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

GB/T 31843.3-2015

**Maritime navigation and radiocommunication equipment and
systems -- Digital interfaces -- Part 3: Serial data instrument
network**

海上导航和无线电通讯设备及系统 数字接口 第3部分：串行数据设备网络
(English Translation)

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Foreword

GB/T 31843 "Maritime navigation and radio communication equipment and systems - Digital interfaces" quasi divided into the following sections.

--- Part 1. Single talker and multiple listeners;

--- Part 2. Single talker and multiple listeners high-speed transmission;

--- Part 3. Serial data network equipment;

This section GB/T Part of 331,843.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method is equivalent to using IEC 61162-3:2008 "Maritime navigation and radio communication equipment and systems - Digital interfaces Part 3.

Serial data network equipment. " Correspondence between the consistency of the standards of international documents and normative references of the following documents.

--- GB/T 15868-1995 Global Maritime Distress and Safety System (CMDSS) marine radio equipment and marine navigation equipment through with the requirements and test methods required test results (idt IEC 60945:1994) this part made the following editorial changes.

--- Preface by deleting the international standards.

This part is proposed by China Shipbuilding Industry Corporation.

This part of the National Marine Electrical and Electronic Equipment Standardization Technical Committee (SAC/TC531) centralized.

This section drafted by. China Shipbuilding Industry Corporation seventh - four Research Institute, China Shipbuilding Industry Corporation seventh billion seven research , Shanghai melting Holy Ship Marine Engineering Technology Co., Ltd.

1 Scope

GB/T 31843 is based on this part of the National Marine Electronics Association 2000 (NMEA2000) standards. NMEA2000 standard Quasi contains minimum requirements for the application of marine electronic equipment on the serial data communication network and the actual ship installation interconnected. Provided pursuant to this section Meter device should have a single signal transmission path capability to share data with a compatible device (including instruction and state).

Data packets passing through a series of data frames, each data packet contains an error and integrity checking, and time frame to ensure that transfer Extension. The actual contents of a data frame of data transfer up to half of the data, this part is suitable for relatively short data packets periodically Transfer, packet transfer instruction as required or requested. Typical data contains discrete parameters (such as latitude and longitude of the location), Global Positioning System Block data (GPS) state value, the autopilot steering commands, limited list of parameters (such as waypoints), and medium-sized (such as the number of electronic charts Database update data). This section does not apply, such as radar, electronic chart, video, data, or other full database or file transfer applications High-bandwidth applications.

This section defines the International Organization for Standardization Open Systems Interconnection model (ISO/OSI) all from the application layer to the physical layer associated layer needs Perform network functional requirements of this part.

This section defines the minimum physical layer data formats, network protocols and devices to interfaces. The International Convention for the Safety of Life at Sea (SO-LAS) The application shall contain redundant devices (such as dual, redundant network interface circuitry) to reduce the impact brought about by the single point of failure.

NMEA2000 standard provides support for redundant equipment, and bus information transfer basic tools and methods. Certain ship-borne equipment safety Fashion design is not within the scope of this section, this section provides some guidance document, see Appendix A.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

ISO 11783 (all parts) Tractors and machinery for agriculture and forestry - Serial control and communications data network (Tractorsand machineryforagricultureandforestry-Serialcontrolandcommunicationsdatanetwork) ISO 11783-3 Tractors and machinery for agriculture and forestry - Serial control and

communications data network - Part 3. Data link layer (Tractors and machinery for agriculture and forestry-Serial control and communications data network-Part 3.

Datalink layer)

ISO 11783-5:2001 Tractors and machinery for agriculture and forestry - Serial control and communications data network - Part 5. Network management [including survey Errata 1 (2002)] [Tractors and machinery for agriculture and forestry-Serial control and communications data network-Part 5. Network management (including its corrigendum 1 (2002))] IEC 60945 Maritime navigation and radio communication equipment and systems - General requirements for the test results of the test methods and requirements (Maritime navigation and radio communication equipment and systems-General requirements-Method of soft testing and required test results) NMEA2000 master file, the first 1.200, October 2004 edition, serial data network of marine electronics equipment (Main document, Version 1.200. October 2004, Serial-Data Networking Of Marine Electronic Devices) NMEA2000 Annex A, section 1.200, October 2004 edition serial data network application layer, marine electronic equipment (parameter group Definitions) [Appendix A, Version 1.200. October 2004, Serial-Data Networking Of Marine Electronic De-