TECHNICAL SPECIFICATION

**ISO/TS 16460**

First edition
2016-09-01

# Intelligent transport systems — Communications access for land mobiles (CALM) — Communication protocol messages for global usage

*Systèmes intelligents de transport — Accès aux communications des services mobiles terrestres (CALM) — Messages de protocole de communication pour une utilisation globale*

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Reference number
ISO/TS 16460:2016(E)

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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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 204, *Intelligent transport systems*.

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# Introduction

This document is a member of the set of International Standards for communications access for land mobiles (CALM). An introduction to this set of International Standards is provided in ISO 21217.[2]

Localized communications, i.e. communications without networking through a cloud, and service advertisement are essential protocol functionalities in Cooperative Intelligent Transport Systems (C-ITS). ISO and IEEE developed protocols with similar functionality, i.e. the

— ISO Fast Networking & Transport Protocol (FNTP) standardized in ISO 29281-1,[6]

— IEEE WAVE Short Message Protocol (WSMP) standardized in IEEE 1609.3,[13]

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

— IEEE WAVE Service Advertisement (WSA) standardized in IEEE 1609.3,[13]

where ISO considered the architectural context of an ITS station specified in ISO 21217[2] and IEEE considered the architectural context of a WAVE device specified in IEEE 1609.0™.[11]

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.[16]

The result of harmonization of FNTP with WSMP, and of FSAP with WSA is presented in this document, distinguishing interoperability modes and enhanced features only specified in this document. The next revisions of ISO 24102-5, ISO 29281-1 and IEEE 1609.3, and the new standards from other SDOs can align their message specifications with the protocol message elements specified in this document in order to achieve global interoperability of equipment designed for different architectures.

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# Intelligent transport systems — Communications access for land mobiles (CALM) — Communication protocol messages for global usage

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## 1 Scope

This document specifies the following:

— the Localized Message (LM) format: an NPDU of a networking and 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 for example, an LM;

— the Service Response Message (SRM): an APDU acknowledging a SAM that offered a service based on an ITS application class[8] to be transported in for example, an LM;

— the related basic requirements for procedures.

Specifications are partly done by normative references to IEEE 1609.3™-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,[2] or a WAVE device specified in IEEE 1609.0™[11] 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*

ISO/IEC 8825-2, *Information technology — ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)*

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

## 3 Terms and definitions

No terms and definitions are defined in this document.

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

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

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

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