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Introduction

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For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 4078-1

Sustainable mobility and transportation — Roadside feeding electric road system —

Part 1: Service role architecture

*Mobilité et transport durable — Système routier électrique
d'alimentation en bordure de route —*

Partie 1: Architecture des rôles de service

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ISO/TC 268/SC 2

Secretariat: JISC

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2025-08-25

Voting terminates on:
2025-11-17

This document is circulated as received from the committee secretariat.

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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).

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This document was prepared by Technical Committee ISO/TC 268, Sustainable cities and communities , Subcommittee SC 2, Sustainable mobility and transportation .

A list of all parts in the ISO 4078 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

Achieving carbon neutrality for heavy-duty commercial vehicles, which are responsible for intercity commercial transport, is important and must be achieved. Possible solutions include electric vehicles and hydrogen vehicles.

Here, consideration to the challenges in using battery electric vehicles for intercity commercial transportation is made.

It is inefficient and uneconomical for a large battery carrying electric vehicle to travel between cities while being charged due to lot of times consumed for charging.

Therefore, it is a wise measure to receive electricity from the infrastructure while driving on the interurban corridor and charging the battery and obtaining driving energy.

When running at the beginning and ending of travelling, vehicle could run as a pure electric vehicle and does not emit carbon dioxide.

It is known that various methods have already been developed around the world on charging system while driving, sometimes it is called “dynamic charging”. This means that the electrical power system is for dynamic charging on highways.

The international standardization of contact-type roadside electric roads is described in this document.

Another point to consider is , to eliminate carbon dioxide emissions, electric vehicles should be powered by renewable energy as much as possible.

In addition, it is necessary to install power storage equipment to smooth out the loading due to various changes in the energy consumption.

Safety measures to avoid human body hazard from the power supply equipment installed on the roadside should be considered.

In addition, security measures that consider against cyber-attacks are also necessary.

It will also be necessary to authenticate the rights of the power supply side and the power receiving side to avoid unauthorized energy consumption by third part which does not have access right.

It is only when these measures are taken that a highly reliable electric road system can be constructed. This Part 1 defines a role and function model for the introduction of roadside electric roads and related services to support intercity commercial electric vehicle transportation systems. The part 2 (Future part) will be defining service and operational concept and the part 3 (Future part) will be defining the system components.

Because of the variety of role and function model presentation methodologies currently available, there is a need for a more commonly understood set of role and function model presentation guidelines. This document defines the presentation of a generic roadside-powered electric road service role and function model.

New business cases in the future can refer to this document as a baseline document. In fact, it is intended to assist future business development, but not to hinder them. This document can hopefully also contribute to the development of the business case for other future road system services other than electric road services.