was intended to say that this error may be greater for a short period of the target was turning greater than 0.5 g.</p>	<p>Recommendation: Remove note and describe in the pending issue paper for EV Acq. deviations from the ASA MASPS.</p> <p>CLARIFIED</p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
95	AIR-130 Bulger	36	Table 2-1	E	This table does not include any requirements for 260 Targets. (NUC). (Note: The requirements are written out in the text.)	COVERED BY CHRIS” RESOLUTION TO COMMENT #83
96	AIR-130 Bulger	36 40	Table 2-1 2.2.4.2.2	C	The AIR stance at this point is that ASSA/FAROA requires a NACp of 9.	Target reqt will be changed to NAC9 for valid and optional degraded at 8 CHRIS WILL DO THIS +TABLE DONE
97	AIR-130 Bulger	36 43	Table 2-1 2.2.4.3.2(b)	S	The horizontal velocity accuracy for CD is listed as “manufacturer determined parameter.” Can this requirement be defined, or clarified to indicate the reasoning?	DONE <u>Note “7” number missing. Added</u>
99	AIR-130 Bulger	37 40	Table 2-1 Note (6) 2.2.4.2.2	S	Note (6) says the ASSA/FAROA requirements for airborne targets are identical to those for EVAcq.	Although this may (may not) be sufficient, a problem occurs when some targets could be broadcasting an airborne state when they are really on the ground. Suggest deleting this note. Additionally, if an airborne target on short final is only accurate to ½ mile the display of that traffic could be misleading for ASSA/FAROA. ITS PROBABLY THE BEST WE CAN DO—NO ACTION
102	Bachman, Moody		2.2.4.1.1 second para	S	May→Shall	Replace first 2 sentences of para with: “DONE.”
103	Petri		2.2.4.1.1 para 1	E	Inconsistent use of terminology. “inoperative” is not a defined application status.	signal that EVAcq is inoperative Unavailable (fail) via the CDTI interface. DONE

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
104	Petri		2.2.4.1.1 para 2	S	I'm not sure that CDTI is defined to accommodate this "degraded" mode.	Check on this REPHRASED <u>I'm not sure what this revised text means Suggested replacement text included in draft,</u>
105	Petri		2.2.4.1.2 para 3	S	What happens if there is no altitude? Is it reported (without altitude) to CDTI? It appears that it's an invalid target. TCAS displays such traffic. Do we want to display TCAS non altitude traffic but suppress ADS-B non altitude traffic?	Discuss. A note may be added to note this situation. NO ACTION
106	Petri		2.2.4.2	S	ASSAP also determines that the necessary map information is present.	Add to end of 1 st para: ASSAP also determines that the necessary map information is present. DONE
107	Petri		2.2.4.2.1 paras 1,2 and 3	E	See comment 30 – inconsistent use of terminology	signal that ASSA/FAROA is inoperative Unavailable (fail) via the CDTI interface. signal that FAROA is inoperative Unavailable (fail) via the CDTI interface. signal that ASSA is inoperative Unavailable (fail) via the CDTI interface. DONE <u>Missed one. Fixed.</u>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
108	AIR-130 Bulger	38 40	Table 2-2 2.2.4.2.1	S	Believe this should be the DO-257A requirement of 36meters, or reference the DO-257A specification. I'm not sure we can assume the quality of the airport database which will be used.	NEW SECT 1 ASSUMPTION ADDED AND CHRIS WILL PROVIDE TEXT FOR SECT 3 FROM SETHU
109	Jeff Meyers	41	2.2.4.2.1	E	Paragraphs 2 and 3 are not related to ownship requirements.	Maybe move to under 2.2.4.2 OK AS IS
110	Jeff Meyers	41	2.2.4.2.1	S	If there is a requirement to have a database (paragraphs 2 and 3) then there should also be a requirement to have database assurance (RTCA/DO-200A).	Could make assumption that the requirements of RTCA/DO-257A for AMMD has been met. NEW SECT 1 ASSUMPTION ADDED AND SETHU WILL PROVIDE TEXT FOR SECT 3 SAME AS 108 DONE
111			2.2.4.2.2.d		May→Shall	Bachman: make it a note Moody: replace all after the first 2 sentences as follows: “If relative geo altitude is used, the following shall apply: the target’s NACp must be 9 or greater and ownship HAE accuracy must be less than 45m. Vertical position... DONE

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
112	Petri		2.2.4.2.2 note after c	S	<p>The note says: The only difference between EVAcq and ASSA/FAROA is that ASSA/FAROA requires airborne ADS-B reports have a valid altitude to be displayed; surface ASSA/FAROA targets do not require a valid altitude.</p> <p>I don't think that is any different from EVAcq, unless we determine that we can display airborne non-altitude reporting traffic in EVAcq. (see comment 32) . Otherwise, without ASSA/FAROA, EVAcq can be used on the surface and wouldn't require valid altitude for surface traffic.</p>	<p>Unless we decide to allow display of non-altitude reporting EVAcq traffic, delete all but the first sentence of the note. If we do allow non-altitude reporting traffic for EVAcq, delete text after semicolon.</p> <p>DONE</p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
113	AIR-130 Bulger	41	2.2.4.3	E		<p>Change the first paragraph to contain the same words that Chip/Sethu/Michael Agreed upon for this section:</p> <p>The requirements included in this document for CD are based on the Conflict Detection application as described in the ASA MASPS (DO-289). Additional development and field experience is necessary to validate and verify this application, and may result in different and additional requirements. If an applicant chooses to implement CD, the requirements in this document may be referenced; however the CD requirements are not intended to be referenced by regulatory guidance.</p> <p>CHRIS TO PUT TEXT ABOVE IN 2.2.4.3 CHANGES LAST SENTENCE FOR ONE BELOW WHICH IS OTHERWISE THE SAME</p> <p><u>DONE</u></p>

