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

GB/T 34141-2017

Network control systems for high speed trains

高速列车网络控制系统

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. Please note that some of this document may be patentable. The issuing agencies of this document do not bear the responsibility of identifying these patents. This standard proposed by the National Railway Administration. This standard by the National Traction Electrical Equipment and Systems Standardization Technical Committee (SAC/TC278) centralized. This standard is drafted by Zhuzhou CSR Times Electric Co., Ltd. Participated in the drafting of this standard. China Railway Science Research Institute of rolling stock, car in Qingdao Sifang Vehicle Research Institute Co., Ltd.. The main drafters of this standard. Road to the sun, Huang He, Liu Jun, Zhao Hongwei, Xu Yanfen, Zhang Lizhi. High Speed Train Network Control System

1 Scope

China's national standard for the network control system of a high speed train. It specifies the working conditions, the system configuration, the electrical requirements, the technical requirements, the inspection methods and rules, the safety and environmental provisions, the software release and the documentation requirements. The network control system is the train's nervous system. It carries the driver's commands to the traction and braking equipment, gathers the state of every subsystem on every vehicle, runs the diagnostics that decide what is reported and what is isolated, and links the train to the ground. On a high speed train it does this across a formation several hundred metres long, at three hundred kilometres an hour, through couplers that are made and broken when sets are joined, in an electrical environment dominated by the traction converters a few metres away. Two things make it unlike an industrial network: the safety functions it carries have to fail in a defined direction, and the configuration has to be discovered at power-up, because the train that was assembled last night is not necessarily the one in the database.

This standard specifies the high-speed train network control system (hereinafter referred to as network control system) working conditions, system configuration, electrical requirements, Technical requirements, inspection methods, inspection rules, safety and

environmental protection, software release, documentation requirements, labeling, packaging and storage. This standard applies to high-speed train installed on the basis of GB/T 28029.1-2011 network control system.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document. Specifications and examples of rail transit reliability, availability, serviceability and safety (

IEC 62278-2002). 2002, IDT)

GB/T 21563-2008 rail traffic rolling stock equipment impact and vibration test (IEC 61373.1999, IDT)

GB/T 25119-2010 Railway rolling stock electronic devices (IEC 60571.2006, MOD)

GB/T 28029.1-2011 Traction electrical equipment train bus - Part 1. Train communication network (IEC 61375-1.2007, IDT)

GB/T 34119 rail transit locomotive electrical connectors TB/T 1484.4 Rolling stock cables - Part 4. Cables for halogen free, low smoke and flame retardant communication networks

IEC 61133.2016 Railway rolling stock rolling stock Motor rolling stock Put into use before the test (Railway applica- tions-Rolingstock-Testing of rollingstock oncompletionofconstructionandbeforeentryinto service

3 Terms and definitions

GB/T 28029.1-2011 defined and the following terms and definitions apply to this document.

3.1 Group consist A single vehicle or a collection of multiple vehicles that can not be separated during normal operation.

3.2 Train Consisting of one or more groups, the composition does not change during normal operation. Remark GB/T 28029.1-2011, the definition of 1.3.28.

3.3 Reconnection train coupledtrain Made up of multiple trains, the composition can change during normal operations.

4 Working conditions

Network control system should be able to work under the following environmental conditions.