
**Security and resilience — Emergency
management —**

**Part 1:
General guidelines for the
implementation of a community-
based disaster early warning system**

Sécurité et résilience — Gestion des urgences —

*Partie 1: Lignes directrices générales pour la mise en oeuvre d'un
système d'alerte communautaire rapide en cas de catastrophe*



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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO 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).

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 Technical Committee ISO/TC 292 *Security and resilience*.

A list of all parts in the ISO 22328 series can be found on the ISO website.

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.

Introduction

Disasters such as earthquakes, tsunamis, volcanic eruptions, high river flows (e.g. floods, low river flows, sudden flash floods), landslides, storm surges and hurricanes as well as slow-onset events such as drought, extreme temperatures, heat waves or soil erosion can have devastating impacts. Disasters can happen anytime to anyone who lives in a disaster-prone area. These disasters injure and kill people and result in tremendous economic, social and environmental losses. Disasters can be caused by natural hazards and/or by human beings.

Disaster mitigation can be conducted by using various approaches, including the construction of prevention and protection works, which require a high investment of cost and time. In addition, disasters can have a varied and wide range of impact, meaning that implementing these measures may not be effective. Therefore, effective disaster risk reduction is implemented through various approaches, by means of improving the community's preparedness and consequent resilience through the implementation of an early warning system (EWS).

A community-based disaster EWS is proposed to empower individuals and communities who live in hazard-prone areas to be more aware, to react or evacuate in a sufficient time, and to reduce losses caused by disasters, such as injuries, loss of life, and damage to property, economy and the environment.

The implementation of a community-based disaster EWS is consistent with the Sendai Framework for Disaster Risk Reduction of 2015–2030^[6], specifically target g) of the seven global targets: "Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030". Based on the fourth priority of the framework, the improvement of preparedness is the basis for the capability to respond effectively to a disaster. Improvement of preparedness can be achieved by implementing an EWS, in addition to improving the dissemination and communication of knowledge about the early warning of disasters at local, national, regional and international levels.

According to UN-ISDR^[7], a complete and effective EWS consists of four interrelated key elements:

- a) risk knowledge;
- b) monitoring and warning service;
- c) dissemination and communication;
- d) response capability.

All of these elements are strongly correlated to the implementation of a community-based EWS.

EWSs are incorporated not only into engineering, but also into social aspects such as demography, economics and culture. This document encourages the active response of the community to disasters and considers social aspects in general. Further dissemination and communication of knowledge to the community are carried out by the authority at local and national levels.

By referring to the four key elements of a community-based EWS, this document promotes uniformity in the development and implementation of an EWS. It will improve the preparedness of the communities and interested parties vulnerable to disasters.

The community-based disaster EWS considers the different communication channels, legal aspects and responsibility allocation as well as final decision-making and its communication.

This document recognizes population behaviour response planning as a key part of the preparedness. It takes into account the approach of ISO 22315:2014^[3] and ISO 22322:2015^[4] and provides additional specifications for a disaster EWS.

Security and resilience — Emergency management —

Part 1:

General guidelines for the implementation of a community-based disaster early warning system

1 Scope

This document gives guidelines for the implementation of a community-based disaster early warning system (EWS). It describes the methods and procedures to be implemented and provides examples.

This document is applicable to communities vulnerable to disasters, without taking secondary/indirect effects into consideration.

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 22300, *Security and resilience — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22300 and the following 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

community vulnerability

characteristics and conditions of different exposed elements at risk, such as individuals, groups or infrastructures, that put them at risk for the destructive effects of a hazard

3.2

early warning

provision of information through local networks, allowing affected individuals to take action to avoid or reduce risks and to prepare responses

3.3

community-based early warning system

community-based EWS

method to communicate information to the public through established networks within institutional, political, legal and social contexts

Note 1 to entry: The warning system can consist of risk knowledge, monitoring and warning service, dissemination and communication, and response capability to avoid, reduce risks and prepare responses against disaster.