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Smart city use case collection and analysis - Managing public health emergencies in smart cities -
Part 1: High level analysis

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IEC Secretariat
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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CONTENTS

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IEC SRD 63347-1 has been prepared by IEC systems committee Smart Cities: Electrotechnical aspects of smart cities. It is a Systems Reference Deliverable.

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

Draft	Report on voting
SyCSmartCities/378/DTS	SyCSmartCities/389/RVDTS

Full information on the voting for its approval 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/publications.

A list of all parts in the IEC 63347 series, published under the general title *Smart city use case collection and analysis – Managing public health emergencies in smart cities, 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– withdrawn, or
– revised.

INTRODUCTION

Smart cities are a key trend of urban development in the new information age, and an effective way to ensure that cities are built and managed in a way that best supports the needs of their residents. The major international standardization organizations are vigorously promoting the research and development of standards. However, the Covid 19 pandemic has demonstrated that there are few relevant international standards that provide guidance for the smart city to respond to public health emergencies, as well as a lack of unified understanding and systematic review, and clear direction for the development of such standards, which affects the development and application of international standards for smart city public health emergency (PHE).

In response to the above issues, this document: "Use case collection and analysis – Management of public health emergencies in smart cities" has been developed to collect relevant use cases in important scenarios of smart city management under public health emergencies in order to enable national and international standards development organizations develop a comprehensive portfolio of standards to help cities be well prepared for any future public health emergency.

1 Scope

This part of IEC 63347 describes and analyses a comprehensive set of high-level scenarios of how smart cities can best respond to public health emergencies, and strengthen their "urban immune system", using evidence from as many countries as possible. It covers use cases related to the prevention, the control and the successful ending of public health emergencies, and to dealing with the longer-term harm that these can cause. It considers a wide range of different scenarios and reviews both the management challenges and the range of technology solutions, including the use of IoT, telecommunications, AI, big data, and cloud computing, available in each of them, in order to provide a comprehensive outline of the standardization requirements to develop an effective urban immune system.

The public health emergencies envisaged are those relating to pandemics resulting from novel forms of disease, for which there is no natural immunity within the population and no tried and tested treatment. However, some of its provisions will be helpful to dealing with pandemics of existing diseases such as typhoid and cholera brought on through natural disasters or war.

This document will provide useful information to international and national standards development organizations and thus facilitate and promote the development of the smart city standards required. Annex A gives a use case database collection and descriptions.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

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:

– IEC Electropedia: available at https://www.electropedia.org/

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

3.1 Terms and definitions

3.1.1
smart city
city where improvements in quality of life, services, sustainability and resilience are facilitated by the effective integration of many and various types of physical, digital and social systems and the transformative use of data and technology

Note 1 to entry: This is a general definition of a smart city. The IEC looks at these aspects from an electrotechnical perspective.

Note 2 to entry: The effective integration of physical, digital and social systems may be facilitated by integration of digital twins of all these systems.

[IEC 60050-831:2025 [1], 831-01-19]

3.1.2
health emergency
sudden events that cause or can cause serious damage to public health

Note 1 to entry: Such public health emergencies include, but are not limited to, major infectious diseases, mass unexplained diseases, major food and occupational poisoning.