

RTCM 10402.3 RTCM Recommended Standards for Differential GNSS (Global Navigation Satellite Systems) Service, Version 2.3 with Amendment 1 (May 21, 2010)

This recommended standards document has been developed by RTCM SC-104 to replace the document entitled "RTCM Recommended Standards for Differential Navstar GPS Service, Version 2.2" issued on January 15, 1998. The results of usage of the RTCM SC-104 standard have been highly successful. While 8-10 meters (95%) was originally targeted for shipboard applications, results have generally been better than 5 meters, often achieving 1-3 meters. These results have been obtained using the C/A code pseudorange measurements, with varying amounts of carrier phase smoothing. Real-time kinematic techniques, which operate over a smaller area, have yielded accuracies at the sub-decimeter level. Governments have taken advantage of the SC-104 standard by prescribing it as the format for publicly supported radiobeacon broadcasts of differential GPS corrections. Coastal waters all over the world have been equipped with radiobeacon-based differential services. This medium is highly attractive because of its low cost, ease of implementation, and accessibility.

The major revisions in Version 2.3 have been the following:

1. Updated the descriptions of the use and need for differential GNSS to reflect recent developments in satellite systems
2. Added new guidance material for real-time kinematic applications
3. Added several messages to improve the potential accuracy of real-time kinematic operation, particularly in defining the ground station reference point
4. Added guidance material for supporting GLONASS operation
5. Added an entire set of messages and guidance material for utilizing Loran-C as a medium for the broadcast of differential GNSS corrections
6. Added a new radiobeacon almanac message that supports multiple reference stations
7. Reformatted the tables in the document to promote clarity

Amendment 1 revises Message Type 27, and changing it from Tentative to Fixed.