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**Technical requirements of network layer of LTE-based vehicular
communication
(English Translation)**

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1 Scope

This Standard specifies the technical requirements of network layer of LTE-based vehicular communication, including short message protocol, application registration, service management and service advertisement. Specifically, they include network layer framework, technical requirements of data sublayer, data sublayer of management sublayer, access point and service primitive.

This Standard is applicable to the network layer of LTE-based vehicular communication.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

YD/T 3340-2018 Technical Requirements of Air Interface of LTE-based Vehicular Communication

YD/T 3400-2018 General Technical Requirements of LTE-based Vehicular

Communication

3 Abbreviations

The following abbreviations are applicable to this document.

AID Application ID

4.1 System Introduction

The LTE-based vehicular communication technology realizes information interaction among different subsystems of the intelligent transportation system, which further implements different applications, such as. road safety, traffic efficiency and information services, etc. Figure 1 and Figure 2 provide the relations among the communication nodes involved in this Standard.

4.2 Network Layer Framework

The network layer framework of the LTE-based vehicular communication technology is shown in Figure 3. This network layer can support Uu interface and PC5 interface- based access layer transmission technology.

4.3.1 Overview

The data sublayer of the network layer of the LTE-based vehicular communication technology includes. TCP / UDP, IP, DSMP and adaptation layer. Among them, IP and UDP / TCP are not within the scope of this Standard.

4.3.2 Adaptation layer

The adaptation layer provides the transmission adaptation function between the bottom layer access technology LTE V2X and the upper layer protocol stack.

4.5.5.2 DME-ProviderService.confirm

DME-ProviderService.confirm confirms that the upper layer's corresponding request has been received. It is used to respond DME-ProviderService.request. If DME decides to accept this request, then, it starts to broadcast DSA for the upper layer.

4.5.5.3 DME-UserService.request

DME-UserService.request represents an upper layer entity's request for communication application, which is generated by the upper layer entity on demand.

The service primitive includes the upper layer's description of the criteria of the application of interest.

4.5.5.4 DME-UserService.confirm

DME-UserService.confirm is used to confirm that the corresponding request has been received. It is used to respond DME-UserService.request. If DME accepts the upper layer request, then, when receiving DSA, it will match the application in DSA with the application identifier of interest requested by the upper layer.

4.5.5.5 DME-DSMService.request

DME-DSMService.request indicates that the upper layer requests a short message service.

4.5.5.6 DME-DSMService.confirm

DME-DSMService.confirm confirms that the corresponding request from the upper layer. It is used to respond DME-DSMService.request.

4.5.5.9 DME-mibSet.request

DME-mibSet.request is used to indicate the value of a specific DME MIB attribute specified by the upper layer.

The parameters of the service primitive are as follows.

4.5.5.10 DME-mibSet.confirm

DME-mibSet.confirm confirms that the corresponding configuration request has been received from the upper layer and responds DME-Set.request. If Status is successful, it feeds back the value of a specific DME MIB attribute, which has been set as requested; otherwise, an error indication is returned in Status field. Possible error indications include. "invalid MIB attribute" and "attempt to set read-only MIB attribute".

The parameters of the service primitive are as follows.

4.5.5.11 DME-Notification.indication

DME-Notification.indication is used to notify the upper layer entity that something has happened. The specific content may be expanded as needed during execution.

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