EIDR
Entertainment Identifier Registry

Overview

November 2013

EIDR
Entertainment Identifier Registry

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

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

What EIDR is Not

- Profit-making
- Rich commercial metadata
- Ownership or rights information
- US-only

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
Entertainment Identifier Registry

Scope and basic approach

Industry enabling philosophy

- Cost-effective for large-scale use
- Cost-recovery participation fees
- Not competitive with existing commercial services
  - Minimal descriptive metadata
  - Strong focus on metadata for uniqueness only
- Interoperable with existing standards and IDs

A clear positioning

- Clear boundaries for what it does and doesn't do
- Designed for ubiquitous adoption w/ no restrictions on use or mirroring
- IP-neutral with no implication of ownership, no rights data
- Opaque IDs with all metadata kept up to date in a database

A proven resource to the industry

- Permanent and persistent B2B service
- Continuous registration of new and back-catalog/archive content
  - Metadata providers and production companies
- In operation since December 2010
  - Currently 45 member companies
  - ~430,000 IDs registered
  - High level of member participation

Governance and operations

Run by the members, for the members

- 2 non-profit industry associations & 7 commercial companies on the board
- Membership dues based on company size (set annually, currently $5K - $ 35K)
- Some non-profits join for free and contribute in kind in various ways
- Very small participants will interact through a service bureau model

All-you-can-eat use model and access

- Registrations are free for members
- Lookups are free to anyone through the EIDR registry UI
- Members can integrate with the registry API using a variety of technologies (Java, .NET, XML and REST)
- Members can mirror the entire Registry.

Lean and agile technology infrastructure

- Operations and most engineering are contracted out
- Small permanent staff
- Some staff loaned by member companies
- New features are defined by technical working group

Database overview: record types

Category	Today	2012	2011	2010
Total records	**537,556**	**279,900**	**221,146**	**183,915**
Original/title-level content:				
Movies	75,361	51,496	45,774	43,573
Shorts	2,527	1,406	1,224	1,121
One-Time-Only TV	29,267	26,112	22,199	17,952
Series	12,888	9,613	8,719	7,541
Seasons	17,540	12,197	9,486	7,837
Episodes	276,982	158,371	130,284	105,891
Edits	116,244	18,293	1,855	0
Manifestations	6,715	2,046	1,621	0

Edits & manifestations are created in commercially deployed distribution workflows.
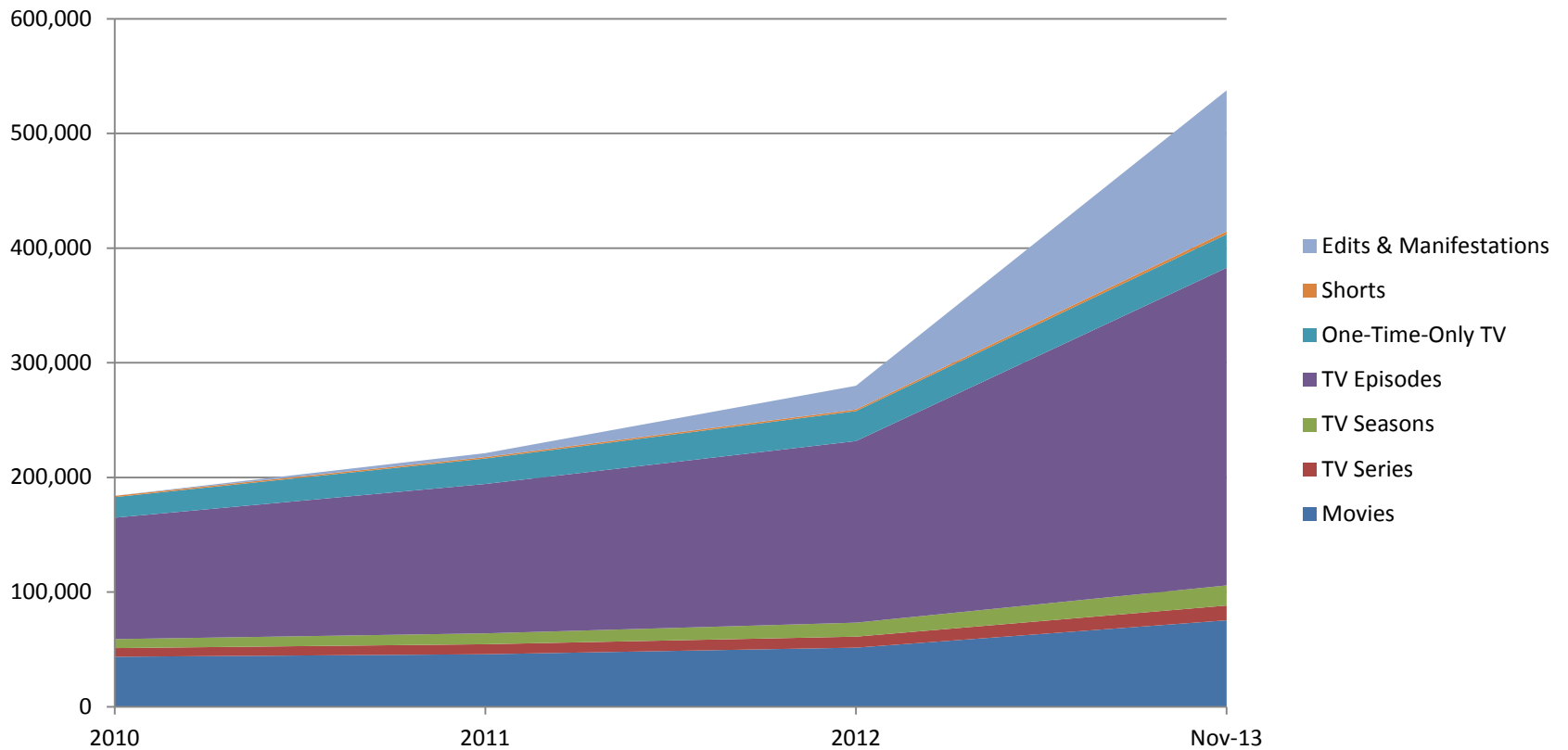
The Need for a Global Unique Identifier Registry

