

### **BECIL's comments on the following BIS Documents:**

- i) LITD 07 (22583) Draft IS/IEC 60958-3: 2021 June 2023 : Digital Audio Interface - Part 3 Consumer Applications Second Revision.
- ii) LITD 07 (22609) WC : Sound System Equipment Listening Tests on Loudspeakers for revision of Indian Standard (IS 10467 : 1983)
- iii) LITD 07 (22588) - Draft IS 15596 (Part 7)-2023 : Sound System Equipment Part 7: Headphones and Earphones (Second Revision) for comments.
- iv) LITD 07 (22587) IS 14231 : Part 9 : 2002/IEC 60728-9 (2000) Cabled Distribution Systems for Television and Sound Signals - Part 9 : Interfaces of Cabled Distribution Systems for Digitally Modulated Signals for comments (BIS email dated 12.6.2023):
- v) 5. BIS document LITD 07 (22612) WC - Digital Audio Interface - Part 4: Professional Applications - Section 2: Metadata and Subcode (New Indian Standard) for comments (BIS email dated 12.6.2023):
- vi) 6. LITD 07 (22614) WC - Digital Audio Interface - Part 4: Professional Applications - Section 4: Physical and Electrical Parameters (New Indian Standard) for comments (BIS email dated 12.6.2023):

### **1. LITD 07 (22583) Draft IS/IEC 60958-3: 2021 June 2023 : Digital Audio Interface - Part 3 Consumer Applications Second Revision.**

- i) This Draft Indian Standard (Part 3) (Second Revision) which is identical with IEC 60958-3:2021 'Digital Audio Interface - Part 3: Consumer Applications' issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendations of Audio, Video and Multimedia Systems and Equipment Sectional Committee and approval of the Electronics and Information Technology Division Council.
- ii) This Standard was originally published in 2007 and was identical with IEC 60958-1: 2003. The First Revision of this standard was published in 2017 and was identical with IEC 609583: 2006. The Second Revision of this standard aligns this Indian Standard with IEC 60958-3: 2021.
- iii) This document specifies the technical requirements for the interconnection of digital audio equipment in consumer applications. The standard includes information on the sampling frequency, bit resolution, and channel status data that are used in

the transmission of digital audio signals. This standard also defines the electrical and mechanical requirements for the interface, including the connector type, cable specifications, and transmission protocols.

iv) The document IEC 60958-3: 2021 was examined and following changes are found, which are not available in the Indian standard IS IEC 60958-3: 2006 :

- a) Para 5.2.2 : Bits 49-53, 54-58 and 61-62 are defined, whereas in the Indian standard Bit 49 to 55 were kept reserved.
- b) Para 6.3.4 : Loudness information- This input was not there in the earlier Indian standard.

v) The text of IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminology and conventions are not however identical to those used in Indian Standards.

Moreover, the standard covers all the digital audio interfaces that are used in Broadcasting in its annexures A to T.

vi) **BECIL agrees to the above changes and the IEC standard may be adopted as Indian standard.**

## **2. LITD 07 (22609) WC : Sound System Equipment Listening Tests on Loudspeakers (BIS email dated 12.6.2023) for revision of Indian Standard (IS 10467 : 1983) :**

i) This Draft Indian Standard which is identical with IEC TR 60268-13:1998 'Sound system equipment - Part 13: Listening tests on loudspeakers' issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendations of the Audio, Video and Multimedia Systems and Equipment Sectional Committee, and approval of the Electronics and Information Technology Division Council.

ii) This Standard was originally published in 1983 and during development of this standard assistance was derived from IEC Doc: 29 B (Secretariat) 189 'Sound system equipment: Part 8 Listening test on loudspeakers. The First Revision of this standard align this Indian Standard with IEC TR 60268- 13:1998.

iii) This standard specifies the recommendations for listening tests on loudspeakers. The recommendations apply to loudspeakers intended for residential systems and environments. Although the procedures are specifically designed for loudspeakers which are separate sound system components for either monophonic, two-channel stereophonic or multichannel stereophonic reproduction, they may also be applied to other devices such as complete audio and television receivers with

integrated sound. This report gives recommendations for establishing, conducting and evaluating listening tests on loudspeakers.

iv) The documents were examined and following changes in the IEC standard may be necessary:

