



**International
Standard**

ISO/IEC 25005-1

**Information technology — Data use
in smart cities —**

**Part 1:
Framework**

*Technologies de l'information — Utilisation des données dans les
villes intelligentes —*

Partie 1: Cadre général

**First edition
2026-07**

Sample Document

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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 document 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 or www.iec.ch/members_experts/refdocs).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

A list of all parts in the ISO/IEC 25005 series can be found on the ISO and IEC websites.

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 and www.iec.ch/national-committees.

Introduction

This document provides an integrated framework for data use that supports the multidimensional use of data as citywide strategic resources and assets. It aims to facilitate evidence-based decision making and enable data-based, data-driven and data-enabled smart cities development and applications.

Data use involves activities enabling data value realization for specific purposes in smart cities along the data value chain. This document is intended to assist in identifying problem-solving strategies and solutions for data use, data applications and data services citywide, including but not limited to data being not available when needed, data being not trusted when used, data not being easily used when available, data not being used securely and data value not being realized when in use.

This document provides a framework for data use in smart cities across five dimensions:

- data availability (ensuring data are accessible);
- data quality assurance (ensuring data are useful);
- ease of data use (ensuring data are easy to use);
- data use security (ensuring data are used securely);
- data-enabled innovation (ensuring data are used for enabling intelligent applications and services).

This document enhances the total capabilities of data use to support data-based, data-driven and data-enabled citywide information communication technology (ICT), big data and artificial intelligence (AI) applications and smart cities services. It is intended to fill the gaps in standards development for better collaboration and harmonization of sustainable data use considerations for smart cities from different standards development organizations (SDOs), to satisfy the maximized needs of multiple stakeholders from many views and various dimensions, e.g. effective, sustainable, comprehensive and innovative use of data as strategic resources and assets citywide.

This document can be used for citywide data use planning, deployment of design, implementation and management in smart cities development and applications.

The ISO/IEC 25005 series consists of three parts. This document provides foundations for standards collaboration on data use citywide and provides basic principles and core characteristics of considerations concerning the other parts in the series.

[Figure 1](#) provides the relations among this document, ISO/IEC TR 25005-2 and ISO/IEC TS 25005-3, describing guiding principles for data use in smart cities, core characteristics of considerations of data use in smart cities which are the basis for data use in smart cities standard series.

ISO/IEC 25005-1:2026(en)

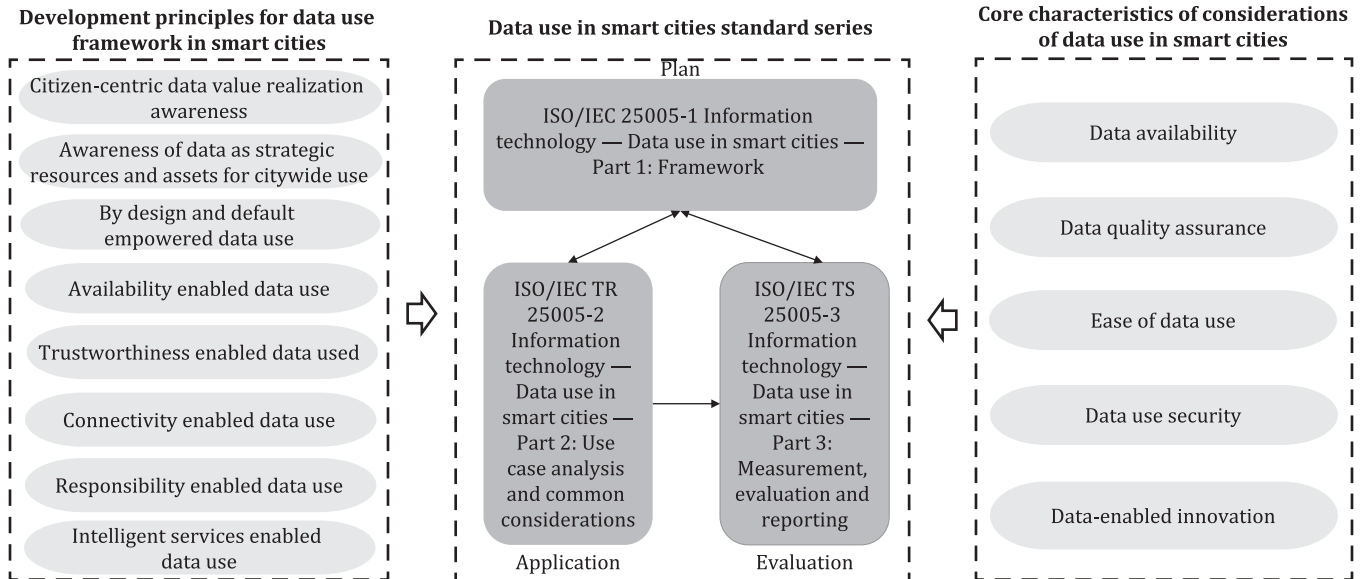


Figure 1 — ISO/IEC 25005 series

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Information technology — Data use in smart cities —

Part 1: Framework

1 Scope

This document provides a framework for data use in smart cities, based on five dimensions:

- data availability (data are available);
- data quality assurance (data are useful);
- ease of data use (data are easy to use);
- data use security (data are used securely);
- data-enabled innovation (data are used for enabling intelligent applications and services).

This framework is intended to facilitate effective, sustainable, comprehensive and innovative use of data as citywide strategic resources and assets.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

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

3.1

data availability

property of being accessible and usable upon demand by an authorized entity

[SOURCE: ISO 37166:2022, 3.2]

3.2

data exchange

representation, transmission, reception, storage, and retrieval of data

[SOURCE: ISO/IEC 20944-1:2013, 3.21.13.1, modified — The preferred term “data interchange” has been removed; Note 1 to entry has been deleted.]

3.3

data-enabled innovation

extent to which data are used by specified users to achieve specified goals with data-enabled monitoring applications, data-enabled early warning and prediction applications, data-enabled intelligent decision-making applications in a specified context of use