Millions of film and TV products created each year

Cumulative unique assets for distribution

Digital encodings of movies, TV shows, clips

Packages
Retailer SKUs

Network , Pay TV Distributions

Formats, Regions, Languages, Subtitles

Versions
Edits
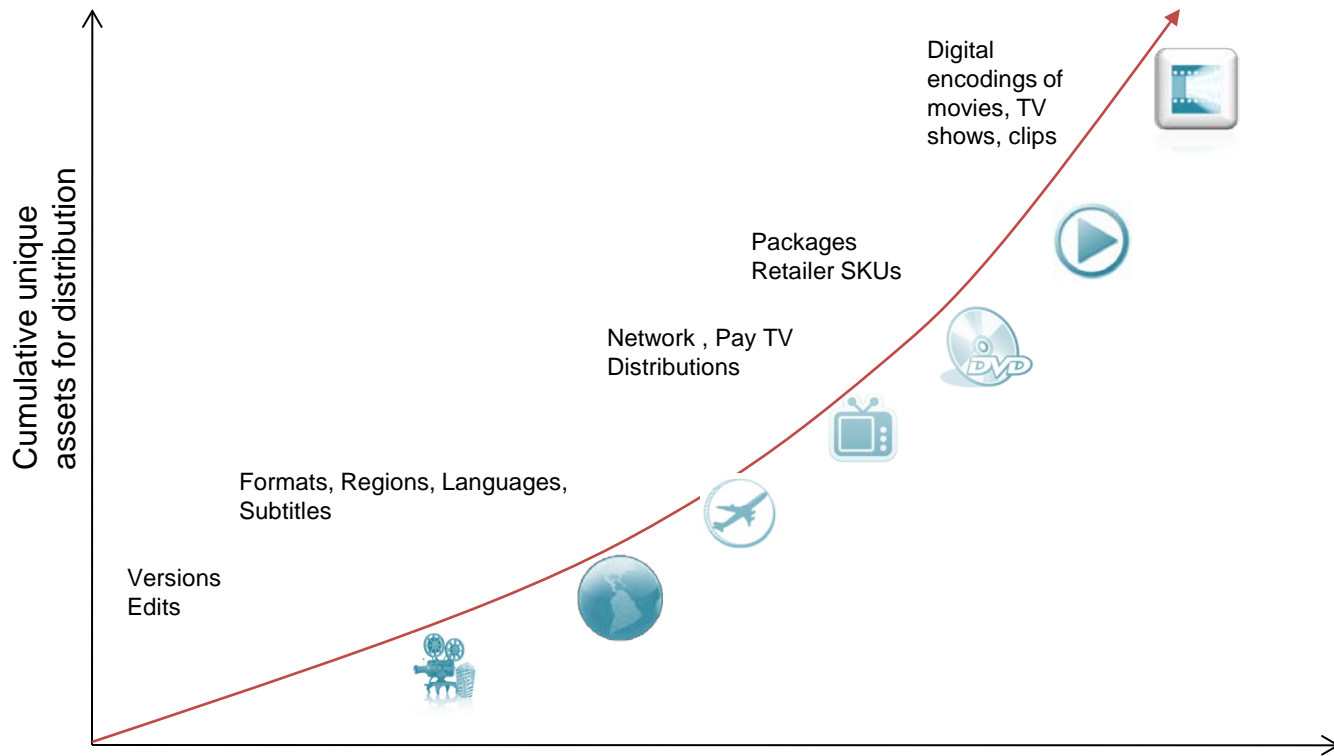
Digital technology, new formats and player devices have caused the number of unique products for a movie or TV production to explode

An ideal ID registry for the supply chain

Coverage: Ability to generate unique identifiers for all types of digital AV content

Scalability: Ability to handle very large volumes of registrations and lookups at production level SLAs

Flexibility: Support wide variety of objects, hierarchies & relationships between objects

Extensibility: Can be readily extended to accommodate new types of assets in future

Cost-effectiveness: Must make economic sense for large volumes

Value-added Services: Must support the ability of vendors to offer value-added services & applications

Interoperability: Must be able to interoperate with other registries & ID's

Accessibility: Open search and query access without restrictions. All applications have equal access. Network accessible.

Real-World Applications of the Entertainment ID Registry (EIDR)

Benefits - what EIDR helps you do

Cut matching & other manual processing costs
- Matches content & metadata quickly and efficiently
- Allows automated B2B delivery of avails, metadata, & content
- Reduces manual processing of ingested content
- Eliminates costly translation between proprietary ID systems
- Improves back office billing & fulfillment in online retail & VOD

Increase revenue opportunities
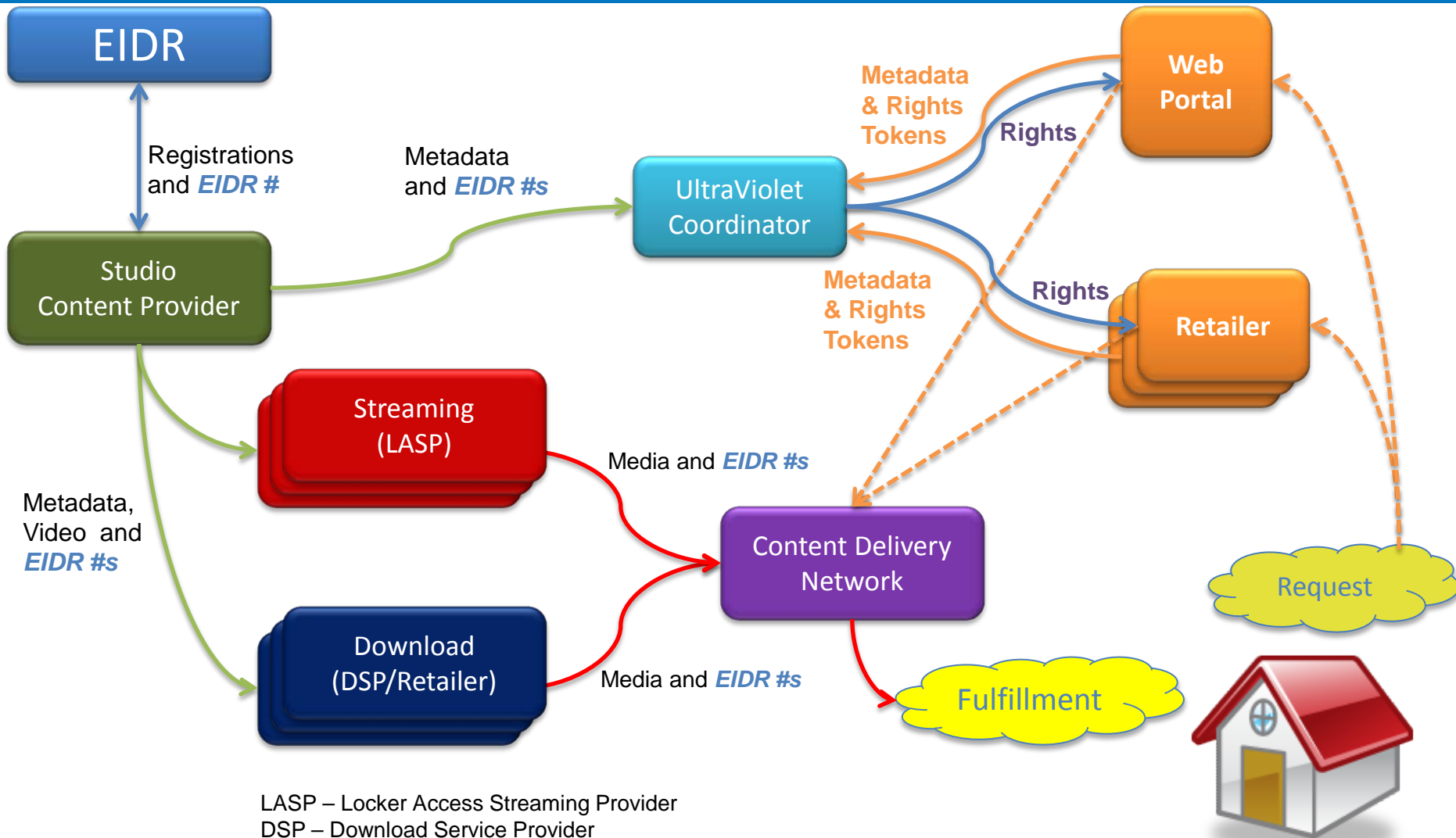- Speeds time to digital sales
- Avoids missed window starts
- Reduces sales tracking error rate
- Enables automated micro-transactions

Deliver services – multi-platform coordination
- Connects consumer services to product ID's
- Allows multiple vendors to coordinate product-triggered services
- Simplifies multi-platform interoperability & services
- Facilitates new consumption metrics & tracking

Online retail - UltraViolet ecosystem

EIDR

Entertainment Identifier Registry

EIDR

Registrations and *EIDR #*

Metadata and *EIDR #s*

Studio Content Provider

UltraViolet Coordinator

Metadata & Rights Tokens

Web Portal

Rights

Rights

Metadata & Rights Tokens

Retailer

Metadata, Video and *EIDR #s*

Streaming (LASP)

Media and *EIDR #s*

Content Delivery Network

Request

Download (DSP/Retailer)