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
114	Petri		2.2.4.3 para 1	C	Replace first paragraph with the same text as used in comment 2. Perhaps this should be included as a note in this case.	<p>Replace para 1 with:</p> <p><i>Note: The requirements included in this document for CD are based on the Conflict Detection application as described in the ASA MASPS (DO-289). Additional development and field experience is necessary to validate and verify this application, and may result in different and additional requirements. If an applicant chooses to implement CD, the requirements in this document may be referenced; however, additional requirements and test criteria will be needed for installation approval.</i></p> <p><u>OBE BY COMMENT ABOVE ABOVE NOTE ADDED</u></p>
115	Petri		2.2.4.3 para 2	E	<p>The current application description is not very clear.</p> <p>Also, there is an extra period after the first sentence.</p>	<p>The objective of Conflict Detection (CD) is to enhance the flight crew's traffic situational awareness of participating proximate traffic by providing alerts for predicted separation conflict and collision situations. to aid in "see and avoid" procedures. The alerts may prompt the flight crew to exercise additional visual vigilance additional "see and avoid" procedures, or to contact ATC for guidance.</p> <p><u>DEAL WITH THIS AS EDITORIAL CHRIS DONE</u></p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
116	Petri		2.2.4.3.1 para 1 and 2	E	Four uses of inconsistent terminology. See comment 30	Replace text in four places: inoperative Unavailable (fail) DONE
117	Petri		2.2.4.4 para 2	E	This is a coupled application.	If so, the pilot may select couple a target aircraft on the CDTI for EVApp. DONECHRIS
118	Petri		2.2.4.4 para 2 and 3	E	ASSAP is always providing Traffic Application Capability to CDTI. There's no need to have the extra text here. Also, the para 3 text assumes a specific method of coupling.	Make this slight change to Para 2: ASSAP also determines whether the quality of Traffic and Ownship information satisfies the EVapp requirements, DONE Delete this text from the start of Para 3: Upon the selection of a target for EVapp, ASSAP shall () receive the target identifier from the CDTI interface. ASSAP then determines if the quality of target vehicle information is sufficient to perform EVApp. If the target quality is insufficient, ASSAP shall () notify the CDTI that EVApp is not available for this target. If the target quality is sufficient, LEFT THIS SINCE WE MODIFIED DURING THE MTG Redundant text about checking data quality was agreed to be deleted, as I recall. I've deleted it. CHRIS
119	Petri		2.2.4.4.1	E	Five uses of inconsistent terminology. See comment 30	Replace text in five places: inoperative Unavailable (fail) DONE

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
120	Bachman, Moody		2.2.5.2 last sentence	S	May→Should	Bachman: probably should be a requirement Moody: this seems to be about test support and may be different from a standard shall SENTENCE DELETED
121	Tom Mosher (TLM)		2.3.1	E	The word “must” (first paragraph, second sentence) is confusing. If that’s a minimum requirement, change “must” to “shall.” If it isn’t a requirement, avoid using words that imply that it is.	Replace the second sentence with this text: “The CDTI is required (in §2.3.4.1) to show own-ship position and (in §2.3.1.2) to show the positions, relative to the own-ship, of traffic targets.” – JHM DONE <u>Wrong section number inserted in document – corrected</u>
122	TLM		2.3.1.1	S	I disagree with the statement (first paragraph, first sentence); “far more traffic” is a value judgment that depends entirely on what application the flight crew is performing.	Delete the word “far”. – JHM DONE
123	James Maynard (JHM)		2.3.1.1	E	JCM asked that the “If CDTI is integrated with TCAS” paragraph be rephrased.	Try this: “If the CDTI is integrated with TCAS, then (a) all intruders causing an RA or TA shall [] be displayed, and (b) all proximate traffic within the selected display range shall [] be displayed — subject to the maximum number of traffic targets that can be displayed.” – JHM DONE

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
124	TLM		2.3.1.1	E	In the Note after the first paragraph, “number of traffic” is an awkward term: “number of targets” is better.	Change the Note after the first paragraph to read, “The traffic elements shown on the display are subject to the traffic priorities specified in this document (see Section 2.2.2.5.1.2), the maximum number of targets that can be shown on the display (see Section 2.3.4.3) and the TDC.” – JHM ADDED “ELEMENTS” TO MAKE TRAFFIC PLURAL
125	Eich		2.3.1.1	S	Traffic Display Criteria (TDC) The surveillance range of ASAS will frequently include far more traffic than is of interest to the flight crew. Displaying too many traffic elements may make the traffic elements indistinguishable. To determine the traffic of interest to the flight crew, a set of TDC is used to filter the traffic. Criteria generally include range and altitude. Additional criteria may be used. The flight crew may change the TDC.	Suggest Change The prioritization is spelled out in 2.3.6.1 and 2.2.2.5.1.2. Traffic display criteria/priority need to be linked. Also, criteria “generally” include range and altitude is not a firm requirement. ITS OK—NO ACTION
126	TLM		2.3.1.1.2	E	In the second Note, instead of “pilots,” “flight crew” is better.	Change the second Note to read, “The default TDC and all alternate TDC are expected to be clearly documented and the flight crew are expected to be trained accordingly.” – JHM CHRIS DONE
127	TLM		2.3.2.4.3	E	Regarding JCM’s comment on the 2008-02-27 draft, (“Traffic”, or “Traffic Element” instead?), I think “selected target” is correct. A Traffic Element is one piece of data that may be displayed.	Change the first sentence to read, “A Selected Target is a traffic target about which additional information is requested by the flight crew.” <u>NO CHANGE</u>CHRIS

