

Minutes for 2-28-02 WG4 Telecon

Participants

Rose Ashford (NASA)
Ganghuai Wang (CAASD)
Steve Koczo (Collins)
Dave Spencer (MIT LL)
Gerry McCartor (FAA)
Shahar Ladecky (ATSI/FAA AFS-42)
Mike Ulrey (Boeing)
Randy Bone (CAASD)
Tim Rand (Collins)
Ann Drumm (MIT LL)
Pio Blankas (Honeywell)
Dave Lankford (FAA)
Jonathan Hammer (CAASD)

Agenda

- 1) Recap of SCRPS/ASAS SG and joint meeting with EUROCAE WG51 (Jonathan, Steve)
- 2) Review of Action Items (all)
- 3) Report on latest work (all)
- 4) SCRPS paper (Jonathan)
- 5) Fault Tree+ information (Jonathan, Mike Ulrey, Ganghuai Wang)

Discussion

Introduction

Jonathan Hammer kicked off the telecon by reviewing the agenda (see above). Since the action item list was inadvertently not included in the attached files, action items were not reviewed and will be addressed next time. Concerning the Fault Tree+ program, Jonathan indicated that the vendor is working a fix to address a computational issue that has been uncovered in MITRE CAASD's use of the tool for the Approach Spacing application.

EUROCAE WG51 Meeting Overview

Steve Koczo provided a summary of the February meeting of RTCA SC-186 WG4 with EUROCAE WG51 SG3 in Brussels. He noted that a significant part of the meeting was to solidify the coordination between WG4 and WG51 and to synchronize work efforts and methodologies. He noted that the initial ASA MASPS will be an RTCA document. WG51 provided a description of application "packages", which identify the sets of applications to be addressed by EUROCAE in development of a later version of the ASA MASPS. This ASA MASPS will be a joint RTCA / EUROCAE document scheduled for 2003 (rev A). EUROCONTROL provided a briefing on Package 1 and also provided a comprehensive description of ASAS application development efforts being worked across Europe.

The joint meeting also addressed feedback on Chapter 1 of the ASA MASPS (from Ken Carpenter and also from Daniel Ferro – Airbus). WG4 took the action item to incorporate comments in Chapter 1, including clarification of references to functional / system requirements to avoid possible misinterpretation of these terms with actual hardware requirements, which are not the focus of the ASA MASPS.

Steve also noted that the joint session broke into 3 individual subgroups to address specific issues: 1) Safety / fault tree / methodology subgroup, 2) OSED / application description outline subgroup, and 3) Terminology subgroup. Each of these subgroups accomplished the goals of developing agreement and synchronizing the work efforts between RTCA and EUROCAE.

The factors influencing RSP/RXX/Service Levels were also discussed at the Brussels meeting. It was generally agreed to that we will need to wait for analysis results from the individual application studies before we can identify the exact nature of Service Levels, etc.

Concluding the Brussels meeting summary, Steve noted that the next joint meeting between WG4 and WG51 is planned for September, 2002, which will likely kick off the joint ASA MASPS development (Rev A). Meanwhile, the two groups will continue to exchange ideas and coordinate as warranted, but it is recognized that WG4 will be more focused on the development of the ASA MASPS document to be completed later this year.

Work Review – CSPA Application

Rose Ashford (NASA) discussed the plans for updating the CSPA application description. Rose noted that NASA's last ops concept update is a couple years old. Rose is planning to provide a draft CSPA application description by April. She is coordinating with Terry Abbott and Vern Battiste at NASA in integrating prior reports into the application description. She is also planning to include Greg Stayton's draft material on CSPA. Rose will also be coordinating with Dave Lankford (FAA OK City). Shahar Ladecky is supporting the CSPA study for Dave's group. Shahar et. al. are modifying the concept / system a bit, which are being added to the CSPA simulation. The concern was raised on the timing of the CSPA analysis work and the availability of the CSPA application description (which will be completed later in April). This was deemed acceptable as long as no major issues surface from the application description.

Work Review – Enhanced Visual Acquisition (EVAcq) Application

Dave Spencer provided a high-level review of his safety analysis work on Enhanced Visual Acquisition. Part of the discussion focused on the possibility that EVAcq could actually impair the mitigations. It was noted that the analysis should consider how EVAcq could impair the mitigations and one should state requirements that minimize impairments. Shahar noted that one could perform a sensitivity analysis of some of the key parameters that affect the risk figure. Dave indicated that EVAcq does not lend itself for a good analytical model and is more of a human factors problem.

Some additional comments on EVAcq:

Randy Bone indicated that ATC call-outs should also be considered in the analysis.

It was also noted that it is acceptable for EVAcq to have an impact to mitigations as long as there is an offsetting safety benefit. Steve noted that the ASA application (in this case EVAcq) itself becomes an avoidance or mitigation to existing procedures, thus providing safety benefits. It was

also noted that the reduced visual scan as a result of EVAcq is more than offset by improved acquisition due to the CDTI.

Randy – the analysis should look at issue of over-reliance on the equipment.

Dave also included a Failure Mode and Effects Analysis (FMEA) on the various display elements on the CDTI (he was able to do this based on document that had specific features). Jonathan liked the FMEA that Dave developed for the CDTI for EVAcq. The group generally agreed that this should be included in the safety analysis.

Mike Ulrey (Boeing) made a couple of observations concerning FMEA: The generic approach for any ASA safety analysis should evaluate the new capability offered by ASA versus the old procedures. Using this approach, one needs to identify the interactions of ASA application (both positive and negative) on the existing procedures. Mike also noted that performing a FMEA is nothing new and was not sure that we should explicitly break it out as a separate step.

Jonathan provided some additional comments on Dave's EVAcq analysis report. He noted that NIC rather than NAC should be used in the safety study. Concerning TCAS RA's as a mitigation, Jonathan indicated that TCAS should generally be kept out of the analysis, perhaps only allowing for its use as an integrity check. Nevertheless, Dave felt that making sure that ASA doesn't interfere with TCAS TA's was needed in the analysis.

Steve recommended that we only analyze TCAS when ASA has an impact on it. Otherwise we should keep TCAS separate, i.e., keep TCAS off to the side as much as possible.

Randy expressed concern that the EVAcq phase diagram does not provide any reference to the CDTI (why isn't CDTI included in the phase diagram?). Dave noted that CDTI was not explicitly included in the diagram, since the procedure is identical to that of today, and is just enhancing it with CDTI. Dave is planning to look at this further (action item) and will coordinate with Randy on this aspect.

Concluding Notes

Based on earlier discussions / emails, Dave inquired whether EVAcq can be equated to enhanced see and avoid(?). It was noted that the group's resolution of this issue at the Brussels meeting was not fully clear (is this enhanced see & avoid {ESA} or enhanced visual acquisition {EVAcq}). It was noted that EVAcq is not a procedure, but that ESA is a procedure.

The discussion of Dave's EVAcq safety analysis completed the telecon discussion.

Jonathan requested that WG4 review the SCRSP paper that is included in the zip file that was attached with the original telecon invitation.

The next WG4 telecon will be on Thursday, March 7 from 1-3 PM Eastern time. The tentative agenda is to continue discussion of the various safety analyses being performed (e.g., ASSA).

End of telecon minutes.