Media and *EIDR #s*

Fulfillment

LASP – Locker Access Streaming Provider
DSP – Download Service Provider

EIDR
Entertainment Identifier Registry
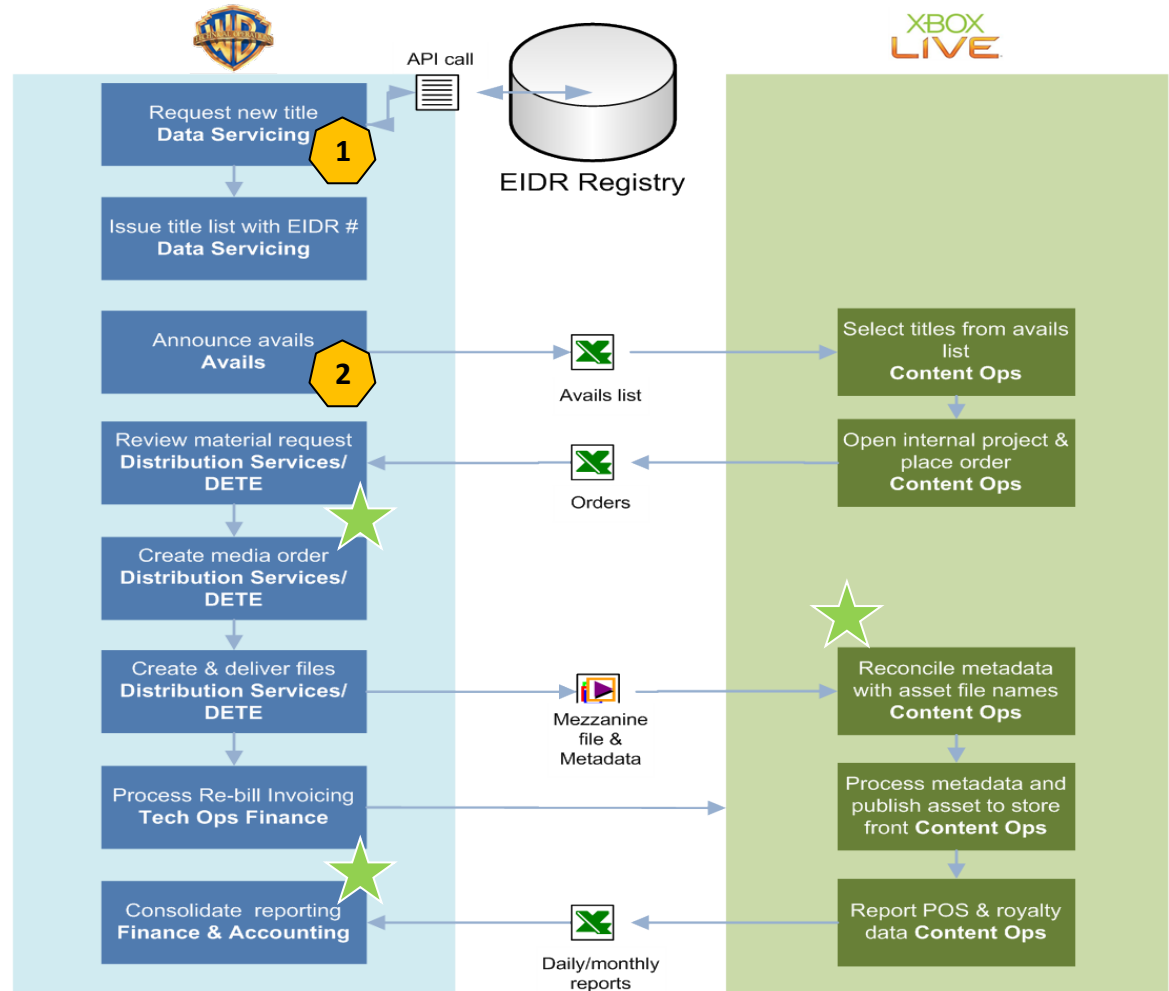
Online retail - metadata & sales enrichment

Critic Reviews

Vendor Metadata

Comments from Friends

Studio Metadata

Cast Bios & Filmography

Related products offers
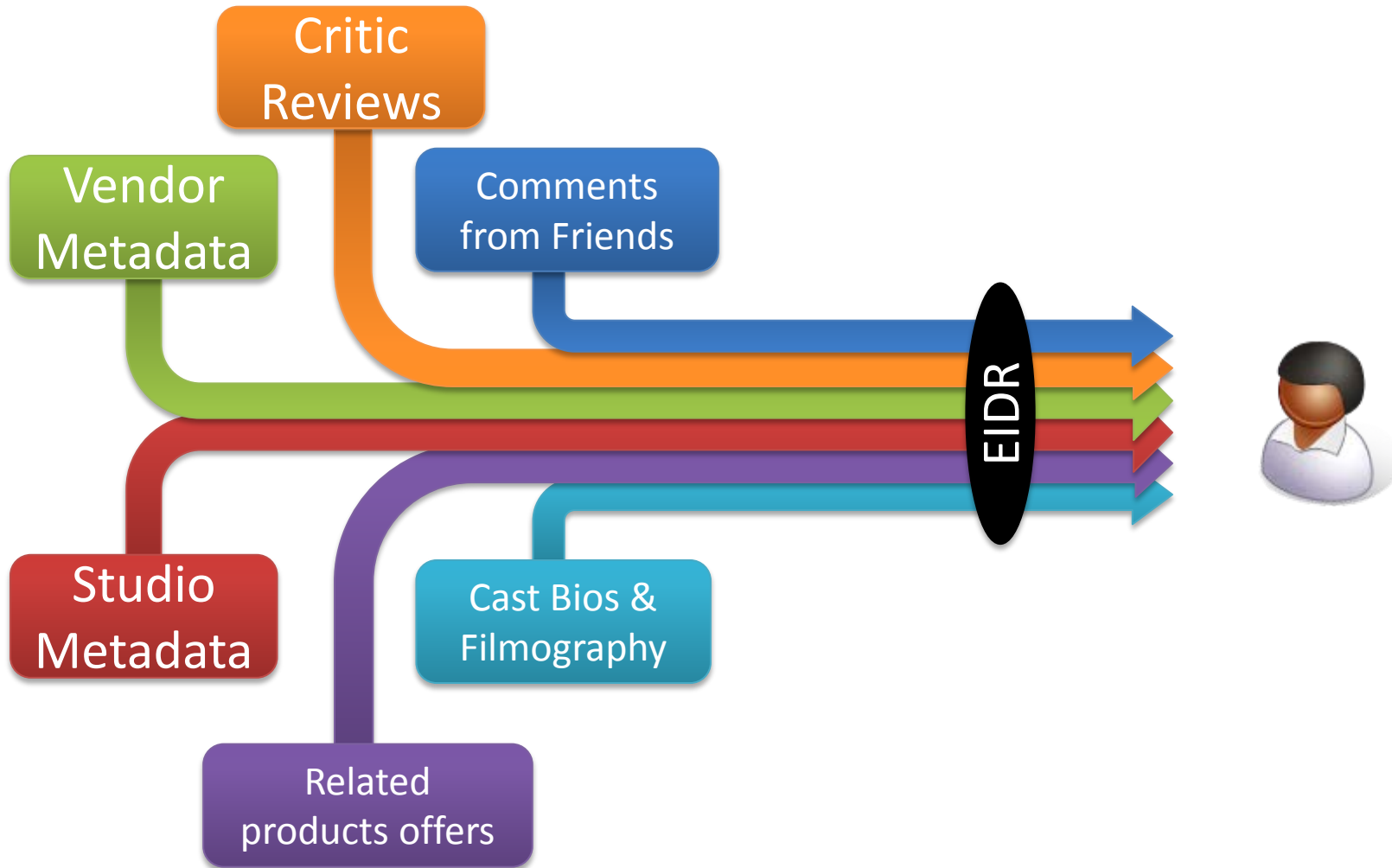
EIDR

Why EIDR is essential for online SP's

- **Cut ingestion costs** – one ID for avails, marketing metadata, file delivery; one system for all partners

- **Standardized content discovery** – surface EIDR IDs in API's for easy, automated discovery by all apps

- **Matching** – match once, then never again

- **Metadata acquisition** – buy the best data from multiple sources with one standard ID

- **Cross-platform delivery** – all vendors on every platform talk the same ID language

- **Data roll-up and reporting** – series/season/episode automatic roll-ups without manual reconciliation

