

November 7, 2002 Teleconference notes
Working Group 4

Attendees:

Steve Koczo
Tim Rand
David Karpa
Bill Morris
Lynne Martin
Bob Manning
Jim Maynard
Martin Eby
Tom Foster
Michael Petri

Gregg Stayton
Bob Passman
Jonathan Hammer
Joel Wichgers
Stan Jones
Bob Grappel
Ganghuai Wang
Bob Hilb
Paul Gross
Dave Witchey

The only agenda item for this teleconference was discussion of some issues raised by Tim Rand during the Airborne Conflict Management application analysis. Tim had mailed out an informal three-page (really, seven page) document to generate discussion about the required surveillance performance for ACM. This document included some material from the ACM application description as background material..

Specifically, there were three issues to be discussed. Choosing NIC and SIL values, and barometric altitude quality and integrity.

NIC

Tim asked the question of how to determine an appropriate NIC value, since the ACM application description basically allows for any NIC. That is, the ACM concept adds buffers to the desired separation based on the accuracy of the target position reports. Jonathan suggested using operational considerations, as these buffers may grow so large with poor quality target reports as to make ACM impractical.

It was noted that in expected normal ADS-B operations with GPS, position accuracy should be relatively good. The values should be chosen for such normal operations. The safety analysis can handle those cases in which, for example, there is a problem with GPS.

Gregg Stayton expressed concern on safety and false alarms for high NICS.

It was suggested that some reasonable assumptions about usage be used as a model, and that requirements values be chosen for that model. One suggestion was self separation in low density airspace. Since the ACM concept includes using AcM as the sole means of separation, that should be included in the model.

Jonathan asked Bob Hilb, Tom foster, Tim Rand, and Martin Eby to come up with a scenario. A teleconference was set up for November 8th to discuss this.

Stan felt that there is a need to consider failure modes, etc. Steve noted that in the sole means case, there is no mitigation. What is an “out” if ACM fails? Jonathan thought that this could be considered later as the system evolves.

SIL

Tim stated that ACM requires some known integrity level, and this needs to be set based on the acceptability of violating the desired separation. There followed a lengthy discussion on SIL. It was decided that there is nothing in the current documentation that requires processing in the ADS-B transmitter. As such, it is unclear just how SIL would be determined without an ASSAP processor. This was determined to be a hole in the standards. It was agreed that an issue paper is needed.

Baro Altitude

Tim inquired how to define a requirement for barometric altitude, and how it might be cross checked. Jonathan suggested that we should define requirements, and use a cross-check to determine that the altitudes are reasonable. There was a discussion on the use of geometric altitude.

The ACM analysts will look at alternative integrity monitor techniques for barometric altitude, and take a look at the RVSM analysis.

Stan and Jonathan have an action to look at variation between baro and geo altitudes.