



# Digital Data Exchange, LLC

## A high-level overview of DDEX

January 2019



# DDEX governance and organisation



# DDEX's Mission

- Develop standard message formats including
  - Choreographies around specific business transactions
  - Communication protocols
- Improve identification
  - Collaboration with other standards organisations
  - Develop unique identification systems where none exist
- Improve metadata quality and consistency

# Digital Data Exchange, LLC

- Open, not-for-profit membership organisation formed in 2006
- Open to all who “demonstrate a business interest in digital media content”
- 100+ members from entire supply chain
  - Musical work rights owners and administrators
  - Recording rights owners and administrators
  - Digital music retailers and technology service providers
  - Studio environment

# Membership

- Members participate in
  - Work prioritisation
  - Requirements gathering
  - Development and drafting of DDEX standards
- Members
  - Influence direction of standards development efforts
  - Get access to documents before others
  - Early-mover advantage for implementations

## Operating Agreement

- Governance rules
- Intellectual Property Policy
- Standards development process
- Confidentiality

# Full Members

- May attend
  - Working Group Meetings
  - Plenaries
  - Annual Meetings
- Provide Working Group chair
- Comment on “Committee Drafts” before publication
- Revenue-based per annum membership fee

Effective from 1<sup>st</sup> January 2019

Revenue \$	Fees
\$500m +	\$13,490
\$100m - \$500m	\$10,815
\$50m - \$100m	\$8,610
\$25m - \$50m	\$6,980
\$10m - \$25m	\$5,400
\$5m - \$10m	\$3,780
\$2m - \$5m	\$2,150
Up to \$2m	\$1,050
Individual	\$265

# Other Membership Tiers

## Charter Members

- Same as full members
- Plus
  - Nominate a Board Member
  - Fee: \$27,035 per annum effective 1<sup>st</sup> January 2019
  - Limited to 21 companies

## Associate Members

- No participation in work
  - Access to all documents
  - Comment on “Committee Drafts” before publication
  - Attend “Annual Meeting”
  - Attend one Plenary Meeting per annum for \$525 per person
- Fee: \$2,675 per annum effective 1<sup>st</sup> January 2019

*Current member list  
on [ddex.net](http://ddex.net)*

# Current Charter Members

## Recording rights owners/administrators

- PPL
- SCPP
- Sony Music
- SoundExchange
- Universal Music
- Warner Music

## Retailers/technology service providers

- Amazon
- Google
- Spotify
- Apple Inc.
- Pandora
- Tencent Music

## Musical Work rights owners/administrators

- ASCAP
- BMI
- GEMA
- Kobalt Music
- PRS for Music
- SACEM
- SOCAN

... plus two vacancies



# Licensees and Liaisons

## Licensees

- Evaluation licence
  - To test
- Implementation licence
  - To implement & use
- Encouraged to provide feedback

