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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 44493-2024

**Smart community infrastructure - Guidance on smart
transportation for implementing parking lot allocation in cities**

智慧城市基础设施 智慧交通中城市停车位匹配实施指南

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

This document is modified to adopt ISO 37163:2020 "Guidelines for urban parking configuration in smart city infrastructure and smart transport".

The technical differences between this document and ISO 37163:2020 and their reasons are as follows.

a) The specific description of the scope section was changed, and the specific description of the scope of application of this document was added in conjunction with the main text section, and the Description of additional benefits such as reduced urban pollution and urban management costs and redundant description of technical objectives (see Chapter 1), to make the scope description more in line with the habits and writing requirements of our country's standards, and clearly express the specific content and applicable areas of the standard.

Scope of use;

b) Added detailed descriptions of data security, privacy protection, and data communication capabilities, and moved the same section d) Communication and Data Sharing the repeated content of point-to-point communication in the clauses has been merged (see

4.1.2) to conform to the technical situation of my country's practice and facilitate the standard to be applied in China.

guidance and implementation;

c) Change solar energy to new energy and add descriptions of relevant requirements for new energy parking spaces (see 4.1.3) to comply with my country's Development of new energy technologies;

d) Three clauses on planning parking lots (see Chapter 5 of ISO 37163:2020) have been deleted. Planned parking lots are not suitable for Incorporated into the parking matching system of this document;

e) Added the main components, application scenarios and beneficial effects of the parking space matching system (see 6.1.1) to align with the content of 6.2.

It is convenient for users to understand and implement the standard;

f) Added information elements, merged the original clauses in 6.2.5 into 6.2.1, and cited them in 6.2.5 (see 6.2.1, 6.2.5), avoid duplication of redundant content and make the description of information elements consistent;

g) Removed privacy and sensitive information such as gender, age, special circumstances and preferred payment method from the driver information element (see 6.2.1 of ISO 37163:2020) to avoid collecting information elements involving privacy and sensitive information;

h) Added accessible parking spaces and [see 6.2.1a)] to the example of convenience facilities and energy types [see 6.2.1b)], supplemented with examples based on practical situations to facilitate user understanding and standard implementation;

i) Added "points payment" as a payment method for parking fees in parking services (see 6.2.1), supplemented with examples based on practical situations, Easy for users to understand and implement standards;

j) Changed the communication requirements for data transmission process, the requirements for communication between parking equipment and drivers (see 6.2.3) to comply with in line with the development of my country's communication technology, it is easy for users to understand and implement the standard;

k) The example of "public bathroom" in the example [see 6.2.4j) of ISO 37163:2020] was deleted, as the example does not conform to the actual practice in my country.

actual situation;

l) Added parking fee information requirements, vehicle sensing equipment and location recognition equipment, ad hoc network equipment, and emergency response equipment disaster and special scene capabilities (see 6.2.6) to meet the development of my country's

smart parking field and facilitate users to understand resolution and implementation of standards;

m) Deleted the "receipt printer" in the example [see 6.2.6h) of ISO 37163:2020], which does not conform to the actual practice in my country.

actual situation;

n) Added "parking lot renovation and reconstruction" to the management information (see 6.2.7).

The situation is collected as management information;

o) Added specific requirements for data exchange and sharing management, and clarified that data exchange and sharing include parking space matching system the sharing of parking space matching systems and external systems (see Chapter 7) is in line with the data exchange and sharing management standards of my country.

Technical development and practice in the field to facilitate user understanding and standard implementation;

p) ISO 37156 (see Chapter 7) has been replaced by the normative reference GB/T 43245 to conform to my country's actual situation;

q) Changed the specific description of the use of the public key cryptographic algorithm in the parking space matching system security technical solution, including parking space the matching system is about the public key cryptographic system's independent control of technology, classification and classification management, terminal security protection, large-scale use, and industry the requirements of business processes, dual offline transactions and low costs increase the simplicity of data security and key systems in data security management.

The security technology recommended in GB/T 36625.3-2021 (see 8.1) is cited to comply with the digital security field of my country.

The technical development and practice of smart cities are linked with the existing national standards in the smart city field to facilitate users' understanding and standardization.

implementation;

r) The description of the goal of planning and further improving traffic management in the optimization of the system has been deleted (see ISO 37163:2020 9.3), in accordance with the requirements for writing national standards, no goals for improving traffic management are proposed in this chapter.

The following editorial changes were made to this document.

a) To coordinate with the existing standards, the name of the standard is changed to "Smart City Infrastructure Smart Transportation Urban Parking Space Matching Implementation

Guidelines;

b) Removed references to ITU-TY 4456 in the Scope and Overview of Parking Space Matching System, Process Overview, and Maintenance Overview (See Chapter 1, 4.1.1, 6.1.3, 9.1 of ISO 37163:2020);

c) Deleted the references to ISO and IEC terminology bases in terms and definitions (see Chapter 3 of ISO 37163:2020);

d) Change the international definitions and examples of vehicles in Notes 1 and 2, as well as the differences between American and British English terms, to

Note 3 has been added to the translation of the terms parking lot and parking space in this document, which explains the translation of the term parking space in American English.

and British English, and added Note 4 to further explain the meaning of parking spaces in this document (see 3.1);

e) Move the specific contents of parking space matching system information from the main text to Note 3 (see 3.3);

f) Deleted the duplicate description of the standardized object "Parking space matching system in intelligent transportation" in some titles (see ISO 37163.

2020, Chapters 4, 5, 6, 6.2, 8, 9 and 9.3);

g) deleted the duplicate clauses on car park capacity and number of parking spaces (see Chapter 5 of ISO 37163:2020);

h) Change "instrument, equipment" to "instrument, equipment or system" (see 6.2.2);

i) Added the description of "parking lot equipment" (see 6.2.3);

j) Change "Parking Space Allocation" to "Parking and Metering Equipment" (see 6.2.6);

k) Change "illegal parking" to "abnormal parking" (see 6.2.7);

l) Notes 1 and 2 are deleted (see 8.2 of ISO 37163:2020);

m) ISO 37120 is replaced by the informative reference GB/T 36749 (see 9.2);

n) The note (see 9.2 of ISO 37163:2020) has been deleted.

Introduction

At present, the per capita car ownership in my country's cities is rising rapidly, and the demand for roads and parking spaces is also increasing. As a result, many cities are facing parking problems.

The prominent problem of parking difficulties is that some public places are densely populated with high and changing parking demands.