

TO: Jonathan Hammer, Steve Heppe, Stu Searight, Tom Foster
FROM: William Harman
SUBJECT: Proposal for note 7
DATE: 22 October 2001

My original proposal to correct an inconsistency in note 7 of Table 3-4 has led to several additional ideas. Here are my comments on the discussion that has followed.

- (1) Original Proposal. Considering first the original proposal, it's my understanding that everyone agrees with that: there currently is an inconsistency in the MASPS, and it occurs in Note 7. Looking back on my original paper (called "Proposed MASPS change -- Delete note 7 to Table 3-4"), I think it still stands as a statement of the problem and what could be done to correct it.
- (2) Relax. Steve Heppe proposed that we relax the requirement for 3 second updates at short range. Generally I agree at this might be possible. Of course Stu has a good point in his 19 October note: given that the current requirement was somewhat arbitrary, we should not just replace it with another arbitrary requirement.
- (3) Dither. Steve Heppe also proposed using dither as a way of relaxing the requirement. I don't agree with that. The current MASPS requirements apply whether dither is used or not, and there has been no problem in that regard. To change the wording so that dither is added would add ambiguity.
- (4) Tau. Steve Heppe also proposed adding a tau concept to the update requirement statement. At face value, this seems unreasonable for a broadcast system. I talked with Steve about this last Friday, and he described a way of doing this that might work. It would require all ADS-B transmitters to receive data from all other ADS-B aircraft, and find the closest in a tau sense, then broadcast high enough rate to cover all other aircraft. I haven't yet thought this through fully, and I don't support it at this time, but maybe it would work.

Regarding the relationship between TCAS and ADS-B, I do have a serious concern. TCAS was intended as a backup to a well functioning control system that prevents mid-air collisions very effectively. As a result of that, the required reliability for preventing another collision was only about 0.90. But ADSB is entirely different in this respect. We are trying to develop a new system that has a much higher surveillance reliability.