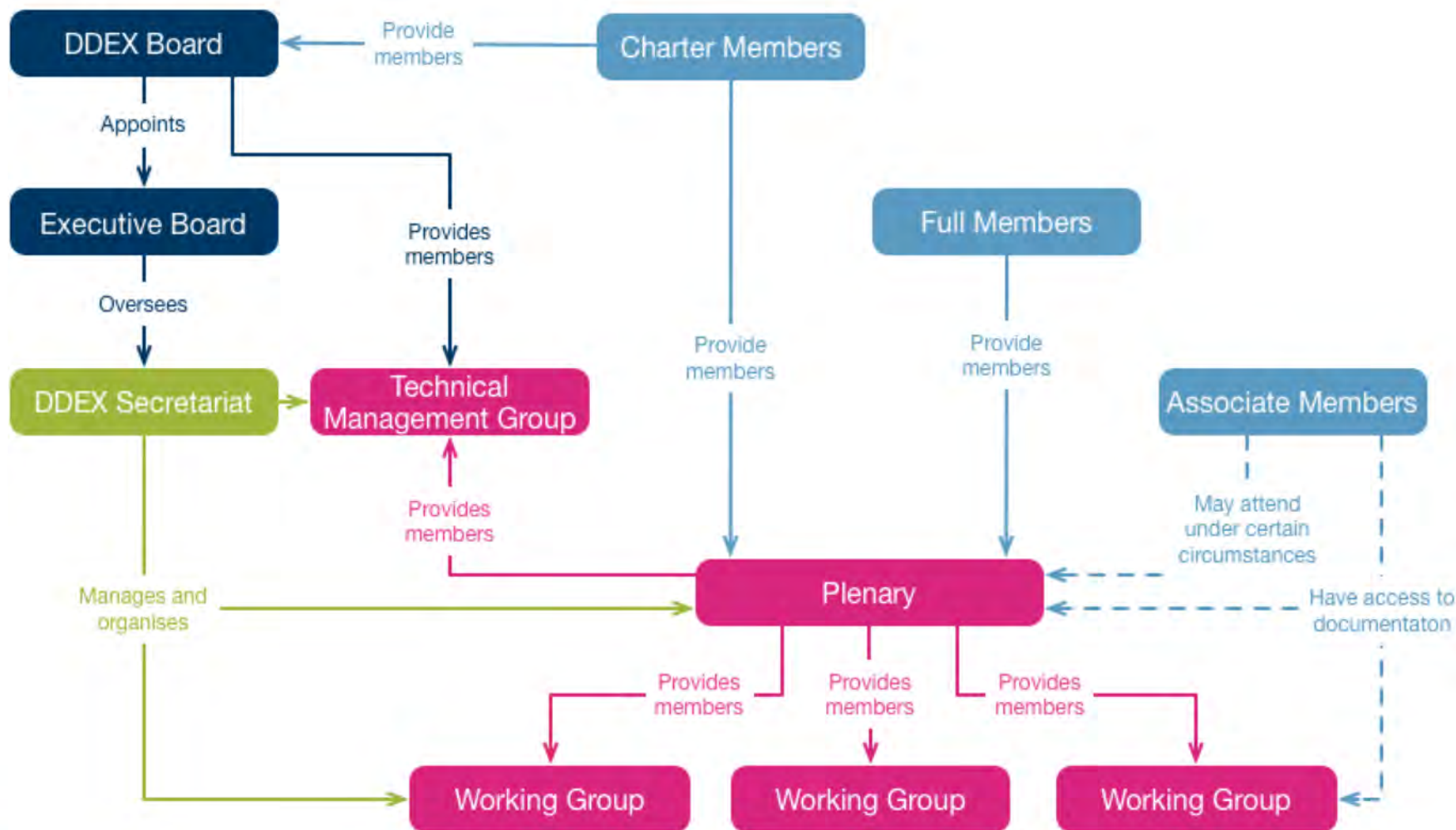
## Liaison Organisations

- Trade associations and standards bodies with common interest
  - Attend Plenary Meetings and Working Group meetings
  - Comment on “Committee Drafts” before publication
  - Communicate only publicly available information to their constituents

# Intellectual Property Policy

- All DDEX documents and meetings are confidential (unless declared public)
- DDEX owns copyright in standards
  - Members grant licence to DDEX in copyright contributions to standards
  - Members retain all ownership in patents, copyrights, trademarks, etc.

