

Minutes for 3-14-02 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)
Michael Petri (FAA/WJHTC)
Lee Etnyre (UPSAT)
Randy Bone (CAASD)
Bob Manning (Pentagon)
Greg Stayton (ACSS)
Jonathan Hammer (CAASD)
Ann Drumm (MIT LL)

Agenda

1) Review of Closely Spaced Parallel Approaches (CSPA) application analysis work.

Discussion

Introduction

Jonathan Hammer kicked off the telecon by briefly noting that based on WG4 leadership discussions, the need to develop a clear outline for each of the application appendices was identified. This will be a topic for the next telecon (3/20). The meeting then jumped into the agenda of the CSPA analysis work.

CSPA Application Discussion

There was a brief discussion / description of the CSPA concept. Rose Ashford noted that the NASA AILS / CSPA work addressed runway spacings from 3400 ft down to 2500 ft. For these spacings, wake vortex is not an issue, and independent parallel approaches can be conducted (i.e., no constraint on longitudinal spacing between aircraft). Wake vortex issue come into play as runway spacings are reduced below 2500 ft.

Rose indicated that she is pulling together documentation to complete the draft CSPA application description by next week (~3/21).

The discussion then turned to the analysis work being performed on CSPA by Shahar Ladecky and Gerry McCartor at FAA AFS-420 in Oklahoma City. Shahar provided the following inputs on CSPA: 1) flow chart description, 2) flow chart, and 3) fault tree.

Sahar walked the group through his CSPA flow chart. The following is a summary of comments and discussions:

Regarding DGPS: While DGPS may ultimately be required, the goal is for the analysis to determine the required RNP/NAC/NIC, without focusing on a specific navigation system technology.

Evasive maneuver in the event of a blunder alert: It was noted from previous studies on PRM by FAA and NASA's AILS program, that a vertical maneuver on its own will not be sufficient and that a turn climb away from the intruder is needed.

Jonathan's comments: Need more detail on the breaking out of own-ship versus adjacent ship procedure. This should be illustrated in the figure. Also, cautions and warnings should be identified in more detail.

Lee Etnyre – Do we need any consideration for nuisance and false alerts? The ensuing discussion noted that false alarms should be part of the analysis. False alarms may be a hazard that can be identified as part of the safety analysis. Also, false alarms will limit applicability of the procedure (if too high, then operation won't be viable, too many breakouts).

Steve Koczko – The setup portion of the CSPA procedure, where the flight crew coordinates with the controller to attain CSPA clearance should also be included in the process chart. Once CSPA commences, then the controller has no mitigating role.

Jonathan commented that the form of Sahar's flow chart (figure 1) needs to be brought into alignment with our standard on phase diagrams.

CSPA Fault Tree

Sahar proceeded to discuss the CSPA fault trees. The following comments were captured for the fault tree discussion:

Mike Ulrey's comments –

- a. We should consider late alerts.
- b. Concerning the left hand side of the fault tree (i.e., A/S Blundering block), the mitigation of the blundering aircraft discovering it's own mistake in time needs to be incorporated into the fault tree. The left hand side (A/S blundering block) should be expanded further.
- c. Assume that pilot will take evasive maneuver, but may not take appropriate action.

Discussion on common mode failures – Lee Etnyre pointed out that a common satellite failure is not necessarily a common mode failure. The group agreed for the moment that this may be too low a level of detail.

In addition to the phase chart and fault trees, a hazard chart / safety table is needed. Sahar indicated that this is being worked on.

This concludes the minutes for the 3-14-02 telecon.