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Intelligent transport systems — Roadside infrastructure supported location-based services on nomadic and mobile devices for urban connected automated mobility —

Part 1: General information and use case definition

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Systèmes de transport intelligents — Services basés sur la localisation supportés par l'infrastructure routière pour les appareils nomades pour une mobilité automatisée et connectée —

Partie 1: Informations générales et définition des cas d'utilisation

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

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Foreword

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

A list of all parts in the ISO 17739 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

Conventional road safety services in intelligence transport systems (ITS) area have been mostly provided as vehicle-centred road safety services by exchanging road safety ITS messages among ITS stations (i.e. roadside ITS station, central ITS station, vehicle ITS station). However, even though lots of ITS based road safety services have been deployed in an urban localized area such as signalized intersection, roundabout, T-intersection, etc., the fatality rate related with a vulnerable road user (VRU) such as pedestrians, bicyclists as well as road vehicles without equipped ITS stations still remains high.

In order to improve road safety of VRUs, a nomadic device (i.e. a personal ITS station) can be used as a not only short range vehicle to everything (V2X) communication-supported device but also a long range V2X communication-supported device to exchange status and intent messages with conventional ITS stations including personal ITS station, vehicle ITS station, roadside ITS station, and central ITS station. In addition, a sensor-equipped roadside ITS station with an AI-supported road user behaviour detection function can support overall road safety enhancement services. It does so by sharing road users' status or intents information with nomadic device road users such as VRUs and road vehicles without equipped ITS stations.

This document specifies general information and use-cases to provide road safety enhancement services in a localized urban area by sharing status or intent messages between all types of road users with nomadic device and conventional ITS stations including a sensor-equipped roadside ITS station.

Intelligent transport systems — Roadside infrastructure supported location-based services on nomadic and mobile devices for urban connected automated mobility —

Part 1: General information and use case definition

1 Scope

This document defines general information and use cases for providing road safety enhancement services to all types of road users with a nomadic device in urban localized areas by sharing status or intent messages between nomadic device users and conventional ITS stations. The road users in this document include all type of road users with nomadic device such as vulnerable road users (VRU) including pedestrians, bicyclists, kickboard users, as well as connected automated mobility users including conventional vehicles, automated or connected driving system equipped vehicles. In addition, this document considers a sensor-equipped roadside ITS station with AI-supported road user behaviour detection function to support overall road safety enhancement services by sharing status or intents information of all type of road users such as VRUs without a nomadic device and road vehicles without equipped ITS stations. This document also specifies general information, such as category of nomadic device supported road safety service, overall access technology in nomadic device, actors, and communication architecture to support use cases.

This document also defines safety enhancement use cases to enhance overall road safety of all types of road users with nomadic device as well as road users without nomadic device with a connectivity of sensor-equipped roadside ITS station. The use cases are applicable to provide road safety enhancement service in a specific urban localized area such as an un-signalized intersection, T-intersection, roundabout, low speed zone, school zone, no turn on red zone, weaving area, etc.

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 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
access technology
technology employed in a communication interface to access a specific medium

[SOURCE: ISO 21217:2020, 3.1]