# Governance Structure



# DDEX Operation

## Working Groups

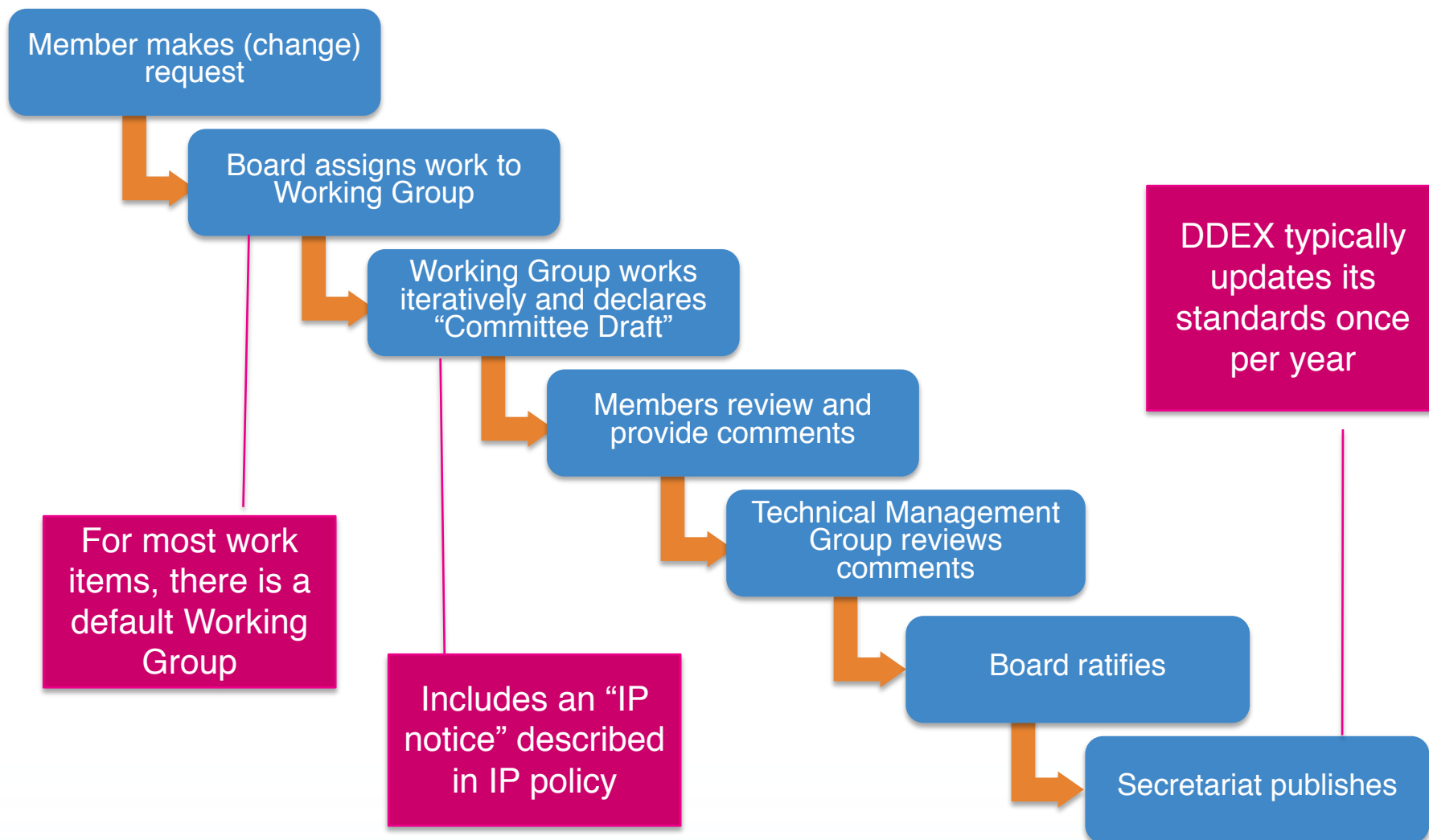
- Setting requirements
- Reviewing proposed solutions
- Meetings
  - Telephone conferences
  - Sharing documents online

All of DDEX's work is done by "consensus"

