

RTCA SC-186 WG3

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Vertical Metrics in ASAS Applications

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Summary

Working Paper 1090-WP24-03 addresses separating the vertical quality metrics from the horizontal quality metrics. This Working Paper addresses the desire for vertical quality metrics in near term ASAS Applications. Future revisions of this Working Paper will propose formats for maintaining geometric altitude accuracy and vertical rate accuracy.

1. Introduction

Working Paper 1090-WP24-03 addresses separating the vertical quality metrics from the horizontal quality metrics. If accepted, the vertical metrics will be unavailable. This Working Paper addresses the desire for vertical quality metrics in near term ASAS Applications. Future revisions of this Working Paper will propose a format for maintaining geometric altitude accuracy and vertical rate accuracy. Further investigation is needed to justify the quantization and transmit rates before making a proposal.

2. Discussion

All five of the initial applications in ASAS MOPS allow for a mode of operation using geometric altitude when the geometric vertical accuracy of the ownship and ADS-B traffic is better than 45 meters.

ASAS MOPS Section 2.2.4.1 Enhanced Visual Acquisition (EVAcq) states that when pressure altitude is unavailable, geometric altitude may be used to compute a relative altitude with the target when the reported vertical accuracy is better than 45 meters for both the ownship and ADS-B traffic.

ASAS MOPS Section 2.2.4.2 Airport Surface Situational Awareness/Final Approach and Runway Occupancy Awareness (ASSA/FAROA) states that the application may be performed when either pressure altitude is valid or geometric vertical accuracy is better than 45 meters for ownship. ADS-B Traffic are considered valid for ASSA/FAROA when pressure altitude is valid or geometric vertical accuracy is better than 45 meters.

The preliminary requirements in ASAS MOPS, §2.2.4.3 Conflict Detection (CD) state that ownship and traffic vertical position requirements may be met by geometric accuracy better than 45 meters.

ASAS MOPS, §2.2.4.4 Enhanced Visual Approach (EVApp) states that ownship and traffic vertical position requirements may be met by geometric accuracy better than 45 meters.

3. Recommendations

WG-3 is advised to consider the desire for vertical quality metrics in the ASAS MOPS. WG-4 will provide suggested formats and required transmit frequency in a revision to this Working Paper upon conclusion of an investigation into quantitative requirements. The investigation is expected to be complete by the Chicago WG-3 meeting.