VOD distribution & tracking

Provides ability to report better VOD results, i.e., series level vs episodic level, rolled-up reports for content regardless of format (SD, HD, 3D)

Programmer registers content

Eliminates need to send content metadata multiple times when re-pitching assets

VOD results correlated with EIDRs

EIDR

VOD Aggregator puts EIDR in ADI feed

Enables retrieval of robust metadata from third-parties for QA/enhancement

MSO adds EIDR to internal tracking

Enables MSO to roll up VOD episodes into a series package

Enables MSO to integrate metadata from multiple sources in a robust database

Enables MSO to utilize metadata across platforms (Linear, VOD, Online)

Linear/VOD/online metadata linkage

Online application vendor, e.g., search

Studio/ Programmer

Metadata provider

Reviews

EIDR

EIDR

EIDR

Parental controls

Search

MSO

Integrated browse, filter, search & recommendations across platforms & products

Consistent, multi-platform data display—titles, program descriptions, genre values, full credit lists, image support
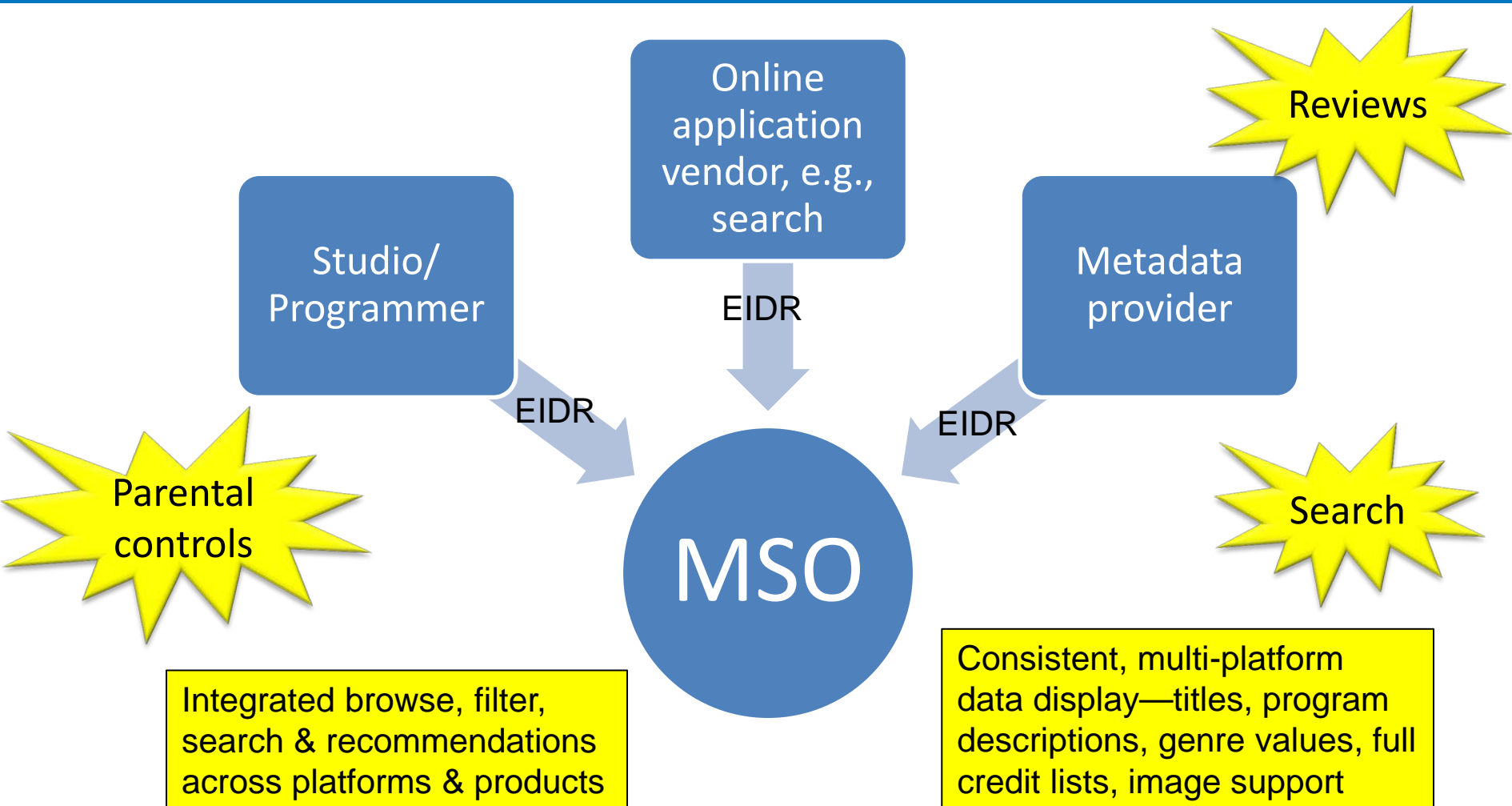
Direct audience measurement

- Panel ratings not sufficient for new TV platforms
- Ad industry needs to measure viewership across an increasing number of platforms
  - Smart phones, tablets, PCs, connected TVs, etc.
- Direct measurement offers greater reach and accuracy
- Requires standardized IDs for programs and ads
- CIMM-TAXI industry group in North America endorses EIDR for program ID
  - Estimates $2.5B benefit to the media industry

Industry needs a uniform ID for all programs to automate direct measurement of viewership.

Rights recovery
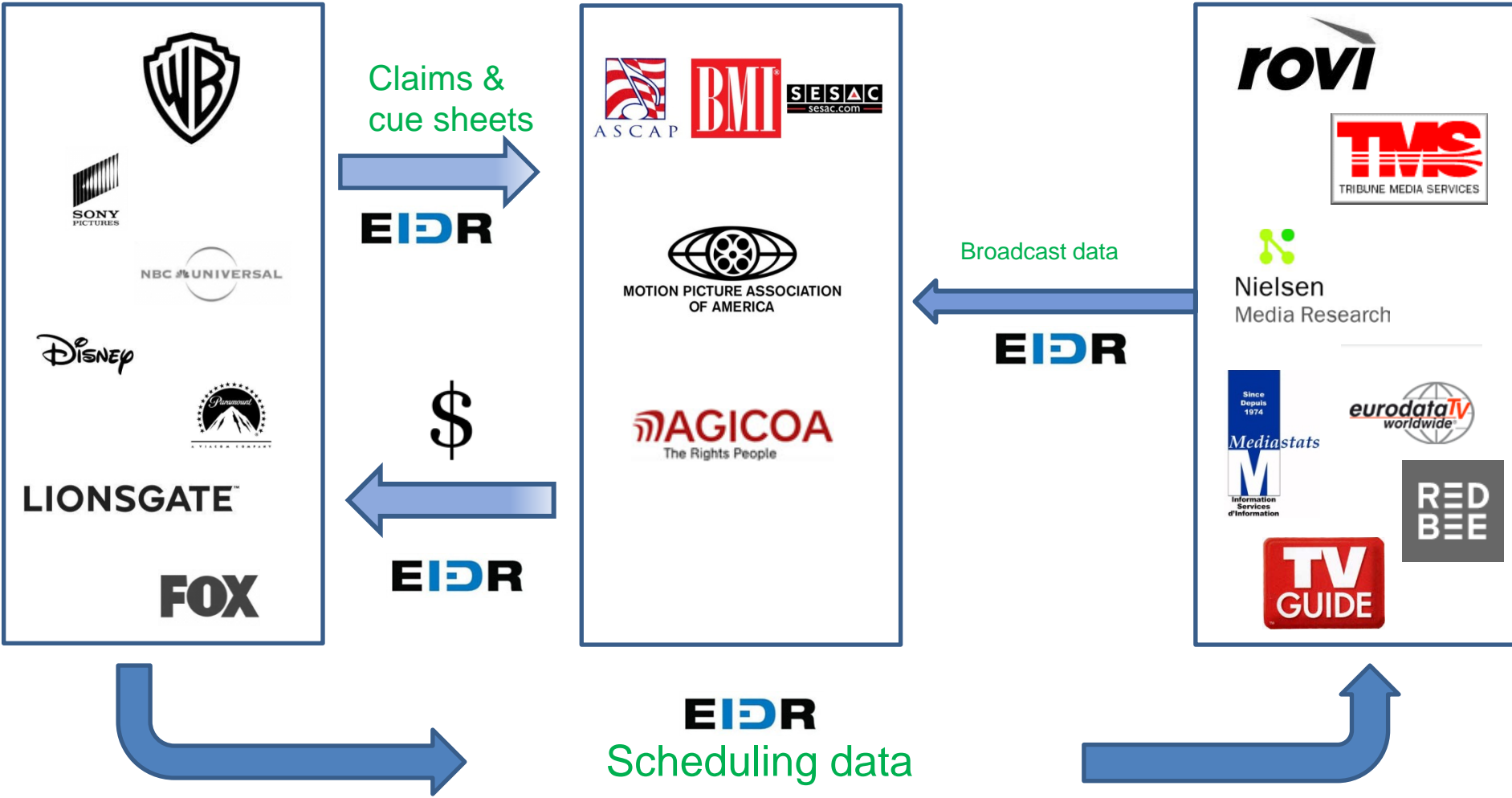
Developing applications across media windows