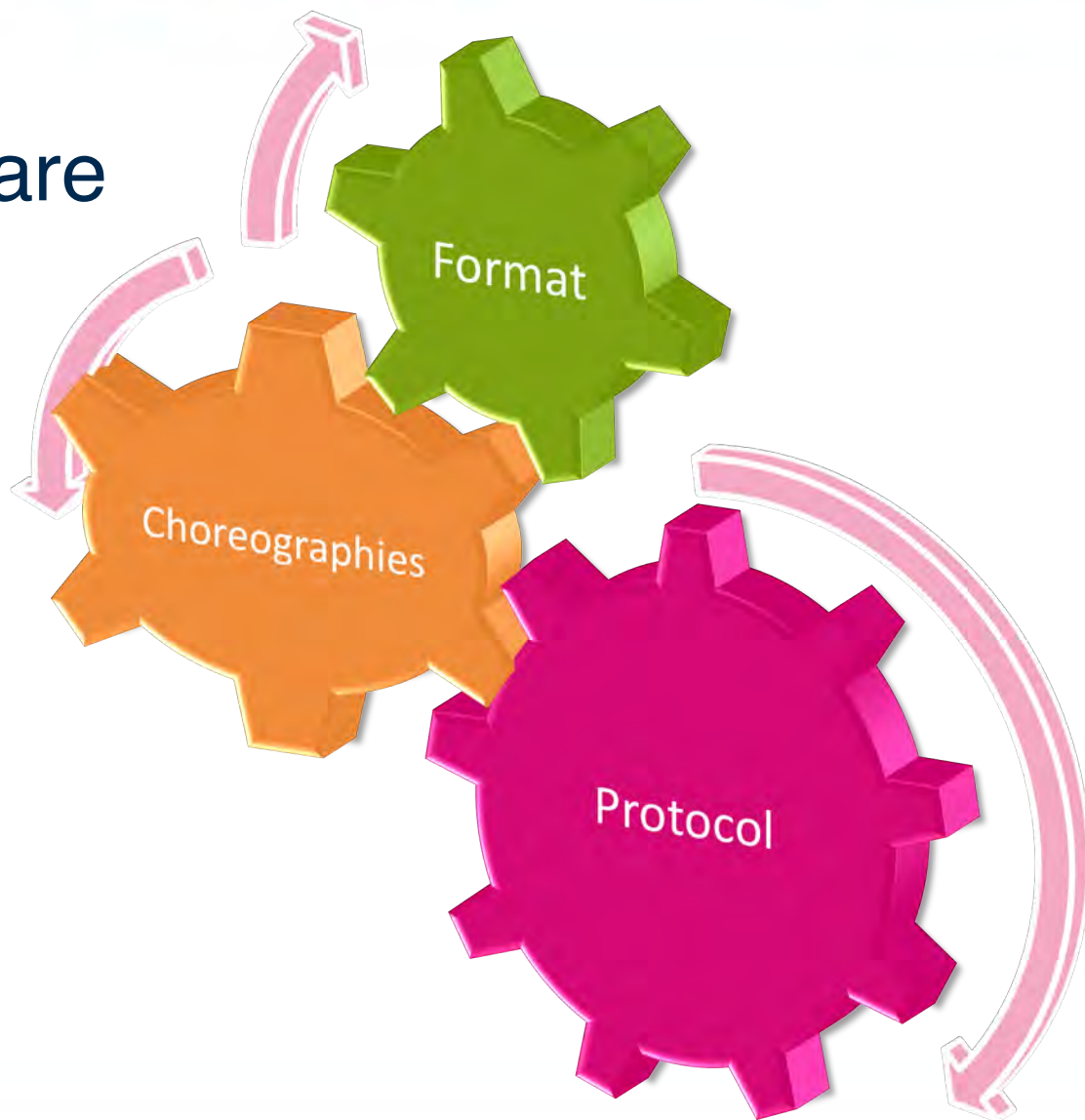
## Plenary Meetings

- Two Plenary Meetings per year currently rotating between
  - East coast of North America
  - West coast of North America
  - Europe
- Reviews Working Groups' progress
  - Recommendations to Board on work items
- Regional/topical meetings

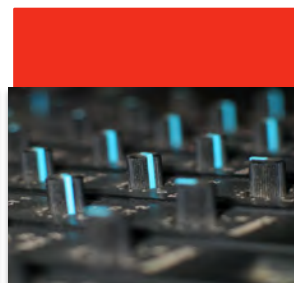
# Standards Development Process



DDEX standards are about **efficiently communicating** data along the value chain



# Focus Areas



Release  
Delivery

Sales and  
Usage  
Reporting

Works  
Notification  
and  
Licensing

Music  
Licensing  
Companies'  
Communication

Collection of  
Studio  
Metadata

Linking Works  
and  
Recordings



Conformance





# Underpinning DDEX's Standards

- DDEX defines the “lingua franca” for the music industry
- DDEX Data Dictionary
  - Semantics of terms
  - Structure of common composites





