

ICS 07.040

CCS A75



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

GB 21139-2007

**Basic requirements for standard data of fundamental
geographic information**

基础地理信息标准数据基本规定

Issued on: August 30, 2007

Implemented on: March 1, 2008

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

All the technical contents of this standard is mandatory. This standard is proposed and managed by the State Bureau of Surveying and Mapping. This standard was drafted. the standardization of China Institute of Surveying and Mapping Institute, National Mapping Bureau, Beijing Municipal Design and Research Institute of Surveying and Mapping, State Home Basic Geographic Information Center, Research and Design Institute to build a comprehensive survey, National Mapping Product Quality Supervision and Testing Center, China Land Surveying Planning Institute, Zhejiang Bureau of Surveying and Mapping and the Nanjing Institute of Surveying and Mapping Survey. The main drafters of this standard. Li fame, Xiao year, India Jie, Chen Cho, Li Li, Wang Dan, Wei Zeng Yan, Xu Jianxin, Chenshao Qin SURVEYING AND Chu Wei Zheng. This standard is the first release.

In order to implement the provisions of the laws and regulations to protect the geographical information platform and related information system reliability and normative promote information Sharing and integration, safeguarding the interests of basic geographic information data producers and users of the standard is formulated. Basic geographic information data standard basic provisions

1 Scope

GB 21139-2007 is the Chinese national standard on basic requirements for standard data of fundamental geographic information, in the field of natural and applied sciences. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 30 August 2007 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 March 2008. Classification: ICS 07.040, CCS A75. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the

issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard mathematical basis, data content, production process and data identified four aspects of the provisions of the standard basic basic geographic information data Claim. This standard applies to the production of basic geographic information data standards, identification and use.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 13016-1991 standard system preparation principles and requirements

GB/T 13989 national basic scale topographic maps and numbering

GB/T 20257.1 national basic scale map Schema Part 1. 1.500 1.1000 1.2000 Topographical Map

GB/T 13923 land information classification and code

3 Terms and Definitions

The following terms and definitions apply to this standard.

3.1 As a unified framework for spatial orientation and spatial analysis of GIS data, which reflect and describe the Earth's surface measurement control Point system, water, and residential facilities, transportation, pipeline, state and administrative region, topography, vegetation and soil, cadastral, place names and other related to the natural and social And other factors of location, shape and attribute information.

3.2 Within a certain range as a basis for other standards and widespread use, it has broad significance criteria. [GB/T 13016-1991,1.7]

3.3 To ensure the applicability of the product, the product must meet some or all of the requirements established by the standard. Its scope includes. different specifications, Technical performance, test methods, inspection rules, packaging, storage, and transportation. [GB/T 13016-1991,1.9]

4 Mathematical basis of the requirements

4.1 plane coordinate system should be used to coordinate a unified state; independent coordinate system when strictly necessary, can be legally approved.

4.2 elevation that should be used or the 1985 National Height Datum 1956 elevation-based Yellow Sea; really necessary, can be built with the National Height Datum Establishment of an independent elevation line contact. Depth reference should theoretical lowest ebb face.

4.3 scale series should be. 1.500,1.1000,1.2000,1.5000,1.10000,1.25000,1.50000,1.100000,1.250000,1.500000,1.1000000.

4.4 map projection should be. 1000000 uses an isometric projection Conformal Conic; 1.25000 ~ 1.500000 Gauss - g Lvge projection by 6 ° zoning; 1.500 ~ 1.10 000 Gauss - Kruger projection when, by 3 ° zoning, indeed necessary, by 1.5 ° zoning.

4.5 In terms of map sheet as a unit, 1.500 ~ 1.2000 subdivision and numbered GB/T 20257.1 execution; 5000 ~ 1000000 Framing and numbered GB/T 13989 execution.

5 Requires the data content

5.1 Overview Basic geographic information data must be in a standard

5.13 of a combination of one or more, and should adopt national standards or mapping industry Standards established metadata.

5.2 measurement and control point data Measurement and control point data should include flat-control point, the control point elevation, astronomical point of gravity point, satellite positioning and other control point measurement control Position of the point, and the point of the property in mind. Wherein the horizontal control points include the origin of the earth, one, two, three, four, etc. triangulation point, one, two, three, four, etc. traverse points; height control points include water Quasi origin, one, two, three, four leveling points; astronomical astronomy main points include points, one, two, three, four and so on astronomical points; gravity points include a reference point, the basic Point, first, second gravity point, encrypted point; GPS control points include AA level (continuous operation station), A, B, C, D, E grade point; other measurements Control points include city level survey control points, such as control points.

5.3 River Data River data shall include rivers, canals, lakes, reservoirs, marine elements, location and other attributes water system and water elements and ancillary facilities.

5.4 residential facilities and data Residential and facilities data should include residential, and industrial facilities, agriculture and its facilities, public services and facilities, historical sites, were Teaching position and property facilities, scientific observation stations and other buildings and facilities.

5.5 Traffic data Traffic data should include rail, intercity highways, urban roads, rural roads, road structures and ancillary facilities, water facilities, waterways, air Location and transportation facilities and other properties of transport facilities.

5.6 Data Pipeline Line data should include transmission lines, communication lines, oil (gas

and water) transport position and attribute the main conduit and the city line. Wherein 1:2000 In small-scale urban pipeline can contain data, 1:100000 small scale power lines can not contain data.

5.7 State and administrative region data State and district data should include political borders, pending border and domestic levels of administrative division boundaries (provincial-level administrative region, prefecture-level administrative region, county line Administrative Region and township administrative) and other regional boundaries (village community, community special area and nature reserve boundaries, etc.) the location and attributes.

5.8 topography data The data should include topography contours, spot heights annotation, digital elevation models, contours waters, water bet record points to the natural landscape and artificial The location and appearance properties.

5.9 Vegetation and soil data Vegetation data should include the location and properties of natural and artificial vegetation. Soil data should include sand, desert, saline, bare land, desert Tundra and the location and attributes.

5.10 Names Data Geographical names data should include the name of the natural and human geographical entity, location, and attributes.

5.11 digital orthophoto data Digital orthophoto data is the result of radiometric and geometric correction, and image processing to correct projection difference; full color image can be Or color, and it can also be multi-spectral, sometimes attached to the main residential areas, places, and state and other vector data.

5.12 Cadastral Survey data Cadastral Survey data should include cadastral (sub) district boundary line, boundary points and other important landmarks as well as the location of the facility is located contains land Property owners and land users or class information and the like. 1:2000 small scale may be free of cadastral survey data.

5.13 Other data Important GIS data and mapping administration department of the State according to the law published in accordance with the law of other organizations Surveying Geomatics data. Production process of claim 6,

7.4 Article

7.3 of the outside foundation 1:500,1:1000,1:2000,1:5000,1:10000 GIS data (excluding survey control point data), the data show provincial land surveying and mapping administrative departments of the institutions entrusted identified. Process and method

7.5 is deemed to be executed in accordance with relevant national standards.