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
128	AIR-130 Bulger	50	2.3.2.4.4	E		Add the following first paragraph of section 2.3.2.4.4 Conflict Detection Parameters: CD Parameter requirements will be further developed with the next revision of this document. Preliminary requirements follow CHRIS--DONE
129	TLM		2.3.3.3	E	Does the document really need to define the concept of a “label”? If so, choose a more appropriate example than an On/Off icon.	LEAVE AS IS, EXAMPLE PROVIDED
131	Bulger		2.3.4.1g	S	If the traffic display can be panned such that own-ship symbol is no longer in view, the display may indicate the ownship position relative to the currently displayed view.	Suggest Change This is contradictory to the requirement to show ownship (2.3.4.1b). Thus it seems that depicting relative ownship position in this scenario would be a requirement. DELETED
132	AIR-130 Bulger	53	2.3.4.1 (f)	E	f) The own-ship symbol should be unobstructed. However, higher priority information may temporarily obstruct the own-ship symbol. - Suggest defining “higher priority traffic” and “temporarily.”	DONE
134	Bulger		2.3.4.2	S	Traffic Information formats The primary purpose of the CDTI is to display traffic information. Traffic information may be displayed in one or more of these formats: Data tags Data block Traffic symbolog	Suggest Change This is probably a hard requirement. OK AS IS

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
135	Bulger		2.3.4.2.3	C	The CDTI may display ground vehicles in addition to aircraft. If ground vehicles are displayed, the ground vehicles should be distinguishable from the aircraft.	<p>Suggest Change This should be a hard requirement (conditional for appropriate applications) Ie, ground vehicles shall be displayed during ASSA/FAROA WILL CHANGE MAY TO REQUIRE GND VEHICLES TO BE DISTINCT FROM AC DONE</p> <p><u>Chip felt that the requirement is to display the traffic, and a “should” is fine for making the ground traffic distinct in a traffic symbol</u></p> <p><u>Also, I updated a requirement in 2.2.2.5.1.5 to cover the need for the traffic category to support this.</u></p>
136	Bulger		2.3.4.2.3.2.2	S	Traffic Application Capability a. The traffic symbol may provide an indication of traffic application capability.	<p>Suggest Change Providing the application capability in the symbol is optional, however knowledge of app capability should be available at some point (symbol/tag/block) so the pilot can understand why he can’t select a target for an application. (See 2.3.9.3b) MIKE WILL CHECK TO MAKE SURE ITS COVERED It is: See sec 2.3.5.2</p>
138	Bulger		2.3.4.2.3.2.4			Change title of 2.3.4.2.3.2.4 to: Alerts and Indications NO CHANGE

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
139	Bulger		2.3.4.2.3.2.4			<p>Add a subparagraph d: The traffic symbol shall [] change to filled for proximate traffic indications Note: I believe its also permissible to say that the traffic symbol shall [] be differentiated for proximate traffic indications. Open for group discussion NEW TEXT ACTION FOR SOMEONE TO REVIEW THIS AND MAKE SURE ITS IN THE RIGHT PLACE MIKE P? <u>It is included, but as a “should” requirement. Chip agrees with this. Also, Chip prepared an assumption that notes any symbol sets will need to be reviewed.</u></p>
140	Bulger		2.3.4.2.3.2.5		<p>Selected Traffic: When a traffic is selected, additional information on that traffic may be displayed in a data block or a data tag. Note: Generally, selecting traffic will bring up the additional information in a data block, but a data tag can also be used for this purpose.</p>	<p>Suggest Change The note sort of contradicts the text. This probably is a “should” (Sethu agreed to change to: (b) When a traffic is selected, additional information on that traffic shall be displayed in a data block or a data tag.) DONE</p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
141	Bulger		2.3.4.2.3.3		<p>b. Traffic directionality may be removed during a TCAS Resolution Advisory. Note: During a TCAS RA, the flight crew is expected to follow the TCAS RA guidance and not be focused on the traffic display. As such, directionality information during an RA might not provide information that could be utilized because the flight crew is following the RA guidance. However, during a transition from a TA to RA, switching from a directional symbol to a non-directional symbol may be visually distracting. There is insufficient knowledge on this subject to provide a requirement.</p>	<p>Suggest Change Realize there has been extensive discussion previously. This single "may" is what started this whole drill through. Although contradictory to AC20-186, this needs to say "shall" not remove directionality. Note can then be removed. DONE</p>
142	TLM		2.3.4.2.3.2.5	S	<p>Item "b" of the lettered list reads, "When a traffic is selected, additional information on that traffic shall [] be displayed in a data block or a data tag." This means that the "additional information" must be available before a target can be eligible for selection, along with stating where that "additional information" should be shown. Is that what is intended?</p>	<p>WE DON'T THINK ANY CHANGE NECESSARY</p>
143	Bulger		2.3.4.3		<p>Traffic will be displayed based on the traffic prioritization scheme (see section 2.2.2.5.1.2 (TBD)). Traffic of interest may not be included within the first 16 traffic in this list, especially if there is no automatic monitoring of threatening traffic.</p>	<p>Suggest Change Section 2.2.2.5.1.2 is the ASSAP prioritization scheme, which is slightly different than the CDTI prioritization scheme in 2.3.6.1 DONE <u>The note should say the TDC, which includes the ASSAP priority scheme. I've updated the note.</u></p>

