Overview

November 2014
The Need for a Global Unique Identifier Registry
Millions of film and TV products created each year
What is EIDR – one page summary

What EIDR is
- **Global** registry for unique identification of movie and TV content
- **Designed** for automated machine-to-machine communication
- **Flexible** data hierarchy down to the product & SKU level, incl. edits, clips, composites, encodings, and relationships

What EIDR is Not
- **Profit-making**
- **Rich commercial metadata**
- **Ownership** or **rights** information
- **US-only**

EIDR Purpose
- Make digital distribution **competitive**
- Help reduce costs
- Improve collaboration and automation across multiple application domains & platforms
- Enable new businesses and create new efficiencies

EIDR Technology Summary
- Interoperable, **standards-based** infrastructure
- Built on ISO Digital Object Identifier (DOI) standard
- Application integration through **public APIs** and schemas, freely available SDK for members
- Efficient infrastructure for new and existing applications
EIDR – enabling scalable content services

Value-added metadata and services

EIDR
What EIDR helps the industry do

- More profitable online distribution
- Automated VOD delivery, ingestion & dynamic ad insertion
- Direct audience measurement across platforms
- Accurate metadata matching & acquisition
- Faster data roll-up across platforms, workflows, and channels
- Efficient catalog matching & ingest
- Standardized content discovery across operators, vendors, platforms & geographies
- Automated rights reporting & recovery
### Who is EIDR?

<table>
<thead>
<tr>
<th>Archives</th>
<th>Producers &amp; Programmers*</th>
<th>Aggregators</th>
<th>Distributors</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFI Film Forever</td>
<td>NBCUniversal</td>
<td>INDemand</td>
<td>Google, swisscom, Comcast</td>
</tr>
<tr>
<td>IVA Internet Video Archive</td>
<td>Viacom, Disney, abc</td>
<td>Viubiquity, Netflix, Vudu</td>
<td>Time Warner Cable, Microsoft</td>
</tr>
<tr>
<td>*Including wholly-owned affiliates, e.g. ESPN, et al</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Reporting, tracking, business intelligence</th>
<th>Infrastructure and media services</th>
<th>Metadata</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXACTUALS</td>
<td>CISCO, clearleap, Cinram</td>
<td>Baseline, Red Bee, West10*</td>
</tr>
<tr>
<td>Copyrightline, mediamorph</td>
<td>T3 Media, Adobe</td>
<td>Media &amp; Entertainment Services Alliance</td>
</tr>
<tr>
<td>RentRak</td>
<td>Orchestra, Network, Verance</td>
<td>EMA, Media Entertainment Association</td>
</tr>
<tr>
<td>FilmTrack</td>
<td>V2Solutions, Vobile</td>
<td>EMA, Media Entertainment Association</td>
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<tr>
<td>RSG Media</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Industry &amp; standards organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>CableLabs, SMPTE, Japan Cable Laboratories, Ad-ID, EMA, MESA, doi, DEG, Ad-ID, EMCA</td>
</tr>
</tbody>
</table>
Independent non-profit registration agency

- Built and run by the industry
- Supported by annual member dues
  - Tiered dues based on size
  - Membership open to large and small ecosystem players
- Board of directors chosen from among promoter members
  - 9-member board with ability to expand as needed
  - CableLabs, Comcast, Deluxe, Disney, MovieLabs, Rovi, Sony Pictures, Warner Bros, Google
- Commitments in by-laws to cost-recovery model, open terms of use, and IP non-assert
- Participants control new features and technical development through Technical Working Group
### Straightforward annual fee structure

<table>
<thead>
<tr>
<th>Annual Revenue</th>
<th>Basic User Fee</th>
<th>Promoter Fee (includes Basic User Fee)</th>
<th>Board fee (includes Promoter Fee)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $100M</td>
<td>$5,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$100M - $500M</td>
<td>$10,000</td>
<td>$35,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>$500M - $1B</td>
<td>$20,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;$1B</td>
<td>$25,000</td>
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</tbody>
</table>
Newest Members

- **ITV**
  - Also joins board of directors
- **Archives**
  - US Library of Congress, IndieCollect
- **Metadata providers**
  - BindInc, media-press tv, ebs
- **Advertising and metrics**
  - AdGorilla, ScreenPlay
- **Services and infrastructure**
  - ODMedia, CSG/ContentDirect
- **UK AV Agency**
  - Founders of ISAN UK
  - Continues its role as an ISAN RA
  - EIDR service bureau for small producers
  - Provides EIDR/ISAN cross-registration for those who want it
  - Local support services for EIDR in the UK
Data Model
Example EIDR movie hierarchy with multiple versions

