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Intelligent transport systems — Localized communications —

Part 1: Fast networking & transport layer protocol (FNTP)

Systèmes intelligents de transport — Communications localisées — Partie 1: Réseautique rapide et protocole de la couche transport

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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

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

This second edition cancels and replaces the first edition (ISO 29281-1:2013), which has been technically revised. It also incorporates the Amendment ISO 29281-1:2013/Amd1:2017.

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

— a complete technical revision in support of the common message format specified in ISO TS 16460 that is harmonized with IEEE WAVE;

— ASN.1 has been aligned with latest developments in ISO TC 204;

— provisioning for path and flow management has been added;

— normative annex related to conformance testing, that contains the PICS proforma, has been added.

A list of all parts in the ISO 29281 series can be found on the ISO website.

Introduction

This document is part of a family of International Standards for communications in Intelligent Transport Systems (ITS) based on the ITS station and communication architecture specified in ISO 21217.

This document is Part 1 of a multipart standard which determines the "Intelligent Transport Systems" (ITS) localized communications.

The FAST Networking & Transport layer Protocol (FNTP) is a protocol for localized communications. FNTP comprises

— a basic port mapper protocol, used for localized communications between ITS station units (ITS-SUs),

— networking related protocol features for

  — null-networking (single-hop communications),

  — N-hop forwarding,

  — ITS station-internal forwarding of packets between ITS station communication units (ITS-SCUs) with ITS-S host role and ITS-S router role,

  extendible with further features;

— transport related protocol features for

  — information dissemination with ITS-AID as destination address,

  — session support with ITS port numbers (ITS-PN) as source address and destination address,

  — LPP,

  extendible with further features.

The first version (2010) of FNTP was validated in the CVIS project of the European Commission. Feedback from CVIS and other activities resulted in the second version (2013). This third version of FNTP is the result of harmonization with the IEEE WAVE Short Message Protocol (WSMP); it is based on the common message format specified in ISO TS 16460.

Intelligent transport systems — Localized communications —

Part 1:
Fast networking & transport layer protocol (FNTP)

1 Scope

This document specifies the "Fast Networking & Transport Protocol" (FNTP) of the ITS-S networking & transport layer.

FNTP is in support of efficient localized communications distinguishing networking related features and transport related features. FNTP is extendible in the future without breaking binary backward compatibility.

This document specifies

— message formats and related basic protocol procedures by reference to ISO TS 16460, and

— further requirements for operation of FNTP in the context of an ITS station specified in ISO 21217.

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

ISO/TS 16460, *Intelligent transport systems — Communications access for land mobiles (CALM) — Communication protocol messages for global usage*

ISO 17419, *Intelligent Transport Systems — Cooperative systems — Classification and management of ITS applications in a global context*

ISO 21217, *Intelligent transport systems — Communications access for land mobiles (CALM) — Architecture*

ISO 21218, *Intelligent transport systems — Hybrid communications — Access technology support*

ISO 24102-3[1)], *Intelligent transport systems — ITS station management — Part 3: Service access points*

ISO 24102-4[2)], *Intelligent transport systems — ITS station management — Part 4: Station-internal management communications*

ISO 24102-6, *Intelligent transport systems — ITS station management — Part 6: Path and flow management*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21217 and the following apply.

1) 2nd edition to be published. Stage at time of publication: ISO/DIS 24102-3.

2) 2nd edition to be published. Stage at time of publication: ISO/DIS 24102-4.