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
144	Bulger		2.3.5.1		The CDTI may support applications that provide alerts on specific traffic (e.g., TCAS, CD).	Suggest Change Change to "shall" However it can be caveated: shall support alerts if integrated with a TCAS or ASAS application requiring alerting. DONE This was kept as MAY. (See also C146)
145	TLM		2.3.5.1	E	The heading, "Traffic Supports Alerting Applications" needs editing; it seems more like a heading in a newspaper than a heading in a MOPS.	MIKE WILL CHECK <u>This section had previously been update to include only TCAS alerts. New heading added.</u>
146	TLM		2.3.5.1	S	The third sentence, "A means shall [] be provided for the flight crew to determine if traffic of interest is monitored by an ASAS alerting information or by TCAS..." is unclear. Is it required that the flight crew be aware of which service is providing the monitoring (ASAS or TCAS), or just that monitoring is being performed?	CHANGED TO MAY <u>The section had previously been updated for only TCAS.</u>
147	TLM		2.3.5.5	S	The requirement in subparagraph (e), "[i]n addition to the altitude value, the display shall [] indicate whether traffic is above or below own-ship," is a duplicate and can be omitted. The relative and actual altitude sections (see below) each have a requirement for altitude above/below.	MIKE WILL CHECK THIS <u>Yes, this was duplicated in the relative and absolute altitude sections.</u>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
148	TLM		2.3.5.5.2	E	The fourth paragraph, second sentence, doesn't read very well. Needs a bit of polish.	MIKE <u>Sentence polished. However, that sentence contradicts the first sentence. Does it make sense to have this second requirement when the first prohibits it?</u>
149	Bulger		2.3.5.5.2		The display of actual barometric altitude below the transition altitude (18,000 MSL in the U.S.) shall [] incorporate a barometric pressure correction from ownship. If barometric pressure corrections are not incorporated, the display of actual barometric altitudes below the transition altitude is potentially ambiguous and may be displayed by pilot selection only for approximately 15 seconds per selection.	Suggest Change This is a hard requirement. Shall only be displayed for xx sec. DONE
150	TLM		2.3.5.6	E	In the second Note under subparagraph (a), it would be better to write "not required" rather than "not used."	Change Note 2 to read, "Traffic Vertical Direction is not required for on-ground traffic." DONECHRIS
151	TLM		2.3.5.9	S	Subparagraph (a), "The traffic display shall [] be capable of displaying the traffic category," doesn't provide any information about when or where the emitter category should be displayed.	MOPS NOT PRESCRIPTIVE ON IMPLEMENTATION—NO CHANGE
152	Bulger		2.3.6.1		Altitude, range, and other information may be used for further prioritization and tie breaking, as appropriate for the application.	Suggest Change The prioritization requirements need to be clearly defined as a requirement. Also, this may not correlate with the ASSAP priority scheme in 2.2.5.1.2. OBE
153	TLM		2.3.6.2	E	In the second sentence of subparagraph (a), it may be better to use "actuated" rather than "selected." The term "selected" is already a keyword with regard to selecting targets.	MIKE Done

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
154	TLM		2.3.6.4.1	S	Regarding the first requirement in this section, “The CDTI shall [] indicate the absence of power (e.g., blank display),” – is this really a MOPS level requirement?	WE ARE OK AS IS
155	TLM		2.3.6.4.1	S	Regarding the fifth requirement, “The CDTI shall [] remove traffic from the display if the following occurs: 1. The CDTI monitor indicates a system failure 2. The ASSAP monitor indicates a system failure” -- The term “system failure” needs definition. What is included in a “system” ?	CLARITY AND SECTION REFERENCES ADDED
156	TLM		2.3.6.4.1	S	I disagree with the seventh requirement, that “[i]f ownship heading data is invalid or not provided, then ... the CDTI shall [] not display traffic as directional.” If the own-ship is switched to north-up, then traffic directionality cab still usefully be displayed.	ITS GONE, THANKS

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
157	TLM		2.3.6.4.1	E	The eighth requirement reads, “If ownship heading data is invalid or not provided, then ... the CDI shall provide an indication ... of that fact if it continues to display traffic.” Clarify what “that fact” refers to.	ITS GONE
158	Jeff Meyers	68	2.3.6.4.1	S	Should have a general requirement somewhere to indicate that the MTBF or failure of ASSAP shall not affect the availability of TCAS. DO-289 (1.2.4.3) says that it must be shown that frequency of common mode failures is sufficiently small.	JEFF SENT EMAIL TO BE INCORPORATED DON TO CHECK DONE (Note added to section 2.1.7)
159	TLM		2.3.6.4.2	E	Subparagraph (a) includes a bulleted list: “The equipment shall [] be capable of indicating any applications that are: <ul style="list-style-type: none"> • On • Running • Unavailable to run • Unavailable – Fault” Are we to imply that this is a complete and comprehensive list of all status values? Avoid using bullet lists unless the context is clear.	IT IS COMPREHENSIVE NO CHANGE This section cites the application status description section
160	TLM		2.3.6.4.2	E	Same comment as above, but for subparagraph (b).	IT IS COMPREHENSIVE

