

**SC186 WG4 October 17, 2001  
Teleconference Minutes**

**Participants:**

Gerry McCartor, FAA Flight Standards  
Dave Spencer, MIT LL  
Steve Horvath, UPS AT  
Steve Koczko, Rockwell-Collins  
Bill Lee, Boeing

Jonathan Hammer, MITRE CAASD  
Andy Zeitlin, MITRE CAASD  
Michael Petri, FAA WJHTC  
Greg Stayton, ACSS  
Ken Carpenter, Qinetiq

**Agenda Item 0: Review status, plans, meeting schedule, action items**

Plans

Jonathan presented WG4's ASA MASPS project plan / schedule that will lead to a June, 2002 Plenary Review of the document. To allow 30 days of review, the final document must be completed no later than May 16, 2002. Jonathan described the work efforts and tentative schedules to accomplish ASA MASPS completion goals. Work schedules are closely aligned with our Work Matrix. Major tasks are completion of 1) application descriptions / scenarios by WG1, 2) state/phase diagrams, 3) safety tables, 4) fault trees, and 5) requirements analysis. After reviewing the schedules, all application development teams {CSPA – Gerry McCartor, et. al, ACM Conflict Detection – Steve Horvath, et. al, EVAs – Dave Spencer) agreed to the same dates for completion of tasks as provided in the Work Matrix for the ACM CD&R schedule.

In discussing the Work Matrix, Dave Spencer noted that for simple applications, it may not be necessary to come up with a fault tree, and that a safety table would suffice. Andy agreed that for low-criticality and low-complexity applications a fault tree may not be necessary. Dave noted that he will not plan on doing a fault tree unless it is later deemed necessary.

On CSPA, Jonathan mentioned that Terry Abbott , NASA Langley, will be the NASA Point-of-Contact for CSPA.

*Action Item: Jonathan will update the Work Matrix to reflect the new schedule dates and to make the changes to the columns of the table per our Brussels meeting.*

*Action Item: Jonathan to add to Schedule the following – 1) Task for Chapter 4, 2) December and May WG4 meetings.*

Meeting & Telecon Schedule

Jonathan also reviewed the WG4 Telecon Schedule and WG4 Meeting Schedule going forward toward the June, 2002 ASA MASPS completion schedule. He noted that we still need to finalize these dates with EUROCAE WG51. Jonathan indicated that the Joint Telecons with WG51 will be extended to three hours, starting at 10:30 am eastern. The

first half of the telecon is to conduct WG4-WG51 joint business, with the later half focusing on WG4 business. This also allows for favorable participation times by people calling in from the US West Coast and from Europe. Jonathan also discussed the December 10-14, 2001 and April 8-12, 2002 meetings, which will be held in the Washington DC area. Due to the desire to conduct a Video Conference with WG51, a portion of the meeting is planned to be held at MITRE CAASD, with the rest of the meeting held at RTCA headquarters. It was noted that this is somewhat inconvenient for some travelers. Jonathan suggested that attendees get a hotel at Tysons Corner in McClean, VA (close to MITRE). For the meetings at RTCA, he noted that the METRO is close by at West Falls Church (parking becomes a problem by 7:30 AM, thus a taxi or shuttle ride to the METRO may be in order).

Please refer to the teleconference / meeting schedule information that was provided in the telecon invitation. These dates will be finalized with WG51.

(Discussion of the logistics of the December meeting also completed Agenda Item #6).

#### Action Item Review

Jonathan led the group through the action item review (WG4/WG51 action items, WG4 action items, WG4-WG1 action items, WG4/WG2 action items).

A few points raised during the action item review:

- Steve Koczo has the action to reexamine the latest NIC/NAC proposal being considered in WG6 and to see where it should fit into the ASA MASPS. Also Steve will review the result of the GPS antenna location issue.
- Dave Spencer inquired about whether the action items for WG4 (application teams) to provided feedback to Safeflight 21 for data to be recorded has been addressed. To date, no one has requested additional data to be recorded. Jonathan noted that significant data was recorded during the SF21/CAA OpEval 1 and OpEval 2 and that this data is available on a web site. *Jonathan took the action to send the web site information to Dave.*
- Michael Petri will rework the phase / state diagrams for the ACM Conflict Detection application to the new format based on his earlier work on the state diagram and also using Jim Klein's feedback.

