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Intelligent transport systems — Localized communications — Communication protocol messages for global usage

Systèmes de transport intelligents — Communications localisées — Messages de protocole de communication pour une utilisation globale

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www. iso. org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www. iso. org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www. iso. org/iso/foreword. html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

This first edition cancels and replaces the first edition (ISO/TS 16460:2016), which has been technically revised.

The main changes compared to the previous edition are as follows:

— editorial improvements;

— editorial corrections.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document belongs to a set of International Standards for Intelligent Transport Systems (ITS) and Cooperative ITS (C-ITS). An introduction to this set of International Standards is provided in ISO 21217.

Localized communications, i.e. communications without networking through nodes, and service advertisement are essential protocol functionalities in C-ITS. ISO and IEEE developed protocols with similar functionality, i.e. the

— ISO Fast Networking & Transport Protocol (FNTP) standardized in ISO 29281-1;

— IEEE WAVE Short Message Protocol (WSMP) standardized in IEEE 1609.3[15],

— ISO Fast Service Advertisement Protocol (FSAP) standardized in ISO 24102-5,

— IEEE WAVE Service Advertisement (WSA) standardized in IEEE 1609.3[15],

where ISO considered the architectural context of an ITS station specified in ISO 21217:2014, and IEEE considered the architectural context of a WAVE device specified in IEEE 1609.0[13].

Although initial versions of these protocols from ISO and IEEE are very similar, there are differences in details of the message formats and the functionality. These differences were identified by the EU/US task force HTG 3, from which a recommendation resulted to harmonize the protocols[20].

The result of harmonization of FNTP with WSMP, and of FSAP with WSA is presented in this document, distinguishing interoperability modes, and enhanced features specified in this document.

With reference to this document, the initial editions of ISO 29281-1 and IEEE 1609.3 were revised, and ISO 24102-5 was converted into EN ISO 22418, enabling global interoperability of equipment designed for different architectures. Finally, ETSI developed EN 302 890-1 (a further service announcement protocol profile) with reference to the previous edition of this document, i.e. ISO/TS 16460:2016.

Intelligent transport systems — Localized communications — Communication protocol messages for global usage

1 Scope

This document specifies:

— the Localized Message (LM) format: an NPDU of a networking & transport layer protocol that does not support routing of a packet through a network;

— the Service Advertisement Message (SAM): an APDU to be transported in an LM, for example;

— the Service Response Message (SRM): an APDU acknowledging a SAM that offered a service based on an ITS application class[2] to be transported in an LM, for example;

— related basic requirements for procedures.

Specifications are partly made by normative references to IEEE 1609.3(TM)-2016.

NOTE These message format specifications and basic procedures need to be complemented by complete procedures and SAP specifications according to the context of usage, i.e. an ITS station specified in ISO 21217, or a WAVE device specified in IEEE 1609.0[13] or any other context.

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.

ISO/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1): Specification of basic notation*

IEEE 1609.3(TM)-2016: *Standard for Wireless Access in Vehicular Environments (WAVE) — Networking Services*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Symbols and abbreviated terms

CIP	communication interface parameter
C-ITS	cooperative ITS
DNS	domain name server
EIRP	effective isotropic radiated power