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
161	AIR-130 Bulger	72	2.3.9.1	E		<p>Add the following first paragraph of section 2.3.9.1 Conflict Detection:</p> <p style="padding-left: 40px;">CD Parameter requirements will be further developed with the next revision of this document. Preliminary requirements follow.</p> <p style="text-align: center;">CHRIS TO IMPLEMENT</p> <p>DONE</p>
162	Bulger		2.3.9.1 Note 2		Note 2: The ANSD may not be set to a value smaller than the collision avoidance zone.	<p>Suggest Change This is a hard requirement. DONE</p>
163	Bulger		2.3.9.3		b. EVApp may use the optional degraded performance traffic application capability state in addition to the valid traffic application capability state. If such is the case, the CDTI shall [] provide a means to distinguish the valid traffic from the degraded performance traffic. The indication may be provided while traffic is being coupled/selected for EVApp.	<p>Possible Change: Can you couple to a degraded target? DONE <u>Degraded deleted</u></p>
164	ACSS	84	2.5.3.1.1.	E	A delta of 25 seconds between reports will result in the track being dropped and reestablished. Is this desired? Also see comments for Appx. J.	<p>Recommend a note. Also recommend stating which reports to use for this test. COVERED BY OTHER ACTION</p>
165	ACSS	85	2.5.3.2.1	E	(s.p.) aircraftt	<p>CHRIS DONE</p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
166	ACSS	n/a	Test Sections		There are no negative tests.	For example, test that interject bad reports that should result in report rejection. ROBERT WILL ADD SCENARIO TO TEST THIS POS OUTLIER
167	ACSS	88	2.5.3.3	S	Verification of Best Source Selection needs to be updated per new requirements in 2.2.3.3. Also test say to use SIL and NIC values below the requirements for EV Acq; but there are no minimum requirements for these for this app.	Update test accordingly. Also appendix C contains the old track selection logic; recommend updating. BURNS/ ACTION
168	AIR-130 Bulger	92	2.5.4.3	E		Add the following first paragraph of section 2.5.4.3 Verification of Conflict Detection (CD): CD Parameter verification requirements will be further developed with the next revision of this document. Preliminary verification requirements follow. CHRIS TO ADD THIS <u>DONE</u>
169	ACSS	C-4	C.3.1.1.1	E	Formatting - Notes are not superscript/subscript in items d., e., g., h., i., and j.	Recommend superscripts. CHRIS TO DEAL WITH
170	ACSS	C-5	C.3.1.1.1	S	Provide derivation of standard deviation of estimated position uncertainty from NACp and standard deviation of horizontal velocity accuracy from NACv (See MASP)	Recommend adding a table as done in the MASPS. ROBERT WILL ADDRESS this
171	ACSS	C-7	C.3.1.1.2.1	E	Equation format problems w/ e2 definitions	ROBERT

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
172	ACSS	C-16	C.3.1.1.2.3	E	Equation format problems w/ e2 definitions	ROBERT
173	ACSS	C-17	C.3.1.2.1	E	Formatting - Notes are not superscript/subscript in items d., e., g., h., i., and j.	Recommend superscript. This is an issue in the whole document.
174	ACSS	C-18	C.3.1.2.1	E	Missing note 1, 2, and 3 (see section C.3.1.1.1)	Add references.
175	ACSS	C-22	C	E	References are made through out Appendix C to puesdo code/ matlab simulation (i.e., track(i).xxxx) If structures are to be referenced a definition should be provided in the Appendix.	Recommend providing a reference to the MATLAB models.
177	ACSS	C-24	C.3.2.2	E	TCAS Report and TCAS Track are used interchangeably within this section. TCAS Report appears to be more appropriate.	
178	ACSS	C-31	C.3.2.2.2	E	Table C-2 – Problem w/ header format	
179	Callaham	C-6	C.3.1.1.2.1	E	Equation number (A) seems odd.	Re-label equations, making (A) (1).
180	Callaham	C-6	C.3.1.1.2.1	E	Units of geodetic latitude should be specified.	Use WGS84 latitude units: degrees.
181	Callaham	C-6	C.3.1.1.2.1	E	In eq. (A), express geodetic latitude in specified units.	Change $\pi/4$ [rad] to 45 [deg].
182	Callaham	C-6	C.3.1.1.2.1	E	b (semi-minor axis) is defined but not used in eq. (A).	Delete the expression that defines b, or else replace the definitions of Somigliana's Constant and gravity ratio with the formulae from WGS84, which show how they depend on b and on other constants (GM and ω), the values of which should be specified (from WGS84).

