

RTCM RECOMMENDED STANDARDS FOR DIFFERENTIAL NAVSTAR GPS SERVICE

RTCM Paper 194-93/SC 104-STD

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PREFACE (quoted by permission)

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 2.0" issued on January 1, 1990. Experience has shown that the recommended data format and message structure were generally sound, and that the 25% overhead required

for the parity coding guarantees a highly robust channel for the differential GPS corrections.

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 integrated Doppler smoothing. Real-time kinematic techniques will enable decimeter accuracy for those applications amenable to them.

Governments have taken advantage of the SC-104 standard by prescribing it as the format for publicly supported radiobeacon broadcasts of differential GPS corrections. Scandinavian and North American countries have announced plans to equip their coastal waters with these services. This medium is highly attractive because of its inexpensiveness and accessibility.

The major revisions in Version 2.1 have been the following:

1. Update chapters 1-3, and add a section on GLONASS.
2. To allow service providers to define the meaning of the station health field.
3. To fix some message types previously designated as tentative, and to add

new messages which support real-time kinematic applications.

4. Provide additional guidance material in Chapter 5 and Appendices I-IV.

There is additional work currently in progress to address messages to support differential GLONASS, provide guidance for interfacing between radiobeacon-based data links and GPS receivers, and to provide standards for ground-based radiobeacons differential GPS stations. Documentation on these topics will be released as the work is completed.

EDITIONS

DOCUMENT: RTCM RECOMMENDED STANDARDS FOR DIFFERENTIAL NAVSTAR GPS SERVICE, VERSION 2.1, RTCM PAPER 194-93/SC 104-STD

Version 2.1, dated January 25, 1994, is the current edition.

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