Theatrical → **EST/Online** → **TV Broadcast** → **Video On-Demand**

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

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

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

Video On-Demand
- MVPD VOD ingestion & delivery
- VOD ad insertion
- CableLabs specs
- Guide data
- Search & recommendations
- Parental ratings
- VOD sales tracking

EIDR glues it all together

- Standards drive automation
  - Media Entertainment Core metadata (MEC)
  - EMA & DEG driving industry specs for avails & reporting
  - Specs bound together with one common ID
- Goal = end-to-end automation of the digital supply chain
  - Order, ingest, market, upsell, track, report, reconcile, pay
  - Single ID from start to finish
- Media ecosystem entry ticket
  - UltraViolet, VOD, online streaming, tablets, smart phones, direct audience measurement, rights recovery, etc.
  - Multi-platform, multi-channel, multi-window
  - Know your number & how it ties to others

EIDR is media dial tone. Every participant in the supply chain dials the same number for the same response.
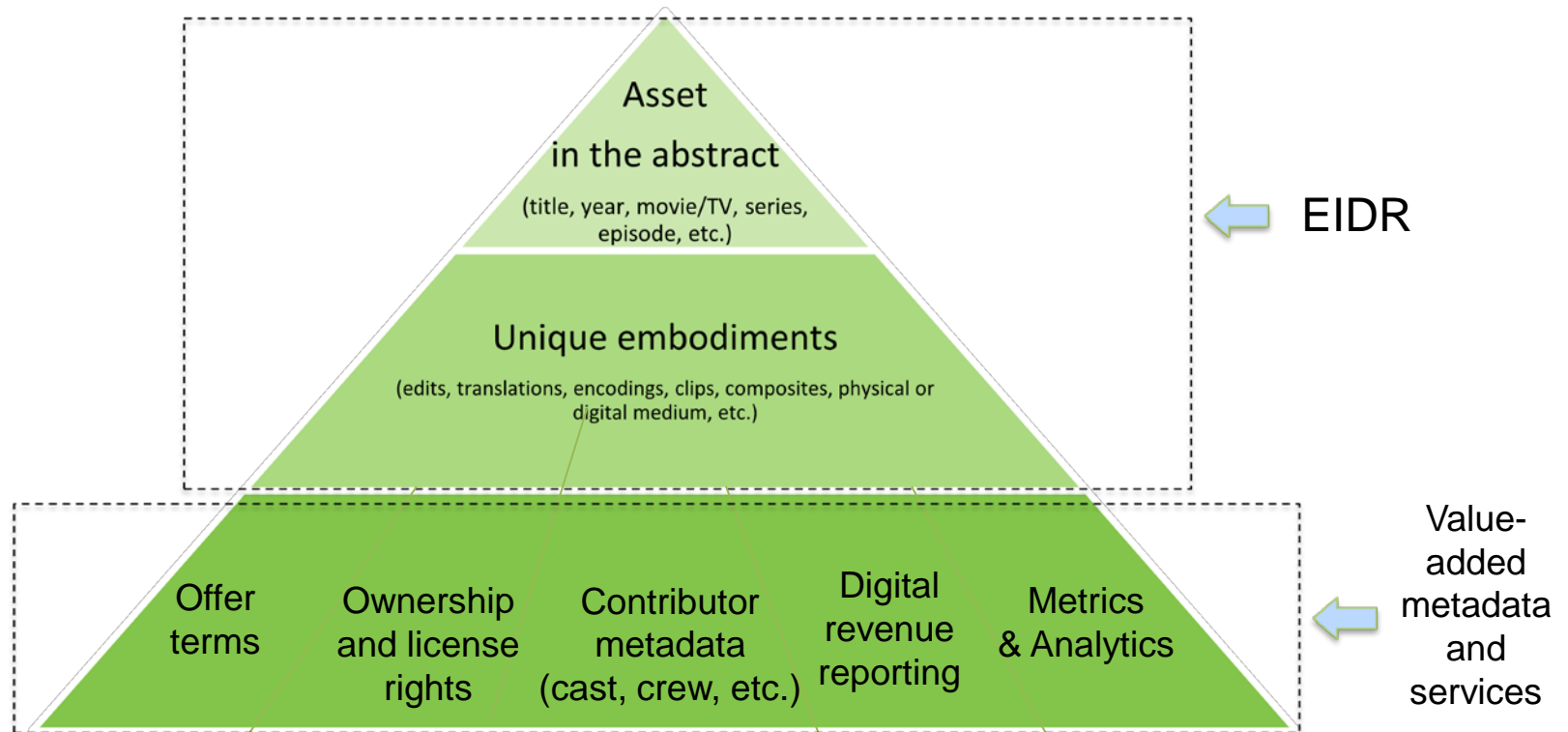
Technical Structure

Basic technical approach

- Centralized registry to guarantee uniqueness
- Opaque ID's
- Strong focus on metadata required for unique identification
- Metadata fields granular enough to distinguish products down to clips, composites, & encodings
- Robust hierarchies and relationships flexible enough to cover known and unknown variations
- Extensible to meet new industry requirements
- Scalable, automated operations for efficient supply chain
- SDK & other tools available
- Interoperable with standards & specs from EBU, CEN, Ad-ID, ISRC, ISAN, DDEX, Ultraviolet, EMA, CL, ML, etc.

EIDR – enabling scalable content services

Asset
in the abstract
(title, year, movie/TV, series, episode, etc.)

← EIDR

Unique embodiments
(edits, translations, encodings, clips, composites, physical or digital medium, etc.)

Offer terms

Ownership and license rights

Contributor metadata (cast, crew, etc.)