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
183	Callaham	C-7	C.3.1.1.2.1	E	Units of geodetic latitude and longitude should be specified.	Use WGS84 units: degrees.
184	Callaham	C-16	C.3.1.1.2.3	E	Equation number (B) seems odd.	Re-label equations, numerically.
185	Callaham	C-16	C.3.1.1.2.3	E	Units of geodetic latitude should be specified.	Use WGS84 latitude units: degrees.
186	Callaham	C-16	C.3.1.1.2.3	E	In eq. (B), express geodetic latitude in specified units.	Change $\pi/4$ [rad] to 45 [deg].
187	Callaham	C-16	C.3.1.1.2.3	E	b (semi-minor axis) is defined but not used in eq. (B).	Delete the expression that defines b, or else replace the definitions of Somigliana's Constant and gravity ratio with the formulae from WGS84, which show how they depend on b and on other constants (GM and ω), the values of which should be specified (from WGS84).
188	ACSS	C-24	C.3.2.3	E	TIS-B Report and TIS-B Track are used interchangeably within the section. TIS-B report appears to be more accurate.	
189	AIR-130 Bulger	G-2	G3	S	I believe we should consider a requirement to be able to distinguish traffic TCAS advisories from ASAS advisories.	OBE

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
190	Bulger		Appendix G		Change G7 as follows and eliminate G8	<p>G7.1 TCAS Proximity Indication: On standard TCAS displays, the only effect of proximity alerts is to alter the traffic symbols (by filling in the diamond) for traffic within 6 nautical miles and +/-1200 feet of ownship. This functionality is being retained. The ASSAP forwards an indication of proximate traffic to the CDTI and the CDTI differentiates the proximate traffic from other traffic by filling in the corresponding symbol.</p> <p>G7.2 Non TCAS Traffic Proximity Indication: For tracks that are not correlated with a TCAS track the ASSAP shall determine traffic proximity based on DO-185A requirements and indicate the proximate nature of the traffic to the CDTI. The CDTI shall differentiate proximate traffic from other traffic in the same manner as TCAS traffic defined in G7.1</p> <p>G7.3 Display of Proximate Traffic During TCAS TAs & RAs Proximate traffic shall be displayed during TAs and RAs. MIKE AND CHIP WILL WORK THIS <u>DONE</u></p>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
191	ACSS	J-1	J	S	TOA specified will be difficult to produce at a systems level. Possible in a software test environment. Relative time should be used w/ tolerance. TOA's do not seem applicable for test called out in Section 2.5.3.1.1.	Instead of TOA, Provide relative times (maybe a generic issue?). OK AS IS
192	ACSS	J-1	J	S	Velocity and are not specified as called out in section 2.5.3.1.1. The extrapolation test for 25 seconds may have issues if the velocity is not constant, which may be the case? Altitude rate may also be an issue?	Recommend adding velocity and altitude rate in the table. BOB WILL REWRITE TEST AND WE WILL DELETE APPENDIX
193	Walker	10	1.6 a	E	DO-160C is obsolete	replace with DO-160E Issued 12-06-07 CHRIS DONE
194	Walker	15	Figure 2-2	E	this figure has numbered notes that don't appear below the figure	include notes below the figure or drop the notes from the figure CHRIS DONE
195	Walker	18	2.2.2.1.2 f	E	NUCp is in the State Vector Report in DO 260 section 2.2.8.1.5	bullet f should be moved into section 2.2.2.1.1 OBE
196	Walker	18	2.2.2.1.2 g	E	NUCr is in the State Vector Report in DO 260 section 2.2.8.1.6	bullet g should be moved into section 2.2.2.1.1 OBE
197	Walker	18	2.2.2.1.2 k	E	Emergency/Priority is spelled wrong	Priority CHRIS DONE
198	Walker	18	2.2.2.2 b	S	TCAS Report Time is not a defined term in this document or DO-185.	This term needs defined as a minimum. Better would be to actually describe the data right here. I presume what is desired here is the time of the TCAS range measurement although several measurements are actually taken during the TCAS whisper-shout cycle. RESOLVED

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
199	Walker	21	2.2.2.3.2	E	Many bullets use the phrase “when available” twice in the same sentence. Makes an awkward sentence.	Suggest losing both instances of “when available” from these bullets COVERED
200	Walker	24	2.2.2.5.1.9 b	E	This is an IO section, but bullet b has a requirement to derive a parameter.	Bullet b should be move to the application processing section for EV App. OK AS IS
201	Walker	30	Figure 2-4	E	this figure has numbered notes that don’t appear below the figure	include notes below the figure or drop the notes from the figure CHRIS—FIGHRE NOW GONE
202	Walker	31	2.2.3	E	sentence right before the figure is too wordy and possibly not correct depending on the interpretation	suggest removing everything after “...among these functions.” CHRIS TO EVALUATE CHANGE ACCEPTED
203	Walker	31	Figure 2-5	E	this figure has numbered notes that don’t appear below the figure	lose the notes CHRIS TO EVAL <u>DONE</u>
204	Walker	32	2.2.3.1 d	S	now that we have a complete appendix, its time to pull out the quantitative requirements	Suggest words like: When an ADS-B Report ID matches an existing ADS-B Track ID and the positions differ by less than TBD meters, the ADS-B report SHALL be used to update the ADS-B track. When an ADS-R Report ID matches an existing ADS-R Track ID and the positions differ by less than TBD meters, the ADS-R report SHALL be used to update the ADS-R track. etc. include altitude, velocity, quality, get Robert’s input ROBERT AND DAN <u>DONE</u>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
205	Walker	32	2.2.3.1 f	S	quantitative requirements	When targets with the same address are present they will be distinguished as unique if a. their positions differ by TBD meters, b. their altitudes differ by TBD feet, c. their velocity differs by TBD m/s, d. their track/heading differs by TBD degrees, e. their NIC differs by two quantizations, or f. their NACp differs by two quantizations. ROBERT AND DAN <u>DONE</u>
206	Walker	33	2.2.3.2.1	S	quantitative requirements	pull the numbers from Appendix C ROBERT AND DAN <u>DONE</u>
207	Walker	33	2.2.3.2.2	S	quantitative requirements	pull the numbers from Appendix C ROBERT AND DAN <u>DONE</u>
208	Walker	33	2.2.3.2.3	S	quantitative requirements	pull the numbers from Appendix C ROBERT AND DAN <u>DONE</u>
209	Walker	36	Table 2-1	S	The latency number don't add up to the total number	add up the latency and use the rolled up number for A-G i.e. 4.7 s. drop the 1 second from the A-B row. DONE
210	Walker	38	Table 2-2	S	ownership state data latency requirement is the same as for STP. if ownership data were routed through STP, this would present a more stringent requirement. is this the intention?	discuss what the intent of this requirement actually is. modify based on the outcome of the discussion. DONE
211	Walker	39	2.2.4.1.2	E	1 st paragraph can be stricken. the following text is clear that version 0 can be used.	strike first paragraph CHRIS <u>ITS OK NOW SINCE NUC REFS ARE GONE</u>
212	Walker	40	2.2.4.2.2	E	1 st paragraph can be stricken. the following text is clear that version 0 can be used.	strike first paragraph CHRIS <u>ITS OK NOW SINCE NUC REFS ARE GONE</u>

