IEC TR 62368-2

Edition 3.0 2019-05

REDLINE VERSION

colour inside

Audio/video, information and communication technology equipment – Part 2: Explanatory information related to IEC 62368-1:~~2014~~2018

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.160.01; 35.020

ISBN 978-2-8322-6916-9

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT –

Part 2: Explanatory information related to IEC 62368-1:~~2014~~2018

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

DISCLAIMER
This Redline version is not an official Standard and is intended to provide the user with an indication of what changes have been made to the previous version. Only the IEC International Standard provided in this package is to be considered the official Standard.

This Redline version provides you with a quick and easy way to compare all the changes between this standard and its previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example, "state of the art".

IEC 62368-2, which is a Technical Report, has been prepared by IEC technical committee TC 108: Safety of electronic equipment within the field of audio/video, information technology and communication technology.

This third edition updates the second edition of IEC 62368-2 published in 2014 to take into account changes made to IEC 62368-1:2014 as identified in the Foreword of IEC 62368-1:2018.

This Technical Report is informative only. In case of a conflict between IEC 62368-1 and IEC TR 62368-2, the requirements in IEC 62368-1 prevail over this Technical Report.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
108/708/DTR	108/711/RVDTR

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

In this document, the following print types are used:

– notes/explanatory matter: in smaller roman type;
– tables and figures that are included in the rationale have linked fields (shaded in grey if “field shading” is active);
– terms that are defined in IEC 62368-1: in **bold type**.

In this document, where the term (HBSDT) is used, it stands for Hazard Based Standard Development Team, which is the Working Group of IEC TC 108 responsible for the development and maintenance of IEC 62368-1.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62368 series can be found, under the general title *Audio/video, information and communication technology equipment*, on the IEC website.

In this document, only those subclauses from IEC 62368-1 considered to need further background reference information or explanation to benefit the reader in applying the relevant requirements are included. Therefore, not all numbered subclauses are cited. Unless otherwise noted, all references are to clauses, subclauses, annexes, figures or tables located in IEC 62368-1:2018.

The entries in the document may have one or two of the following subheadings in addition to the Rationale statement:

Source – where the source is known and is a document that is accessible to the general public, a reference is provided.

Purpose – where there is a need and when it may prove helpful to the understanding of the Rationale, we have added a Purpose statement.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

IEC 62368-1 is based on the principles of hazard-based safety engineering, which is a different way of developing and specifying safety considerations than that of the current practice. While this document is different from traditional IEC safety documents in its approach and while it is believed that IEC 62368-1 provides a number of advantages, its introduction and evolution are not intended to result in significant changes to the existing safety philosophy that led to the development of the safety requirements contained in IEC 60065 and IEC 60950-1. The predominant reason behind the creation of IEC 62368-1 is to simplify the problems created by the merging of the technologies of ITE and CE. The techniques used are novel, so a learning process is required and experience is needed in its application. Consequently, the committee recommends that this edition of the document be considered as an alternative to IEC 60065 or IEC 60950-1 at least over the recommended transition period.

AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT –

Part 2: Explanatory information related to IEC 62368-1:~~2014~~2018

0 Principles of this product safety standard

Clause 0 is informational and provides a rationale for the normative clauses of the document.

0.5.1 General

ISO/IEC Guide 51:2014, 6.3.5 states:

"When reducing risks the order of priority shall be as follows:

a) inherently safe design;

b) guards and protective devices;

c) information for end users.

Inherently safe design measures are the first and most important step in the risk reduction process. This is because protective measures inherent to the characteristics of the product or system are likely to remain effective, whereas experience has shown that even well-designed guards and protective devices can fail or be violated and information for use might not be followed.

Guards and protective devices shall be used whenever an inherently safe design measure does not reasonably make it possible either to remove hazards or to sufficiently reduce risks. Complementary protective measures involving additional equipment (for example, emergency stop equipment) might have to be implemented.

The end user has a role to play in the risk reduction procedure by complying with the information provided by the designer/supplier. However, information for use shall not be a substitute for the correct application of inherently safe design measures, guards or complementary protective measures."

In general, this principle is used in IEC 62368-1. The table below shows a comparison between the hierarchy required in ISO/IEC Guide 51 and the hierarchy used in IEC 62368-1:~~2014~~2018:

ISO/IEC Guide 51	IEC 62368-1
a) inherently safe design	1. inherently safe design by limiting all energy hazards to class 1
b) guards and protective devices	2. **equipment safeguards**
	3. **installation safeguards**
	4. **personal safeguards**
c) information for end users	5. **behavioral safeguards**
	6. **instructional safeguards**

Risk assessment has been considered as part of the development of IEC 62368-1 as indicated in the following from ISO/IEC Guide 51 (Figure 1) in this document. See also the Hazard Based Safety Engineering (HBSE)

Process Flow (Figure 2) in this document that also provides additional details for the above comparison.

