

ICS 07.040
CCS A 75



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

GB/T 39612-2020

**Specifications for low-altitude digital aerial photography and
data processing**

低空数字航摄与数据处理规范

Issued on: December 14, 2020

Implemented on: December 14, 2020

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

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1:1-2009: This standard was proposed by the Ministry of Natural Resources of the People's Republic of China: This standard is under the jurisdiction of the National Geographic Information Standardization Technical Committee (SAC/TC230): This standard was drafted by: Zhongce Xintu (Beijing) Remote Sensing Technology Co., Ltd.; Zhongce Xintu (Beijing) Low Altitude Digital Mapping Technology Co., Ltd: Company, Wuhan Zhongce Shengtuo Remote Sensing Technology Co., Ltd.; Zhejiang Zhongce Xintu Geographic Information Technology Co., Ltd: The main drafters of this standard: Li Yingcheng, Xue Yanli, Ding Xiaobo, Zhu Xiang, Li Xilin, Dai Fang, Ren Yafeng, Chen Beiping, Cao Hualong, Liu Pei, Liao Ming, Zheng Anwu, Kuang Xiumei: Low-altitude digital aerial photography and data processing specifications

1 Scope

China's national specification for low-altitude digital aerial photography and the processing of the data. It specifies the terms and definitions and the basic requirements, beginning with the framing and numbering of imagery. Low-altitude here means unmanned aircraft rather than survey aeroplanes, and the shift has changed who does aerial survey: a drone with a calibrated camera flying a planned grid produces imagery at centimetre resolution for a project a manned survey could never justify - a construction site, a quarry, a village cadastre, a landslide. What the specification has to fix is everything that makes such imagery measurable rather than merely pretty: the flying height and overlap that give the required accuracy, the ground control that ties the block to a coordinate system, the camera calibration, and the processing that turns overlapping photographs into an orthophoto and a surface model.

This standard specifies the basic requirements for low-altitude digital aerial photography and data processing, including low-altitude digital aerial photography, photo control measurement, aerial Technical requirements for triangulation and production of basic geographic information products: This standard applies to the use of unmanned aerial vehicle low-altitude digital aerial photography systems for 1:500, 1:1000 and 1:2000 digital orthophotos Image map (DOM), digital elevation model (DEM), digital surface model (DSM) and digital line drawing (DLG) and other results production:

2 Normative references

The following documents are indispensable for the application of this document: For dated reference documents, only the dated version applies to this article Pieces: For undated references, the latest version (including all amendments) applies to this document:

GB/T 13989 National Basic Scale Topographic Map Framing and Numbering

GB/T 18314-2009 Global Positioning System (GPS) Measurement Specification

GB/T 18316 Quality Inspection and Acceptance of Digital Surveying and Mapping Results

GB/T 24356 Quality Inspection and Acceptance of Surveying and Mapping Results

GB/T 27919-2011 IMU/GPS assisted aerial photography technical specifications

GB 35650 National Basic Scale Map Surveying and Mapping Basic Technical Regulations

CH/T 1007 Fundamental Geographic Information Digital Product Metadata CH/T 1024

Technical specification for quality inspection of image control measurement results

CH/T:2009-2010 Global Positioning System Real-time Kinematics (RTK) Technical

Specification CH/T 3006-2011 Digital Aerial Photogrammetry Control Survey Specification

CH/T 3007:

1 Specification for Digital Aerial Photogrammetry Mapping Part 1: 1:500 1:1000 1:2000

Digital Elevation Model digital orthophoto map digital line drawing CH/T 3012 Digital surface

model aerial photogrammetry production technical specification CH/T 9022 Digital

Achievement of Fundamental Geographic Information 1:500 1:1000 1:2000 1:5000 1:10000

Digital Table Face model

3 Terms and definitions

The following terms and definitions apply to this document: 3:

1 Unmanned aerial vehicle An unmanned aircraft operated by remote control equipment or self-provided program control devices: 3:

2 Low-altitudedigitalaerialphotography Digital aerial photography with an unmanned aerial vehicle and a relative altitude below:2000m: 3:3 2000 National Geodetic Coordinate System ChinaGeodeticCoordinateSystem2000;CGCS2000 Using:2000 reference ellipsoid, the

origin is in the right-hand ground-fixed rectangular coordinate system of the center of the earth: Z axis is the reference pole direction of the International Bureau of Earth Rotation, X

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