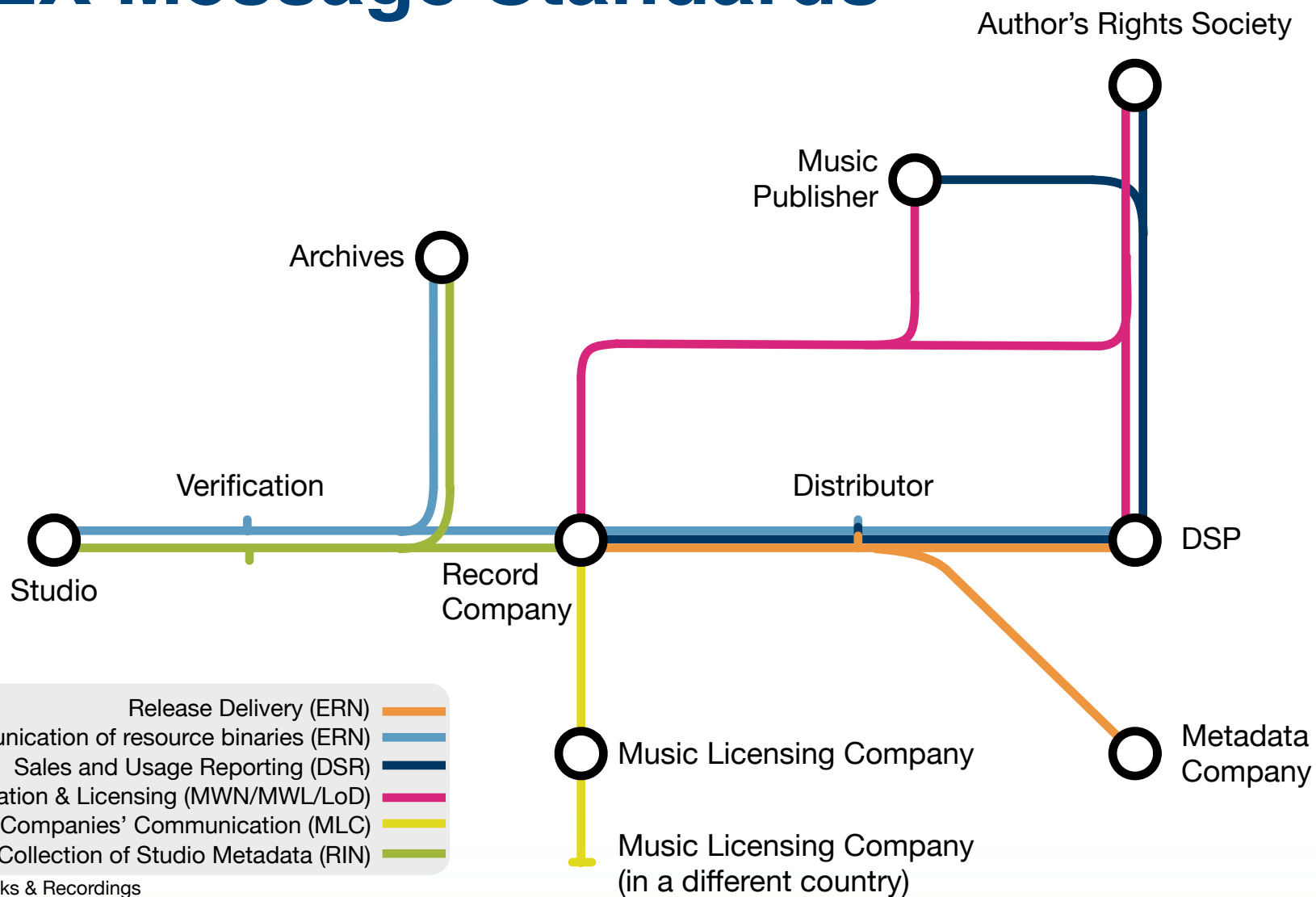
# DDEX is ubiquitous

- 4,100+ implementation licences issued
- DDEX has limited data on implementations
- There isn't any serious music company that is not using DDEX

# DDEX's Message Standards



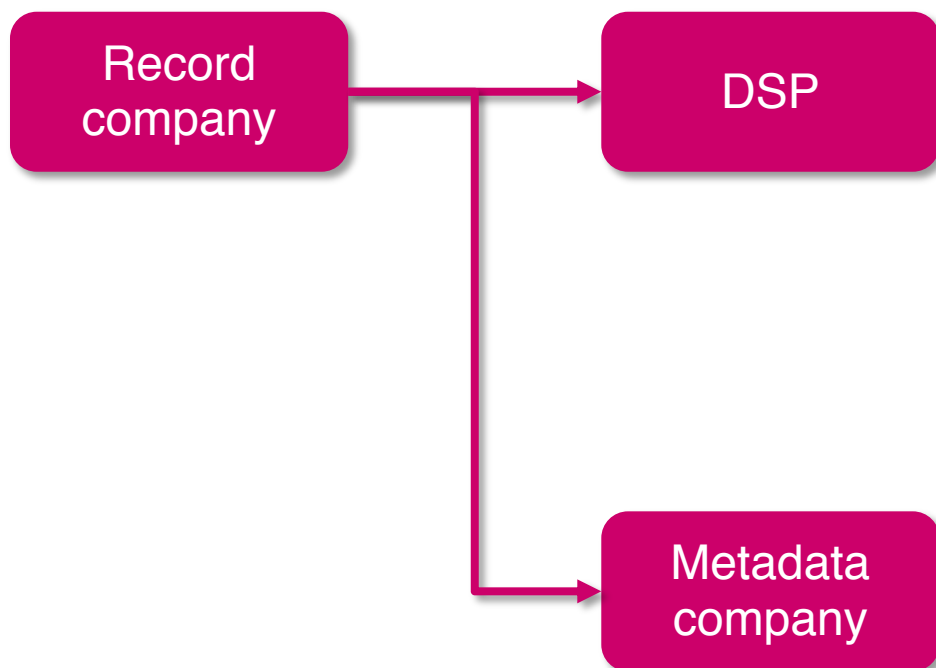
# DDEX Message Standards



# Release Delivery

Electronic Release Notification Message Suite  
Standard (ERN)

