



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

GB/T 51465-2024

**Technical standard for inland electronic navigational chart
engineering**

内河电子航道图工程技术标准

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Foreword

This document was issued on 23 August 2024 by the Ministry of Housing and Urban-Rural Development of the PRC and takes effect on 1 January 2025.

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

The document runs to 276 pages. The identification, the dates, the classification and the table of contents on this page are taken from the cover and the printed contents of the standard itself.

This standard was approved and issued by the Ministry of Housing and Urban-Rural Development of the People's Republic of China as Announcement No. 141 of 2024, dated 23 August 2024, and takes effect on 1 January 2025.

The editing department is the Ministry of Transport of the People's Republic of China and the approving department is the Ministry of Housing and Urban-Rural Development.

The standard was drafted in accordance with the notice of the Ministry of Housing and Urban-Rural Development issuing the 2013 plan for the formulation and revision of engineering construction standards and specifications (Jianbiao [2013] No. 6). The drafting group carried out extensive investigation and research, summarised practical experience, referred to the relevant international and foreign advanced standards, and drew up the standard after wide consultation.

The main technical content of the standard is: general provisions; terms; basic requirements; objects and attributes; feature coding; data files; data structure; and data verification.

The lead drafting organisations are the Waterborne Transport Research Institute of the Ministry of Transport and the Changjiang Waterway Bureau; the participating organisations include the Changjiang Waterway Survey Centre, the Changjiang River Administration of Navigational Affairs and the Three Gorges Navigation Authority.

The four annexes carry the substance of the document: Annex A, objects and attributes, runs from page 19 to page 194; Annex B, feature coding, from 195 to 201; Annex C, data structure, from 202 to 206; and Annex D, data verification, from 207 to 243.

1 Scope

GB/T 51465-2024 is the Chinese engineering standard for the inland electronic navigational

chart. The ENC is the digital chart an inland vessel navigates on, and on the Yangtze in particular it carries traffic on a scale no other inland waterway approaches; unlike a sea chart, an inland chart has to be updated constantly, because the channel moves with the sediment and the water level, and the dredged depth of a reach can change within a season. This standard defines the chart as a data product: the classification of the charts and the cell structure, the topology, the data sources and the mathematical basis, the language and character requirements and the units; the object catalogue, that is the feature objects, their classification and grouping, the relationships between them, their geometry and their attributes; the feature coding; the data files, the exchange set and the data set, their naming, updating and checking; the data structure; and the data verification. Four annexes carry the object and attribute catalogue and the coding, structure and verification specifications in full. For a waterway authority, a chart producer or an ECDIS supplier working on Chinese inland waters, this is the governing text.

3 Basic requirements

Clause 3 is organised as follows: 3.1 Classification; 3.2 Cells; 3.3 Topology; 3.4 Data sources; 3.5 Mathematical basis; 3.6 Language and characters; 3.7 Units of measurement.

4 Objects and attributes

Clause 4 is organised as follows: 4.1 Data model; 4.2 Classification of feature objects; 4.3 Grouping of feature objects; 4.4 Relationships between feature objects; 4.5 Geometric requirements for feature objects; 4.6 Basic requirements for the attributes of feature objects.

6 Data files

Clause 6 is organised as follows: 6.1 Exchange set; 6.2 Data set; 6.3 File naming and coding; 6.4 File update; 6.5 File checking.