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**Simultaneous interpreting —  
Equipment — Requirements**

*Interprétation simultanée — Équipement — Exigences*

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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](http://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](http://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 on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

The committee responsible for this document is ISO/TC 37, *Terminology and other language and content resources*, Subcommittee SC 5, *Translation, interpreting and related technology*.

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## Introduction

This document specifies the components of typical interpreting equipment, which together with either permanent (ISO 2603) or mobile (ISO 4043) booths, form the interpreter's working environment.

Interpreting equipment, included until the 1998 version in ISO 2603, and referred to in ISO 4043, has now found its place in this document, together with other elements indispensable for the interpreter's working environment, like video displays and chairs.

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# Simultaneous interpreting — Equipment — Requirements

## 1 Scope

This document specifies requirements for equipment used for simultaneous interpreting.

Accessibility requirements are defined in [Annex A](#).

Requirements for booths furniture are defined in [Annex B](#).

Requirements on the system operation are defined in [Annex C](#).

In conjunction with either ISO 2603 or ISO 4043, ISO 20108 and this document provide the relevant requirements both for the quality and transmission of sound and image provided to interpreters and for the equipment needed in the booths.

## 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 639-3, *Codes for the representation of names of languages — Part 3: Alpha-3 code for comprehensive coverage of languages*

ISO 9241-303, *Ergonomics of human-system interaction — Part 303: Requirements for electronic visual displays*

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ISO 9241-410, *Ergonomics of human-system interaction — Part 410: Design criteria for physical input devices*

ISO 24503, *Ergonomics — Accessible design — Tactile dots and bars on consumer products*

IEC 60268-4, *Sound system equipment — Part 4: Microphones*

IEC 60268-7, *Sound system equipment — Part 7: Headphones and earphones*

## 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

#### **simultaneous interpreting**

mode of interpreting performed while a speaker is still speaking or signing

Note 1 to entry: The activity requires specialized equipment.

### 3.2

#### **interpreter console**

individual workstation containing controls for listening and speaking that enables *simultaneous interpreting* (3.1)

3.3

**microphone**

device that converts sound into an electrical signal

3.4

**headphones**

device that converts an electrical signal into sound, designed to be held in place close to the user's ears

3.5

**headset**

*headphones* (3.4) combined with a *microphone* (3.3)

3.6

**portable interpreting system**

*simultaneous interpreting* (3.1) system that is lightweight, battery operated and enables the interpreter and the participants to move around

3.7

**relay interpreting**

interpreting that occurs when an interpreter's input comes from another interpreter's rendition and not directly from the speaker

3.8

**relay status**

indicator of the source of an *interpreter console's* (3.2) incoming channel

Note 1 to entry: The source can be the floor, direct interpreting, relay interpreting, or double relay interpreting.

3.9

**video display**

electronic device that represents information in a visual form

3.10

**distance interpreting**

remote interpreting

*simultaneous interpreting* (3.1) of a speaker in a different location from that of the interpreter, enabled by information and communications technology

## 4 Overall interpreting system

### 4.1 General

The entire system's audio processing shall be digital. Overall latency between the analogue input (microphone) to the analogue output (headphone) shall not exceed 10 ms.

All sound pressure levels (SPL) referred to in this document are based both on a nominal input level between 85 dB<sub>SPL</sub> and 115 dB<sub>SPL</sub> at 30 cm speaking distance, and on the use of passive headphones with an impedance of 32 ohms and a throughput between 95 dB<sub>SPL</sub> and 115 dB<sub>SPL</sub> per milliwatt.

### 4.2 Frequency response

The overall interpreting system excluding the microphones and headphones shall correctly reproduce audio-frequencies between at least 125 Hz and 15 000 Hz ± 3 dB, high-pass with attenuation of at least 12 dB per octave for frequencies below 125 Hz in order to improve speech intelligibility.

The microphone and the headphones shall correctly reproduce audio-frequencies between 125 Hz and 15 000 Hz ± 10 dB.



### 4.3 Amplitude nonlinearity

The system shall be free of perceptible distortion; total harmonic distortion (THD) should be less than 1 %.

### 4.4 Noise and hum

The system shall be free of perceptible noise and hum, with an end-to-end signal-to-noise ratio of at least 95 dBA at maximum input level.

### 4.5 Hearing protection

An audible hearing-damage warning shall be activated when the average sound pressure level is higher than 80 dBA<sub>SPL</sub> for more than 1 min.

The system shall limit loud sounds, with a maximum output level of 94 dBA<sub>SPL</sub> for any duration longer than 100 ms.

### 4.6 Level consistency across channels

The volume of each channel should be automatically adjusted to minimize the volume difference between channels, as well as between channels and the floor assuming that the input level varies between nominal and  $\pm 12$  dB.

## 5 Interpreter console

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### 5.1 General

There shall be one console for each interpreter, containing individual controls for listening and speaking, including the relevant indicators.

