IEC SRD 63233-2

Edition 1.0   2023-06

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**Smart city standards inventory and mapping –
Part 2 : Standards inventory**

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INTERNATIONAL
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CONTENTS

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SMART CITY STANDARDS INVENTORY AND MAPPING –

Part 2: Standards inventory

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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IEC SRD 63233-2 has been prepared by IEC systems committee Smart Cities: Electrotechnical aspects of Smart Cities. It is a Systems Reference Deliverable.

This document contains an attached file that is cited in Clause 4. This file can be downloaded from https://www.iec.ch/sycsmc/supportingdocuments.

The text of this Systems Reference Deliverable is based on the following documents:

Draft	Report on voting
SyCSmartCities/264/DTS	SyCSmartCities/274/RVDTS

Full information on the voting for the approval of this systems reference document can be found in the report on voting indicated in the above table.

The language used for the development of this Systems Reference Deliverable is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC SRD 63233 series, published under the general title *Smart city standards inventory and mapping*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

> **IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

INTRODUCTION

At present, several standards organizations around the world are developing standards for smart cities, but they focus on different aspects of cities. Because a smart city needs a long-term investment, it should provide stakeholders with many standard views with different perspectives as the basis for future investments.

This document is Part 2 of the IEC SRD 63233 series on smart city standards inventory and mapping. Part 1 provides the methodology for inventory and mapping of standards. Part 4 providing guidance on standards for public health emergencies, and Part 3 designed as a standards map are under development.

This document provides a catalogue of the identified standards related to the smart city system according to the criteria specified in IEC SRD 63233-1. This catalogue, as a database or inventory, can provide users with a function to search the smart city-related standard information with the hyperlinks to the searched standards. The inventory of Smart City standards includes not only the existing standards but also those under development officially registered in standards development organizations (SDOs). The inventory is comprehensive, and it provides an overview of each standard catalogued. The users (e.g. designers and implementers of smart cities) can use this inventory to select an appropriate set of standards for their design and implementations.

The standards inventory (the file for the standards inventory linked in 4.3) is available online. It will be maintained and updated regularly.

SMART CITY STANDARDS INVENTORY AND MAPPING –

Part 2: Standards inventory

1 Scope

This part of IEC SRD 63233, which is a Systems Reference Deliverable, provides the catalogue and list of smart city related standards, either existing or under development in IEC and other standards development organizations.

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:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

4 Access to the smart city standards inventory

4.1 General

The smart city standards inventory table is a Microsoft Excel®[1] file. The table is stored in a specific IEC repository accessible online.

The following worksheets are in the inventory Excel file.

- How to search standards: this worksheet illustrates the methods for searching standards of interest.
- Smart city standards inventory: this worksheet has the list of standards with standard number as identifier. Each row is assigned to a standard and each column is assigned with "x" to an aspect of smart city standards.

4.2 Standards catalogue for smart cities in this inventory

Smart city standards are identified and listed following the criteria in IEC SRD 63233-1:2022, 5.1.2. When categorizing the smart city standards, the basic principles in IEC SRD 63233-1:2022, 5.2.1 are considered, as well as other related references in the Bibliography.
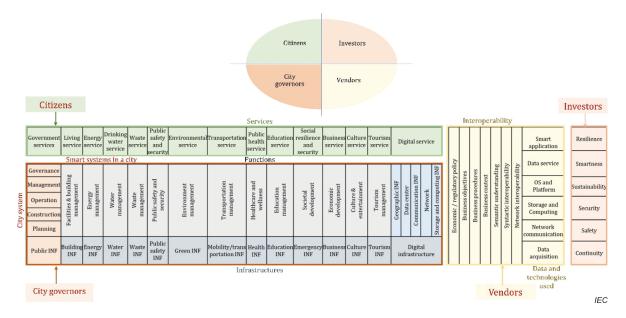
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[1] Excel is the trademark of a product supplied by Microsoft Corporation. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named.

Table 1 shows the standardization aspects that are identified by the needs of stakeholders in smart cities. Figure 1 is established based on Table 1 and used as a conceptual model to derive the standards catalogues for smart cities.

Table 1 – Stakeholders, their needs and corresponding standardization aspects

Stakeholders	Needs	Standardization areas
Citizens including individual, visitors, business owners	Full city system functionality	Infrastructures, functions and services of city systems as well as city-wide issues.
Infrastructure investors and smart solution providers	Set of standards for city systems that are easy to understand, use and implement and that are interoperable and consistent with each other.	Systems' interoperability from the physical and logical connectivity of components and systems, to exchange data in compliance with data protection and data security.
	A "set of tools" that will help stakeholders to estimate, plan, manage and execute Smart Cities programmes and projects.	Assessment including sustainability, resilience, continuity, security and safety, quality, efficiency, maturity, etc.
Investors	Standards that address by-design city system quality characteristics.	Assessment including sustainability, resilience, continuity, security and safety, quality, performance, effectiveness, efficiency, maturity, etc.
Municipal authorities, urban planners	Standards that cover the whole life cycle of city systems.	City life cycle as a whole system and life cycle of systems in a city including infrastructures, which is composed of the processes of planning and design, construction or development, operation, maintenance, governance.
Smart solution providers	Standards that promote the widespread and transformative use of data and technology.	Technical requirements about data and technologies used to make a city smarter.

Key

INF   infrastructure

OS   operating system

NOTE 1   Investors invest in city construction and services.

NOTE 2   Vendors develop and provide smart solutions for city.

Figure 1 – Stakeholders, framework for structure of smart cities standards catalogue

Table 2 is the smart city standards catalogue derived from Figure 1 for the standards list in the "Smart city standards inventory" sheet in the Excel file linked URL in 4.3. The subclasses in each class are not the same because of different layers that can be identified at present.

Table 2 – Smart city standards catalogue structure

Standardization area	Sub-area of standardization	Specific topic of standards [a]	Sub-topic of standards [a]
City system as a whole	Terminology and architecture	Terms, vocabulary	—
		Framework, architecture	—
		Standards roadmap or map	—
	Infrastructure	Planning and design	—
		Development	—
		Operation	—
		Maintenance	—
	Urban planning and design	—	—
	Construction	—	—
	Operation	—	—
	Management	—	—
	Governance	—	—
	Security and safety, privacy	—	—