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**Technical requirements for multimedia information processing
for the visually impaired person**

盲用多媒体信息处理技术要求

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1 Scope

This document sets out the general production requirements for multimedia information, the requirements for script production and the requirements for narration recording and for video that are needed in order to describe multimedia information to visually impaired people.

It applies to the production of multimedia information for the blind on internet websites, mobile internet application platforms and new-media information publishing platforms of all kinds.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 multimedia information: media content formed by combining media elements of different kinds, such as text, graphics, images, audio and video.

4 General production requirements

Multimedia information produced for the blind shall meet the following general requirements.

- a) The main language of the multimedia information produced for the blind shall be the same as the language of the original multimedia information.
- b) The multimedia information produced for the blind shall not interfere with the visually impaired person's enjoyment of the original multimedia information.
- c) The multimedia information produced for the blind shall add descriptions of the picture content of the original multimedia information that has no dialogue, voice-over or monologue; except in special cases, the added description shall not overlap the dialogue of the characters.

5 Requirements for script production

5.1 General requirements for script production. 5.1.1 Objectivity: the script shall describe the content of the multimedia information objectively and truthfully, and shall not introduce personal judgements. 5.1.2 Common usage: common language and common terms shall be used, and specialised terminology unrelated to the multimedia content shall not be used; where the content makes a specialised term unavoidable, it shall first be briefly explained and then used in the description. 5.1.3 Accuracy: the script's description of the picture content shall be accurate, and language that is ambiguous or apt to be misunderstood shall not be used. 5.1.4 Completeness: except for simple prompts about characters, complete sentences shall be used. 5.1.5 Appropriateness: the script shall use concise and accurate wording and avoid vagueness and repetition; and it shall distinguish the important from the secondary, rather than describing every picture and every detail flatly and evenly. 5.1.6 Consistency: the content of the script shall not interfere with the normal dialogue of the original multimedia information, and the style of the script should as far as possible be consistent with that of the original.

5.2 Preparation for script production. 5.2.1 Viewing the multimedia information in full: before the script is produced, the multimedia information shall be viewed in full so that its whole shape is understood. 5.2.2 Understanding the relationships between characters and the main content: the main content and the development of the plot shall be understood in advance; the specialised vocabulary and the subject matter involved shall be studied as well, so that the script is accurate and professionally sound. 5.2.3 Completing a synopsis: a synopsis shall be compiled covering the time, the place, the characters and the main events of the multimedia information. 5.2.4 Other information: other related information shall be found out, including but not limited to the cast and crew and the producer.

5.3 Key points of the script content. 5.3.1 Description of time. a) For content in which the

indication of time is unclear, or in which there are many interpolated or flashback passages or several time lines, a prompting description of the time shall be given so as to help the visually impaired listener follow the story. b) If the gaps in the playback of the multimedia information are not long enough to describe the time, and yet the listener needs to know the effect on the story produced by the change of time, a suitable passage of the multimedia information shall be chosen for an added description; the added description should not be too long, and the language shall be clear and concise.

5.3 Key points of the script content (continued). 5.3.2 Description of place: changes of place in the multimedia information shall be prompted accordingly, and the prompting description shall be concise and accurate. 5.3.3 Description of characters. a) When a character first appears, an introductory description shall be given of features such as name, sex and age; this may be done all at once, or added at suitable moments according to the content. b) The character's expressions and bodily actions shall be described concisely and accurately, descriptive wording may be added as appropriate, and subjective judgements or conclusions about the character shall not be introduced. c) When several characters appear at once, the important shall be distinguished from the secondary and the identity of each character made clear. d) Where the multimedia information contains dialogue translated by subtitles, or dialogue in a language other than Chinese, the content of that dialogue shall be translated and restated in Chinese.

5.3 Key points of the script content (continued). 5.3.4 Description of scenes: the description of a particular scene shall be concise and clear, so as to help the visually impaired listener form a picture of it quickly. Where the content lacks clear scene features, expressions such as at this moment and now may be used to mark the change of scene, but they shall not be overused, and nothing shall be invented subjectively. 5.3.5 Description of the main plot: the necessary threads and the main events on which the development of the plot turns shall be described without a single omission, and the description shall keep pace with the original multimedia information. 5.3.6 Other key points of description: content that a visually impaired listener finds hard to understand shall be explained in the description, for instance special devices, geometric objects, scenes with a particular significance, the ethnic features of a character and colours carrying a particular meaning; subjective judgement shall not be introduced.

6 Requirements for narration recording and for video

6.1 Requirements for the recording environment. a) With all the necessary working equipment switched on, the dynamic background noise in the narration recording studio shall not be above the noise rating (NR) curve. b) With all the necessary working equipment switched on, the dynamic background noise in the recording control room shall not be above the NR curve. c) The airborne sound insulation of the door between the corridor and the dialogue recording studio shall be not less than 55 dB. d) The airborne sound insulation

of the door between the corridor and the recording control room shall be not less than 35 dB.

6.2 Requirements for narration recording. The narration shall be recorded following the content of the script, and shall meet the indicators of Table 1. For sound quality, the voice shall be true and clearly layered, rounded and soft, neither shrill nor harsh, and free of abnormal noise. For content, the recording shall agree with the script, with no misreading and no omission. For delivery rate, the sentences shall flow, the rate shall be even, and the pauses between sentences and paragraphs shall be of suitable length. For emotional delivery, the emotion shall suit the situation portrayed. For semantic expression, the meaning shall be clearly conveyed for the situation portrayed. For volume control, there shall be no clipping distortion and no excessively low level, and the volume shall be kept balanced between different readers and between different films.

6.3 Audio parameter requirements. 6.3.1 Audio recording. The audio parameters at recording shall meet the following: a) stereo audio shall be supported, and the audio shall be combined with the other media into a single file; b) the sampling rate shall be not lower than 44.1 kHz; c) the audio bit depth shall be not lower than 16 bit.

6.3 Audio parameter requirements (continued). 6.3.2 Enhanced requirements. The audio parameters should meet the following enhanced requirements: a) separate audio stems shall be provided, including the international sound, the dialogue and the music, together with the sound effects and the mixing parameters; b) stereo and 5.1 channels shall be supported, and immersive audio such as Dolby Atmos or WANOS should be supported; c) pulse code modulation (PCM) and advanced audio coding (AAC) shall be supported, with an AAC bit rate greater than 128 kb/s per channel; d) file container formats such as WAV, MOV and MXF shall be used; e) the sampling rate shall be not lower than 48 kHz; f) the audio bit depth shall be not lower than 24 bit; g) the maximum true peak of the audio shall be minus 2 dBTP, so as to avoid clipping distortion; h) the overall loudness of the audio shall reach minus 16 LUFS/LK, with a tolerance of plus or minus 2 LU, and the loudness shall be less than 12 LU.

6.4 Video parameter requirements. 6.4.1 Basic requirements. The video parameters shall meet the following basic requirements: a) MP4 and MOV containers shall be supported, H.264 and H.265 coding shall be used, and there shall be no visible noise and no picture break-up; b) the bit rate shall be not lower than 30 Mb/s; c) the resolution shall be not lower than 1080p; d) the frame rate shall be not lower than 25 f/s. 6.4.2 Enhanced requirements. The video parameters should meet the following enhanced requirements: a) the pixel aspect ratio shall be 1 to 1; b) the colour gamut shall meet BT.709-6; c) progressive scanning shall be supported.