- a) Some Terminologies may be modified as used in Indian Standard.
- b) Physical dimensions such as room size, etc. may be maintained as per the Indian Standard.
- c) Environmental conditions may be kept as per the Indian Standard.
- d) Programme material including musical instruments, etc. may be maintained as per the Indian standard.

v) Accordingly, following changes are proposed in the IEC Standard to be adopted as Indian Standard :

IEC 60268-13		Changes proposed
Para no	Subjects/ Terms	
	Forword	Similar to IS 10467-1983 with necessary changes in para 0.5
1.3	Explanation of Terms	'Explanation of Terms' may be replaced as 'TERMINOLOGY' and in sub para 1.3.1 replace 'Programme excerpt' as 'Programme Section', etc.
2	Listening Conditions	May be replaced as 'PHYSICAL CONDITIONS'
2.1.1	Room Dimensions	As per para 3.1.1.1 to 3.1.1.5 of IS 10467-1983
2.1.3	Environmental conditions	As per para 3.1.3 of IS 10467-1983
4	Programme Material	May be replaced by Para 3 of IS 10467-1983

**3. LITD 07 (22588) - Draft IS 15596 (Part 7)-2023 : Sound System Equipment Part 7: Headphones and Earphones (Second Revision) for comments (BIS email dated 12.6.2023).**

i) This Draft Indian Standard (Part 7) (Second Revision) which is identical with IEC 60268-7:2020 'Sound system equipment - Part 7: Headphones and earphones' issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendation of the Audio, Video and Multimedia Systems and Equipment Sectional Committee and approval of the Electronics and Information Technology Division Council.

ii) This part of IEC 60268, is applicable to headphones, headsets, earphones and earsets, intended to be used on, or in, the human ear. It

also applies to equipment, such as pre-amplifiers, passive networks and power supplies which form an integral part of the headphone system.

iii) This document outlines the performance requirements for headphones and earphones. It specifies the measurement methods and performance criteria that should be used to test headphones and earphones, including frequency response, distortion, sensitivity, maximum power input, Power supply, Electrical impedance, Input voltage, Frequency response, Amplitude non-linearity, Rated climatic conditions, Unwanted sound radiation, Sound attenuation, Crosstalk attenuation for multi-channel headphones etc.

iv) This standard was originally published in 2005 and was identical with IEC 60268-7:1996. The First Revision of this standard was published in 2016 and was identical with IEC 60268-7: 2010. The Second Revision of this standard aligns this Indian Standard with IEC 60268-7:2020 CSV.

v) This edition constitutes a technical revision and contains the following changes:

- addition of a measurement system using Head and torso simulator (HATS);

The HATS used for measurement shall comply with IEC TS 60318-7, however with the pinna simulator specified in IEC 60268-7:2010.

- addition of details on pinna simulators for high measurement reproducibility.

(The pinna simulators in IEC TR 60959 are primarily intended for hearing aid measurements, including behind-the-ear hearing aids. Therefore, these pinna simulators have extra-large ear protrusions, larger concha volumes and a simple ear canal inlet shape. This reduces their suitability for supra-aural, circumaural, supra-concha, intra-concha and insert earphone measurements.)

vi) In the past the Indian standard has been revised from time to time in line with changes made in IEC 60268-7. **BECIL agrees to the above amendments as mentioned in para v) above as per the IEC 60268-7:2020 CSV.**

#### **4. LITD 07 (22587) IS 14231 : Part 9 : 2002/IEC 60728-9 (2000) Cabled Distribution Systems for Television and Sound Signals - Part 9 : Interfaces of Cabled Distribution Systems for Digitally Modulated Signals for comments (BIS email dated 12.6.2023):**

i) This Indian Standard (Part 9) which is identical with IEC 60728-9 : 2000 `Cabled distribution systems for television and sound signals - Part

9: Interfaces of cabled distribution systems for digitally modulated signals' issued by the International Electrotechnical Commission (IEC) was adopted by the Bureau of Indian Standards.

ii) Standards of the IEC 60728 series deal with cable networks for television signals, sound signals and interactive services including equipment, systems and installations – for headend reception, processing and distribution of television and sound signals and their associated data signals, and – for processing, interfacing and transmitting all kinds of signals for interactive services using all applicable transmission media. All kinds of networks like CATV-networks, MATV-networks and SMATV-networks, individual receiving networks and all kinds of equipment, systems and installations installed in such networks, are within the scope of this series. The extent of this standardization work goes from the antennas, special signal source inputs to the head-end, or other interface points to the network, up to the system outlet or the terminal input, where no system outlet exists.

