

SC-186 WG1 CDTI sub-group teleconference  
May 4, 2004

Randy Bone - MITRE  
Michael Petri – FAA  
Terry Abbott – NASA Langley  
Tadji ? – Boeing ?  
Sethu Rathinam – Rockwell Collins  
Gary Livack – FAA  
Bill Kaliardos - FAA  
John Morgan - Honeywell  
Jim Maynard – Garmin AT  
Rick Shea – NASA Langley  
Bob Hilb – UPS  
Vern Battiste – NASA Ames  
Jim Walton -

Gary relayed some concern that Bill Kaliardos had about targets dropping out outside of the coverage volume. There is RTCA Interop document that contains some information on TIS-B requirements.

Sethu reviewed the agenda for the teleconference.

0. Secretary. Michael Petri will act as secretary.

1. Status on action items (same order as listed in the excel file):

1 - Collect set of documents for CDTI Library - Bill provided a list of regulatory and suggested practices papers. Bill suggested that articles from the research side should also be collected.

It was suggested that these documents be made available in a library for easy access by the committee. SAE and RTCA documents are copyright controlled.

Gary agreed to look through the list and suggest other items that might be of interest. The rest of the group should also do this. Bill will add these additional items and then mail it out to the group by 5/14/2004

2 – Get a copy of Lessons Learned from Capstone on CDTI and distribute to group - Bill is not having much getting CAPSTONE documentation or comments. It was suggested that perhaps someone involved in CAPSTONE be included in the subgroup. Garmin AT does not seem likely to provide much support for the activity. It was also suggested that someone involved with UPS might provide some feedback. Bill will continue to seek input.

3 - Compile a LIST of current CDTI designs and products (pilot manuals if available) - Gary started the process, and provided a list of ADS-B displays. He did not get any pilot manuals, and stuck with documents in the public domain on ADS-B CDTI installed display equipment. Sethu would also like a list of installed TCAS displays. There was some discussion about whether the ASAS MOPS will apply only to installed equipment, and what "installed" means. Sethu assumes that this means that the ASSAP and CDTI are physically and electrically installed aboard the airframe.

4 - Final draft of the outline of the CDTI section to fit into the ASAS MOPS - John Morgan has been working on fitting this into the current ASAS MOPS outline. Sethu will send this out to the group soon. It does not alter the original CDTI MOPS material, other than the formatting.

5 - Present to the group list of potential customers for the MOPS - Bill will make a presentation of this at the May meeting.

6 - Survey CDTI material in existence – Terry Abbott found a document created for NASA Ames that contains much of this information, but NASA Ames is concerned that some information is outdated, and will not release it. He has asked one of the primary authors, Jackie Doley, to make a presentation about it. A new draft is due in June. Vern suggested that perhaps access could be granted to the group to read the document on the DAG website. Vern will attempt to get this access approved.

7. Where the CDTI Requirements come from - create "big picture" – First draft completed (see below).

8. CDTI MOPS Timeline (project plan) – Sethu created a slide on the CDTI MOPS process diagram, and plans to discuss it today. Timeline should be completed by the meeting.

9. Review DO-257A for what part of the moving map display is covered. - Sethu noted that this document provides own-aircraft situational awareness advisory information for navigation only. It provides requirements for showing runways and guidance for taxiways. It does not provide requirements for traffic. Sethu noted that CDTI won't distinguish between the movement and non-movement areas. Optional map requirements will need to be discussed within the group.

DO-272 map technology is evolving, and we may need to be cognizant of that.

10. Distribute the issue paper template – Completed and distributed.

2. SC-147 meeting input (CDTI) - SC-147 asked what our thoughts are on the scope of the CDTI. These are initial thoughts prepared by Sethu, with some modifications during the teleconference:

- CDTI will show traffic information from the TCAS sensors.
- CDTI has no involvement with TCAS aural alerts and RA guidance information.

- Should CDTI position the traffic symbol using the best information? (Will be handled through ASSAP)
- CDTI may use non-TCAS symbols for non-RA traffic
- CDTI will show TCAS only information (according to TCAS MOPS) when ASSAP failure is detected
  - (Direct tap from TCAS - to be discussed with WG-4 - or talk to Jonathan Hammer before finalizing)
- ICAO Hybrid surveillance is "transparent" to the pilot - no action required from pilot.

There was considerable discussion about some of these issues, clearly indicating that there is no consensus of opinion. Sethu asked for comments on these items, and will work with Randy to refine the list for presentation to SC-147. They will be presented in such as to make clear that these issues have not yet been settled, but will be discussed. Bill suggested that the integration guidance be reviewed, since it addresses many of these concerns.

3. Review CDTI MOPS Requirements Overview – Sethu prepared a slide of the requirements sources for CDTI was distributed prior to the meeting. These sources include the application descriptions and requirements contained in the ASA MASPS, the original CDTI draft documentation, and draft CDTI appendix material which was not included in the ASA MASPS. This material will require varying levels of analysis and review, and must be checked for consistency.
4. Review CDTI MOPS Process – Sethu prepared a few slides of the process:
  - Collect existing documents to derive/copy CDTI requirements
    - Perform review
  - Survey related industry (standards, designs, regulatory) activity and documents
  - Create issues list for CDTI, collect major and minor issues
  - Discussion of issues, general consensus on direction and scope
  - Create detailed issue papers
    - Discuss issue papers, capture all relevant information (decisions, consensus, disagreements, ...)
  - Make writing assignments from mature issue papers
  - If non-issue or minor issue, writing assignments start early
  - Disagreements → Surveys, lab evaluations, ...
  - May result in consensus conclusion
  - Disagreement may continue (state this in a note on the MOPS)
  - Review written draft material in group, refine
  - Capture the essence of requirements in group meeting (framework, external requirements)
  - Prefer no writing “as a group” – assignments will be for 1-3 people, to be reviewed in group meetings or telecons
  - Merge with ASSAP and STP documentation as ASAS MOPS
  - Review with WG-4

- [Rest of RTCA Process: Final draft, editorial committee, final version, send out for vote, ...]

Sethu asked that any comments or additions to this process description be sent to him.

5. Review Issues Template – The template was distributed to the group. The forms should be used if someone disagrees with the document, when something is missing from the document, or for controversial topics that lead to repeated discussion.

6. Issue assignments:

- Issue paper(s) on TCAS – Michael will work on this.
- Review/comment on existing symbol sets (are they consistent with MASPS/MOPS), identify issues
- Design two/three symbol sets (draft) consistent with the currently available draft requirement material ("should" meet the quality of data requirement)