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

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**Smart community infrastructures - Common framework for
development and operation**

智慧城市基础设施 开发和运营通用框架

(English Translation)

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Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
4 Characteristics and Issues of Smart City Infrastructure Development and Operation
4.1 Characteristics of smart city infrastructure development and operation
4.2 Problem Example
4.3 Key points to be clarified when developing and operating smart city infrastructure
5 Framework and Benefits
5.1 Framework
5.2 Element
5.3 Benefits
Reference

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/TR 37152:2016 "Generic framework for the development and operation of smart city infrastructure", the document type is ISO 's technical documents are adjusted to become my country's recommended national standards.

The following editorial changes have been made to this document.

- a) Modify the name of the standard from "Common Framework for Development and Operations" to "Common Framework for Development and Operations";
- b) Changed the specific description of the scope to make it more consistent with Chinese language expression habits and writing requirements, and clearer.
Clearly express the specific content and scope of application of the standard;
- c) The description of the characteristics of smart city infrastructure has been changed to include a), b), and c) for a more detailed description (see 4.1);

- d) Changed the description of "To achieve the above features, smart city infrastructure must have" and specified it using a) and b) Description (see 4.1);
- e) change the name of Figure 4, "Example c. Waste management system", to "Waste management system";
- f) Change the name of Figure 5 "Example d. Electric vehicles connected to the grid" to "Electric vehicles connected to the grid";
- g) Change the title "Overview" to "Framework" (see 5.1).

Introduction

With the acceleration of urbanization, urban management faces multiple challenges such as population concentration, resource shortage, and disaster risks.

Integrating various infrastructures and building a coordinated and interconnected "system of systems" has become the key to breaking the bottleneck of urban development.

Due to problems such as dispersed responsibilities, inconsistent standards, and information barriers, the system often struggles to achieve overall effectiveness, leading to waste of resources and low efficiency.

The core of a city lies in the integration of infrastructure into a "system of systems".

However, currently, stakeholders often focus only on the development and operation of a single subsystem, resulting in a lack of coordination between infrastructures and difficulty in meeting the to meet the overall functional requirements of smart cities, it is necessary to clarify and coordinate the functions of each subsystem according to the needs of smart cities.

The plan takes into account the perspectives of stakeholders and the full life cycle management of infrastructure.

In order to achieve coordination of smart city infrastructure, a common framework is urgently needed.

Technical procedures and responsibilities in the operation and maintenance process. Through information sharing and consensus mechanism, ensure the coordination of system functions and controllability of risks.

and resource utilization efficiency; clarify the subsystem function allocation and interaction rules to ensure the realization of the overall goal; identify the internal and external interaction effects, and formulate Formulate dynamic response strategies; build a multi-party information sharing mechanism to strengthen responsibility attribution and consensus. By promoting efficient integration of infrastructure, Promote the coordinated development and sustainable operation of smart city infrastructure, and contribute to

high-quality urban development.

Smart city infrastructure development and operations General Framework

1 Scope

This document provides a general framework for the development and operation of smart city infrastructure, from promoting the coordination of various parts of smart city infrastructure perspective, describing approaches to infrastructure planning, development, operation, and maintenance.

This document applies to all stakeholders involved in the development and operation of smart city infrastructure throughout its life cycle.

Note 1: Infrastructure includes but is not limited to energy, water, transportation, waste management, information and communication technology, etc.

NOTE 2 The generic framework covers the processes for stakeholder engagement, including management, organizational structure, analysis and design methods, and document management.

Note 3: All relevant parties include planners, developers, urban infrastructure operators and urban infrastructure suppliers, etc.

Note 4: The entire life cycle of smart city infrastructure includes conceptual design, planning, development, operation, maintenance, updating and feedback.

2 Normative references

This document has no normative references.

3 Terms and Definitions

There are no terms or definitions that require definition in this document.

4.1 Characteristics of Smart City Infrastructure Development and Operation

Characteristics of smart city infrastructure.

- a) Efficient use of funds;
- b) have efficient resource utilization;
- c) Ability to provide people with a high level of convenient services.

To achieve the above characteristics, smart city infrastructure must have.

- a) Synergy. Through the synergy of various infrastructures, the utilization rate of funds and resources is improved, and convenient services are provided to the people;
- b) Adaptability. Ability to respond to changes in the urban environment, including disasters

and demographic changes, providing convenience to people while being resilient.
performance and reliability.

Smart city infrastructure has three distinct characteristics compared to traditional infrastructure (see Figure 1).

- a) systems of systems;
- b) all relevant parties;
- c) Full life cycle.

The above characteristics bring about the following problems. Solutions to these problems become the elements of this framework.

- a) Problems caused by "system of systems" and the entire life cycle.