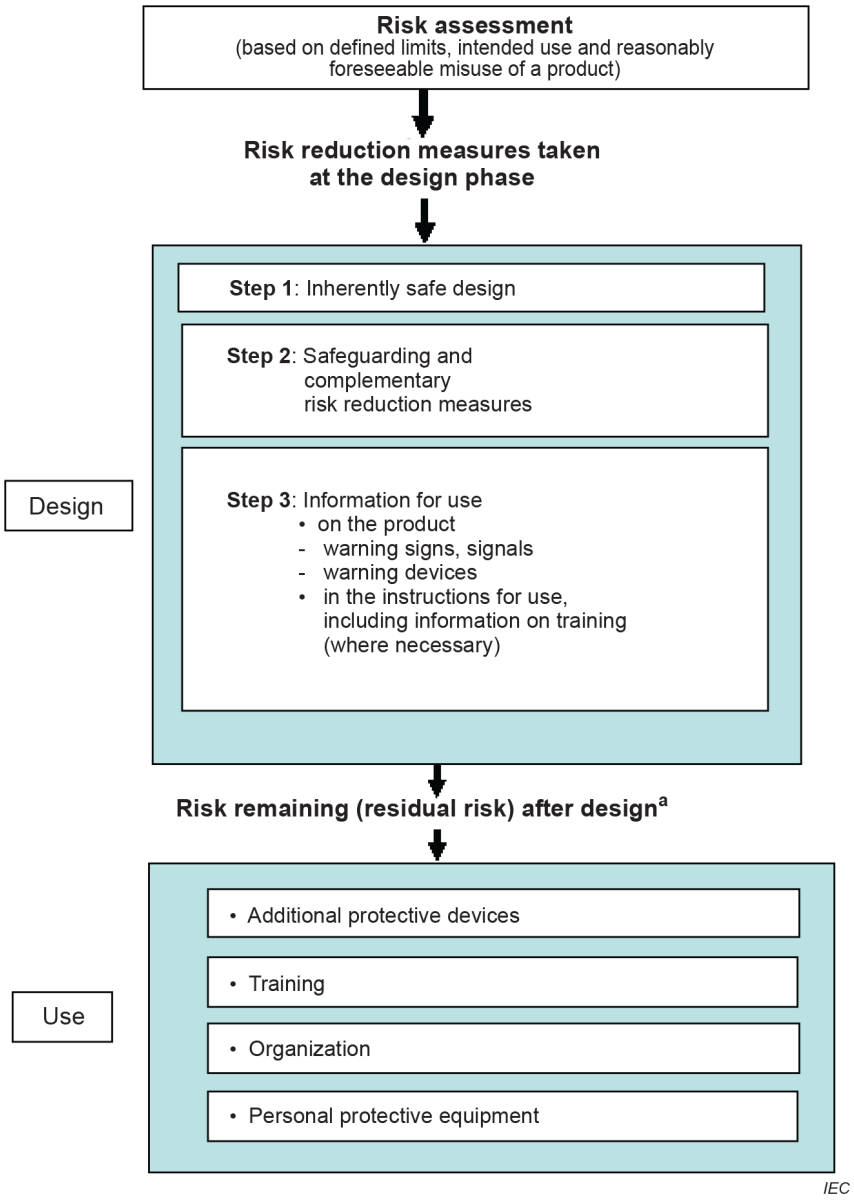

Figure 1 – Risk reduction as given in ISO/IEC Guide 51

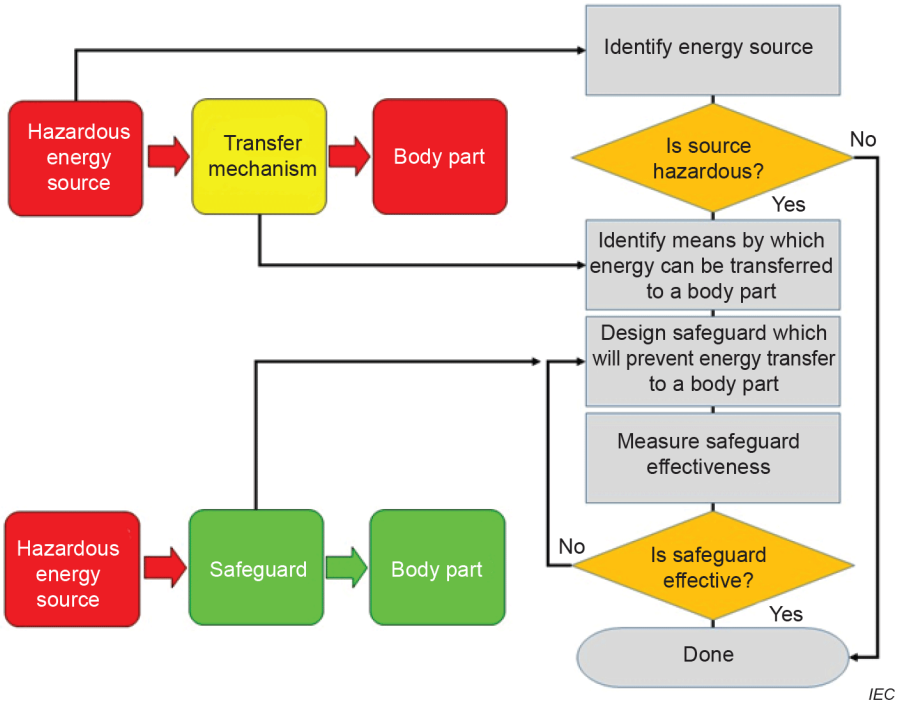

Figure 2 – HBSE Process Chart

0.5.7 Equipment safeguards during skilled person service conditions

Purpose: To explain the intent of requirements for providing **safeguards** against involuntary reaction.

Rationale: By definition, a **skilled person** has the education and experience to identify all class 3 energy sources to which he may be exposed. However, while servicing one class 3 energy source in one location, a **skilled person** may be exposed to another class 3 energy source in a different location.

In such a situation, either of two events is possible. First, something may cause an involuntary reaction of the **skilled person** with the consequences of contact with the class 3 energy source in the different location. Second, the space in which the **skilled person** is located may be small and cramped, and inadvertent contact with a class 3 energy source in the different location may be likely.

In such situations, this document may require an **equipment safeguard** solely for the protection of a **skilled person** while performing servicing activity.

_____

1 Scope

Purpose: To identify the purpose and applicability of this document and the exclusions from the scope.

