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Smart community infrastructures — Disaster risk reduction — Survey results and gap analysis

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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).

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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.

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Introduction

Over the last decade, global communities have made great progress towards reducing disaster risk through strengthening resilience against natural hazards. However, in addition to geological hazards, ongoing climate changes can exacerbate existing hydrometeorological hazard risks by increasing the frequency and intensity of these hazards, in either unprecedented combinations and/or unexpected locations. As a result, more communities and assets can be exposed to these hazards, leading to greater damage by disasters.

In order to protect communities against natural hazard risks, infrastructures can play a key role in strengthening resilience. Critical infrastructures that communities rely on, such as energy, information and communication technologies (ICT), transportation, waste and water, and other infrastructures affect vital community functions such as livelihoods, medical activities, financial services. This results in an increasing cost of disasters for all sectors of the community whether it is governments, businesses, and individuals. These costs include not only direct costs but also indirect ones such as costs from flow-on effects from disasters. Through the implementation of infrastructure that can strengthen resilience, communities can recover from the impacts of disasters quickly and effectively.

The demand for smart community infrastructures, as scalable and integrable products, will continue to grow in the decades ahead. However, it is imperative that such infrastructures can also be designed in a way that reduces disaster risk and strengthens disaster resilience. Through an analysis of existing documents on smart community infrastructure for disaster risk reduction and a survey of global examples, this document is intended to identify existing gaps in the implementation of smart community infrastructure for disaster risk reduction, and to identify topics for potential areas in the standardization of smart community infrastructures for disaster risk reduction. Through the accumulation of global best practices, this document identifies areas for potential standardization, which includes but is not limited to, the strengthening of disaster risk reduction technologies utilized in critical infrastructures such as energy, waste and water, transportation, ICT, and the built environment. This document seeks to provide the foundation for future standardization deliverables which promote the interoperability of disaster risk reduction technologies globally.

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Smart community infrastructures – Disaster risk reduction – Survey results and gap analysis

1 Scope

This document identifies existing global smart community infrastructures that enhance disaster risk reduction, the key purposes served by these global examples, gaps in coverage, and the need for standardization activities, which establishes the basis for the next steps for standardization.

This document is intended to be a basis for the future standardization of smart community infrastructures for disaster risk reduction through the identification of areas for potential standardization. This includes, but is not limited to, infrastructures related to energy, waste and water, transportation, information and communication technologies (ICT), and the general built environment.

It does not address specifications or requirements already covered by other relevant international standards.

This document primarily addresses disasters caused by natural hazards, such as geological and hydrometeorological hazards, and does not focus on human-induced disasters such as terrorism or biological hazards such as pandemics.

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
community
group of people with an arrangement of responsibilities, activities and relationships

Note 1 to entry: In many, but not all, contexts, a community has a defined geographical boundary.

Note 2 to entry: A city is a type of community.

[SOURCE: ISO 37120:2018, 3.3]

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]

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