*Action Item: Jonathan will update the action item tables, and move the completed / action items toward the end of the tables to save time in future action item reviews.*

*Action Item: Steve Horvath agreed to send Jonathan a file that allows easy filtering of milestones that have been completed.*

#### **Agenda Item 1: Review of Paper R08 – Process Diagram Methodology**

The group next discussed the Object-Process Methodology being used for our Application Phase / State Diagrams. The process led to additional discussion. Jonathan referenced the Approach Spacing Phase diagram that Ganghuai Wang developed as an example (which was discussed at the Brussels meeting). Jonathan noted how Ganghuai took the earlier work from Bill Lee that identified phases, and then captured them as phases in his Phase Diagram, where he further decomposed each phase into a more detailed number of states. Dave compared and contrasted the WG51 approach, which takes a high-level look at Operational Phases, which in turn leads to identification of Operational Hazards that lead to Operational Consequences. *Action Item: Dave indicated that he would send a note to everyone that compares the DO-264 method (operational procedures focus) to the AC25-1309 method (system focus) that would help clarify things for the group.*

Jonathan polled the group if we endorse the Phase Diagrams approach? Consensus was Yes. He further polled the group on whether there was a need to drill down deeper than the top level phases. There was agreement that we should focus on the phases from a top-down approach that takes an operational view, and that we need to drill down an additional level to factor in how equipment and subsystems contribute to the failure modes. For now the suggestion was to identify the application phases, and attempt to drill down at least one additional layer to capture phases and sub-processes, and to identify hazards and operational consequences. WG4 can reassess this later to determine whether this is sufficient for performing our safety analyses / fault trees.

## **Agenda Item 2: ASSA Phase & State Diagrams, Safety Table**

Steve Koczko briefed WG4 on the Airborne Surface Situational Awareness (ASSA) application (refer to Paper R03). Steve briefly reviewed the Operational Concept and then presented a Phase Diagram for ASSA. Steve noted that the ASSA application commences when the aircraft enters the airport surface / movement area (either from pushback from the gate or during landing), and terminates when the aircraft leaves the airport area (arrives at gate, or after takeoff). In addition, if a threatening situation occurs relative to other traffic, visual operations and communications with Air Traffic Services are the primary means of taking action (no actions based on ASSA CDTI alone). Two phases were identified, 1) Identify Traffic of Interest and 2) Maintain Traffic Awareness. Identify Traffic of Interest was further decomposed into "Crew: Identify Traffic of Interest on CDTI" and "Crew: Correlate CDTI traffic with visual sighting". Upon successful traffic correlation, there is a transition to the Maintain Traffic Awareness phase.

Several comments and questions were raised:

Bill Lee inquired whether this application also addressed the flight crews use of the map for identifying turns, etc. Steve noted that the ASSA study strictly focuses on the Traffic aspects and that he had no plans to address the other aspect of the flight crew interactions / human factors with the map for navigation purposes (ASA MASPS purview is only on

traffic). It was agreed that others do need to look at the airport map navigation aspect, but not WG4.

Bill also inquired whether we were/should be looking at the unique hazards associated with the various taxi phases (push back from gate, ramp area, taxi on taxiways, runways, etc). Steve indicated that the approach used for the ASSA application work was to treat traffic situational awareness the same throughout the entire airport region, since the purpose of ASSA is only to provide additional awareness in addition to typical visual out the window view. It was also noted that ASSA only address VMC operations (not IMC). Dave Spencer agreed with the approach that Steve is pursuing. Steve noted that higher level surface applications that address IMC operation probably do need to account for more specific taxi operations as Bill suggested. In fact FAROA does a small amount of that by focusing on the runway occupancy aspects.

Steve next reviewed the Safety Table for ASSA. Using our update methodology for the Safety Tables, Phases are listed in column 1. Column 2 then lists the processes (sub-states) associated with each phase, and column 3 then identifies the hazards that lead to the operational consequences (column 4). A hazard class then identifies the severity of the operational consequence (column 5). ASA sub-events are that contribute to the hazard are identified in column 6, and avoidances, mitigations and equipment criticality are then listed in columns 7, 8, and 9.

Jonathan noted that one hazard should be added to the table: "Traffic Misidentified".

The group also discussed whether aircraft-to-aircraft contact should be listed as an operational consequence. In prior applications, e.g., EVAs, we listed NMAC as an operational consequence. The group decided that only operational consequences that are within the "scope" of the application should be identified. Thus operational consequences such as increased workload, or no-safety affect are more appropriate for ASSA and EVA applications, since visual acquisition and Air Traffic Services already provide the necessary safety contributions, i.e., avoidances. Steve will update the Phase charts and continue development of the Safety Tables for future reviews.

Jonathan concluded the telecon by reminding members of the Safety subgroup to closely review the Operational Hazard Assessment (OHA) / Operations Services and Environmental Definitions (OSD) papers. These papers show some excellent work by WG51. The subgroup is planning for a telecon on Tuesday, October 23 (11:30 to 1:30PM EDT).

*Action Item: Jonathan to send an email to participants that provides information on which papers to review and also confirmation of the time of the telecon.*

Agenda Items 3, 4, and 5 were not addressed due to the length of the telecon. These will be picked up in future discussions.

This concludes the minutes.