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Intelligent transport systems — Mobility integration — Role and functional model for mobility services using low Earth orbit (LEO) satellite systems

Systèmes de transport intelligents — Intégration de la mobilité — Rôle et modèle fonctionnel des services de mobilité qui utilisent les systèmes de satellites en orbite terrestre basse (LEO)

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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*.

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.

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Introduction

Recent implementations of low Earth orbit (LEO) satellite communication systems (e.g. OneWeb,[13] Starlink[19]) offer advantages in terms of large coverage area, large capacity, multi-modal mobility access, low latency and resilience compared to other available communication service systems. These characteristics of LEO offer benefits when used for smart city or community mobility integration services. This document describes a role and functional model of LEO in the context of use cases for intelligent transport systems (ITS).

This document can contribute to the development of mobility service standards using LEO satellite system business cases.

Background information on LEO is provided in the Bibliography.

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Intelligent transport systems — Mobility integration — Role and functional model for mobility services using low Earth orbit (LEO) satellite systems

1 Scope

This document describes a basic role and functional model for mobility services using low Earth orbit (LEO) satellite systems for ITS services. This document provides:

a) a role and functional model using a LEO satellite system for mobility services;

b) a description of the concept of operations (CONOPS), and the relevant role models;

c) a conceptual architecture between actors involved;

d) references for the key documents on which the architecture is based;

e) a mobility service use case summary.

In-vehicle control systems are not within the scope of this document.

This document scope is limited to mobility services using physical and digital infrastructure.

NOTE Physical infrastructure facilities include for example, battery charging facilities, dynamic charging facilities for battery electric vehicles, physical infrastructure markings, physical traffic regulation signs, mobility monitoring facilities, emergency response service support facilities, traffic operation control centre facilities, fee collection service facilities (e.g. road usage fee), battery electric vehicle charging facilities, online reservation and online mobility usage fee payment facilities, and other infrastructure platform facilities that support ITS mobility services.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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/

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