Rationale: The scope excludes requirements for functional safety. Functional safety is addressed in IEC 61508-1. Because the scope includes computers that may control safety systems, functional safety requirements would necessarily include requirements for computer processes and software.

The requirements provided in IEC 60950-23 could be modified and added to IEC 62368 as another –X document. However, because of the hazard-based nature of IEC 62368-1, the requirements from IEC 60950-23 have been incorporated into the body of IEC 62368-1 and made more generic.

The intent of the addition of the IEC 60950-23 requirements is to maintain the overall intent of the technical requirements from IEC 60950-23, incorporate them into IEC 62368-1 following the overall format of IEC 62368-1 and simplify and facilitate the application of these requirements.

Robots traditionally are covered under the scopes of ISO documents, typically maintained by ISO TC 299. ISO TC 299 has working groups for personal care robots and service robots, and produces for example, ISO 13482, *Robots and robotic devices – Safety requirements for personal care robots*.

_____

2 Normative references

The list of normative references is a list of all documents that have a normative reference to it in the body of the document. As such, referenced documents are indispensable for the application 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.

Recently, there were some issues with test houses that wanted to use the latest edition as soon as it was published. As this creates serious problems for manufacturers, since they have no chance to prepare, it was felt that a reasonable transition period should be taken into account. This is in line with earlier decisions taken by the SMB that allow transition periods to be mentioned in the foreword of the documents. Therefore IEC TC 108 decided to indicate this in the introduction of the normative references clause, to instruct test houses to take into account any transition period, effective date or date of withdrawal established for the document.

These documents are referenced, in whole, in part, or as alternative requirements to the requirements contained in this document. Their use is specified, where necessary, for the application of the requirements of this document. The fact that a standard is mentioned in the list does not mean that compliance with the document or parts of it are required.

_____

IEC TR 62368-2

Edition 3.0 2019-05

TECHNICAL REPORT

RAPPORT TECHNIQUE

colour inside

Audio/video, information and communication technology equipment – Part 2: Explanatory information related to IEC 62368-1:2018

Équipements des technologies de l'audio/vidéo, de l'information et de la communication – Partie 2: Précisions relatives à l'IEC 62368-1:2018

IEC TR 62368-2:2019-05(en-fr)

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT –

Part 2: Explanatory information related to IEC 62368-1:2018

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example, "state of the art".

IEC 62368-2, which is a Technical Report, has been prepared by IEC technical committee TC 108: Safety of electronic equipment within the field of audio/video, information technology and communication technology.

This third edition updates the second edition of IEC 62368-2 published in 2014 to take into account changes made to IEC 62368-1:2014 as identified in the Foreword of IEC 62368-1:2018.

This Technical Report is informative only. In case of a conflict between IEC 62368-1 and IEC TR 62368-2, the requirements in IEC 62368-1 prevail over this Technical Report.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
108/708/DTR	108/711/RVDTR

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

In this document, the following print types are used:

– notes/explanatory matter: in smaller roman type;
– tables and figures that are included in the rationale have linked fields (shaded in grey if “field shading” is active);
– terms that are defined in IEC 62368-1: in **bold type**.

In this document, where the term (HBSDT) is used, it stands for Hazard Based Standard Development Team, which is the Working Group of IEC TC 108 responsible for the development and maintenance of IEC 62368-1.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62368 series can be found, under the general title *Audio/video, information and communication technology equipment*, on the IEC website.

In this document, only those subclauses from IEC 62368-1 considered to need further background reference information or explanation to benefit the reader in applying the relevant requirements are included. Therefore, not all numbered subclauses are cited. Unless otherwise noted, all references are to clauses, subclauses, annexes, figures or tables located in IEC 62368-1:2018.

The entries in the document may have one or two of the following subheadings in addition to the Rationale statement:

Source – where the source is known and is a document that is accessible to the general public, a reference is provided.

Purpose – where there is a need and when it may prove helpful to the understanding of the Rationale, we have added a Purpose statement.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

IEC 62368-1 is based on the principles of hazard-based safety engineering, which is a different way of developing and specifying safety considerations than that of the current practice. While this document is different from traditional IEC safety documents in its approach and while it is believed that IEC 62368-1 provides a number of advantages, its introduction and evolution are not intended to result in significant changes to the existing safety philosophy that led to the development of the safety requirements contained in IEC 60065 and IEC 60950-1. The predominant reason behind the creation of IEC 62368-1 is to simplify the problems created by the merging of the technologies of ITE and CE. The techniques used are novel, so a learning process is required and experience is needed in its application. Consequently, the committee recommends that this edition of the document be considered as an alternative to IEC 60065 or IEC 60950-1 at least over the recommended transition period.

AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT –

Part 2: Explanatory information related to IEC 62368-1:2018

0 Principles of this product safety standard

Clause 0 is informational and provides a rationale for the normative clauses of the document.

0.5.1 General

ISO/IEC Guide 51:2014, 6.3.5 states:

"When reducing risks the order of priority shall be as follows:

a) inherently safe design;

b) guards and protective devices;

c) information for end users.

Inherently safe design measures are the first and most important step in the risk reduction process. This is because protective measures inherent to the characteristics of the product or system are likely to remain effective, whereas experience has shown that even well-designed guards and protective devices can fail or be violated and information for use might not be followed.

Guards and protective devices shall be used whenever an inherently safe design measure does not reasonably make it possible either to remove hazards or to sufficiently reduce risks. Complementary protective measures involving additional equipment (for example, emergency stop equipment) might have to be implemented.

The end user has a role to play in the risk reduction procedure by complying with the information provided by the designer/supplier. However, information for use shall not be a substitute for the correct application of inherently safe design measures, guards or complementary protective measures."

