

SMPTE RECOMMENDED PRACTICE

Audience Measurement Using OBID and OBID-TLC



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Foreword

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Introduction

This section is entirely informative and does not form an integral part of this Engineering Document.

This document is intended to provide guidance to implementers of SMPTE ST 2112-10, which standardizes the method of binding content identifiers, and SMPTE ST 2112-20, which standardizes the method of binding distribution channel identifiers and timestamps.

1 Scope

This Recommended Practice covers the use of SMPTE's Open ID (OBID and OBID-TLC) binding as applied to the Audience Measurement use case.

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.

A conformant implementation according to this document is one that includes all mandatory provisions ("shall") and, if implemented, all recommended provisions ("should") as described. A conformant implementation need not implement optional provisions ("may") and need not implement them as described.

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; then 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 engineering document. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this engineering document are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

SMPTE ST 2112-10:2018, Open Binding of Content Identifiers (OBID)

4 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

4.1 Acoustic Detection/Recovery

detection and recovery of an OBID or OBID-TLC mark via sound waves traveling through the air in a detection environment.

4.2 Direct Detection/Recovery

detection and recovery of an OBID or OBID-TLC mark via direct (electronic) connection to a receiving device.

4.3 Editing Rules

rules commonly used in electronic audience measurement systems that are designed to fill-in incomplete detection of watermarks. These are also referred to as bridging rules.

To account for the possibility that there may be decoding latency (i.e. a time lag between when a meter/device first detects a watermark and when it recognizes and registers that watermark) a lead-in or bridging edit may be applied to the beginning of each audio exposure event to ensure that the media outlet receives credit immediately after exposure. A typical lead-in or bridging edit will add 15 to 60 seconds immediately prior to the first watermark detection.

5 Mark Properties, Workflow and Signal Flow

5.1 General Principles – OBID Marks (informative)

OBID marks, which are defined in ST 2112-10, are used for carrying identifiers that uniquely identify the content being marked. There are several requirements with which the OBID mark was designed to comply. These are stated below.

5.1.1 Payload

The OBID mark carries either an Ad-ID or an EIDR (but not both simultaneously). The payload of the OBID mark is 32 bits in the case of Ad-ID and 96 bits in the case of EIDR, with an additional 8 bits for payload identification in each case. Refer to ST 2112-10 for the specifics of the form and carriage of these identifiers.

5.1.2 Survivability Across Platforms

Audio watermarking was chosen as an appropriate technology, due in part to its ability to survive across all common distribution platforms, and all other associated processing.

5.1.3 Recording And Playback

It is crucial that the OBID binding survive commonly used recording and replay methods in both the professional and consumer realms.

5.1.4 Granularity

The transition to or from one OBID mark to another has to be detected within 1 second of the transition when electronic (direct) detection is used, and 30 seconds when acoustic detection is used. This transition detection is not to be confused with recovery of the actual content ID.

5.1.5 Retrievability

When using electronic detection, OBID identifiers themselves must be recoverable from any continuous 3 second segment of content in the case of Ad-IDs, or any continuous 5 second segment of content in the case of EIDRs.

When using acoustic detection, OBID identifiers themselves must be recoverable from any continuous 30 second segment of content in the case of Ad-IDs, or any continuous 60 second segment of content in the case of EIDRs.

5.1.6 ID Replacement

In cases where content with an ID is re-aired, used within a new work, such as a composite work or similar situations, it must be capable of being removed or overwritten with the ID for the new work. A common example of this is the incorporation of short segments of content from sporting events in a sports highlight show. Removal and replacement or overwriting of marks is not transparent; it can have an adverse effect on the subjective quality of the audio and on the recoverability of the mark. Users are strongly advised to avoid multiple replacements or overwrites of OBID marks.

5.1.7 Insertion and Detection Points

OBID marks are to be inserted as the last step in the production process because changes to the audio content after mark insertion can have deleterious effects on the recoverability of the marks. Insertion of OBID marks later in the distribution chain is required to be possible but is undesirable because it can result in unmarked versions of content being distributed.

5.1.8 Quality

The presence of an OBID mark must not degrade the perceptible quality of audio and/or video, including lip sync, at the consumer's reception point.

5.1.9 Non Interference

The OBID watermark must not interfere with any existing watermarks in use.

5.1.10 Linear and Non-Linear Support

It is expected that insertion of OBID watermarks will be useful in both the linear and non-linear (file-based) environments.