

Minutes
SC186 WG2
12-13 August 2003

Attendees

Andrew Zeitlin (co-chair)	MITRE/CAASD
Ken Staub (co-chair)	Trios
Bob Magee (secretary)	Mulkerin
Larry Bachman	JHU APL
Roxaneh Chamlou	MITRE/CAASD
Ann Drumm	MIT Lincoln Laboratory
Bill Harman	MIT Lincoln Laboratory
Bob Pomrink	Sensis
Ron Staab	Trios
Rob Strain	MITRE/CAASD
Jim Chen (by telephone)	FAA

The meeting was hosted by MIT Lincoln Laboratory in Lexington MA. The co-chairs thanked Bill Harman for making arrangements.

Review of Minutes

There were several questions on minutes of the June meeting. It was noted that the FAA East Coast procurement is using the term ADS-R to denote the rebroadcast service, while RTCA documents have used both the latter term and “multilink gateway.” The WG decided to continue to use the Rebroadcast Service term. Other clarifications were recorded by the secretary.

Review of Draft ASA MASPS

WG4 recently completed the ASA MASPS and the ballot process has begun. Comments are due to RTCA September 3, except for later dates for several Appendices. The WG conducted a review of the document main body, primarily to develop comments that concerned TIS-B. Members remain free to submit individual comments.

[Note: the WG list of comments is being coordinated among the attendees, and will be provided to the WG2 list before the comment deadline.]

The ASA system diagrams used in several places in Sections 1 and 2 did not include all TIS-B functionality. The WG felt it should do so, and should also add the detail to show the Distribution function.

Many requirements are referenced to interface points. Their definition seems to have sought the maximum parallelism between ADS-B and TIS-B, and the WG found this unfortunate. Some requirements would be better tied to a single point, while others

should be measured between two points, as shown. Also, it is unclear how the Time of Applicability of a surveillance measurement corresponds to the named interface points.

A detailed review was provided of the technical definition of Update Interval Confidence. It is not simply the probability of receiving an update. The group felt that the definition was acceptable and that some limit is appropriate for TIS-B, but the ASA value is given for an air-air range. This does not suffice for specifying TIS-B performance throughout its service volume.

It appeared that target altitude was a required element. This raised a concern that either a primary radar target or a Mode A transponder (no altitude) target that would be useful for Enhanced Visual Acquisition would not be allowed, as the WG interpreted the document. The WG decided to make this a “major” comment, with the rationale that: (a) ATC issues TAs without altitude; (b) TCAS issues TAs for Mode-A targets, i.e. without altitude; (c) In some areas, this application (via TIS-B) will be the only aid to visual acquisition and situational awareness for GA users.

Another concern was raised concerning latency requirements. The ASA document requires that TIS-B provide the age of a report when the latency exceeds 2.1 sec. While this value should be achievable for terminal radar and rebroadcast, a larger value such as 3 sec would be more typical of long range radar. The WG4 concern originally arose from the analysis of Enhanced Visual Approach (EVA), but that application was subsequently reclassified as requiring TQL=2, and thus the maximum latency to support it is capped at 2.1 sec. Among the Basic applications, the ones using TQL=1, it appears that only Conflict Detection (CD) would justify the data age requirement. The WG briefly examined the operational description of this application, which is a situational awareness enhancement to Enhanced Visual Acquisition, and felt that small uncertainties in data age would likely have little operational effect and no safety effect. Since determining latency may be troublesome and sending it would require redefinition of message fields, the WG decided to question the requirement. It developed an alternative suggestion: to reclassify the CD application as TQL=2, so as to cap the maximum latency, as for EVA.

Another concern was identified in comparing latency requirements between different tables, which used different reference points. Comparing these tables, it was inferred that the latency budget remaining for CDTI was less than 1 second, and this was not achievable.

Various other comments were generated on consistency, clarity and editorial matters.

Security

Jim Chen had provided the co-chairs with forms for security assessment of TIS-B. He had requested that certain hazards, denial of service and corrupted data, be examined for each application. The forms call for assessment of the criticality and likelihood of each risk.

The WG determined that this sort of activity was an FAA responsibility, and not a RTCA WG function. SafeFlight 21 and Capstone have performed a number of security assessments, and standard FAA practice calls for a variety of assessments within a SCAP (Security Certification and Authorization Package) for each program. These activities include vulnerability and risk assessments. Moreover, the public nature of RTCA would make it inappropriate to disseminate sensitive data. Therefore, the WG will not pursue it, though we might consider a brief mention of

some concerns or mitigations in the next MASPS. It was also noted that WG experts could be made available for separate meetings.

Rebroadcast Service

At the June meeting, the WG had revised Rob Strain's paper that proposed MASPS text to define the Rebroadcast Service. The group reviewed the paper again. It was agreed that if multiple broadcasts were made to increase reception probability, then all of them must meet the 1 second latency requirement. Bob Pomrink expressed a preference that requirements such as latency be stated with a 95% limit rather than an absolute limit. If it is absolute, we would need to state what is done (e.g., don't send a report) when a report's latency exceeds it.

There has been correspondence on a functional diagram for the service. One of the versions was agreed at the meeting, but it still needs to be integrated into the TIS-B functional diagram. [*Coordination is continuing between authors.*]

The WG is optimistic that a revised MASPS describing this new service and clarifying other topics should be capable of completion about 6 months after ASA MASPS approval.

Telecon on SC186 Document Changes

The WG decided to join a portion of the SC186 telecon that was considering a number of issues related to ASA MASPS items that could impact other documents, particularly link MOPS. One item related to TIS-B latency. After joining, Andy explained the two concerns noted above about data age and non-altitude targets. The members of the telecon seemed unwilling to pursue discussion of these issues due to lack of time and because the telecon needed to focus on impacts on MOPS, rather than concerns with ASA MASPS. [*Note: WG4 plans to hold telecons and/or meetings prior to the Plenary week to attempt to resolve issues.*]

Next Meeting

WG4 will meet at RTCA Sept. 15-17 to complete comment resolution on ASA MASPS. The SC186 Plenary will meet Sept. 18 at RTCA for final ballot on ASA MASPS.

WG2 will meet Oct. 1-2 at Trios (School St.) in Washington DC.