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Smart community infrastructures — Guidelines on data exchange and sharing for smart community infrastructures

*Infrastructures urbaines intelligentes — Cadre directeur pour
l'échange et le partage de données pour les infrastructures urbaines
intelligentes*



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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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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

Community is the crystallization of human technological progress, economic development and social civilization. It is also the basic unit of human economic activities and regional production. Community function and people's daily life are highly dependent on different types of community infrastructure. As the foundation of survival and development, community infrastructure includes energy, water, transportation, waste and information and communication technology (ICT). This community infrastructure provides convenience for urban residents. Therefore, the scientific and effective management of community infrastructure is crucial. It affects the living conditions of citizens, the efficiency of the social economy and the ecological safety of the community. Poor management of community infrastructure causes problems such as environmental pollution, traffic congestion, inadequate urban resources and a weak urban lifeline system. It is incompatible with sustainable development.

Data provide the fundamental basis of effective management. It is a common problem that different organizations or departments govern the data relating to community infrastructure. The existence of information silos across different community infrastructure negatively affects effective and efficient management. Therefore, strengthening the sharing of data is an important activity for smart communities. Standardized data exchange and/or sharing will benefit business collaboration across departments, organisations and communities; it will also improve service capabilities as regards community infrastructure. Furthermore, it will base the management of communities on data and improve outcomes, making communities safer, more hospitable and more liveable.

This document is a reference for governments and other enterprises, organizations and individuals who have a responsibility or need to share data from community infrastructure. This document helps to promote a foundation of information, eliminate isolated information silos and move toward the use of data to make communities smarter. An example of the benefits of implementing this document is the promotion of efficient cooperation by establishing mechanisms for information exchange among different departments within local governments.

This document provides a set of community infrastructure data governance methods and a unified framework of community infrastructure data exchange and sharing, underpinned by privacy and security principles. The purposes of this document are:

- to provide intensive, efficient, convenient, ecological and secure infrastructure for community infrastructure users, consumers or beneficiaries;
- to provide appropriate approaches to the exchange, monitoring, sharing and maintenance of community infrastructure services.

This document relates to smart community infrastructures, and should be used alongside ISO 37101, ISO 37120, ISO 37122, ISO 37123, ISO/TR 37150 and ISO/TS 37151. ISO 37101 contains the requirements for the different types of data which are supported. ISO 37120 provides macro-guidance to cities on how to achieve the United Nations sustainable development goals. Under the macro-guidance from ISO 37101, this document, ISO/TR 37150 and ISO/TS 37151 constitute implementation guidance for smart city infrastructure. This document focuses specifically on data exchange and/or sharing for smart community infrastructures.

In addition, this document should be used with ISO 8000-110, ISO 22745-1 and ISO/IEC 30182.