The console may be either freestanding on or integrated into the working surface. The surface of the console shall be matte and non-reflecting.

It shall be possible to quickly and easily service or replace a malfunctioning console or its microphone without impairing the functioning of the rest of the system.

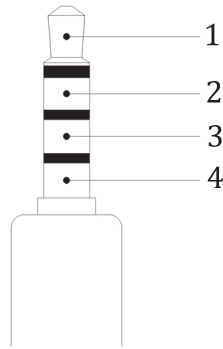
The console shall be fully and equitably usable by non-sighted persons, as well as persons with low vision, anomalous colour vision, or age-related degeneration of vision. It shall be easy to operate and not require manual dexterity from users.

For further requirements regarding the accessibility and usability of the interpreter console, see [Annex A](#).

### 5.2 Headphones/headset connector

Each interpreter console shall have one non-locking, 3,5 mm headphones/headset connector socket on each side. It may have an additional, non-locking, 6,35 mm headphones connector socket.

Each 3,5 mm connector shall follow the Tip, Ring 1, Ring 2, Sleeve (TRRS) CTIA/AHJ Standard, where Tip = Headphone Left, Ring 1 = Headphone Right, Ring 2 = Ground, Sleeve = Microphone (see [Figure 1](#)).



**Key**

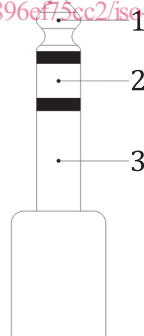
- 1 headphone left
- 2 headphone right
- 3 ground
- 4 microphone

**Figure 1 — 3,5 mm TRRS connector pinning**

The console shall detect if a headset is connected to any 3,5 mm connector. When a headset is connected, the console’s fixed microphone shall be automatically deactivated, but not the microphone on-air indicator light and the headset’s microphone shall be activated. When the headset is disconnected, the console’s fixed microphone shall be automatically activated again. An indicator shall be available when a headset is connected and activated. (standards.iteh.ai)

Each 6,35 mm connector shall follow the Tip, Ring, Sleeve (TRS) configuration, where Tip = Headphone Left, Ring = Headphone Right and Sleeve = Ground (see Figure 2).

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**Key**

- 1 headphone left
- 2 headphone right
- 3 ground

**Figure 2 — 6,35 mm TRS connector pinning**

**5.3 Console dimensions**

Console dimensions shall be (width × height × depth):

- maximum: 40 cm × 15 cm × 21 cm;
- minimum: 28 cm × 5 cm × 12,5 cm.

For ergonomics purposes, the console inclination shall be between 15° and 45°.

## 5.4 Indicator lights

Indicator lights shall be confined to primary functions (microphone “ON,” channel selected, channel occupied/engaged, etc.) and shall be in the immediate vicinity of the corresponding controls.

The microphone “ON” light shall be evident to anyone present in the booth, without disturbing the occupants. It shall be the only red indicator light; all other indicator lights shall use colours other than red. In addition, the microphone shall have an on-air indicator light which shall be red when the microphone is switched on.

Where a “power-on” indicator is provided, it shall be unobtrusive.

## 5.5 Buttons

The buttons shall be laid out so that they correspond with the information and content they control and be arranged in hierarchical order or in a sequence which will aid recognition and use in accordance with ISO 9241-410.

Buttons should protrude in depth from the surface and have, where possible, a diameter/width of 10 mm or greater. When a button is pressed, a clear haptic feedback shall be produced.

Groups of buttons should have tactile markings that aid identification and navigation, according to ISO 24503.

The number of buttons required to use the console should take into account the need to avoid excessive complexity and confusion.

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## 5.6 Visual display

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If the console includes a display screen, it shall be non-reflective and legible at the intended viewing angle.

The tilt of the display shall permit an ergonomically sound gaze angle and head tilt angle, in accordance with ISO 9241-303.

Display luminance shall be easily adjustable. The display shall be designed to provide good visual ergonomics and a good luminance contrast across a variety of lighting conditions (darkened meeting room, low lighting in the booth, normal office lighting conditions, direct sunlight).

For light-emitting (active) displays, the foreground to background luminance should have a contrast ratio of 6:1 or higher.

Character height should be 10mm for perpendicular viewing. If the user is looking at an angle, character height should be increased accordingly.

Colour combinations should be considered carefully. When using colour to provide information, information shall also be provided using non-colour methods.

## 5.7 Listening section

### 5.7.1 Incoming channel pre-selection

Incoming channel pre-selection shall be provided for at least three incoming language channels and the floor channel. Depending on the number of booths or the requested language combination of a meeting or conference, up to seven incoming channel pre-selections may be required.

The pre-selected channel shall be clearly indicated, close to the selector, giving channel numbers and languages in alphanumeric form according to ISO 639-3 codes.