In general, this principle is used in IEC 62368-1. The table below shows a comparison between the hierarchy required in ISO/IEC Guide 51 and the hierarchy used in IEC 62368-1:2018:

ISO/IEC Guide 51	IEC 62368-1
a) inherently safe design	1. inherently safe design by limiting all energy hazards to class 1
b) guards and protective devices	2. **equipment safeguards**
	3. **installation safeguards**
	4. **personal safeguards**
c) information for end users	5. **behavioral safeguards**
	6. **instructional safeguards**

Risk assessment has been considered as part of the development of IEC 62368-1 as indicated in the following from ISO/IEC Guide 51 (Figure 1) in this document. See also the Hazard Based Safety Engineering (HBSE) Process Flow (Figure 2) in this document that also provides additional details for the above comparison.

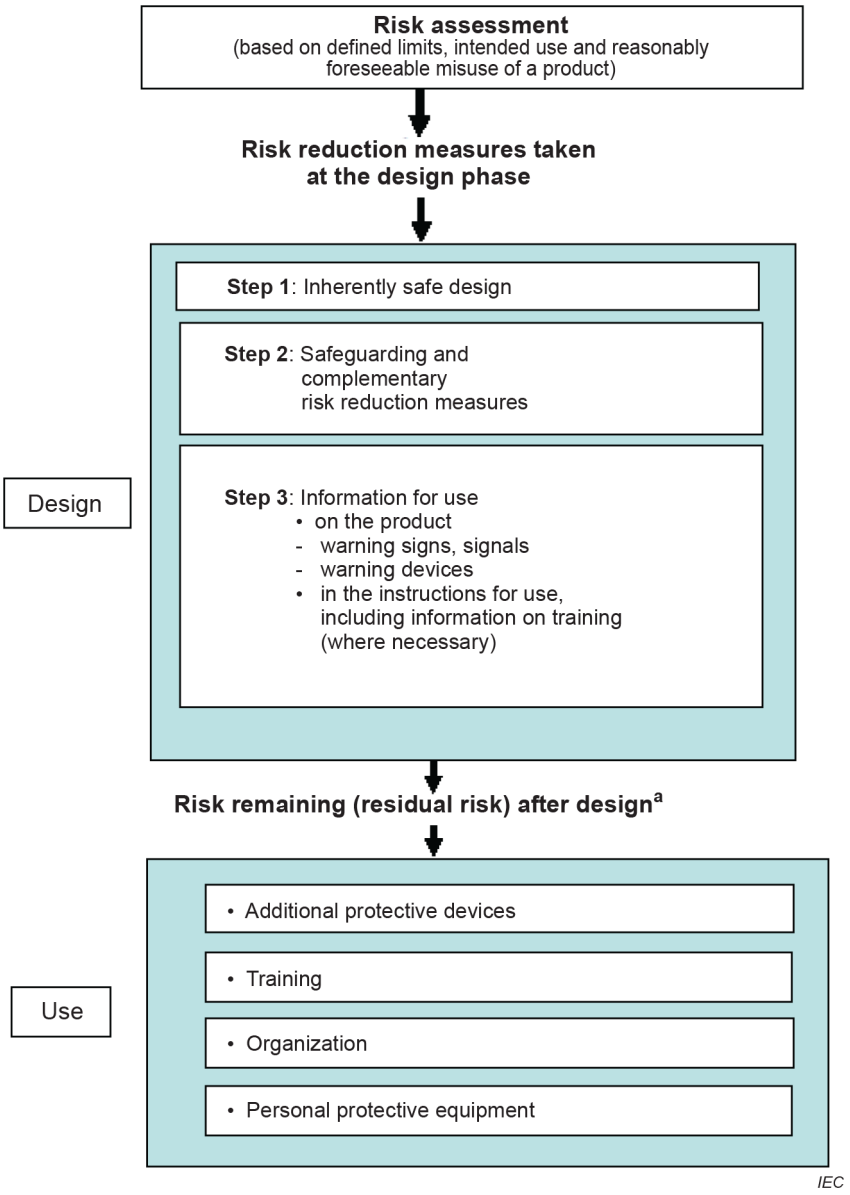

Figure 1 – Risk reduction as given in ISO/IEC Guide 51

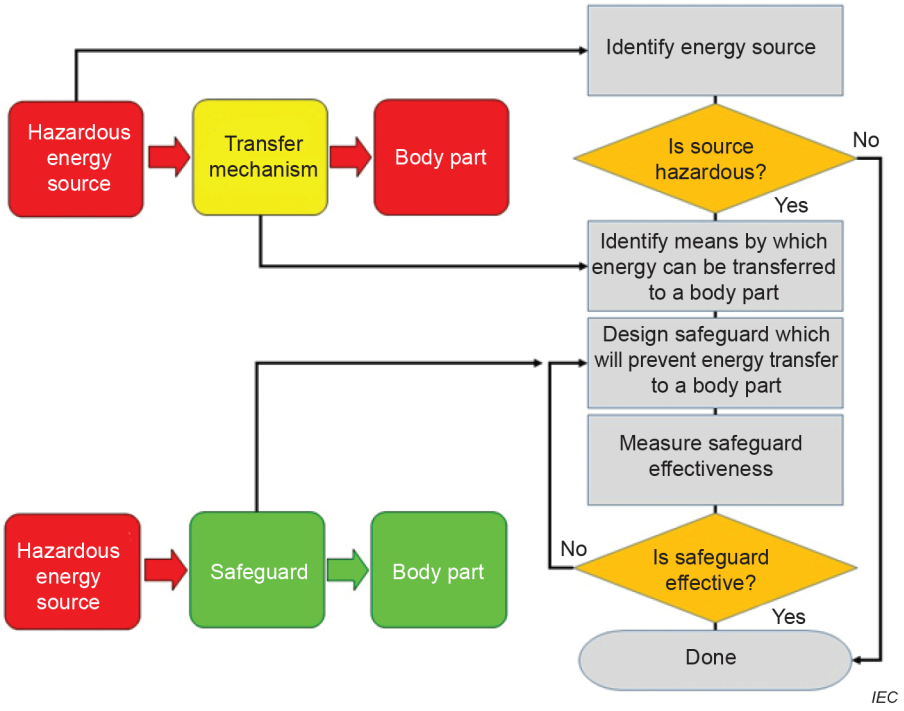

Figure 2 – HBSE Process Chart

0.5.7 Equipment safeguards during skilled person service conditions

Purpose: To explain the intent of requirements for providing **safeguards** against involuntary reaction.

