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**NATIONAL STANDARD OF THE
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GB/T 42442.3-2023

**Smart city - Smart parking - Part 3: Technology requirements for
platform**

智慧城市 智慧停车 第3部分：平台技术要求

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. This document is Part 3 of GB/T 42442 "Smart Parking in Smart Cities". GB/T 42442 has released the following parts.

1. General requirements;

3. Platform technical requirements. Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed and coordinated by the National Information Technology Standardization Technical Committee (SAC/TC28). This document was drafted by: China Electronics Technology Standardization Institute, China Electronics Technology New Smart City Research Institute Co., Ltd., Hangzhou Hikvision Vision Digital Technology Co., Ltd., Shenzhen Jieshun Technology Industrial Co., Ltd., Beijing Jiaotong University, Shandong Inspur New Infrastructure Technology Co., Ltd. Co., Ltd., Huawei Technologies Co., Ltd., Beijing Wanji Technology Co., Ltd., Nanwei Software Co., Ltd., Yunsai Zhilian Co., Ltd. Company, Construction Comprehensive Survey Research and Design Institute Co., Ltd., Hangzhou Fang Holdings Co., Ltd., Shenzhen Huaao Data Technology Co., Ltd., Chengdu Du Qinchuan Internet of Things Technology Co., Ltd., Beijing Tongtong Yilian Technology Co., Ltd., Shandong Institute of Standardization, Shanghai Digital Industry Development Exhibition Co., Ltd., Dezhou Big Data Bureau, Zhongruixin Digital Technology

Co., Ltd., Chengyun Technology (China) Co., Ltd., Ministry of Transport Planning and Research Research Institute, Beijing Elite Lutong Technology Co., Ltd., Chengdu Institute of Standardization (Chengdu WTO/T BT Consulting Center), Beijing Aerospace University, Henan Static Traffic Operation Management Co., Ltd., Jiangsu Saixi Technology Development Co., Ltd., Smart Interconnect Technology Co., Ltd., Beijing Jingzhu Mengyuan Technology Co., Ltd., China Construction Science and Industry Group Smart Parking Technology Co., Ltd., Zhejiang Miwang Electronic Technology Co., Ltd., Guangdong Ankuai Intelligent Technology Co., Ltd., Shenzhen Caimen Intelligent Technology Co., Ltd., China Science and Technology Big Data Research Institute, Shandong New Generation Standardization Research Institute Co., Ltd. company. The main drafters of this document. Zhang Hongwei, Liu Wen, Peng Gefei, Zhang Shengmiao, Xu Zhaolin, Wu Hao, Liu Guanhua, Zhou Bo, Cui Hao, Yu Haibo, Lin Guangzhou, Zeng Fei, Zhang Huanzhou, Wu Zhixiong, Zhang Jianbing, Su Ying, Shi Guangming, Liu Fang, Zheng Qiang, Shao Zehua, Hu Huanyu, Zhang Mingzhuang, Xiong Ziwei, Li Teng, Hu Jinhui, Wang Yaoyao, Wang Tianxiao, Sun Guanghua, Li Chao, Feng Xiaomeng, Liu Xiaojing, Zhang Guoqiang, Liu Yi, Hu Xing, Liu Sha, Sheng Hao, Tang Bin, Luo Ling, Wei Ying, Hu Kai, Li Kaimin, Yan Jun, Duan Hongyi, Jiang Guanye, Zeng Biao, Xiao Yongshan, Li Jiansheng, Wang Yan, Huang Shaoan, Zhong Duanyang, Zhuang Guangxin.

The parking problem is one of the important social issues related to urban development and people's livelihood. With the widespread application of new technologies and the construction of smart cities With the in-depth advancement of construction, smart parking has become an important measure to solve my country's urban parking problems. In order to standardize and guide the development of smart parking industry development, promote the interconnection and interoperability of parking information, realize efficient utilization and rational allocation of parking resources, and formulate relevant standards for smart parking to become an industry consensus same needs. GB/T 42442 "Smart Parking in Smart Cities" aims to provide guidance for the planning, design, construction and implementation of smart parking in smart city scenarios. It provides the basis for operation and maintenance, etc., and is planned to be composed of three parts.

1.General requirements. The purpose is to establish the overall architecture of smart parking and stipulate the IoT sensing and network communication of smart parking. Basic requirements such as information, computing storage, data support, application services, and security.

2.Data requirements. The purpose is to standardize the data classification and data elements of smart parking, and stipulate data management, data Requirements for collection, data transmission, data processing, data storage, data sharing and exchange, and data security.

3.Platform technical requirements. The purpose is to establish the overall architecture of the smart parking platform and stipulate the platform infrastructure layer, Technical

requirements such as data layer, application service layer, operation and maintenance management, security management and platform interface. Smart City Smart Parking Part

1 Scope

GB/T 42442.3-2023 specifies the platform behind smart parking. Parking is one of the few smart city applications whose value is immediate and measurable - a substantial share of urban traffic is vehicles circling for a space, and guidance that ends that circling reduces congestion and emissions directly. The obstacle is not the sensors but the fragmentation above them: kerbside spaces, municipal car parks, private operators and residential garages each run their own system, and a driver needs one view of all of them. The platform is where that consolidation happens or fails. This part specifies the technical requirements for the smart parking platform: its overall architecture, the infrastructure layer, the data layer and the application service layer, together with operation and maintenance management, security management, and the platform interfaces through which external systems connect. Getting the interfaces defined is what allows a city to add an operator later without rebuilding. Under ICS 35.240.01 and CCS L70, it is written for the vendors building these platforms, for the municipal transport authorities procuring them, and for the parking operators who have to integrate with them.

This document stipulates the overall architecture, infrastructure layer, data layer, application service layer, operation and maintenance management, security management and other aspects of the smart parking platform. and platform interface and other technical requirements. This document is suitable for guiding the planning, design, construction, operation and maintenance of smart parking platforms.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 22239-2019 Basic requirements for network security level protection of information security technology

GB/T 35273-2020 Information Security Technology Personal Information Security Specifications

GB/T 40689-2021 Technical requirements for smart city equipment connection management and service platform

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 smart parking smart parking Use information and communication technology to realize the monitoring, management and service of urban parking resources, and improve the utilization rate of urban parking resources and the efficiency of parking management. A smart application for efficiency and parking service quality. [Source: GB/T 42442.1-2023,3.1]

3.2 parkinglot parkinglot Places for parking motor vehicles and above-ground and underground structures. It generally consists of entrances and exits, parking spaces, passages and ancillary facilities.

Note. The parking lots mentioned in this document include on-street parking lots and urban public parking lots. Among them, urban public parking lots refer to independent parking lots located outside the road red lines. Parking lots for public services occupying an occupied area and parking lots for public services that do not occupy independent land and are built on behalf of a building. [Source: GB/T 51149-2016, 2.0.1, with modifications]

3.3 smart parking platform smartparkingplatform Realize the integration and openness of smart parking data and business, and provide users with parking data for public services, operational services, regulatory services and other needs. An information system for data access, management, sharing and exchange, and application support services. [Source: GB/T 42442.1-2023,3.6]

3.4 parking space parkingspace A parking space divided for parking vehicles or a part of a mechanical parking facility where vehicles are parked. The size of the vehicle itself plus the necessary surrounding