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Information technology.— City service platform for public health emergencies— ==

Part 1:

Overview and general requirements

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Foreword

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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 or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

A list of all parts in the ISO/IEC 5153 series can be found on the ISO and IEC websites.

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 and www.iec.ch/national-committees.

Introduction

Public health emergencies, particularly those caused by infectious diseases such as the COVID-19 pandemic, have unprecedented impacts on the social and economic aspect of many cities. A Public Health Emergency of International Concern (PHEIC) is a formal declaration by the World Health Organization (WHO) of "an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response"^[4]..^[6]

Information technology can provide significant support in expanding city capacities to respond to such public health emergencies, in particular by providing capabilities to coordinate data, services and applications across operational domains for multiple stakeholders in smart cities.

Smart city applications can be classified into two groups: domain-specific applications and cross-domain applications. In a public health emergency scenario, various information and services are provided via different channels from different sources. It would be more convenient and simpler for users to have a single hub which can provide all necessary services at the application layer.

This document introduces a city service platform as a single hub for public health emergencies.

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Information technology — City service platform for public health emergencies

Part 1: Overview and general requirements

1 Scope

This document specifies the general requirements for a city service platform for public health emergencies. It also specifies the requirements in terms of data, functions, security and privacy protection.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 30145-3:2020, *Information technology — Smart City ICT reference framework — Part 3: Smart city engineering framework*

ISO/IEC 24039, *Information technology — Smart city digital platform reference architecture — Data and service*

ISO/IEC 27701:2019, *Security techniques — Extension to ISO/IEC 27001 and ISO/IEC 27002 for privacy information management — Requirements and guidelines*

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

city service

service rendered in the public interest

Note 1 to entry: This is also known as "public service" and "service of general interest".

4 Abbreviated terms

PHE public health emergency

DDoS distributed denial-of-service

PHE public health emergency

5 Public health emergency scenario

A public health emergency (PHE) is a typical smart city scenario which requires cross-sector and cross-department cooperation and collaboration. To control a public health emergency and allocate necessary emergency resources requires professional authority and enforceability, such as disease control and prevention, emergency response and management, and healthcare. Information technologies also enable accurate information collection and analysis, quick community reactions, enhancement of society cooperation and support in decision-making, thus improving city sustainability and resilience under a PHE scenario.

According to a study taken by the World Summit on the Information Society (WSIS), the main stakeholders for a PHE include academia, civil society, the government, international organizations, the private sector and others (individuals and organizations) ~~[1]~~.^[4] These stakeholders can be further categorized into three roles, as follows:-

- 1) ~~1)~~ Manager and coordinator: ensures preparedness, readiness and response actions at an appropriate scale to reduce both PHE spread and economic, public and social impacts.
- 2) ~~2)~~ Service provider: implements and provides necessary technologies, measures, services and tools based on user demand and policies made by manager and coordinator.
- 3) ~~3)~~ User: follows official guidance and uses services provided to protect themselves and others with respect to public interest.

PHEs have wide impact on all aspects of city operation and public daily life. In general, the following four phases of emergency management are widely applied:

- ~~—~~ Prevention and mitigation: ~~covers~~cover activities or precautions for assessing and preventing the risks, vulnerabilities, threats, potential severity, likelihood, consequences and impact of a PHE for cities. With ~~these~~these activities or precautions, it can be ensured that cities have taken adequate steps to prevent and reduce the likelihood of occurrence or mitigate the damaging effects.

NOTE- ~~—~~ Prevention and mitigation need to ~~consider~~be considered and ~~plan~~planned in advance of an actual emergency ~~is presented~~.

- ~~—~~ Preparedness: covers the planning that needs to be incorporated or decided actions that will assist in successfully dealing with an emergency.
- ~~—~~ Response: ~~deals with~~covers the reality of how to respond to an emergency scenario.
- ~~—~~ Recovery: takes place after the emergency is over and the immediate danger has subsided.

City services are located at the smart applications layer as described in ISO/IEC-30145-3. With the common data and service capabilities provided by a smart city digital platform as described in ISO/IEC-24039, a city service platform for PHE focuses on providing scenario-specific and integrated services to improve emergency response efficiency, ensure city operation, protect public safety and continue daily life throughout the emergency prevention and mitigation, preparedness, response and recovery stages, as shown in ~~Figure 1~~Figure 1.

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