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

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**Road vehicles - Diagnostic communication over Internet  
Protocol (DoIP) - Part 2: Transport protocol and network layer  
services**

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## Table of Contents

|                                                                      |    |
|----------------------------------------------------------------------|----|
| Foreword...                                                          | 4  |
| Introduction...                                                      | 6  |
| 1 Scope...                                                           | 9  |
| 2 Normative references...                                            | 10 |
| 3 Terms and definitions...                                           | 11 |
| 4 Symbols and abbreviated terms...                                   | 14 |
| 4.1 Symbols...                                                       | 14 |
| 4.2 Abbreviated terms...                                             | 14 |
| 5 Conformance...                                                     | 16 |
| 6 DoIP introduction...                                               | 16 |
| 6.1 General information...                                           | 16 |
| 6.2 Connection establishment and vehicle discovery...                | 17 |
| 6.3 Vehicle network integration...                                   | 22 |
| 6.4 Communication examples using message sequence charts...          | 23 |
| 6.5 IP-based vehicle communication protocol - General information... | 23 |
| 7 Application (APP) requirements...                                  | 24 |
| 7.1 APP implementation of DoIP requirements...                       | 24 |
| 7.2 APP data transmission order...                                   | 24 |
| 7.3 APP DoIP entity synchronization of a vehicle's GID...            | 24 |
| 7.4 APP vehicle identification and announcement request message...   | 27 |
| 7.5 APP diagnostic power mode information request and response...    | 34 |
| 7.6 APP DoIP entity status information request and response...       | 34 |
| 7.7 APP timing and communication parameters...                       | 35 |
| 7.8 APP logical addressing...                                        | 37 |
| 7.9 APP communication environments and recommended timings...        | 38 |
| 7.10 APP DoIP entity functional requirements...                      | 38 |
| 8 Service interface...                                               | 39 |
| 8.1 General...                                                       | 39 |
| 8.2 Service primitive parameters (SPP)...                            | 40 |
| 8.3 SPP DoIP layer service interface...                              | 42 |
| 9 Application layer (AL)...                                          | 44 |
| 9.1 AL dynamic host control protocol (DHCP)...                       | 44 |

|                                                                     |    |
|---------------------------------------------------------------------|----|
| 9.2 AL generic DoIP protocol message structure...                   | 50 |
| 9.3 AL handling of UDP packets and TCP data...                      | 56 |
| 9.4 AL supported payload types over TCP and UDP ports...            | 56 |
| 9.5 AL diagnostic message and diagnostic message acknowledgement... | 57 |
| 9.6 AL alive check request and alive check response...              | 62 |
| 10 Transport layer security (TLS)...                                | 63 |
| 10.1 TLS secure diagnostic communication...                         | 63 |
| 10.2 TLS DoIP application profile...                                | 66 |
| 11 Transport layer (TL)...                                          | 68 |
| 11.1 TL transmission control protocol (TCP)...                      | 68 |
| 11.2 TL user datagram protocol (UDP)...                             | 71 |
| 11.3 TL handling of UDP messages...                                 | 75 |
| 12 Network layer (NL)...                                            | 75 |
| 12.1 NL internet protocol (IP)...                                   | 75 |
| 12.2 NL IPv4 address resolution protocol (ARP)...                   | 76 |
| 12.3 NL IPv6 neighbour discovery protocol (NDP)...                  | 77 |
| 12.4 NL internet control message protocol (ICMP)...                 | 77 |
| 12.5 NL IP-based vehicle communication protocol...                  | 78 |
| 12.6 NL socket handling...                                          | 84 |
| 13 Data link layer (DLL)...                                         | 92 |
| 13.1 DLL general...                                                 | 92 |
| 13.2 DLL MAC-layer...                                               | 92 |
| Bibliography...                                                     | 93 |

## Foreword

This document is drafted in accordance with the rules provided in GB/T 1.1-2020

Directives for standardization - Part 1.Rules for the structure and drafting of  
standardizing documents.

This document is part 2 of GB/T 43258 Road vehicles - Diagnostic communication over  
Internet Protocol (DoIP). The following parts have been issued for GB/T 43258.

- Part 2.Transport protocol and network layer services;
- Part 3.Wired vehicle interface based on IEEE 802.3;

- Part 4.Ethernet-based high-speed data link connector.

This document adopts ISO 13400-2:2019 Road vehicles - Diagnostic communication over Internet Protocol (DoIP) - Part 2.Transport protocol and network layer services by modification.

The technical differences between this document and ISO 13400-2:2019, and the causes for these differences are as follows.

- USE the normatively referenced GB 16735 to replace ISO 3779 (see Table 4 and Table 5), to adapt to the technical conditions in China and to improve operability;
- ADD the symbol < k> (see 4.1), to improve the usability of the document;
- ADD the abbreviated terms AutoIP, PDU and OTA, and DELETE the unused abbreviated term FMI (see 4.2), to improve the usability of the document;
- CHANGE "the DoIP entity has an IP address configured in approximately two seconds" to "the DoIP entity has an IP address configured in approximately seven seconds", and CHANGE "an IP address is configured after approximately seven seconds" to "an IP address is configured after approximately two seconds" (see 9.1.2.2), so that the timing parameters are consistent with those in Table 15;
- CHANGE "node management (xx1616)" to "0xxx16" (see 9.2), to adapt to the technical conditions in China and improve the operability;
- CHANGE "Response by the DoIP gateway" to "Response by the DoIP entity" (see Table 48), to improve the technical application flexibility.

## 1 Scope

This document specifies the requirements for secured and unsecured diagnostic communication between client DoIP entity and server(s) installed in the vehicle using Internet protocol (IP) as well as the transmission control protocol (TCP) and user datagram protocol (UDP).

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the

edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 9387.1-1998, Information technology - Open systems interconnection-basic reference model - Part 1.The basic model (idt ISO/IEC 7498-1.1994)

### **3 Terms and definitions**

For the purposes of this document, the terms and definitions given in GB/T 9387.1-

### **4 Symbols and abbreviated terms**

For the purpose of this document, the following symbols apply.

### **5 Conformance**

This document is based on the conventions discussed in the OSI Service Conventions (as specified in ISO/IEC 10731) as they apply to diagnostic services.

### **6 DoIP introduction**

In a direct connection scenario with no networking infrastructure, a "crossover" Ethernet cable is used or Auto-MDI(X) is supported by the Ethernet controller by either the client DoIP entity or the DoIP entity (server), in order to directly connect the vehicle to the client DoIP entity.

This subclause gives an example of a sequence by which the external client DoIP entity may be able to identify and group server DoIP entities of all connected vehicles within a network.

### **7 Application (APP) requirements**

A group identification (GID) is a decentralized approach for identifying multiple DoIP entities within one vehicle. This implies that there is a VIN/GID master (e.g., the DoIP edge node) from which all other DoIP entities receive the VIN/GID during a synchronization process.