Rationale: By definition, a **skilled person** has the education and experience to identify all class 3 energy sources to which he may be exposed. However, while servicing one class 3 energy source in one location, a **skilled person** may be exposed to another class 3 energy source in a different location.

In such a situation, either of two events is possible. First, something may cause an involuntary reaction of the **skilled person** with the consequences of contact with the class 3 energy source in the different location. Second, the space in which the **skilled person** is located may be small and cramped, and inadvertent contact with a class 3 energy source in the different location may be likely.

In such situations, this document may require an **equipment safeguard** solely for the protection of a **skilled person** while performing servicing activity.

_____

1 Scope

Purpose: To identify the purpose and applicability of this document and the exclusions from the scope.

Rationale: The scope excludes requirements for functional safety. Functional safety is addressed in IEC 61508-1. Because the scope includes computers that may control safety systems, functional safety requirements would necessarily include requirements for computer processes and software.

The requirements provided in IEC 60950-23 could be modified and added to IEC 62368 as another –X document. However, because of the hazard-based nature of IEC 62368-1, the requirements from IEC 60950-23 have been incorporated into the body of IEC 62368-1 and made more generic.

The intent of the addition of the IEC 60950-23 requirements is to maintain the overall intent of the technical requirements from IEC 60950-23, incorporate them into IEC 62368-1 following the overall format of IEC 62368-1 and simplify and facilitate the application of these requirements.

Robots traditionally are covered under the scopes of ISO documents, typically maintained by ISO TC 299. ISO TC 299 has working groups for personal care robots and service robots, and produces for example, ISO 13482, *Robots and robotic devices – Safety requirements for personal care robots*.

_____

2 Normative references

The list of normative references is a list of all documents that have a normative reference to it in the body of the document. As such, referenced documents are indispensable for the application 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.

Recently, there were some issues with test houses that wanted to use the latest edition as soon as it was published. As this creates serious problems for manufacturers, since they have no chance to prepare, it was felt that a reasonable transition period should be taken into account. This is in line with earlier decisions taken by the SMB that allow transition periods to be mentioned in the foreword of the documents. Therefore IEC TC 108 decided to indicate this in the introduction of the normative references clause, to instruct test houses to take into account any transition period, effective date or date of withdrawal established for the document.

These documents are referenced, in whole, in part, or as alternative requirements to the requirements contained in this document. Their use is specified, where necessary, for the application of the requirements of this document. The fact that a standard is mentioned in the list does not mean that compliance with the document or parts of it are required.

_____

SOMMAIRE

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

_____

ÉQUIPEMENTS DES TECHNOLOGIES DE L'AUDIO/VIDÉO, DE L'INFORMATION ET DE LA COMMUNICATION –

Partie 2: Précisions relatives à l'IEC 62368-1:2018

AVANT-PROPOS

1) La Commission Électrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
2) Les décisions ou accords officiels de l'IEC concernant les questions techniques représentent, dans la mesure du possible, un accord international sur les sujets étudiés, étant donné que les Comités nationaux de l'IEC intéressés sont représentés dans chaque comité d'études.
3) Les Publications de l'IEC se présentent sous la forme de recommandations internationales et sont agréées comme telles par les Comités nationaux de l'IEC. Tous les efforts raisonnables sont entrepris afin que l'IEC s'assure de l'exactitude du contenu technique de ses publications; l'IEC ne peut pas être tenue responsable de l'éventuelle mauvaise utilisation ou interprétation qui en est faite par un quelconque utilisateur final.
4) Dans le but d'encourager l'uniformité internationale, les Comités nationaux de l'IEC s'engagent, dans toute la mesure possible, à appliquer de façon transparente les Publications de l'IEC dans leurs publications nationales et régionales. Toutes divergences entre toutes Publications de l'IEC et toutes publications nationales ou régionales correspondantes doivent être indiquées en termes clairs dans ces dernières.
5) L'IEC elle-même ne fournit aucune attestation de conformité. Des organismes de certification indépendants fournissent des services d'évaluation de conformité et, dans certains secteurs, accèdent aux marques de conformité de l'IEC. L'IEC n'est responsable d'aucun des services effectués par les organismes de certification indépendants.
6) Tous les utilisateurs doivent s'assurer qu'ils sont en possession de la dernière édition de cette publication.
7) Aucune responsabilité ne doit être imputée à l'IEC, à ses administrateurs, employés, auxiliaires ou mandataires, y compris ses experts particuliers et les membres de ses comités d'études et des Comités nationaux de l'IEC, pour tout préjudice causé en cas de dommages corporels et matériels, ou de tout autre dommage de quelque nature que ce soit, directe ou indirecte, ou pour supporter les coûts (y compris les frais de justice) et les dépenses découlant de la publication ou de l'utilisation de cette Publication de l'IEC ou de toute autre Publication de l'IEC, ou au crédit qui lui est accordé.
8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
9) L'attention est attirée sur le fait que certains des éléments de la présente Publication de l'IEC peuvent faire l'objet de droits de brevet. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets et de ne pas avoir signalé leur existence.

