

ICS 49.020
CCS V 04



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 45526-2025

**Specification for corrections product of BDS/global navigation
satellite system (GNSS) precise point positioning real-time
kinematic state space representation**

北斗/全球卫星导航系统（GNSS）实时动态精密单点定位状态域改正产品规范

Issued on: April 25, 2025

Implemented on: April 25, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Abbreviations	1
5 Information Content	2
5.1 Information content structure	2
5.2 Orbit correction information	8
5.3 Clock Correction Information	9
5.4 User ranging accuracy information	10
5.5 Code deviation correction information	11
5.6 Phase deviation correction factor	12
5.7 Ionospheric delay correction information	13
5.8 Tropospheric delay correction information	20
6 Accuracy requirements	26
6.1 Orbital Correction Accuracy Requirements	26
6.2 Accuracy requirements for clock corrections	26
6.3 Space signal user ranging error accuracy requirements	26
6.4 Code deviation correction number accuracy requirements	27
6.5 Phase deviation correction accuracy requirements	27
6.6 Accuracy requirements for ionospheric delay corrections	27
6.7 Accuracy requirements for tropospheric delay corrections	28
6.8 PPP-RTK positioning performance requirements	28
7 Test Methods	28
7.1 Calculation of orbit correction accuracy	28
7.2 Calculation of the accuracy of clock corrections	29
7.3 Calculation of Space Signal User Ranging Error Accuracy	29
7.4 Calculation of code deviation correction accuracy	30
7.5 Calculation of Phase Deviation Correction Accuracy	30
7.6 Calculation of the accuracy of ionospheric delay corrections	31
7.7 Calculation of the accuracy of tropospheric delay corrections	31
7.8 PPP-RTK positioning performance test method	32

Appendix A (Normative) Algorithm Model	34
A.1 State Space Representation	34
A.2 State Domain Correction Calculation	34
A.3 Application	42

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the Equipment Development Department of the Central Military Commission.

This document is under the jurisdiction of the National Beidou Satellite Navigation Standardization Technical Committee (SAC/TC544).

This document was drafted by: Institute of Space Information Innovation, Chinese Academy of Sciences, Shanghai Jiaotong University, Wuhan University, China Satellite Navigation Engineering Center Center, Qilu Aerospace Information Research Institute, China Satellite Navigation System Management Office, Zhejiang Spacetime Daoyu Technology Co., Ltd., Beijing Beidou Navigation Navigation Technology Co., Ltd., Qianxun Location Network Co., Ltd., Shanghai Huace Navigation Technology Co., Ltd., Shanghai Sinan Navigation Technology Co., Ltd.

Co., Ltd., China Space-Time Information Group Co., Ltd., Institute of Precision Measurement Science and Technology Innovation of the Chinese Academy of Sciences, Harbin Engineering University Zhejiang University of Science and Technology, Southeast University, China Telecom Satellite Communications Co., Ltd., Beidou Application Development Research Institute, China Mobile Intelligent Driving Network Technology Co., Ltd.

Technology Co., Ltd. and Smart City Research Institute of China Unicom.

The main drafters of this document are: Li Zishen, Wang Ningbo, Li Jianwen, Wang Liang, Liu Bingcheng, Xiang Yan, Hu Zhigang, Liu Ying, Jiao Wenhai, Wang Chenglong, Hou Furong, Wang Liangliang, Zhao Wen, Wang Jian, Ji Guofeng, Wan Lihua, Su Hong, Li Xiao, Yuan Yunbin, Liu Teng, Li Liang, Pan Shuguo, Wang Chenxu, Meng Qingbo, Wang Zhiyu, Li Ang, Chen Hao, Lü Zhen, Li Yang, Wang Shengzhe, Yu Qi, Wang Liuqi, Wei Kai, Li Pu, Liu Ang, Zhang Jing, Zhao Jiajia, Kang Ning, Hou Jie, Jiang Xin, Sainan Yang, Bo Gu, Shan

Yang, Chenfeng Jing, Songchuan Liu.

BeiDou/Global Navigation Satellite System (GNSS) real-time Specifications for dynamic precise point positioning state domain correction products

1 Scope

This document specifies the information content, accuracy requirements, and other requirements of the BeiDou/Global Navigation Satellite System real-time dynamic precise point positioning status domain correction products. The test method is described.

This document is applicable to the Beidou/global satellite navigation system real-time precise dynamic positioning, precise time and frequency transmission and other spatiotemporal information enhancement services.

The generation, dissemination and use of state domain correction information.

2 Normative references

GB/T 39267

GB/T 44175.1-2024

GB/T 44175.2-2024

3 Terms and definitions

The terms and definitions defined in GB/T 39267 and the following apply to this document.

3.1 State space representation

State-space characterization of error sources in satellite navigation precision positioning.

Note. The error sources are decomposed into independent error vectors such as satellite orbit, satellite clock error, code bias, phase bias, ionospheric delay and tropospheric delay.

3.2 Observation Space Expression

Observation space of error source characteristics in satellite navigation precision positioning.

NOTE. The error sources are characterized as common-mode errors in the pseudorange and carrier phase observations.

3.3

The satellite navigation receiver terminal corrects the information in the state domain (including satellite orbit, satellite clock error, code deviation, phase deviation, ionospheric

delay, etc.) delay, tropospheric delay, etc.), to achieve a real-time positioning method in which the ambiguity of the user terminal is quickly fixed.

4 Abbreviations

The following abbreviations apply to this document.

chinastandards.org · PREVIEW