



BSI Standards Publication

Intelligent transport systems — Mobility integration — Role model of the human-centric predictive risk information provisioning service

National foreword

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Technical Report

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Intelligent transport systems — Mobility integration — Role model of the human-centric predictive risk information provisioning service

*Systèmes de transport intelligents — Intégration de la mobilité —
Schéma d'application des services de fourniture d'informations
prédictives relatives aux risques centrés sur l'homme*

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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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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.

Introduction

Mobile entities require sufficient safety distance allowing them to efficiently reduce speed and improve manoeuvring distance in a timely manner to avoid traffic incidents. To achieve safer road transportation with mobile entities, an information provisioning service is indispensable which provides information on traffic status and incident situation, i.e. predictive risk information, from locations well ahead of the mobility's position.

This document describes a conceptual operational framework of predictive risk safety information provision provided by service providers. This description is based on ISO 4445^[2], which describes a basic role model of smart city intelligent transport systems (ITS) service applications. There are two types of services, enforcement (for regulated purpose) and non-enforcement (for non-regulated purpose). This document describes non-enforcement services. For the enforcement services, see the ISO/DTS 24315^[44] series.

For information provisioning, the technology of clouds is relevant. The cloud acts as a digital platform where aggregated traffic data are available.

This document focuses on service provider transactions between the roles via ITS-stations and road users. Using this system architecture, additional safety information provision services to road users can be realized. Where authority requires such regulated monitoring (for enforcement purpose), new means of safe road transport management and enforcement can be enabled by using this document.

Whilst currently available safety standards deal with time critical information provisioning, i.e. means applicable close to an imminent risk, this document aims to describe means to increase safe road transportation based on predictive risk information; see [Figure 1](#). Providing predictive risk information has the capability to reduce traffic incidents because road users are better prepared for incidents that could happen later in the trip on the oncoming roads. This is also potentially applicable for automated driving vehicles considering technologies for fast processing of a huge amount of data, referred to as "Artificial Intelligence" (AI) technologies. Examples of potential accident events and locations are work zones, merging traffic, tail end crushing, crossing from behind parked vehicles, blind intersection, etc.

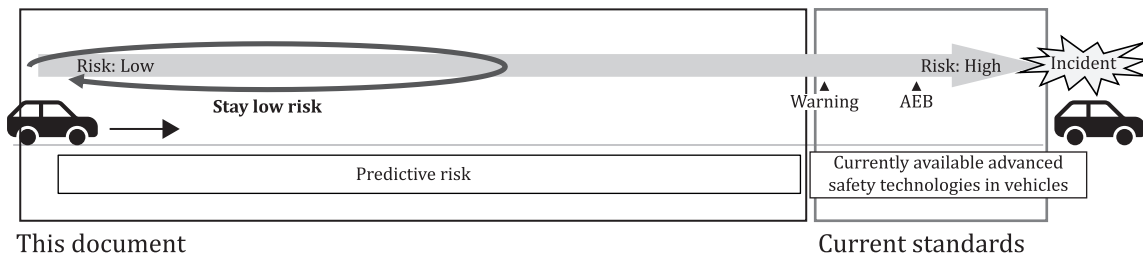


Figure 1 — Predictive risk

Intelligent transport systems — Mobility integration — Role model of the human-centric predictive risk information provisioning service

1 Scope

This document describes a role model for predictive safety risk information provisioning primarily applicable for non-enforcement applications, and potentially applicable for enforcement application services are out of scope of this document. This role model is dedicated to human centric road transport safety management purposes considering all road users on the roads. It can be applicable to enforcement application 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/>

4 Symbols and abbreviated terms

AI	artificial intelligence
AV	automated vehicle
AD	automated driving
API	application programming interface
ATC	advanced transportation controller
ATCC	advanced transportation controller cabinet
C2C-CC	car-to-car communications consortium
CMC	connected motorcycle consortium
ConOPs	concept of operations
DMS	dynamic message signs
INFLO	intelligent network flow optimization
ITS	intelligent transport systems