# SLOVENSKI STANDARD
# oSIST prEN IEC 63087-1:2020

**01-december-2020**

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**Merilna metoda za pomoč pri poslušanju (TA 16)**

Measurement method for assistive listening functionality (TA 16)

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**Ta slovenski standard je istoveten z:** **prEN IEC 63087-1:2020**

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**ICS:**

33.160.30 Avdio sistemi Audio systems

**oSIST prEN IEC 63087-1:2020** **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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# 100/3479/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

| PROJECT NUMBER: | |
|---|---|
| **IEC 63087-1 ED1** | |
| DATE OF CIRCULATION: | CLOSING DATE FOR VOTING: |
| **2020-10-09** | **2021-01-01** |
| SUPERSEDES DOCUMENTS: | |
| **100/3276/CD, 100/3377/CC** | |

IEC TA 16 : ACTIVE ASSISTED LIVING (AAL), WEARABLE ELECTRONIC DEVICES AND TECHNOLOGIES, ACCESSIBILITY AND USER INTERFACES

| SECRETARIAT: | SECRETARY: |
|---|---|
| Germany | Mrs Ulrike Haltrich |
| OF INTEREST TO THE FOLLOWING COMMITTEES: TC 29 | PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary. |

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY

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☒ SUBMITTED FOR CENELEC PARALLEL VOTING ☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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**Attention IEC-CENELEC parallel voting**

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

**Measurement method for assistive listening functionality (TA 16)**

PROPOSED STABILITY DATE: 2023

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# ASSISTIVE LISTENING DEVICES AND SYSTEMS FOR ACTIVE ASSISTED LIVING –

## Part 1: General

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International Standard IEC 63087-1 has been prepared by Technical Area 16: Active Assisted Living (AAL), accessibility and user interfaces of IEC technical committee 100: Audio, Video and multimedia equipment and systems.

The text of this standard is based on the following documents:

| FDIS | Report on voting |
|---|---|
| XX/XX/FDIS | XX/XX/RVD |

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

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

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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.

The National Committees are requested to note that for this publication the stability date is 2022.

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

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# INTRODUCTION

AAL (Active Assisted Living) aims to improve the quality of users lives. The user is any person of any age who uses or benefits from AAL products, services and systems. IEC has created the Systems Committee AAL which is tasked to develop systems standards taking into account the following: products, services and systems, safety, security and privacy.

The TC 100 title items, audio, video and multimedia device and systems provide various services to users, however some of users may have some difficulties of hearing, listening, viewing and sensing because of their age or by nature or some other reasons. These users increase in this mature society, IEC shall correspond to this situation with the philosophy of AAL.

The legacy standardization work focuses on providing quality and functions to the ordinary user, this document specifies the requirement for providing audio quality and functionalities to the users who have some difficulties with hearing and listening.

Personal listening systems are used to improve the perception and audibility of a range of sound sources when listening in non-ideal situations. Examples of these include listening to a television when not seated close to it, following a discussion in a meeting, engaging in a one-to one conversation, or in other applications where programme material is available such as transport, theatre or education environments where provision for access enables users to overcome the presence of competing background noise.

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Personal listening systems are widely used by those with normal hearing, but in some instances by those who have a mild hearing loss, but either do not consider that they need a hearing aid, or do not meet health-care criteria for hearing aid provision.

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Unlike hearing aids, which are classified as Medical Devices and require an appropriately trained and competent hearing aid professional to assess an individual's hearing and select and fit an suitable device, personal listening systems are not provided for by current regulatory requirements. Requirements for hearing aid performance are specified within the IEC 60118 series of Standards and aspects relating to hearing aid safety are specified in relevant parts of IEC 60601.

Changes in regulatory restrictions on the marketing of devices intended to assist hearing lead to the need to create an electroacoustic performance standard (including the related methods of measurement) for personal listening systems. This Standard specifies basic requirement for personal listening systems, establishes a control on their maximum sound pressure level output and establishes defines recommended performance in other respects, including frequency response, distortion and internally generated noise.

This standard only makes provision for the electroacoustic performance of personal listening systems which relate to their input and output. Products which physically resemble modern hearing aids and which are entirely worn on or in the ear are also excluded from the scope of this Standard

This project is intended to co-ordinate with IEC TC100 activity on the accessibility of audio sources.

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# ASSISTIVE LISTENING DEVICES AND SYSTEMS FOR ACTIVE ASSISTED LIVING –

# Part 1: General

## 1 Scope

This part of IEC 63087 specifies requirements for the provision of assistive listening in audio, video and multimedia systems and equipment. The requirements are of different kinds, because of the diversity of the hardware concerned. Existing IEC standards for methods of measurement are normatively referenced if they exist. Associated performance requirements are specified in this standard or another Part of IEC 63087.

This International Standard specifies requirements, and the associated methods of measurement, for the electroacoustic performance of personal listening systems. This standard does not apply to hearing aids. Also excluded are devices entirely worn on or in the ear, which cannot be measured independently.

## 2 Normative references

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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.

