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Intelligent transport systems — Cooperative ITS — Test architecture

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National foreword

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Contents

Page

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 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 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*.

Introduction

For conformance testing in C-ITS, ETSI developed a generic initial test architecture, published in Reference [6]. Considering the ITS station and communication architecture for C-ITS specified in ISO 21217 and implementations of ITS station units being compliant with the ITS-S station-internal management communications protocol (IICP) specified in ISO 24102-4, conformance testing can be simplified and related effort and cost can be reduced by applying the extended test architecture specified in this document. IICP enables remote access to all points of control and observation (PCO) of the implementation under test (IUT) without the need to implement IUT-specific upper tester applications and lower tester access.

Understanding of this document requires knowledge of:

— the ITS station and communication architecture specified in ISO 21217,

— the IICP specified in ISO 24102-4, and

— the related MX-SAP service primitive functions specified in ISO 24102-3.

Further knowledge of standards related to conformance testing with TTCN-3 is also recommended, for example:

— Reference [6] on the framework on C-ITS conformance testing, and

— Reference [7] on the TTCN-3 core language.

Intelligent transport systems — Cooperative ITS — Test architecture

1 Scope

This document specifies an extension of the ETSI C-ITS test architecture for conformance testing of protocols and applications in ITS station units. It specifies usage of the ITS station-internal management communication protocol (IICP) for the purpose of connecting an ITS test system to an implementation under test (IUT) residing in a system under test (SUT).

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 21217:2014, *Intelligent transport systems — Communications access for land mobiles (CALM) — Architecture*

ISO 24102-3, *Intelligent transport systems — Communications access for land mobiles (CALM) — ITS station management — Part 3: Service access points*

ISO 24102-4, *Intelligent transport systems — Communications access for land mobiles (CALM) — ITS station management — Part 4: Station-internal management communications*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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/

3.1
implementation under test
IUT
part of a real system which is to be studied by testing

3.2
system under test
SUT
real system in which an *IUT* (3.1) resides

4 Abbreviated terms

CI	communication interface
IIC	ITS-S internal management communications
IICA	IIC agent