
**Smart community infrastructures —
Data exchange and sharing for
community infrastructures based on
geographic information**

*Infrastructures territoriales intelligentes — Échange et partage de
données pour les infrastructures territoriales basés sur l'information
géographique*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 ISO documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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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.

This document was prepared by Technical Committee ISO/TC 268, *Sustainable cities and communities*, Subcommittee SC 1, *Smart community infrastructures*.

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.

Introduction

Data from community infrastructures, e.g. water, energy, transportation, waste, information and communication technologies (ICT), provides high-quality support for decision-making and social services. It is particularly important in the process of smart community construction. ISO 37156 focuses on data exchange and sharing for smart community infrastructures. It provides guidelines on principles and the framework to use for data exchange and sharing for entities with authority to develop and operate community infrastructure. The pilot project to investigate the utility of ISO/TC 268/SC 1 deliverables, including ISO 37156 and ISO/TR 37171, determined that more practically operational standards are needed to provide technical guidance on implementation and application scenarios of smart community infrastructure data exchange and sharing.

As intelligent transportation, urban management, environmental improvement, earthquake prevention and disaster mitigation create new needs for the use of geographic information regarding community infrastructures, geographic information has become an important basic information of a smart community. Data exchange and sharing for community infrastructure based on geographic information involves different stakeholders, various data types, and different periods of the data life cycle (e.g. production, storage, distribution). It is necessary to strengthen cooperation to clarify the relationship, boundaries, roles, objectives, and responsibilities between different stakeholders in order to support government decision-making and urban operation and management.

As an implementation case of ISO 37156 on geographic information, this document helps improve the operability of ISO 37156, and provides practical guidance for the ongoing ISO 37156 pilot city. This document is intended to guide data exchange and sharing in smart community infrastructure-related industries, including but not limited to, standard-setting, data production, equipment procurement and construction, platform construction and policy formulation.

Smart community infrastructures — Data exchange and sharing for community infrastructures based on geographic information

1 Scope

This document provides a framework for data exchange and sharing based on geographic information for smart community infrastructures, along with specific application scenarios.

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

geographic information system

information system dealing with information concerning phenomena associated with location relative to the Earth

[SOURCE: ISO 19101-1:2014, 4.1.20]

3.2

community infrastructure

systems of facilities, equipment and services that support the operations and activities of communities

Note 1 to entry: Such community infrastructures include, but are not limited to, energy, water, transportation, waste and information and communication technologies (ICT).

[SOURCE: ISO 37100:2016, 3.6.1]

3.3

smart community infrastructure

community infrastructure (3.2) with enhanced technological performance that is designed, operated and maintained to contribute to sustainable development and resilience of the community

Note 1 to entry: It is the infrastructure that is considered to be “smart” in this document, and not the community.

Note 2 to entry: Sustainable development tends to require community infrastructures that meet multiple, often contradictory, needs at the same time.

Note 3 to entry: Information and communication technologies (ICT) is an enabler but not a precondition for achieving smart community infrastructures.

[SOURCE: ISO 37100:2016, 3.6.2]