La tâche principale des comités d'études de l'IEC est l'élaboration des Normes internationales. Toutefois, un comité d'études peut proposer la publication d'un rapport technique lorsqu'il a réuni des données de nature différente de celles qui sont normalement publiées comme Normes internationales, cela pouvant comprendre, par exemple, des informations sur l'état de la technique.

L'IEC 62368-2, qui est un rapport technique, a été établie par le comité d'études 108 de l'IEC: Sécurité des appareils électroniques dans le domaine de l'audio, de la vidéo, du traitement de l'information et des technologies de la communication.

Cette troisième édition met à jour la deuxième édition de l'IEC 62368-2 parue en 2014 afin de prendre en compte les modifications apportées à l'IEC 62368-1:2014 identifiées dans l'Avant-propos de l'IEC 62368-1:2018.

Ce Rapport technique est donné à titre informatif uniquement. En cas de contradiction entre l'IEC 62368-1 et l'IEC TR 62368-2, les exigences de l'IEC 62368-1 prévalent sur le présent Rapport technique.

Le texte de ce rapport technique est issu des documents suivants:

Projet d'enquête	Rapport de vote
108/708/DTR	108/711/RVDTR

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de ce rapport technique.

Dans le présent document, les caractères d'imprimerie suivants sont utilisés:

– notes/rapport explicatif: petits caractères romains;
– les tableaux et figures inclus dans le justificatif comportent des champs liés (en gris si le "grisé de zone" est actif)
– termes définis dans l'IEC 62368-1: en **gras**.

Dans le présent document, le terme (HBSDT) qui est utilisé est l'acronyme de Hazard Based Standard Development Team, qui est le groupe de travail du Comité d'études 108 de l'IEC chargé du développement et de la maintenance de l'IEC 62368-1.

Cette publication a été rédigée selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série IEC 62368, sous le titre général *Équipements des technologies de l'audio/vidéo, de l'information et de la communication*, peut être consultée sur le site web de l'IEC.

Dans le présent document, seuls les paragraphes de l'IEC 62368-1 dont il est estimé qu'ils ont besoin d'informations générales ou d'explications complémentaires pour aider le lecteur à appliquer les exigences pertinentes sont inclus. Par conséquent, les paragraphes numérotés ne sont pas tous cités. Sauf indication contraire, toutes les références concernent les articles, paragraphes, annexes, figures ou tableaux de l'IEC 62368-1:2018.

Les entrées du document peuvent comporter une ou deux des sous-rubriques suivantes en plus de la déclaration Justificatif:

Source – lorsque la source est connue et qu'il s'agit d'un document accessible au grand public, une référence est fournie.

Objet – si cela s'avère nécessaire, et s'il peut être utile à la compréhension du Justificatif, la déclaration Objet a été ajoutée.

Le comité a décidé que le contenu de cette publication ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous “http://webstore.iec.ch” dans les données relatives à la publication recherchée. À cette date, la publication sera

- reconduite,
- supprimée,
- remplacée par une édition révisée, ou
- amendée.

IMPORTANT – Le logo *"colour inside"* qui se trouve sur la page de couverture de cette publication indique qu'elle contient des couleurs qui sont considérées comme utiles à une bonne compréhension de son contenu. Les utilisateurs devraient, par conséquent, imprimer cette publication en utilisant une imprimante couleur.

INTRODUCTION

L'IEC 62368-1 est fondée sur les principes de l'ingénierie de la sécurité établie sur le danger, qui représente une manière différente de développer et de spécifier des considérations relatives à la sécurité par rapport à la pratique actuelle. Tandis que le présent document diffère des documents traditionnels de l'IEC relatifs à la sécurité dans son approche et alors que l'IEC 62368-1 est considérée apporter plusieurs avantages, il n'est pas prévu que son introduction et son évolution entraînent des modifications significatives de la philosophie de sécurité existante qui a conduit au développement des exigences en matière de sécurité contenues dans l'IEC 60065 et l'IEC 60950-1. La philosophie qui sous-tend la création de l'IEC 62368-1 consiste à simplifier les problèmes créés par la fusion des technologies des ATI et de la CE. Les techniques utilisées sont nouvelles et exigent par ailleurs un processus d'apprentissage. Une certaine expérience est également nécessaire dans leur application. En conséquence, le comité recommande que cette édition du document soit considérée comme une variante à l'IEC 60065 ou l'IEC 60950-1 au moins pendant la période transitoire recommandée.

ÉQUIPEMENTS DES TECHNOLOGIES DE L'AUDIO/VIDÉO, DE L'INFORMATION ET DE LA COMMUNICATION –

Partie 2: Précisions relatives à l'IEC 62368-1:2018

0 Principes de la présente norme relative à la sécurité des produits

L'Article 0 est donné à titre informatif et justifie les articles normatifs du document.

0.5.1 Généralités

L'ISO/IEC Guide 51:2014, 6.3.5 indique:

"Lorsque l'on réduit les risques, l'ordre de priorité doit être le suivant:

a) prévention intrinsèque;

b) protecteurs et dispositifs de protection;

c) informations pour les utilisateurs finaux.

La prévention intrinsèque constitue la première et la plus importante étape du processus de réduction du risque, car les mesures de prévention inhérentes aux caractéristiques du produit ou du système ont de bonnes chances de rester efficaces en permanence. En revanche, l'expérience montre que des protecteurs et des dispositifs de protection, même bien conçus, peuvent présenter une défaillance ou être contournés, et que l'information pour l'utilisation peut ne pas être suivie.