Titles (Abstractions)

Edits (Performances)
IsEditOf

Movie (EN)

Theatrical (Domestic Cut)

Home Entertainment (Regional Censored Cut)

Home Entertainment (Director’s Cut)

Manifestations (Digital)
IsManifestationOf

Domestic Cut w/Orig Language Aud (EN) DCP

Regional Cut w/ Audio (RU) UVVU APID

Regional Cut w/ Aud (RU) ProRes Mezz

Regional Cut w/ Aud (EN, FR, SP) Sub (FR) ProRes Mezz

Director’s Cut w/ Aud (EN, FR, SP) Subs (FR) ProRes Mezz

Director’s Cut w/ Audio (RU) ProRes Mezz
Example EIDR episodic hierarchy

Series (Abstractions)

Seasons (Abstractions)

Episodes (Abstractions)

Edits (Performances)

Manifestations (Digital)

Series

Season 1

Season 2

Episode 1

Episode 2

Episode N

Broadcast Edit

Broadcast Edit

Broadcast Edit

Promotional Clip

Retail EST (EN, FR)

Retail EST (EN, FR)

Retail EST (EN, FR)

Social Upload

UGC Upload

IsSeasonOf

IsSeasonOf

IsEpisopdeOf

IsEpisopdeOf

IsPromotionFor

IsPromotionFor

Similar Hierarchy Here

13
Growth rate

- Edits & Manifestations
- Shorts
- One-Time-Only TV
- TV Episodes
- TV Seasons
- TV Series
- Movies
### Database overview: record types

<table>
<thead>
<tr>
<th>Category</th>
<th>Dec-10</th>
<th>Dec-11</th>
<th>Dec-12</th>
<th>Dec-13</th>
<th>Oct-14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title-level records:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Movies</td>
<td>43,573</td>
<td>45,774</td>
<td>51,501</td>
<td>75,800</td>
<td>122,850</td>
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<tr>
<td>Shorts</td>
<td>1,121</td>
<td>1,224</td>
<td>1,406</td>
<td>3,039</td>
<td>6,962</td>
</tr>
<tr>
<td>One-Time-Only TV</td>
<td>17,952</td>
<td>22,199</td>
<td>26,112</td>
<td>29,709</td>
<td>31,865</td>
</tr>
<tr>
<td>TV Episodes</td>
<td>105,891</td>
<td>130,284</td>
<td>158,371</td>
<td>313,328</td>
<td>343,737</td>
</tr>
<tr>
<td>TV Series</td>
<td>7,541</td>
<td>8,719</td>
<td>9,613</td>
<td>13,409</td>
<td>14,714</td>
</tr>
<tr>
<td>TV Seasons</td>
<td>7,837</td>
<td>9,486</td>
<td>12,197</td>
<td>18,082</td>
<td>20,596</td>
</tr>
<tr>
<td>Edits &amp; Manifestations</td>
<td>0</td>
<td>3,460</td>
<td>20,701</td>
<td>128,379</td>
<td>169,708</td>
</tr>
<tr>
<td><strong>Total records</strong></td>
<td>183,915</td>
<td>221,146</td>
<td>279,900</td>
<td>581,746</td>
<td>710,588</td>
</tr>
</tbody>
</table>
## Alternate IDs

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sony</td>
<td>201,358</td>
</tr>
<tr>
<td>Warner Bros.</td>
<td>112,054</td>
</tr>
<tr>
<td>ISAN</td>
<td>79,645</td>
</tr>
<tr>
<td>IMDb</td>
<td>77,551</td>
</tr>
<tr>
<td>Flixster/Rotten Tomatoes</td>
<td>71,340</td>
</tr>
<tr>
<td>Baseline</td>
<td>65,341</td>
</tr>
<tr>
<td>Veronica</td>
<td>30,803</td>
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<tr>
<td>Netflix</td>
<td>27,255</td>
</tr>
<tr>
<td>Red Bee</td>
<td>25,928</td>
</tr>
<tr>
<td>The Cinema Source</td>
<td>20,942</td>
</tr>
<tr>
<td>Amazon</td>
<td>17,913</td>
</tr>
<tr>
<td>ITV (2 kinds)</td>
<td>14,456</td>
</tr>
<tr>
<td>NBCUniversal</td>
<td>13,854</td>
</tr>
<tr>
<td>BFI</td>
<td>5900</td>
</tr>
</tbody>
</table>
Use Cases
Developing applications across media windows

