PD ISO/TR 4447:2022

BSI Standards Publication

Intelligent transport systems — Mobility integration — Comparison of two mainstream Integrated mobility concepts

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The UK participation in its preparation was entrusted to Technical Committee EPL/278, Intelligent transport systems.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2022

ISBN 978 0 539 16808 2

ICS 03.220.01; 35.240.60

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 August 2022.

Amendments/corrigenda issued since publication

Date	Text affected

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TECHNICAL REPORT

ISO/TR 4447

First edition
2022-05

Intelligent transport systems — Mobility integration — Comparison of two mainstream integrated mobility concepts

Systèmes de transport intelligents — Intégration de la mobilité — Comparaison de deux grands concepts de mobilité intégrée

Reference number
ISO/TR 4447:2022(E)

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Published in Switzerland

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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 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 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*.

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

Transport systems and services have remained unchanged for long periods of time and are characterized by slow incremental innovations. However, urbanization, changes in climate and demographic and societal changes are some of the major trends that have had an impact on transport systems and services over the last decades. Combined with the implementation of intelligent transport system (ITS) services and Internet of Things (IoT), new transport concepts have been developed. User requirements on efficiency, availability and interoperability have also been driving forces for new transport concepts for integration of multimodal, existing and new transport services as described and implemented in mobility concepts like "mobility as a service" (MaaS) and "mobility on demand" (MOD). Connected and autonomous vehicles will also have a significant effect on how travellers plan and implement their journeys between multiple modes of transportation in the integrated mobility environment.

Integrated mobility concepts are evolving around the world, mostly based on the MaaS and MOD concepts. Hence, there is a need for a generic, common and world-wide concept description mapping all existing and foreseen concepts for interoperable, integrated and seamless multimodal transport services.

The objective of this document is to describe the MaaS and MOD concepts focussing on the relevant services and role models. Further, the objective is to compare the two concepts searching for commonalities that can build a bridge between the MaaS and MOD concepts and form a basis for a common understanding. This could further be used for a convergence towards one world-wide integrated mobility concept description. Establishing a common understanding and terminology will enable greater world-wide collaboration on integrated mobility implementations.

This document is based on a literature review of the references listed in the Bibliography and describes the state-of-the-art for the two mainstreams in integrated mobility, i.e. the MaaS and MOD concepts.

This document includes a proposal for issues for further elaboration and possibly standardization, including:

— an enterprise view on the integrated mobility service;

— a functional view on the integrated mobility service;

— a physical view on the integrated mobility service.

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1 Scope

This document describes the core services and roles and responsibilities models in the "mobility as a service" (MaaS) and "mobility on demand" (MOD) ecosystems. The description is based on a literature review of the references listed in the Bibliography.

This document also includes a comparison of the basic services and roles and responsibilities in order to map any similarities that can potentially be used for bridging and merging the two mainstream concepts in integrated mobility, i.e. MaaS and MOD.

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/

4 Abbreviated terms

API	application programming interface
ARC-IT	Architecture Reference for Cooperative and Intelligent Transportation
CTSA	common transport service account
DOC	Department of Commerce (US)
DOD	Department of Defence (US)
DOE	Department of Energy (US)
DOL	Department of Labour (US)
DSS	decision support system
ERTICO	European Road Transport Telematics Implementation Co-ordination Organisation
ICT	information and communication technologies
IT	information technology
ITS	intelligent transport systems

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