Digital revenue reporting

Metrics & Analytics

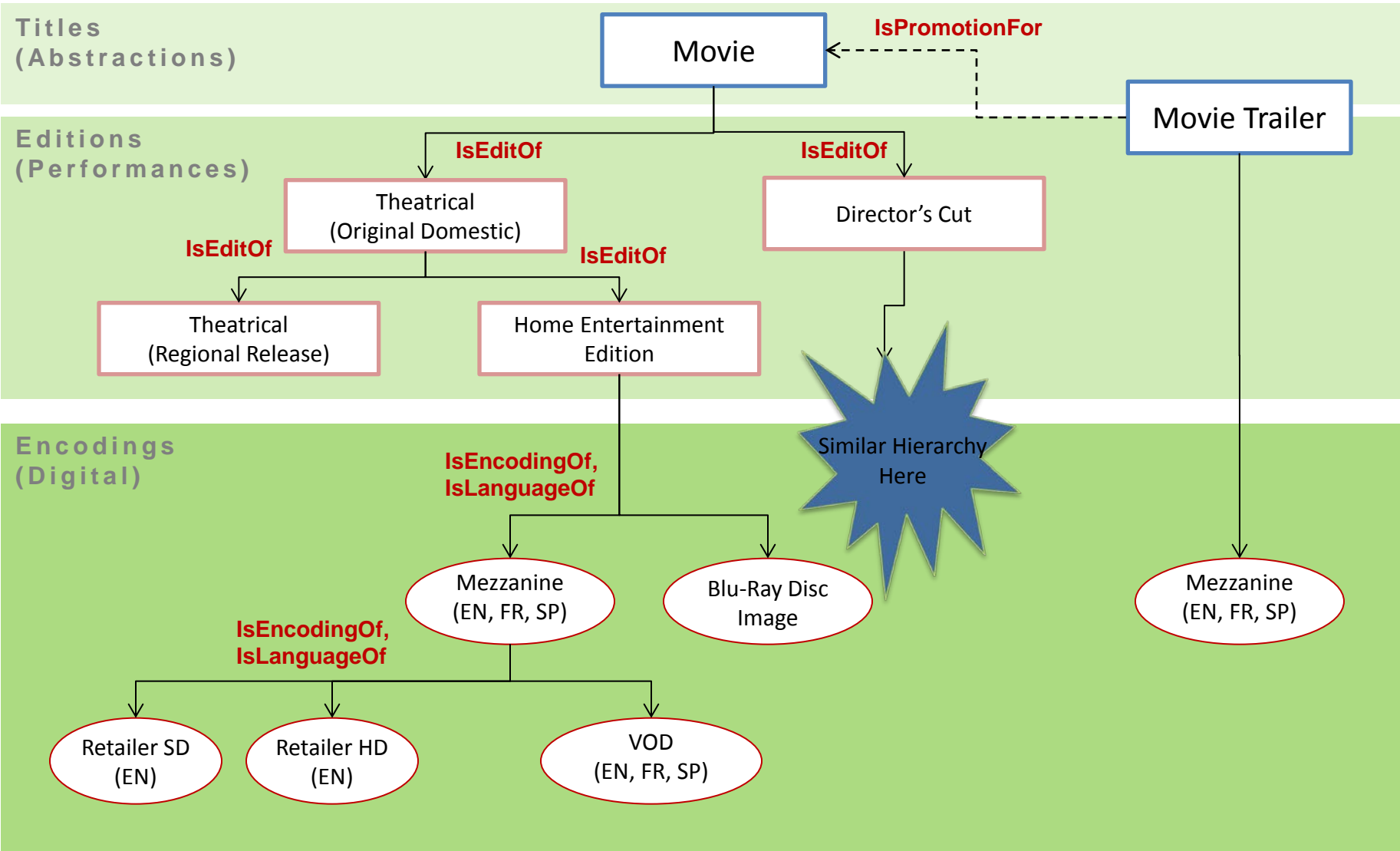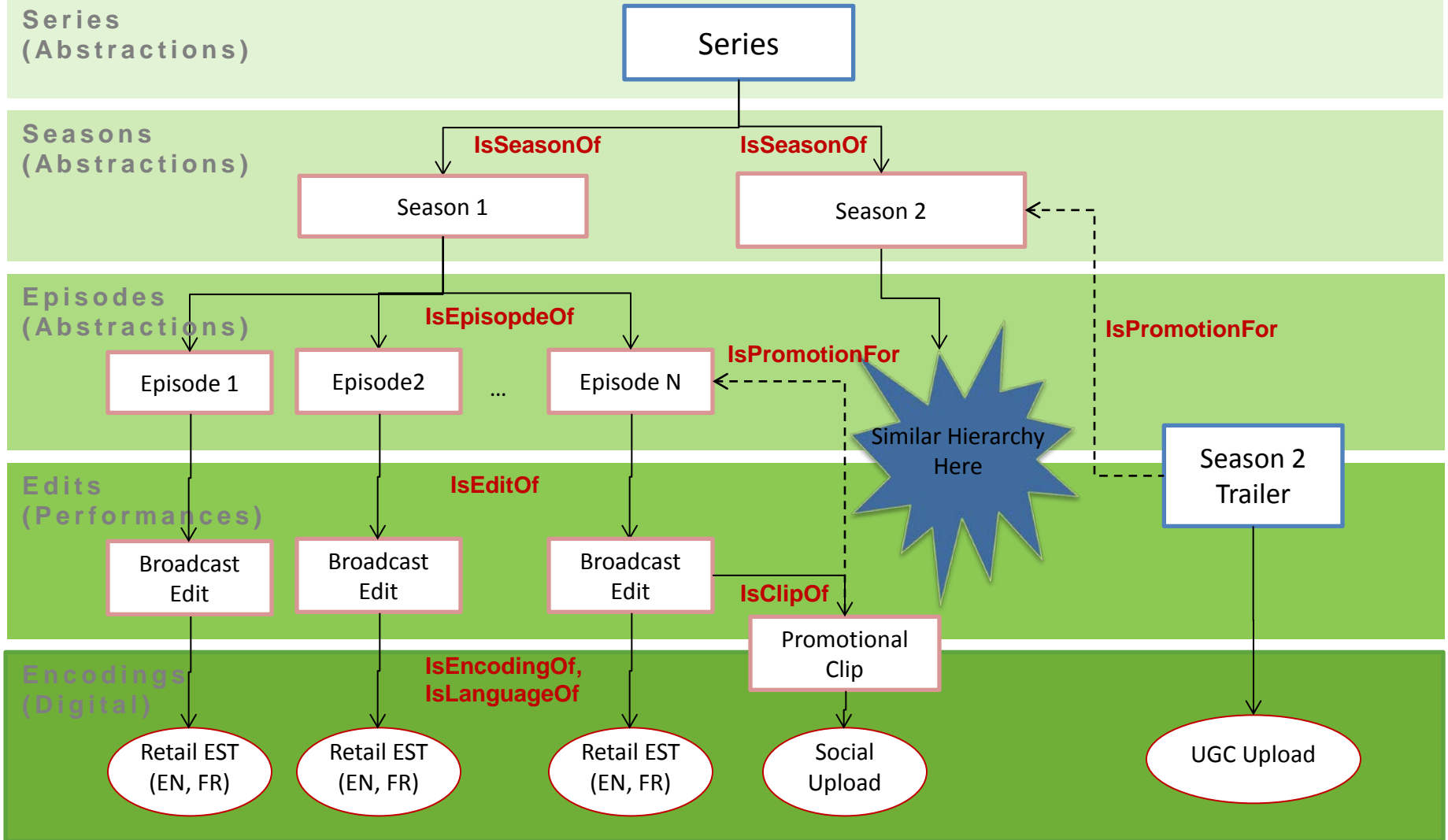← Value-added metadata and services

EIDR provides a common link for an unlimited number of value-added services.

Example EIDR movie hierarchy

EIDR — Entertainment Identifier Registry

Titles (Abstractions)

Movie — *IsPromotionFor* — Movie Trailer

Editions (Performances)

Movie — *IsEditOf* → Theatrical (Original Domestic)

Movie — *IsEditOf* → Director's Cut

Theatrical (Original Domestic) — *IsEditOf* → Theatrical (Regional Release)

Theatrical (Original Domestic) — *IsEditOf* → Home Entertainment Edition

Encodings (Digital)

Home Entertainment Edition — *IsEncodingOf, IsLanguageOf* → Mezzanine (EN, FR, SP)

Home Entertainment Edition → Blu-Ray Disc Image

Mezzanine (EN, FR, SP) — *IsEncodingOf, IsLanguageOf* → Retailer SD (EN), Retailer HD (EN), VOD (EN, FR, SP)

Movie Trailer → Mezzanine (EN, FR, SP)