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
213	Walker	41	2.2.4.2.2 g	E	is the 11 seconds really based on TIS-B update rate now that we are fairly certain we won't get TIS-B on the surface from an SSR?	the TIS-B text should be deleted CHRIS <u>DONE</u>
214	Walker	42	2.2.4.3.2	E	1 st paragraph can be stricken.	strike the first paragraph CHRIS <u>DONE</u>
215	Walker	43	2.2.4.3.2	S	CD timeout is 25 s	change 30 s to 25 s DONE
216	Walker	43	2.2.4.4	E	the text reads like this is a sequential process. this may not be the case.	reword text to read as parallel processes OBE
217	Walker	45,46	2.2.5.3.1, 2.2.5.3.2	E	notes are redundant	strike the notes CHRIS <u>DONE</u>
218	Walker	45	2.2.5.3.1	S	add a quantitative requirement	...within 2 seconds. DONE
219	Walker	46	2.2.5.3.2	S	add a quantitative requirement	...within 2 seconds. DONE
220	Walker	46	2.2.5.3.3	S	add a quantitative requirement	...within 2 seconds. DONE
220	Walker	47	2.3.1.1	S	this note about prox traffic should only apply to airborne ADS-B/ADS-R/TIS-B traffic, NOT surface traffic for obvious reasons	carefully word the note action item CHIP AND MIKE <u>Done</u>
221	Walker	60	2.3.5.3	E	is this note necessary?	delete the note MIKE <u>Done</u>
222	Walker	60	2.3.5.4 d	S	is 99 Knots sufficient? what is the justification of this requirement?	educate the ASSAP folks DONE — <u>its now 199</u>

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
223	Walker	62	2.3.5.5.3	S	add a requirement to indicate GEO relative altitude is being displayed	If Geometric relative altitude is displayed, it shall be indicated with a G following the altitude (eg. +12G). <u>DONE This was NOT done, and I don't even remember the group agreeing to do it. Was this rejected?</u> <u>CHRIS THINKS IT WAS REJECTED—NO CHANGE</u>
224	Walker	73	2.3.9.1 g	S	Do we really want CD to generate warning alerts? Considering the quality metrics that are allowed by CD, this may not be the level of assurance you want for a warning advisory.	Suggest that warnings be reserved for ACM application and CD only generate Caution advisories. This will require a white paper against the MASPS. <u>DONE This was rejected.</u>
225	Walker	75	2.3.9.3	S	Traffic Horizontal Velocity Vector should not be required.	make velocity vector a should. write a white paper if necessary against the MASPS. NON-CONCUR RESOLUTION
226	Walker	75	2.3.9.3 b	S	ASSAP doesn't compute degraded EVApp	delete bullet b CHRIS TO CHECK <u>This was deleted from another item.</u> DONE
227	Walker	80	Table 2-3b	S	We need to assign tests to this table.	add an agenda item to this meeting DONE FOR ASSAP NEED FOR CDTI JOHN MORGAN DONE
228	Walker	84	2.5.3.1	S	this test procedure is a white box test STATEMENT ADDED	add an assumption that the vendor must provide a test interface for observing source level track data, correlated track data, estimated track data, best source track data <u>OK? Statement added to front of 2.5.1--DONE</u>
229	Walker	93	2.5.4.4	S	section 2.2.4.4 includes 4 shalls that should be tested in this paragraph SHALLS DELETED	add necessary tests <u>SHALLS WERE DELETED MAKING THIS OBE??</u>