- Ratings
- Archives
- Digital cinema packages
- Box office sales tracking

- UltraViolet
- All online retail
- Avails
- Metadata
- Mezz file delivery
- Standardized content discovery
- Reviews
- Home video sales reporting

- Direct audience measurement
- Cross-platform tracking
- Int’l TV distribution
- Music cue sheets
- Rights collections
- BXF, ATSC, EBU, EN metadata mappings

- MVPD VOD ingestion & delivery
- VOD ad insertion
- CableLabs specs
- Guide data
- Search & recommendations
- Parental ratings
- VOD sales tracking
Saves money

- Match once, then never again
  - Integrate with new vendors & partners faster and cheaper
  - Purchase metadata from any source with one ID
- Reuse one ID across all work flows
  - No need to reinvent the wheel for every work flow & channel
- Streamline consolidation of supply chain and performance data
  - Improve reporting/invoicing capabilities
  - Reduce fuzzy text matching of orders, deliveries, invoices, & reports
  - Speed internal roll-ups & reports
  - Text string processing is expensive
- Reduce customer queries on deliveries, versions, assets
- Reduce manual QC efforts on deliveries
Integration Points

1. WB’s MSB metadata management system to the EIDR directory. Requests and applies new EIDR #’s to WB titles.
2. WB’s MSB system to the Avails system (RRTS) to provide the EIDR # on avails titles
   - Facilitating Microsoft reporting back to WB with EIDR detail

Benefits Identified

- Reduction in QC efforts
- Reduction in customer queries
- Improved reporting / invoicing capabilities
Savings with one partner

• EIDR added to ordering, delivery, sales and royalty reporting

• Results for one studio and one retailer
  – Direct savings = 650 hours/year (partial implementation)
  – Future savings = 1,100 add’l hours/year (full implementation)

• Assume 5 partners = 8,750 hours/year
Enables automation

- WB/Xbox case study identified savings w/o automation
- EMA, DEG, MovieLabs, DECE cooperating on specs to enable automation
  - Rely on a common ID to link data across work flows
  - Avails, metadata delivery, file delivery, reporting
- Deployed now - Google Play & studios automating avails
- Comcast automating VOD ingestion
  - System matches programmer deliveries with metadata using EIDR IDs
- Cable industry automating DAI for VOD
- Studios, metadata providers, archives using EIDR API for registrations
Case study – Google Play avails

- Google Play deploys EMA Avails spec w/ EIDR IDs today
  - Primarily 1\textsuperscript{st} and 2\textsuperscript{nd}-level EIDR IDs
- Already deployed with 2 major partners
  - In progress with two more studios
- Asking all content partners to adopt
  - In discussions w/ partners across North America & Europe
## Quantified savings

### Processing Time for Batch of 1000 Avail Updates

<table>
<thead>
<tr>
<th>Process Description</th>
<th>Before use of EMA Avails w/ EIDR</th>
<th>After use of EMA Avails w/ EIDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title matching, de-dupe, parsing, including research &amp; partner communications</td>
<td>~25 hours</td>
<td>0.1 hour</td>
</tr>
<tr>
<td>Apply final updates &amp; audit</td>
<td>~25 hours</td>
<td>0.1 hour</td>
</tr>
<tr>
<td>Total</td>
<td>50 hours</td>
<td>0.2 hour</td>
</tr>
</tbody>
</table>

Reduces 50-hour reconciliation to <1/2 hour of processing time. Benefits multiply across *tens of thousands* of avails.
Increases revenues

- New Comcast X1 platform has delivered double-digit increases in VOD sales
  - Uses EIDR to automate VOD ingestion & matching
- Streamlines dynamic ad insertion for VOD
- Lowers risk of missed window starts
  - Faster ingestion and setup for online retail
- Enables cross-platform delivery like UltraViolet
- Links screens, platforms, metadata sources, sales channels
- Enables new models for sell-up, direct audience measurement, micro-transactions
EIDR glues it all together

- Goal = end-to-end automation of the digital supply chain
  - Order, ingest, market, upsell, track, report, reconcile, pay
  - Common, resolvable ID from start to finish
- Standards drive automation
- Specs bound with one common ID
Social media discovery across MVPDs

Comcast

TWC

Content + EIDR

EIDR?