iii) This part of IEC 60728 describes physical interfaces for the interconnection of signal processing devices for professional CATV/SMATV headend equipment or for similar systems, such as in up-link stations. This standard, in particular, specifies the transfer of MPEG-2 data signals in the standardized transport layer format between devices of different signal processing functions.

iv) This draft amendment No.1 is identical with amendment No.1 of IEC 60728-9:2000 "Cabled distribution systems for television and sound signals - Part 9: Interfaces of cables distribution systems for digitally modulated signals" published in 2005 issued by International Electrotechnical Commission (IEC).

v) This amendment provides Guidelines for the implementation and usage of the DVB Asynchronous Serial Interface.

vi) The amendment was examined and we have no comments to add and may agree to the above amendment.

**5. BIS document LITD 07 (22612) WC - Digital Audio Interface - Part 4: Professional Applications - Section 2: Metadata and Subcode (New Indian Standard) for comments (BIS email dated 12.6.2023):**

i. This document specifies the format for coding metadata, or subcode, that relates to the audio content and is carried with it in digital audio interfaces. This standard is focused on professional audio applications and is designed to provide a reliable and efficient way to transmit audio data.

ii. This Draft Indian Standard (Part 4/Section 2) which is identical with IEC 60958-4-2:2016 'Digital audio interface - Part 4-2: Professional applications - Metadata and subcode' issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendations of Audio, Video and Multimedia Systems and Equipment Sectional Committee and approval of the Electronics and Information Technology Division Council

iii. IS/IEC 60958-4: 2003 was originally published in 2007. IEC now has withdrawn IEC 60958- 4:2003 and it is now replaced by IEC 60958-4-1:2016, IEC 60958-4-4:2016. This Standard along with IS/IEC 60958-4-1: 2016, IS/IEC 60958-4-4:2016 supersedes IS/IEC 60958-4: 2003.

iv. The text of IEC Standard may be approved as suitable for publication as an Indian Standard without deviations. BIS, through wide circulation, sought further comments, if any, on the draft.

v. The document was examined. This Metadata and subcode document specifies the format for information, metadata, or subcode transmitted with the audio data, principally the "channel status" but also user data and the auxiliary bits. The standard defines User data format, Channel status format, Auxiliary bits including channel modes (e.g. two channel, stereophonic, monophonic, primary-secondary & single channel double sampling frequency mode). No additional input is felt necessary at this stage. We, therefore, have no comments to offer on the draft standard.

**6. LITD 07 (22614) WC - Digital Audio Interface - Part 4: Professional Applications - Section 4: Physical and Electrical Parameters (New Indian Standard) for comments (BIS email dated 12.6.2023):**

i. This document is part of a series of standards that together specify an interface for the serial digital transmission of two channels of periodically sampled and linearly represented digital audio data from one transmitter to one receiver

ii. This document specifies the physical and electrical characteristics of the interface, such as the connector type, cable length, and signal levels, to ensure reliable and efficient transmission of audio data.

iii. This Draft Indian Standard (Part 4/Section 4) which is identical with IEC 60958-4-4:2016 'Digital audio interface - Part 4-4: Professional applications - Physical and electrical parameters' issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendations of Audio, Video and

Multimedia Systems and Equipment Sectional Committee and approval of the Electronics and Information Technology Division Council.

iv. IS/IEC 60958-4: 2003 was originally published in 2007. IEC now has withdrawn IEC 60958- 4:2003 and it is now replaced by IEC 60958-4-1:2016, IEC 60958-4-2:2016. This Standard along with IS/IEC 60958-4-1: 2016, IS/IEC 60958-4-4:2016 will supersede IS/IEC 60958-4: 2003. This edition includes the following significant technical changes with respect to IS/IEC 60958- 4:2003:

- a) support for a wider range of physical media;
- b) support for a wider range of audio sampling frequencies;
- c) deprecation of "minimum implementation" of channel status data.

v. As stated in the BIS document, the text of IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. However, BIS, through wide circulation, sought further comments, if any, on the draft.

vi. The document was examined. The standard covers all interfaces, symbol rates & sampling frequencies, transmission interfaces for balanced, Co-axial, optical and other parameters associated with Digital Audio transmission in broadcasting. **We have no further comment on the draft standard.**