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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 terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

**3.1**
**product**
piece of equipment, possibly comprising several objects that work together, that is typically acquired by a member of the general public as a single purchase

EXAMPLE 1 a television receiver

EXAMPLE 2 a radio headphone kit, comprising headphones, transmitter and power supply

Note 1 to entry: The term 'product' is used to improve clarity, as the term 'equipment' is considered to be rather 'technical'.

**3.2**
**personal listener**
product relaying an acoustic input signal to an acoustic output transducer, for listening purposes. A system will at least comprise a microphone, an electrotechnical amplifier and earphones or headphones.

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Note 1 to entry Additional items can be included, such as a neck loop for use with hearing aids, or a magnetic pick-up coil for use with hearing-loop systems

**3.3**
**assistive listening**
listening with assistance of technologies

**3.4**
**hearing aid**
portable instrument intended to assist the hearing of persons with impaired hearing, usually consisting of a microphone, amplifier and earphone or bone vibrator

Note 1 to entry. A hearing aid is a medical device selected and fitted by an appropriately trained and competent hearing aid professional.

# 4 General

## 4.1 Assistive listening devices and systems

Assistive listening systems consist of dedicated listening devices and audio amplifiers.

## 4.2 Sources of audio for assistive listening

No such list can be exhaustive, but the major sources are listed in Table 1, with the applicable IEC 'methods of measurement' standard, if it exists, and an applicable performance standard, if it exists. The list is intended to be updated as new sources qualify for inclusion.

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**Table 1 Sources of audio for assistive listening**

| Product or system | 'Methods of measurement' standard | Applicable 'interoperability standard' [a] |
|---|---|---|
| Radio receiver | IEC 60315 (relevant Part) | IEC 61938 |
| Television receiver | IEC 60107 (relevant Part) | IEC 61938 |
| Video player | IEC 60268 (relevant Part) | IEC 61938 |
| Personal music player | IEC 60268 (relevant Part) | IEC 61938 |
| Smart phone and its expansion system | IEC 61606-3 | IEC 61938 |
| PC, Tablet | IEC 61606-3 | IEC 61938 |
| Home audio system | IEC 60268 (relevant Part) | IEC 61938 |
| Car audio system | IEC 60268 (relevant Part) | IEC 61938 |
| Sound reinforcement system | IEC 60268 (relevant Part | IEC 61938 |
| Microphone | IEC 60268 (relevant Part) | IEC 61938 |
| Intercommunication system | IEC 60268 (relevant Part) | IEC 61938 |
| Audio over IP system | EBU Tech 3326 | |
| [a] IEC 61938 gives recommended electrical interface characteristics for the connection of assistive listening devices as accessories. | | |

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## 4.3 Dedicated assistive listening systems

Table 2 gives a non-exclusive list of such systems, but the list is intended to be updated as new systems qualify for inclusion.

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191 **Table 2 Dedicated assistive listening systems**

| Type of system | Applicable standards | Notes |
|---|---|---|
| Hearing-loop system | IEC 60118-4, IEC 62489-1, IEC TR 63079 | Studied by IEC TC29. Include methods of measurement and performance requirements |
| Personal listener | IEC 63087 (other Part) | Standard to include methods of measurement and performance requirements. Product includes microphone, amplifier and earpieces. Can include input from any system type, and or output to telecoil or other method as applicable. |
| Infra-red system | [IEC (60)914 was withdrawn] | This was a TC 100 standard, but not dedicated to assistive listening. Includes infra-red headphones. |
| Radio system (VHF) | | Includes radio headphones |
| Wireless system (2.4 GHz and similar) | | Includes wireless headphones |
| Audio vibration system | | 'Body sonic' is an example |
| Sound field system | IEC 62777 | With directional loudspeaker or parametric sound system |

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193 # 5 Requirements in the context of accessibility and ease of use

194 ## 5.1 Requirements for products and systems under the control of the user

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195 ### 5.1.1 General requirements

196 These requirements apply generally, but one or more might be inapplicable in some cases. The
197 manufacturer shall be prepared to justify any deviation.

198 • Designs shall take into account that users might have impaired vision and manual dexterity,
199 in addition to hearing impairment;

200 • Rotary controls are more suitable than push-buttons or touch controls with a visual display;

201 • Voice control…Voice or sound information or instruction;

202 • Controls shall be labelled in words, not only symbols; overlays or adhesive labels can be
203 provided for labelling in different languages;

204 • Alpha-numeric characters shall be at least 3 mm high (x-height) and strongly contrast with
205 their background;

206 Note Black text in a sans-serif font on any light-coloured background can usually be read easily.

207 • Controls of functionality shall be easy and less complexity.

208 ### 5.1.2 Considerations for specific products and systems under the control of the user

209 #### 5.1.2.1 Radio receivers

210 Radio receivers shall provide, in addition to any other audio signal format, a single channel of
211 acceptable 'mono' composition, either digital or analogue, suitable for connection to an assistive
212 listening accessory.

213 Note A two-channel 'stereo' signal might be provided as well, but the demand for stereo in the hearing-impaired
214 community is low, because many have very different impairments in the two ears.