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Information technology — Smart city ICT indicators



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Preface

This Standard was prepared by the Standards Australia Committee JT-001, JTC 1 Strategic Advisory Committee.

The objective of this document is to define a comprehensive set of evaluation indicators specially related to information and communication technologies (ICT) adoption and usage in smart cities. This document establishes an overall framework for all the indicators, and also specifies the name, description, classification and measurement method for each indicator.

This document is identical with, and has been reproduced from, ISO/IEC 30146:2019, *Information technology — Smart city ICT indicators*.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC 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) or the IEC list of patent declarations received (see http://patents.iec.ch).

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 Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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.

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Introduction

Smart city is a concept that has been widely used by city administrators, planners and implementers for decades. Although the precise definition of smart city has not been agreed upon among different international standardization organizations, the significance of information and communication technology (ICT) as indispensable key enablers is universally recognized. During the global development of smart cities, the issue of effectively adopting ICT in smart city programs as key enablers has become a common focus among scientific research institutions, industries, city administrators and construction implementers. This document supports the United Nations Sustainable Development Goals[1][7][8].

It is an urgent and important task to develop standard evaluation methods and indicators focusing on the area of ICT within the smart city, with which the city stakeholders can understand the smart city performance from the perspective of ICT. The evaluation methods and indicators focus on the individual efficient functioning of different systems, infrastructures and facilities. In addition, they also provide the guidance on how cities function holistically and facilitate innovation and growth in an integrated and coherent way.

The purpose of establishing smart city ICT indicator systems and conducting smart city evaluations is to guide and promote a systematic construction of a smart city. The indicators can be used as a whole package to evaluate a smart city holistically. The package can also be tailored as individual parts when evaluating cities or certain aspects of cities. The indicators can be used to:

— evaluate the city ICT preparation state before starting the smart city construction;

— evaluate the effect of city ICT during and after the smart city construction;

— compare the smart city construction between cities in the area of city ICT in a certain area to promote smart city healthy competition and development.

This document establishes criteria to evaluate in making cities smarter. This document can be used to evaluate the level of smart city development. It is applicable to city, municipality or the local government. For city administration organizations, it can be used for self-evaluation and to develop corresponding ICT strategies to make cities smarter. For related evaluation agencies and scientific research institutions, it also provides guidance and reference in developing smart city ICT indicators.

The indicators in this document are consistent with the overall work of ISO/TC 268/WG 2 on smart city indicators.

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NOTES

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Information technology — Smart city ICT indicators

1 Scope

This document defines a comprehensive set of evaluation indicators specially related to information and communication technologies (ICT) adoption and usage in smart cities. Firstly, it establishes an overall framework for all the indicators. Then, it specifies the name, description, classification and measurement method for each indicator.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
performance indicators
<generic> category of quantized and pre-authorized benchmarks that reflect the realization of the goals

[SOURCE: ISO 15746-1:2015, 2.7]

3.2
performance indicators
<smart city> set of indicators used to measure the level of convenience, habitability, comfort, security and happiness felt by city users for related ICT infrastructures, applications and services in developing a smart city

3.3
capability indicators
<smart city> set of indicators used to measure the level of design, development, innovation and coverage area of ICT infrastructures, applications and services in developing a smart city

3.4
e-government
digital interaction between a government and citizens, government and businesses, and between government agencies

[SOURCE: ISO 19101-1:2014,4.1.10]

3.5
city model
appropriate set of data which models those physical and social aspects of the city that are relevant for its objectives

3.6
real-world feature
physical or social feature that exists in the city

EXAMPLE Buildings and voting districts.

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