

SMPTE ENGINEERING GUIDELINE

Safe Areas for Television



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Foreword

SMPTE (the Society of Motion Picture and Television Engineers) is an internationally-recognized standards developing organization. Headquartered and incorporated in the United States of America, SMPTE has members in over 80 countries on six continents. SMPTE's Engineering Documents, including Standards, Recommended Practices, and Engineering Guidelines, are prepared by SMPTE's Technology Committees. Participation in these Committees is open to all with a bona fide interest in their work. SMPTE cooperates closely with other standards-developing organizations, including ISO, IEC and ITU.

SMPTE Engineering Documents are drafted in accordance with the rules given in Part XIII of its Administrative Practices.

SMPTE EG 2046-3 was prepared by Technology Committee 10E.

Intellectual Property

At the time of publication, no notice had been received by SMPTE claiming patent rights essential to the implementation of this Engineering Guideline. However, attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. SMPTE shall not be held responsible for identifying any or all such patent rights.

1 Scope

SMPTE has several Standards and Recommended Practices on safe areas for television. Among these are SMPTE ST 2046-1, SMPTE RP 2046-2, SMPTE RP 218, and SMPTE RP 27.3. It is the purpose of this Engineering Guideline to explain the use of these documents and the relationships among them and others, principally SMPTE ST 2016-1. A brief history of TV safe areas and their evolution is also given.

2 Conformance Notation

Normative text is text that describes elements of the design that are indispensable or contains the conformance language keywords: "shall", "should", or "may". Informative text is text that is potentially helpful to the user, but not indispensable, and can be removed, changed, or added editorially without affecting interoperability. Informative text does not contain any conformance keywords.

All text in this document is, by default, normative, except: the Introduction, any section explicitly labeled as "Informative" or individual paragraphs that start with "Note:"

The keywords "shall" and "shall not" indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.

The keywords, "should" and "should not" indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

The keywords "may" and "need not" indicate courses of action permissible within the limits of the document.

The keyword "reserved" indicates a provision that is not defined at this time, shall not be used, and may be defined in the future. The keyword "forbidden" indicates "reserved" and in addition indicates that the provision will never be defined in the future.

Unless otherwise specified, the order of precedence of the types of normative information in this document shall be as follows: Normative prose shall be the authoritative definition; Tables shall be next; followed by formal languages; then figures; and then any other language forms.

3 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this recommended practice. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this recommended practice are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

None.

4 History of Television Safe Areas

From the early days of film and television, it has been recognized that not all of the information contained in the original image frame will necessarily be presented to the viewer. In television, the principal limitation has been the use of overscan in the viewer's receiver.

In 1957, the SMPTE Journal included a paper entitled Television Receiver Picture Area Losses, in which the author, Charles Townsend, describes research conducted at NBC's WRCA-TV in an effort to determine the extent of the broadcast image that was actually seen in viewers' homes. The paper is reproduced in Annex B. Note that the safe area the author suggests is based on the assumption that all elements within the safe area will be viewable on at least 85% of receivers; no attempt is made to ensure viewability on 100% of receivers.