Facebook, Twitter, etc.

http://dx.doi.org/10.5240/4EFA-6EE4-9893-3604-E808-G

Check out this show.

Comcast Subscriber

TWC Subscriber
Ad industry benefits

- Panel ratings not sufficient for new TV platforms
- Ad industry needs to measure viewership across platforms
  - Smart phones, tablets, PCs, connected TVs, etc.
- Direct measurement offers greater reach and accuracy
- Requires standardized IDs for programs and ads
- CMM-TAXI industry group endorses EIDR as program ID
  - $500M annual savings from automated work flows
  - $2B annual upside in new and better ad opportunities
- Supported by research chiefs of ESPN, Viacom, NBC, CBS, and others
Delivers a data analysis advantage

- Link performance data from multiple sources
  - Theatrical
  - Home video - EST, iVOD, SVOD, UltraViolet
  - MVPDs – VOD, EST
  - Advertising – C3, C7, direct measurement, DAI

- Multiple vendors
  - Rentrak, Nielsen, DEG data tracking, MediaMorph

- Related titles
  - Series/season/episode
  - Franchises

- International & domestic
Summary

Equal, open access

• Anyone can use it
• Any member can register new records
• Published API
• Religion-free support for multiple development and integration models

Practical management

• Cross-company
• Cross-industry
• Collaborative
• Cheap

Infrastructure

• Providing IDs for commercial audio-visual works
• Sharp focus on the ID reduces complexity, provides clarity, speeds adoption

Technology

• Based on international standards
• Interoperability a primary design point
• Improves efficiency in existing processes
• Supports creation of new products and services
Technical Appendices
Developer support

- **Web UI**
  - Register, modify, resolve, browse, query
- **Simple tools**
  - Register, modify, query, resolve, etc
  - Bulk change, manage alternate IDs
- **SDK**
  - REST, Java, .NET
  - Published as source, with sample applications (see above)
- **Other tools**
  - Bulk registration provided by system operator
  - Catalog matching tool (external vendor)
  - Ultraviolet CFF registration
- **Help with Proof of Concept implementations**
Documentation

- Registrant documentation
  - Data fields guide
  - Best practices (Film, Episodic, and many corner cases)
- Technical documentation
  - Registry Users Guide, API documentation, a tutorial or two
- ID format guidelines
  - Standard, binary, URN, URI, compressed, etc
- Mapping guidelines for other metadata standards
  - ISAN, EN 15907, EBUCore
  - Base records only; taking input on versions and episodic
## Required fields for EIDR registration – standalone item (movie, OTO TV)

### Fields based on type/class of work
- Can be done algorithmically

- **Referent Type**
  - Movie, TV, Short, Web (also Series, Season, Composite, Compilation, Interactive, Supplemental)

- **Structural Type**
  - Abstraction, Performance, Digital, Physical

- **Mode**
  - Visual, Audiovisual, Audio, Other

- **Publication Status**
  - Valid, In development

### For a particular work
- Can usually be done algorithmically

- **Title and Title Language**
  - RFC 5646

- **Original Languages and Manifestations**
  - RFC 5646
  - Audio, Subtitle

- **Release Date**
  - YYYY (/MM/DD)

- **Approximate Length**
  - HH [:MM(:SS)]

- **Country of Origin**
  - ISO 3166-2, with extensions
Requirements and Best practices

Participants
- AssociatedOrg and Role
  - Company name or ID
  - Producer, Distributor, etc
- Directors
  - Up to 2 allowed
- Actors
  - Up to 4 allowed

Must have
- 1 AssociatedOrg
- OR 1 Director
- OR 4 Actors

Strongly Encouraged
- Alternate Title
  - Text Field
- Alternate ID
  - Ex. IMDb, ISAN, DOI, Proprietary IDs
- Participants beyond the minimum
Further resources

- **Documentation**
  - [http://eidr.org/technology](http://eidr.org/technology)

- **UI**
  - [http://ui.eidr.org](http://ui.eidr.org)

- **Examples**
  - Records through UI.
    - Lots of relationships (seasons, clips, etc)
    - List of many Alternate IDs.
      - [https://ui.eidr.org/view/content?id=10.5240/E5C6-A6EA-403E-5D80-8BBF-G](https://ui.eidr.org/view/content?id=10.5240/E5C6-A6EA-403E-5D80-8BBF-G)
  - Records through DOI proxy for XML
    - [http://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G](http://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G)
  - Sample Registration XML in SDK
    - [http://eidr.org/members-resource](http://eidr.org/members-resource)