# EIDR in Broadcast Workflows
January 2015 Status

EIDR is a global registry for unique identification of movie and TV content[1]. It is based on the ISO/IEC 26324 Digital object identifier (DOI) system standard[2], and is, for instance, the primary content identifier used in the UltraViolet[3] online media ecosystem.

The following highlights selected current and future applications of EIDR in broadcast workflows.
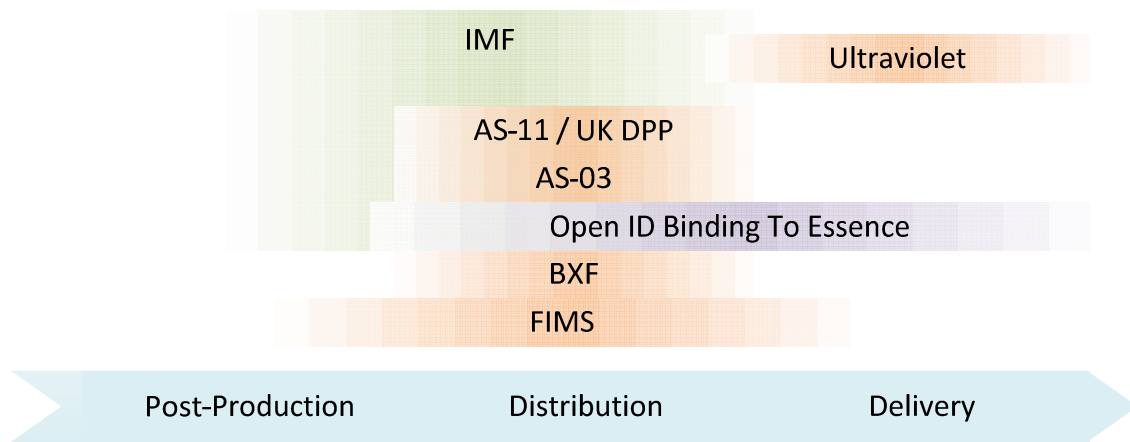
MXF and XML

The MXF media container and the XML language are at the heart of professional media workflows. To facilitate the use of EIDR in these workflows,

- SMPTE Recommended Practice RP 2079 specifies[4] text and KLV representations of EIDR Identifiers, supplementing ISO/IEC 26324.

- SMPTE Recommended Practice RP 2089 specifies[5] a Descriptive Metadata Scheme (DMS) that allows EIDR Identifiers to be added to an MXF file, at or after file creation.

- IETF RFC 7302[6] specifies the URN representation of EIDR Identifiers.

AS-03 and AS-11 (U.K. Digital Production Partnership)

AMWA AS-03 and AS-11[7] are vendor-neutral subsets of the MXF file format to use for delivery of finished programming from program producers and distributors to broadcast stations. AS-11 is used by the UK DPP[8] as the basis for its delivery requirements to UK broadcasters.

An EIDR Identifier can be designated as the primary program identifier by setting:

- the `AS_03_Identifier` and `AS_03_IdentifierKind` elements of the AS-03 DM Framework Set to the canonical string representation of the EIDR Identifier and the string `"EIDR"`, respectively; or

- the `Other Identifier` and `Other Identifier type` elements of the DM_AS_11_UKDPP DM Framework Set to the canonical string representation of the EIDR Identifier and the string `"EIDR"`, respectively.

Alternatively or in addition, SMPTE Recommended Practice RP 2089 can be used to associate an EIDR Identifier with an MXF file.

Interoperable Master Format (IMF)

A single TV or movie title is typically made into multiple content versions (airline edits, director's cut…), with each of these edits localized for multiple territories and encoded into multiple formats to meet the needs of each distribution channel, e.g. packaged media, Internet, broadcast, etc…

The IMF framework[9] allows these content versions, called Compositions, to be efficiently represented, managed, processed and exchanged. In particular it facilitates the on-demand generation of deliverables from a given Composition based on instructions contained in an Output Profile List.
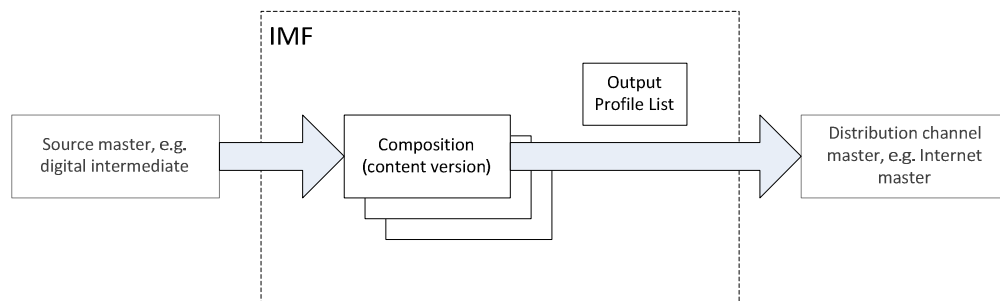
Figure 1. The IMF framework allows the management and processing of multiple high-quality content versions, called Compositions, of a finished content.

As such IMF is intended to be the first step in the long entertainment ecosystem. By associating an EIDR Identifier with a Composition, using the `//CompositionPlaylist/ContentVersion/Id` element of a Composition, the EIDR becomes available as the Composition is transformed, allowing the work to be identified, from its origin to downstream distribution channels.

The IMF family of standards (ST 2067-2, ST 2067-3, ST 2067-5, etc…) is published by SMPTE[10].

BXF

Broadcast Exchange Format (BXF)[11] is a protocol for the exchange of data among broadcast systems such as Traffic, Program Management, Automation, and Content Distribution.

SMPTE Recommended Practice RP 2021-5 allows[12] an EIDR Identifier to be carried wherever `BxfAlternateId` is used.

Open ID Binding To Essence

EIDR is routinely carried as metadata in media containers, or bound to an identifier associated with a media container. Such mechanism does not always survive processing or delivery to the consumer.

Based on input from the Coalition for Innovative Media Measurement (CIMM) industry group, the SMPTE 24TB Technology Committee on Television and Broadband Media is developing open standards[13] allowing EIDR to be bound to the audiovisual essence itself, e.g. using an audio watermark, so that it can survive throughout the media chain, up to display to the consumer.

Framework for Interoperable Media Services (FIMS)

FIMS allows descriptive metadata based on EBU Core to be associated with content being processed. EIDR is one of the identifier schemes[14] supported by EBU Core.

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[1] http://eidr.org/

[2] http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=43506

[3] http://www.uvvu.com/

[4] http://goo.gl/xjdt7j

[5] http://goo.gl/c7myyy

[6] http://tools.ietf.org/html/rfc7302

[7] www.amwa.tv/

[8] http://www.digitalproductionpartnership.co.uk/

[9] http://goo.gl/tz1sVW and http://www.youtube.com/watch?v=bmhv36hmSP4

[10] http://library.smpte.org/

[11] https://www.smpte.org/webcasts/BXF

[12] http://goo.gl/pEVcFo

[13] https://kws.smpte.org/kws/groups/24tb-binding

[14] http://www.ebu.ch/metadata/cs/ebu_IdentifierTypeCodeCS.xml