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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS
IPTV multimedia services and applications for IPTV –
Digital Signage

Digital signage: Requirements for disaster information services

Recommendation ITU-T H.785.0

ITU-T

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Digital signage: Requirements for disaster information services

Summary

Recommendation ITU-T H.785.0 describes overall aspects and high-level requirements for disaster information services provided through digital signage. The main services expected to be applied are early warning to lessen damages, reports of up-to-the-minute situations and announcements of traffic status/evacuation sites. The requirements are categorized into eight areas: general, operational management, application/delivery, contents, security, network, terminal device/display and accessibility.

History

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FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Digital signage: Requirements for disaster information services

1 Scope

This Recommendation addresses the high-level requirements for digital signage services under disaster situations. Disaster informational services contain three aspects:

- 1) Early warning to lessen damages caused by a disaster
- 2) Reporting up-to-the minute situations on disaster
- 3) Announcements of traffic status or evacuation sites.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T H.780] Recommendation ITU-T H.780 (2012), *Digital signage: Service requirements and IPTV-based architecture*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 alert [b-ITU-T X.674]: A warning or alarm message concerning an impending danger or problem.

3.1.2 alert agency [b-ITU-T X.674]: A national, regional or international entity responsible for the management of alerts.

3.1.3 content [ITU-T H.780]: A combination of audio, still image, graphic, video, or data.

NOTE – A variety of formats are classified as "data" (e.g., text, encoded values, multimedia description language introduced by [b-ITU-T H.760]).

3.1.4 digital signage (DS) [ITU-T H.780]: A system that sends information, advertising and other messages to electronic devices (e.g., displays, speakers) in accordance with the time of day and the location of the display, or the actions of audience. Contents and their relevant information such as display schedules are delivered over networks.

3.1.5 multimedia [b-ITU-T T.174]: The property of handling several types of representation media.

3.1.6 service provider [b-ITU-T M.1400]: A general reference to an operator that provides telecommunication services to customers and other users either on a tariff or contract basis. A service provider can optionally operate a network. A service provider can optionally be a customer of another service provider.

NOTE – Typically, the service provider acquires or licenses content from content providers, and packages this into a service that is consumed by end-users.

3.1.7 terminal device (TD) [b-ITU-T Y.1901]: An end-user device which typically presents and/or processes the content, such as a personal computer, a computer peripheral, a mobile device, a TV set, a monitor, a VoIP terminal or an audio-visual media player.

3.1.8 universal design [b-ITU-T Y.1901]: The design of the products and environments to be useable by all people, to the greatest extent possible by including accessibility features in the original design to prevent the need for adaptation after deployment.

NOTE – The intent of universal design is to simplify life for everyone by making products, communications, and the built environment more usable by as many people as possible at little or no extra cost. Universal design benefits people of all ages and abilities.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 reconstruction phase: A later stage of disaster recovery, when definitive repair of the infrastructure affected by a disaster is done.

3.2.2 restoration phase: The earlier stage of disaster recovery, when the first steps to restore services to the population affected by a disaster are taken.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

DS	Digital Signage
ETS	Emergency Telecommunication Service
ICT	Information and Communication Technology
IPTV	Internet Protocol Television
NFC	Near Field Communication
NGN	Next Generation Networks
PGP	Pretty Good Privacy
RFID	Radio Frequency Identification
S/MIME	Secure/Multipurpose Internet Mail Extensions
SVG	Scalable Vector Graphics
TD	Terminal Device
TLS	Transport Layer Security
UPS	Uninterruptable Power Supply

5 Conventions

In this Recommendation:

- The keywords "is required to" indicate a requirement which must be strictly followed and from which no deviation is permitted, if conformance to this Recommendation is to be claimed.
- The keywords "is recommended" indicate a requirement which is recommended but which is not absolutely required. Thus, this requirement need not be present to claim conformance.
- The keywords "can optionally" indicate an optional requirement that is permissible, without implying any sense of being recommended. This term is not intended to imply that the vendor's implementation must provide the option, and the feature can be optionally enabled by the network operator/service provider. Rather, it means the vendor may optionally provide the feature and still claim conformance with this Recommendation.

6 Overview

6.1 General disaster information services

Information and communication technology (ICT) services treating disaster information are expected to deliver reliable content to people both swiftly and surely, and in a manner that may differ from usual delivery. The content delivered is based on the affected locations and/or damage-levels. From the viewpoint of disseminating content to a large number of people, it is desirable that ICT services be used daily and that they be well recognized by the masses. It is also preferable to provide the disaster information content through diverse communication methods (e.g., terrestrial broadcasting, cellular services, IPTV).

NOTE 1 – [b-TR-FG DR&NRR] presents a number of case studies of the performance of public telecommunication systems in recent disasters.

A variety of access methods gives an opportunity to fill gaps in individual information literacy and accessibility (e.g., an aged person may not be familiar with bi-directional Internet services such as social network services).

Digital signage (DS) services, which are usually provided as a method of presentation in public areas, are ideal for supporting disaster information services. A chief characteristic of DS services is the flexibility for selecting and controlling content delivery according to service timing and the location of the DS terminal device. Large DS screens are commonly set in public places, which as such are useful as a means to deliver announcements in disaster situations.

DS services deal with various aspects of disaster information: to provide early warning to lessen damage caused by disasters; to give up-to-date reports on disaster conditions; to provide the status of public infrastructure in and around affected areas; to give guidance on evacuation routes to shelters; and to report on the safety of victims. That is, DS services are expected to continuously provide disaster-relevant information over a period of time: before disasters, after disasters, in the restoration phase (i.e., an early stage of disaster recovery), and in the reconstruction phase (i.e., a later stage of disaster recovery). Hence, DS terminal devices may be also installed in locations serving as potential evacuation shelters/places.

Classifying service locations in times of disaster is necessary because the content may be altered depending on audience location, which can significantly relate to the degree of damage from the disaster.