Des protecteurs et des dispositifs de protection doivent être utilisés chaque fois que l'application de mesures de prévention intrinsèque ne permet raisonnablement ni d'éliminer les dangers ni de réduire suffisamment les risques associés. Des mesures de prévention complémentaires mettant en œuvre d'autres équipements (équipement d'arrêt d'urgence, par exemple) peuvent être nécessaires.

L'utilisateur final a un rôle à jouer dans la procédure de réduction du risque en se conformant à l'information mise à sa disposition par le concepteur/fournisseur. Toutefois, les informations pour l'utilisation ne doivent pas être substituées à la mise en œuvre correcte de mesures de prévention intrinsèque, de protecteurs ou de mesures de prévention complémentaires."

En général, ce principe est utilisé dans l'IEC 62368-1. Le tableau ci-dessous compare la hiérarchie exigée dans l'ISO/IEC Guide 51 et celle de l'IEC 62368-1:2018.

ISO/IEC Guide 51	IEC 62368-1
a) prévention intrinsèque	1. prévention intrinsèque en limitant tous les dangers d'énergie à la classe 1
b) protecteurs et dispositifs de protection	2. **protections de l'équipement**
	3. **protections de l'installation**
	4. **protections individuelles**
c) informations pour les utilisateurs finaux.	5. **protections de comportement**
	6. **protections par instructions**

L'appréciation du risque a été considérée comme faisant partie intégrante de l'IEC 62368-1, comme indiqué ci-après (de l'ISO/IEC Guide 51) (Figure 1) dans le présent document. Voir également le flux de processus du HBSE (Hazard Based Safety Engineering) (Figure 2) dans le présent document, qui donne également des informations détaillées supplémentaires pour procéder à la comparaison ci-dessus.

