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**Technical requirements and test methods of BeiDou airborne
equipment for aviation supplemental navigation**

航空辅助导航北斗机载设备技术要求和测试方法

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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.

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Introduction

Beidou airborne equipment for aviation-aided navigation is based on the use of Beidou satellite navigation system by civil aviation industry users in transport aircraft and general aviation aircraft.

It is an airborne dedicated terminal used by the target aircraft in the en-route phase to meet the actual application needs of the B1C frequency point for auxiliary navigation.

The BeiDou airborne equipment specified in this document is expected to provide position/velocity/time (PVT) information to other airborne terminal equipment.

A failure that causes erroneous information is a minor failure state, and a loss of function is a failure state with no safety impact.

Beidou airborne navigation equipment refers to the relevant technical standards of China's civil aviation. Generally, Beidou airborne equipment is divided into two types.

Beta equipment and Gamma equipment, of which Beta equipment consists of independent Beidou airborne equipment, which is expected to be other terminal. The terminal device provides information such as position/speed/time (PVT). The error information caused by the failure of Beta devices is a minor failure.

Gamma equipment consists of Beidou airborne equipment and display and control devices, and has route guidance. For devices with navigation and display functions, there is no standard minimum failure state category for Gamma devices. Record its functions when designing the device.

Failure condition categories of loss and malfunction.

In order to maintain the compliance of BeiDou airborne equipment with relevant civil

aviation standards, the functions of BeiDou airborne equipment in this document are as follows.

The energy and performance requirements are consistent with Beta equipment and are suitable for use on civil aircraft.

Technical requirements for Beidou airborne equipment for aviation-aided navigation and test methods

1 Scope

This document specifies the technical requirements for BeiDou airborne equipment for aviation assisted navigation using BeiDou B1C signals and describes the corresponding tests. method.

This document applies to the development, production, testing and acceptance of Beidou airborne equipment for aviation assisted navigation (hereinafter referred to as Beidou airborne equipment).

2 Normative references

GB/T 5080.7

GB/T 39267

GB/T 39413

GB/T 39414.1-2020

3.1 Terms and Definitions

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

3.1.1 Alarm time timetoalert

The time from when the fault is located to when the device issues an alarm.

[Source. GB/T 42833-2023, 3.1.22]

3.1.2 Positioning failure

The difference between the true position and the calculated position exceeds the corresponding horizontal protection level.

3.1.3

The radius of the circular horizontal area centered on the true position that contains the horizontal positioning position with 95% probability.

3.1.4

When the fault detection and elimination function is available, the radius of the circle centered on the true position that meets the requirements of missed alarms and failure elimination.

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