

RTCA Special Committee 186, Working Group 3

ADS-B 1090 MOPS, Revision A

Meeting #15

**Action Item 14-04
Proposed Change to the
Time Limit for CPR Global Decoding**

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SUMMARY

This Working Paper proposes a change to the time limit for global decoding when receiving messages from a transmitter on the Airport Surface. Given that the transmitted rate may be only one per 5 seconds, the 10 second time limit should be increased to 50 seconds. This paper addresses Action Item 14-04.

Time Limit for CPR Global Decoding

During discussions at the previous WG-3 meeting, it was realized that there is an inconsistency in the current version of the MOPS (DO-260) in regard to the time limit for global decoding. When the signals being received are from a target on the airport surface, the transmission rate may be as low as one per 5 seconds.

The MOPS currently imposes a time limit of 10 seconds on the process of combining an “**even**” format with an “**odd**” format reception. This is a conservative limit, based on the maximum velocity of an aircraft, and based on the airborne transmission rate, which is 2 position squitters per second. When, however, the transmitter is on the airport surface, the transmission rate can be as lower by a factor of 10 (one squitter per 5 seconds). Also, for an aircraft or other vehicle on the surface, the velocity is much less than the maximum airborne velocity on which the 10 second limit was based.

Therefore, I propose that the current time limit be changed for surface targets to be 50 seconds. Specifically, the requirement for the time limit is in §2.2.10 and Appendix A.

1. Make changes to Figure 2-16b and 2-16c consistent with the following changes.

2. In §2.2.10.3.2 and §2.4.10.3.2, in the first sentence, I propose replacing:

"within a ten second period"
with
"within a fifty (50) second period".

3. In §2.2.10.4.2.2 and §2.4.10.4.2.2 in paragraph “a.(4)” and again in “b.(3)” I propose replacing:

“Buffer for 100 +/- 5 seconds”
with
“Buffer for 200 +/- 5 seconds”

4. In §2.2.10.4.2.3 and §2.4.10.4.2.3 in paragraph “a” I propose replacing:

“the Participant in 25 +/- 5 seconds.”
with
“the Participant in 200 +/- 5 seconds.”

The time limit is also stated in Appendix A. Therefore the following changes are appropriate.

5. In A.1.7.1, Note 2, replace:

"approximately 10 seconds"

with

"approximately 10 seconds for airborne formats and 50 seconds for surface formats"

6. In A.1.7.7, last sentence before Note 1, replace:

" no longer than 10 seconds"

with

"not longer than 10 seconds for airborne formats and 50 seconds for surface formats"

7. In A.1.7.7, Note 2, add a sentence at the end of the note:

"For targets on the airport surface, speeds are much less, and the transmission rate can be as low as one per 5 seconds. Therefore the corresponding time limit for global decode is 50 seconds."