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Identification of civil unmanned aircraft system - Three-dimensional spatial location code

民用无人驾驶航空器系统身份识别 三维空间位置标识编码

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Foreword

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It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

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Drafting.

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Introduction

This document is aimed at the non-uniform coordinate projection and format of the three-dimensional spatial position information of civil unmanned aircraft and the insufficient expression of spatial range.

In order to solve the problems of low efficiency of position calculation, it stipulates the unified compilation of the three-dimensional spatial position information of civil unmanned aircraft based on the earth's subdivision grid.

Coding methods, including low-altitude three-dimensional grid division framework, grid size regulations for various types of civil unmanned aircraft corresponding to time and space ranges, civil unmanned aerial vehicle

Grid coding conversion method for three-dimensional space coordinates of human-piloted aircraft, three-dimensional space position coding format for civil unmanned aircraft, etc., covering

All aspects of the entire life cycle of civil unmanned aircraft, including production, user management, airspace management, and flight management, effectively improve the performance of civil unmanned aircraft.

Three-dimensional spatial location information in applications such as piloting aircraft equipment management, flight monitoring, collision detection, flight path planning, airspace control, service assurance, etc.

Submission, calculation and management efficiency.

Civilian unmanned aircraft system identification

Three-dimensional space position identification encoding

1 Scope

GB/T 43551-2023 covers the coding used to state where a civil unmanned aircraft is, in three dimensions, at each stage of its life. The scheme joins a spatial position code to a time code, built on a grid code taken from a subdivision of the earth into low altitude cells, with the cell level chosen to suit the class of aircraft and the object being described. Four codes are then defined on that base: the production location of the aircraft, the location where its user keeps it, the real time position reported for flight management, and the position points that make up a mission trajectory. Clauses 3 and 4 settle the terms and the abbreviations that go with them. Position data for drones arrives in mixed projections and formats, and a spatial extent - a corridor, a no-fly volume, a delivery zone - is awkward to express as a point at all. Asking which aircraft are inside a given volume then costs far more computation than it should, at exactly the moment the answer is needed. A grid code turns those questions into comparisons between strings. For aircraft and flight control system makers, operators of unmanned traffic management platforms, and the authorities registering and supervising low altitude flight.

This document stipulates the location identification code for the production location of civil unmanned aircraft, the identification code for the storage location of unmanned aircraft user,

Flight management real-time location identification coding, flight mission trajectory location identification coding.

This document is applicable to the management and application of civil unmanned aircraft location information, as well as the identification, transmission and big data of spatial location information.

deal with.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

GB/T 39409-2020 Beidou Grid Location Code

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

unmannedaircraftunmannedaircraft

An aircraft controlled by remote control equipment or self-contained program control device and with no pilot on board.

[Source. GB/T 38152-2019,2.1.1]

3.2

A gridded representation of the location of the Earth's spatial regions based on the Geospatial Spatial Distribution Model (GeoSOT) and suitable for Beidou terminal output.

code identification.

[Source. GB/T 39409-2020,3.6]

4 Abbreviations

The following abbreviations apply to this document.

POI. Point of Interest (PointOfInterest)

5 Coding Overview

The encoding consists of two parts. spatial position encoding and time encoding. BGC is used as the location identification code in earth space, combined with unmanned

For relevant information on the production, storage and use of piloted aircraft, according to the scale of the specific coding object, select the corresponding level of BGC and determine