TECHNICAL REPORT

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Intelligent transport systems — Use of nomadic and portable devices to support ITS service and multimedia provision in vehicles —

Part 2: Definition and use cases for mobile service convergence

Systèmes intelligents de transport — Utilisation des dispositifs nomades et portables pour la prise en charge des services ITS et la mise à disposition d'applications multimédias dans les véhicules —

Partie 2: Définition et cas d'utilisation pour la convergence des services mobiles

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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.*

A list of all parts in the ISO/TR 10992 series can be found on the ISO website.

Introduction

ISO/TC 204 is designed to facilitate the development, promotion and standardization of the use of nomadic and portable devices to support ITS service provision and multimedia use such as passenger information, automotive information, driver advisory and warning systems, and entertainment system interfaces to ITS service providers and motor vehicle communication networks. The ISO 10992 series fosters the introduction of multimedia and telematics nomadic devices in the public transport and automotive world.

This project provides the convergence software framework to identify mobile cloud connectivity services while driving and related standards required to develop a nomadic device application with intelligent transport systems (ITS) technologies in vehicles.

Intelligent transport systems — Use of nomadic and portable devices to support ITS service and multimedia provision in vehicles —

Part 2: Definition and use cases for mobile service convergence

1 Scope

This document specifies the introduction of multimedia and telematics nomadic devices in the public transport and automotive world to support intelligent transport systems (ITS) service provisions and multimedia use such as passenger information, automotive information, driver advisory and warning systems, and entertainment system interfaces to ITS service providers and motor vehicle communication networks.

This document focuses on the convergence software framework to identify mobile cloud connectivity services while driving utilizing nomadic device application for intelligent transport systems (ITS) technologies in vehicles.

The use cases described in this document include:

— IVI interaction configuration

This competence is provided by automatic application suppliers.

— Biosignal measurement configuration

This competence is provided by IT application companies.

— Cloud service configuration

This competence is provided by third-party providers such as parking service providers and insurance service providers.

This document includes the identification of existing International Standards for ITS in ISO/TC 204 and existing vehicle communication network access standards.

2 Normative references

There are no normative references in this document.

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 https://www.electropedia.org/

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

3.1
nomadic device
ND
personal ITS station which provides communication connectivity via equipment such as cellular telephones, mobile wireless broadband (WIMAX, HC-SDMA, etc.), WiFi, etc. and includes short range links such as Bluetooth, Zigbee, etc. to connect portable devices to the motor vehicle communications system network

3.2
portable device
PD
handheld device or mobile device which is primarily a battery-powered device with base computing resources in the form of a processor, memory, and storage and network access

Note 1 to entry: The latest portable devices are thin and lightweight, making them easy to carry and hold. This was not the case for earlier attempts at portable computers.

3.3
in-vehicle selective gateway
in-vehicle infotainment
IVI
entertainment and information system which includes a device or a technology that provides a variety of services for navigating the internet, for enjoying a movie, and for playing games and social network services (SNS) in vehicles

3.4
vehicle station gateway
VSG
system that provides security and safety functionality in order to allow only authorized access to the in-vehicle networks (IVN)

Note 1 to entry: Vehicles will be electronically integrated into the IT infrastructure with the risk of unauthorized access. ISO (International Standardization Organization) is going to establish a joint working group standardizing the Vehicle Station Gateway (VSG).

4 Abbreviated terms

ITS Intelligent Transportation Systems

IVI In-Vehicle Infotainment

VSG Vehicle Station Gateway

VIN Vehicle Identification Number

UI User Interface

UX User eXperience

ND Nomadic Device

PD Portable Device

ICT Information and Communication Technology

5 Document overview and structure

This document provides all information and references required to support the implementation of the requirements related to standardized access to definition and use cases for mobile service convergence. The document consists of the following parts:

— Part 1: Overview

This part provides an overview of the communications architecture and generic requirements to enable the connectivity between the vehicle and the infrastructure or other vehicles by using nomadic links within the vehicle and devices introduced into the vehicle including the provision of connectivity via mobile devices to the infrastructure; the support of application services within the vehicle; and integration within the CALM architecture and in vehicle gateways.

— Part 2: Definition and use cases for mobile service convergence

This part specifies general requirements related to the integrated mobile service convergence to be used on nomadic devices and personal ITS stations. It provides an overview of the document set and structure along with the use cases definition and common set of resources (definitions, references), which are used for all subsequent parts.

6 General information

6.1 Purpose of this document

This document addresses two major areas:

— identify the method to describe the general information for all subjects related to mobile service convergence on the vehicle station interfaced with personal station, and cloud service station;

— specify the general use cases that should be included for the mobile service convergence.

6.2 Overview of mobile service convergence

Conceptual aspects of the mobile service convergence should be considered as illustrated in Figure 1.