Technical Specification

ISO/TS 24854-5

Intelligent transport systems — Facilities layer services —

Part 5: Message sets

Systèmes de transport intelligents — Services de la couche des fonctionnalités —

Partie 5: Ensembles de messages

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Foreword

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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 document 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 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*.

A list of all parts in the ISO 24854 series can be found on the ISO website.

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

A basic introduction to the ISO 24854 series is provided in ISO/TS 24854-1:—[1)].

This document specifies an intelligent transport system message set (ITS-MsgSet) as a collection of one or more uniquely identified ITS messages, where internal unique identification including versioning is performed by the design of an ITS-MsgSet. ITS-MsgSets are introduced in the ITS architecture standard ISO 21217. Various initial ITS messages have been outlined by various Standard Development Organizations (SDOs) in the past without being specified as part of an ITS-MsgSet; these initial ITS messages can be included in ITS-MsgSets.

An ITS-MsgSet is identified by a globally unique, registered ITS message set identifier (ITS-MsgSetID) specified in ISO 17419. Registered values of ITS-MsgSetID are published in the ISO/TC 204 "Registry of Intelligent Transport System Items" (RITSI)[1]. Various versions of an ITS-MsgSet are identified by the same value of ITS-MsgSetID, as versioning is performed internally by design of an ITS-MsgSet.

This document also specifies the ITS message set protocol data unit (ITS-MsgSetPDU) as a concatenation of messages from ITS-MsgSets. For transmission and reception of ITS-MsgSetPDUs using the Fast Networking & Transport Protocol (FNTP) specified in ISO 29281-1 and in ISO 16460, the necessary FNTP port number is identified.

This document complements the procedural guidelines on ITS-MsgSets in ISO 17419 by providing technical guidelines and requirements on the creation and usage of ITS-MsgSets and ITS-MSgSetPDUs. The techniques specified in this document allow a dynamic creation of a protocol data unit (PDU) as a concatenation of messages from several ITS-MsgSets, i.e. avoiding hard-coded messages. Combining several messages reduces channel load, as the security overhead has a fixed size, i.e. independent of the size of the payload. This approach could be considered as being similar to the natural language, where sentences are built with defined words. However, so far there is no activity to specify details of such a consideration.

Throughout this document, the term "message" without a qualifier is used in the natural language meaning.

NOTE ISO/TS 14812 specifies the term "message" as " grouping of data elements, data frames, or data elements and data frames that is used to convey information". Definitions of "data element" and "data frame" are also given in ISO/TS 14812.

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Intelligent transport systems — Facilities layer services —

Part 5:
Message sets

1 Scope

This document specifies guidelines and requirements for the creation and use of intelligent transport system (ITS) station facilities layer service "message sets" (ITS-MsgSets). This includes specification of the basic structure of ITS-MsgSets, the creation of a message as a concatenation of messages from ITS-MsgSets, and the reception of respective messages.

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 17419, *Intelligent transport systems —Globally unique identification*

ISO 21217, *Intelligent transport systems — Station and communication architecture*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21217, ISO 17419 and the following apply.

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

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

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

3.1
ITS-MsgSet
ITS message set
collection of one or more uniquely identified intelligent transport system (ITS) messages

3.2
ITS-MsgSetPduP
ITS-MsgSet PDU parser
capability of the intelligent transport systems (ITS) facilities layer to receive protocol data units (PDUs) that are concatenated messages from one or various ITS message sets (ITS-MsgSets), and to forward the information to the correct station-internal destination