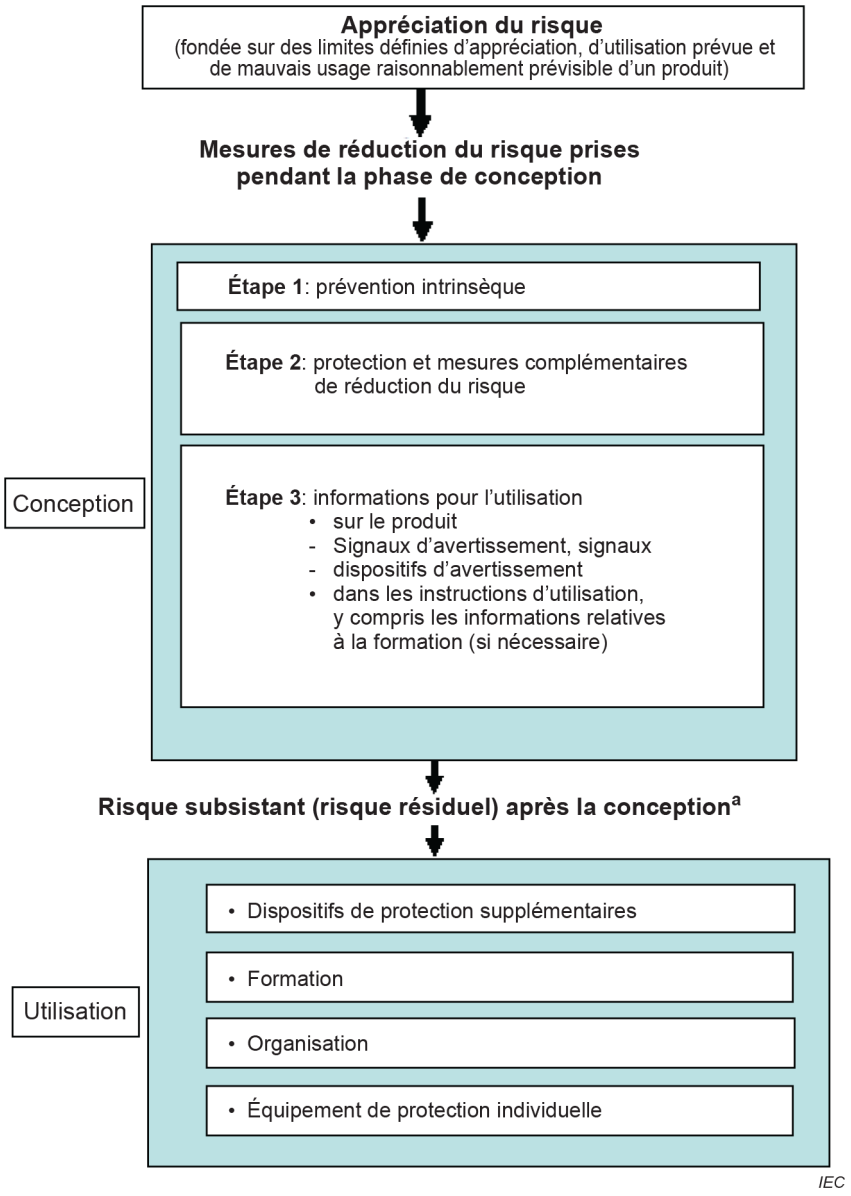

Figure 1 – Réduction du risque comme indiqué dans l'ISO/IEC Guide 51

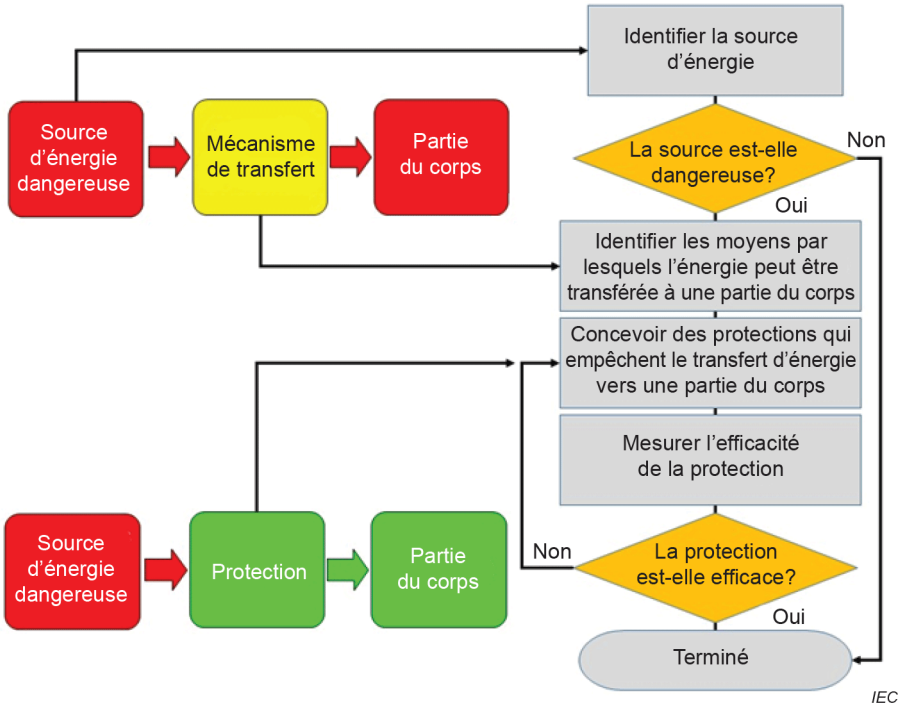

Figure 2 – Diagramme de processus HBSE

0.5.7 Protections dans des conditions d'entretien par une personne qualifiée

Objet: Expliquer l'objet des exigences de fournir des **protections** contre une réaction involontaire.

Justificatif: Par définition, une **personne qualifiée** a reçu la formation et a acquis de l'expérience pour identifier toutes les sources d'énergie de classe 3 auxquelles elle peut être exposée. Toutefois, au cours de l'entretien d'une source d'énergie de classe 3 dans un emplacement, une **personne qualifiée** peut être exposée à une autre source d'énergie de classe 3 dans un autre emplacement.

Dans cette situation, l'un des deux événements suivants est possible. Tout d'abord, un événement peut déclencher une réaction involontaire de la **personne qualifiée**, provoquant le contact avec la source d'énergie de classe 3 située dans l'autre emplacement. En second lieu, l'espace dans lequel se trouve la **personne qualifiée** peut être exigu et étroit, et un contact involontaire avec une source d'énergie de classe 3 dans l'autre emplacement peut être probable.

Dans cette situation, le présent document peut exiger une **protection de l'équipement** uniquement pour protéger une **personne qualifiée** qui procède à une opération d'entretien.

---

1 Domaine d'application

Objet: Identifier l'objet et l'applicabilité du présent document et les éléments exclus du domaine d'application.

Justificatif: Le domaine d'application exclut les exigences de sécurité fonctionnelle. La sécurité fonctionnelle est traitée dans l'IEC 61508-1. Étant donné que le domaine d'application inclut les ordinateurs qui peuvent commander les systèmes de sécurité, les exigences de sécurité fonctionnelle incluent nécessairement celles relatives aux processus et logiciels informatiques.

Les exigences indiquées dans l'IEC 60950-23 ont pu être modifiées et ajoutées à l'IEC 62368 comme un autre document –X . Toutefois, compte tenu de l'IEC 62368-1 qui est fondée sur les dangers, les exigences de l'IEC 60950-23 ont été intégrées dans le corps de l'IEC 62368-1 et rendues plus génériques

L'ajout des exigences de l'IEC 60950-23 vise à maintenir l'objectif général des exigences techniques de l'IEC 60950-23, à les intégrer dans l'IEC 62368-1 en se conformant au format global de l'IEC 62368-1 et à simplifier et faciliter leur application.

Traditionnellement, les robots relèvent des domaines d'application des documents ISO, gérés en général par le comité technique 299 de l'ISO. Le comité technique 299 de l'ISO dispose de groupes de travail sur les robots d'assistance à la personne et les robots de service, et produit, par exemple, l'ISO 13482, *Robots et composants robotiques – Exigences de sécurité pour les robots de soins personnels*.

_____

2 Références normatives

La liste des références normatives répertorie tous les documents cités en référence normative dans le corps du document. À ce titre, les documents cités en référence sont indispensables à l'application du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document cité en référence s'applique (y compris les amendements).

Dernièrement, des laboratoires d'essai ont voulu utiliser la dernière édition dès sa publication, ce qui a posé un problème. Cette situation ayant créé de graves problèmes pour les fabricants, étant donné qu'ils n'avaient aucune chance de s'adapter, il a été estimé qu'il convenait de prévoir une période de transition raisonnable. Cette disposition correspond aux décisions précédentes prises par le SMB, qui autorise à mentionner les périodes de transition dans l'avant-propos des documents. Par conséquent, le comité d'études 108 de l'IEC a décidé d'indiquer cette information dans l'introduction de l'article sur les références normatives, afin de demander aux laboratoires d'essai de tenir compte d'une période de transition, d'une date d'entrée en vigueur ou d'une date de suppression établie pour le document.

Ces documents sont cités en référence, en tout ou partie ou en tant qu'exigences alternatives à celles contenues dans le présent document. Leur utilisation est spécifiée, le cas échéant, pour l'application des exigences du présent document. Le fait qu'une norme apparaisse dans la liste ne signifie pas que la conformité au document ou à ses parties soit exigée.

_____