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
230	Walker	95	2.5.5.1.1	E	there is a TBD reference in this paragraph that needs filled in	add reference DONE These were not filled in DONE NOW
231	Walker	96	2.5.5.2	S	bullet 4 references validating BITE for all Input and Output channels. although some output channels are wrapped around to inputs for real-time monitoring in existing designs, this feature is not supported across the board. typically this feature is supported only for applications whose criticality warrants the expense. since the initial applications are all situational awareness in nature and don't have a criticality greater than minor, this sort of output monitoring is not warranted. DELETED	remove the text requiring validation of output channel bite DELETED
232	Walker	96	2.5.5.2	S	bullet 5 references validating BITE for clock frequencies. I presume this is meant to validate a watchdog feature. NO CHANGE	look for text in other documents to use here to replace the existing text NO CHANGE
233	Walker	96	2.5.5.3.1, 2.5.5.3.2, 2.5.5.3.3	S	missing quantitative test 2 SEC ADDED	add quantitative validation per requirements above 2 SEC ADDED
234	Walker	99	Table 2-4	S	All the TCAS rows should be marked as required when integrated with TCAS OK AS IS	mark all rows consistently OK AS IS

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
235	Walker	100	Table 2-5	S	would the author please walk us through this table again. this looks like a small number of cases. maybe it's ok, but convince me... FAA has stated they are concerned about our test coverage. we need to be positive. <u>OK AS IS</u>	justify existing test cases are complete <u>OK AS IS</u>
236	Walker	100, 101	Table 2-5, 2-6	S	there are turn rates and vertical speeds used here as constants. how were these determined? do they need to be varied? <u>OK AS IS</u>	justify existing test cases are complete <u>OK AS IS</u>
237	Walker	147	3.1.8 +	S	There is a bunch of highlights and TBD stuff here. Who is on the hook for this?	assign a stuckee if not already assigned. assign stuckee an evil overseer to provide adequate motivation SETHU AND DON ACTION
238					Update Table 2-4 traj set one to match data	CHRIS WILL DO THIS <u>DONE</u>
239					Need environmental tests	NEED INPUT FROM JOHN MORGAN
240					Do we need assumption 1.5.1.3?	KEEP <u>DONE</u>
241					Can we delete figure 2-2? Seems too detailed for intro section	FIGURE DELETED
242					2.2.2.1.1 final note?	DELETE NOTE <u>DELETED</u>
243			2.2.2.3.3		Do we need item g?	OBE
244					Need pointer to App B?	DONE <u>Added to section 1.2.2. Also, changed name of appendix (replaced ADS-B with ASAS)</u>
245					Do we need assumption that version # is in report?	COVERED
246					Have vendors used data yet?	NO

ASAS MOPS 9 March08 MASTER COMMENT MATRIX

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
247					Should we number the shalls? What do we do with the numbers?	AFTER FRAC MAYBE
248					Purge glossary of unused terms	MITRE <u>DONE</u>
249					Need specific reqt ref in ASSAP test section	CHRIS—after FRAC
250					Purge term target, replace with traffic singular or traffic elements plural?	CHRIS <u>it should be traffic (plural) and traffic element (single) DONE IN MAIN DOC—NOT APPENDICES</u>
251					Check for missing refs	CHRIS <u>DONE</u>
252					APP J on Heading Error	JONATHAN WILL PROVIDE <u>DONE</u>
253					Update App I for TCAS Heading Error?	JONATHAN
254					Need test on missing fields esp NAC that does not get updated.	BOB and TOM P WILL DEVELOP REQT AND TEST—AFTER FRAC
255					Test for track over-capacity	BOB WILL ADD A STEP TO EXISTING TEST FOR OVER CAPACITY
256					Need test for transition from A-G and vice versa.	BOB—AFTR FRAC
257					Fix all the yellow in Sections 3.1.8 and 3.1.9	SETHU/DON <u>DONE</u>
258					Remove Fig 2-2 and update fig refs	CHRIS <u>DONE</u>
					<u>Need test section realignment for new material dan provided</u>	

No.	Reviewer Name	PAGE	SECTION	*C S E	COMMENT / RATIONALE	PROPOSED RESOLUTION(S)
184	Pagano		2.3		<p>General concern test requirements are not complete. See text from email between Chris and Tom P below</p> <p>Chris, — Here is a quick summary of ASSAP MOPS test procedures. The assumption for these comments is that TCAS data and rqts for using TCAS data are no longer included for testing. BTW — a review of GDTI test procedures indicates additional work is required to bring those procedures up to FRAC quality. ASSAP Test Procedures Input Processing — ADS-B Reports with various combinations of data (e.g. missing fields, TIS-B w/wo velocity) — — Input data timeouts — you mean for ownship data i assume? — - Ownship data and received traffic data as well. — Capacity — tests verifying graceful handling when capacity exceeded including proper prioritization, range shedding, etc. — Our ATL scenario already has more tracks than the reqd minimum capacity for ASSAP. Do you envision a test that exceeds the actual capacity of the system under test? — As we discussed, if this is already covered, great. Otherwise, need to look at the existing procedures and rqts and verify rqts and tests are adequate. - Scenarios — Data values outside expected values (this is different from the one time outliers (e.g. position, speed jumps) we discussed the other day) — Ok, but what should the PASS response be? — The position accuracy rqts for the tracker are tested with this. The response of the filter to inputs beyond the normal noise included in the position inputs in the existing scenarios is tested here. - — More robust testing with input data update rates for TIS-B, ADS-R and ADS-B (tracker may be sensitive to this) — Not sure how this is different than the one below? — Here I was talking about the coasting of the tracker when the update rate of input data varies, to the point to where it is marginal (where tracks are dropped). There are track drop tests in the scenarios but I think there is need for more cases here. — More robust tests dealing with data of own aircraft and received aircraft</p>	
Page	58 of 59					

**ASAS MOPS 9 March08
MASTER COMMENT MATRIX**