

2.2.4.4 Enhanced Squitter Reception Techniques

2.2.4.4.1 Need for Enhanced Techniques

The squitter reception techniques specified in subparagraph **TBD** provide a high probability of correct reception when the desired squitter is overlapped with one Mode A/C interfering reply of equal or greater power. In some high interference environments (e.g., Los Angeles or Frankfurt, Germany), there is a relatively high probability that the desired squitter signal will be overlapped with two or more Mode A/C replies. In these environments, the air-to-air range may be reduced due to the effects of this interference.

2.2.4.4.2 Enhanced Squitter Reception Technique Overview

Enhanced squitter reception techniques have been developed (see Appendix I) that provide the ability to receive squitters with multiple overlapping Mode A/C fruit. Such enhanced reception techniques are composed of the following elements:

- a. Improved preamble detection to reduce the probability of a false alarm caused by detection of an apparent Mode S preamble synthesized by overlapped Mode A/C fruit replies.
- b. Improved code and confidence bit declaration typically based on the use of amplitude to aid in the interpretation of the squitter data block.
- c. More capable error correction techniques that are optimized to the characteristics of the code and confidence process.

Class A1, A2 and A3 equipment **shall** demonstrate compliance with the test procedures specified in 2.4.4.4.

Note: The full set of enhanced techniques are applicable to class A2 and A3 receiving equipment. Class A1 receiving equipment requires only a subset of the enhanced reception capabilities, and this is reflected in the test procedures of Section 2.4.4.4.

2.2.4.4.3 Error Correction Restriction

The enhanced reception techniques are intended to operate in very high Mode A/C fruit environments. For this reason, the sliding window error correction technique **shall** not be used in connection with the enhanced techniques since it produces an unacceptably high undetected error rate in these high fruit environments.

Note: See Appendix I, paragraphs I.3.3 and I.4.3 for more details on error correcting techniques.