Similar Hierarchy Here

Example EIDR episodic hierarchy

Opaque unique identifier

Standard prefix
for EIDR registry

Unique suffix
for each asset

Check
digit

10.5240/ XXXX-XXXX-XXXX-XXXX-XXXX-C
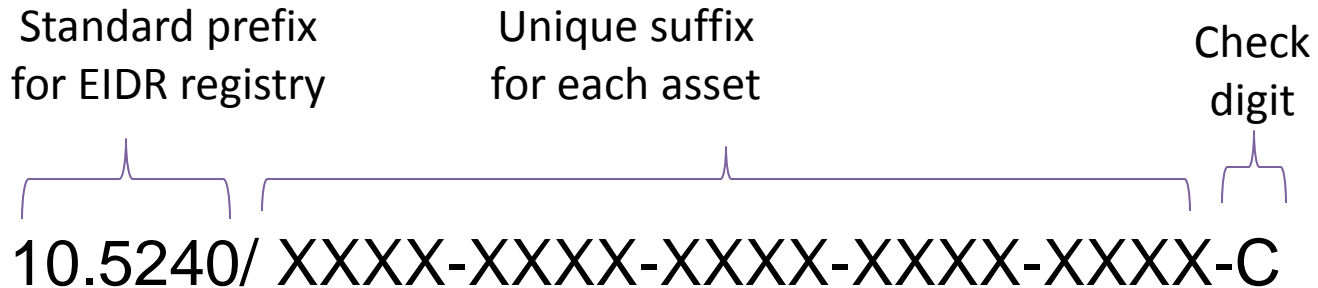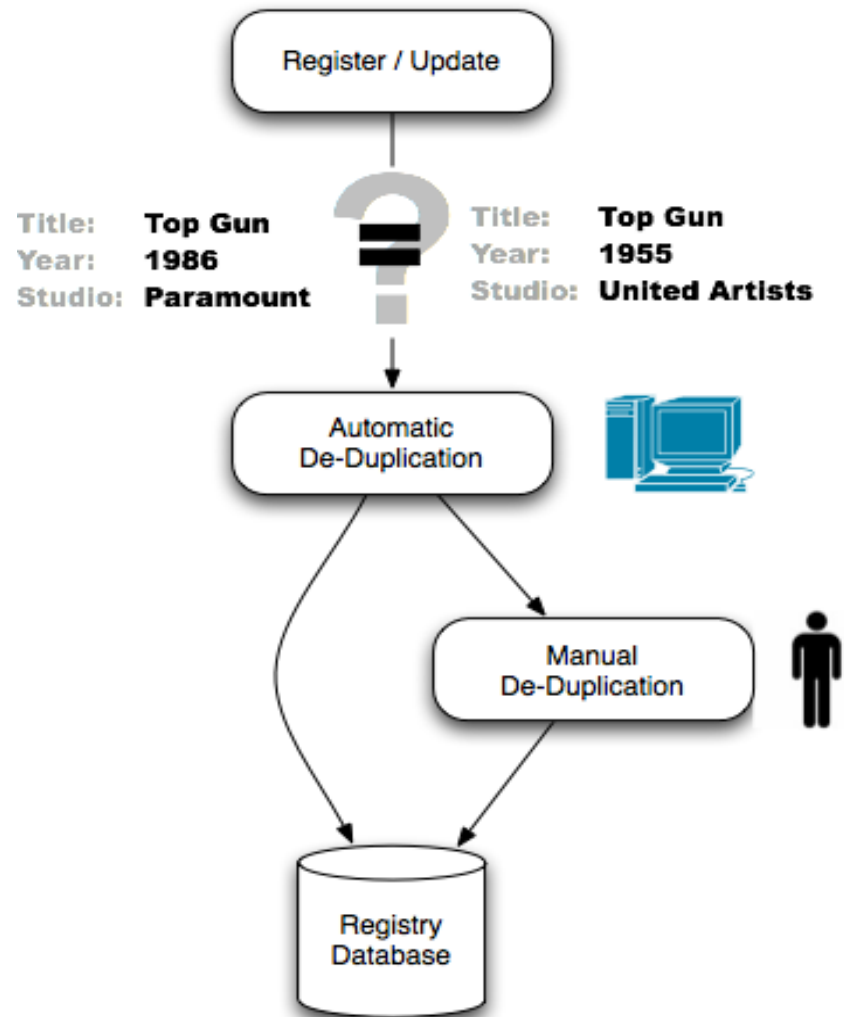
- Format
  - Prefix identifies the EIDR registry w/i the DOI and handle systems
  - Suffix is 20 hexadecimal digits and a Base 36 check digit

- Opaque numbers assigned by the registry
  - Purely functional without any implication of ownership
  - Remain the same regardless of asset or registrant ownership
  - Central database contains all required data
  - Metadata dial tone

Uniqueness & de-duplication

- Goal: Ensure that each work has exactly one ID

- Match records: Confidence level generated based on available metadata

- Low confidence matches require manual de-duplication

- Registrants can request immediate pass/fail

- EIDR matching tool available for pre-processing

Register / Update

Title:	**Top Gun**		Title:	**Top Gun**
Year:	**1986**		Year:	**1955**
Studio:	**Paramount**		Studio:	**United Artists**

Automatic De-Duplication

Manual De-Duplication

Registry Database

SLA & mirroring

- The EIDR Registry designed for 99.9% uptime for registrations
  - Better uptime for resolutions through the DOI and Handle System infrastructure
- More robust SLA would increase costs and fees
- Members free to maintain full copies as needed
  - Higher uptime for business-critical needs
  - Regular EIDR updates
  - Mirroring using registry codebase tbd
- Only EIDR will register new records
  - Unified database
  - One trusted source of DOI's
  - No duplicates

Governance & Business Model

Basic business approach

- Built on open DOI standard and developed by CNRI from existing open-source components to keep costs down

- Run as an industry non-profit to provide a permanent and persistent B2B service

- Cost-effective for large-scale use with clips and other micro products

- Designed for ubiquitous adoption with no restrictions on use or database mirroring

- Not competitive with existing metadata services

- IP-neutral with minimal descriptive metadata

- Continuous seeding with title-level movie/TV records from Rovi, Baseline Research, studios, and other members

IP and data ownership

- Functional, opaque ID has no implication of ownership
- IP rights remain with data and asset owners
    - Registry has non-exclusive license to data
- Low IP risk due to narrow EIDR focus
    - Commodity namespace data with low IP value
    - Minimal descriptive metadata
    - No intent to compete with metadata owners or suppliers
    - Built on open-source IP from mid-1990s
- EIDR specification is published freely
- Members provide reciprocal patent non-assert
    - Protects use and operation of the EIDR Registry
    - Applies to the actual as-built Registry run by EIDR
    - Standard defensive suspension clause

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
- 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

Annual Revenue	Basic User Fee	Promoter Fee (includes Basic User Fee)
< $100M	$ 5,000	
$100M - $500M	$ 10,000	
$500M - $1B	$ 20,000	$ 35,000
>$1B	$ 25,000	

Fees will be set annually by the EIDR Board of Directors on a cost-recovery basis.

How You Can Participate

Registry participation opportunities

Board — Founders & elected promoters governing the registry.

Promoters — Voting decision-makers with substantial interest in EIDR's success; eligibility to serve on and elect Board; significant influence on technical and policy direction of EIDR.

Contributors — General users who participate in working groups and agree to IPR policy, etc.; open to all membership levels, regardless of level of fee; no voting rights.

General Users — All ecosystem participants; full use rights; ability to take snapshots of the registry, mirror locally; API's for application development; tiered membership levels.

What industry leaders can do right now

- Streamline your supply chain now

- Deliver EST, rental, subscription, & VOD content with EIDR IDs

- Integrate EIDR into your systems & deliver EIDR-compliant services today

- Take a seat at the table and optimize EIDR for your use cases

EIDR is moving. The time to join & build EIDR into your work flow is now.

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
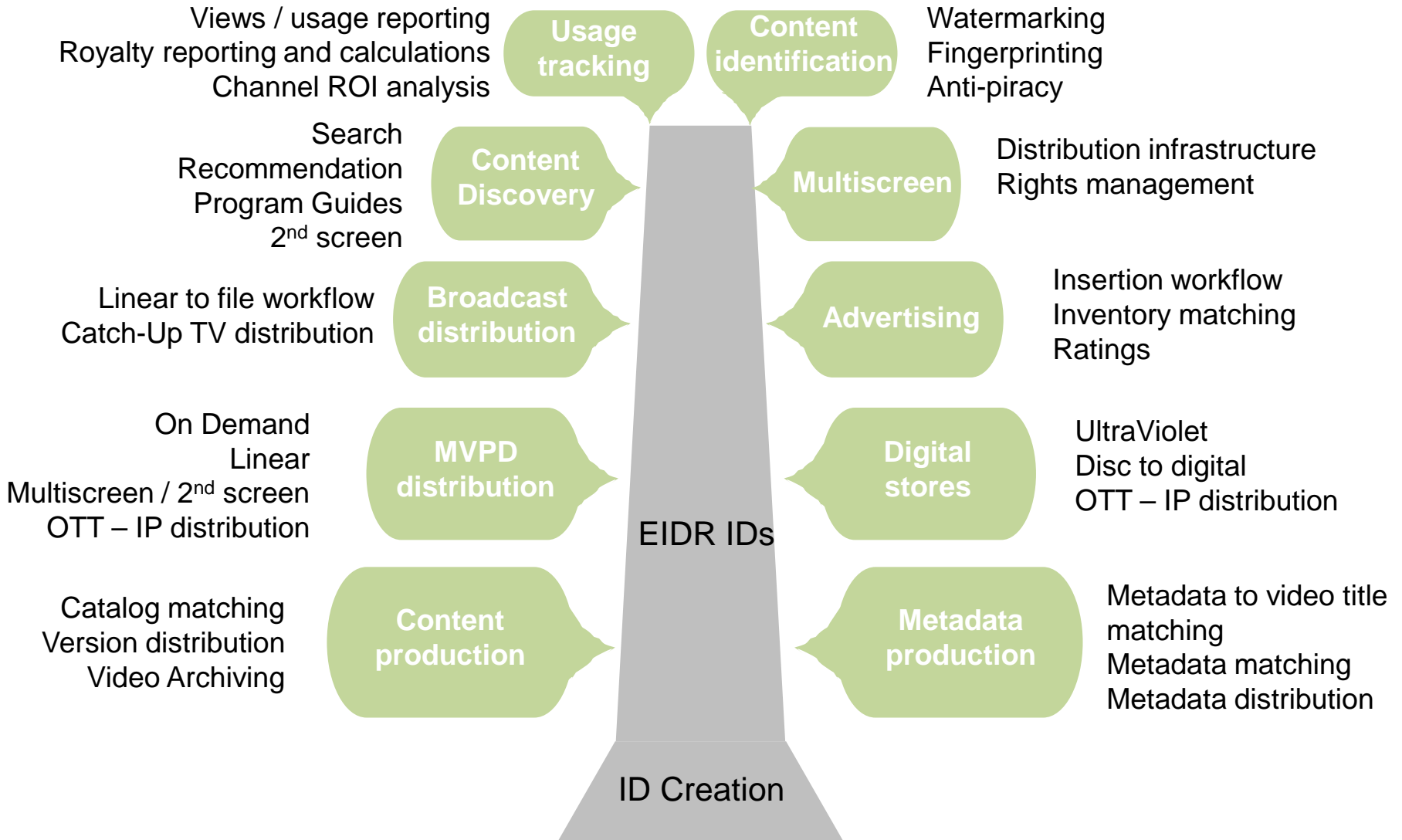- Sharp focus on the ID reduces complexity, provides clarity, speeds adoption

Technology

- Based on international standards
- Interoperability a primary design point
- Improves efficiency in existing processes
- Supports creation of new products and services

Appendices

Use cases span the digital value chain

Views / usage reporting
Royalty reporting and calculations
Channel ROI analysis

Usage tracking

Content identification

Watermarking
Fingerprinting
Anti-piracy

Search
Recommendation
Program Guides
2nd screen

Content Discovery

Multiscreen

Distribution infrastructure
Rights management

Linear to file workflow
Catch-Up TV distribution

Broadcast distribution

Advertising

Insertion workflow
Inventory matching
Ratings

On Demand
Linear
Multiscreen / 2nd screen
OTT – IP distribution

MVPD distribution

Digital stores

UltraViolet
Disc to digital
OTT – IP distribution

EIDR IDs

Catalog matching
Version distribution
Video Archiving

Content production

Metadata production

Metadata to video title matching
Metadata matching
Metadata distribution

ID Creation

Outsourced development and operations

- EIDR outsources all functions to keep costs down
- Corporation for National Research Initiatives (CNRI) creates registry software
  - Partners with IDF & ITU on the handle system that links all DOI registries
  - Experience building other registries such as CrossRef
  - Off-the-shelf code available under open source
- On-going server operations contracted to Rovi under service agreement
  - Runs other high-availability metadata services
  - Employs de-duplication tools to ensure uniqueness of registrations
  - Handles ongoing support and network maintenance
- Registrants may mirror the registry as needed for operations

EIDR pre-seeding with title-level movie/TV records

Simple membership categories

- Users - includes all members
- Contributors – users who want to join working groups and agree to the IPR policy, AT policy, etc.
- Promoters – users who want to be decision-makers and pay a higher fee plus agree to the IPR policy, AT policy, etc.

General users

- Target
  - All ecosystem participants who need to look up or register records
  - No representatives to work groups
- Requirements
  - Pay the Basic User Fee based on size of company
  - Agree to a click-to-accept Terms of Use agreement only
  - For registration credentials, meet criteria set by EIDR for trusted data sources
  - No additional fees unless registrations exceed limits for each fee tier:
    - $5K membership = 50K registrations
    - $10K membership = 250K registrations
    - $20K membership = 500K registrations
    - $25K membership = 1M registrations
- Benefits
  - Unrestricted search, query, and traversals through UI or API's
  - Ability to take snapshots of the registry, mirror locally, etc.
  - Access to API's for application development

Contributors

- Target
  - General users who want to participate in working groups and have their voices heard
  - Open to all membership levels, regardless of level of fee
- Requirements
  - Sign a full Participation Agreement and agree to the IPR Policy, AT Policy, etc.
- Additional benefits
  - Membership in Technical Working Group
  - Opportunity to participate in other EIDR working groups
  - Technical input into feature roadmap, use case priorities, technical development, and registry
  - Policy input on data quality, registrant criteria, SLA's, access control, confidentiality, terms and conditions, and other matters

Promoters

- Target
  - Leading companies with significant interest in EIDR's success and the ability and resources to promote adoption

- Requirements
  - Pay the Promoter Fee (includes the Basic User Fee)
  - Sign a full Participation Agreement and agree to the IPR Policy, AT Policy, etc.
  - Approval by the Board

- Additional benefits
  - Voting decision-maker on Technical Working Group
  - Eligibility to serve on the EIDR Board of Directors
  - Ability to vote in board elections for Industry Promoter Directors
  - Significant influence on technical and policy direction of EIDR

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 - movie

- Referent Type
  - Movie, TV, Series, Season, Short, Web, Composite, Interactive, Supplemental
- Title
- Title Language
  - 2 Character Language Code
- Primary Language
  - 2 Character Language Code
- Language Manifestation
  - Audio, Subtitle
- Structural Type
  - Abstraction, Performance, Digital, Physical

- Publication Status
  - Valid, In development
- Release Date
  - YYYY (/MM/DD)
- Mode
  - Visual, Audiovisual, Audio, Other
- Approximate Length
  - HH [:MM(:SS)]
- Country of Origin
  - 2 Character Country Code
- Principal Agent
  - Type name, select
- Principal Agent Role
  - Producer, Distributor

Optional fields for EIDR registration - movie

Important Optional Fields for EIDR De-duplication

- Director
  - Text Field
- Actor
  - Text Field
- Actor (secondary)
  - Text Field
- Alternate Title
  - Text Field
- Alternate ID
  - Ex. IMDb, ISAN, Proprietary IDs