# Release Notification



`NewReleaseMessage` for

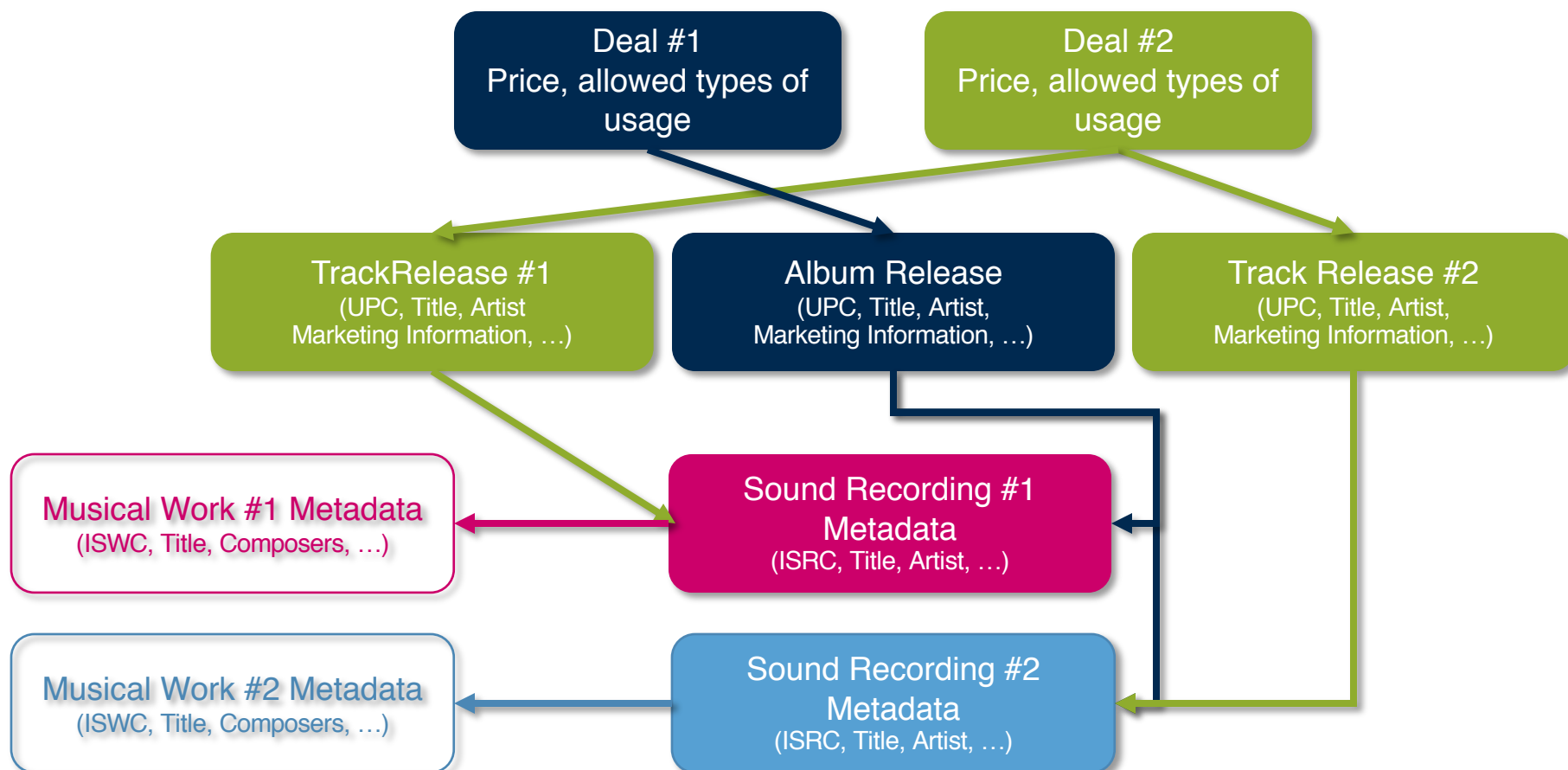
- Releases
- Deals
- Takedowns

`NewReleaseMessage` to communicate Release metadata

# Statement of Truth

- ERN messages are “statements of truth”
  - When a deal changes or is added all metadata needs to be re-sent
    - Descriptive metadata
    - Deals
  - There are no updates to individual fields
- Similar approach to communicating binaries

# New Release Message



# Flexibility versus Automation

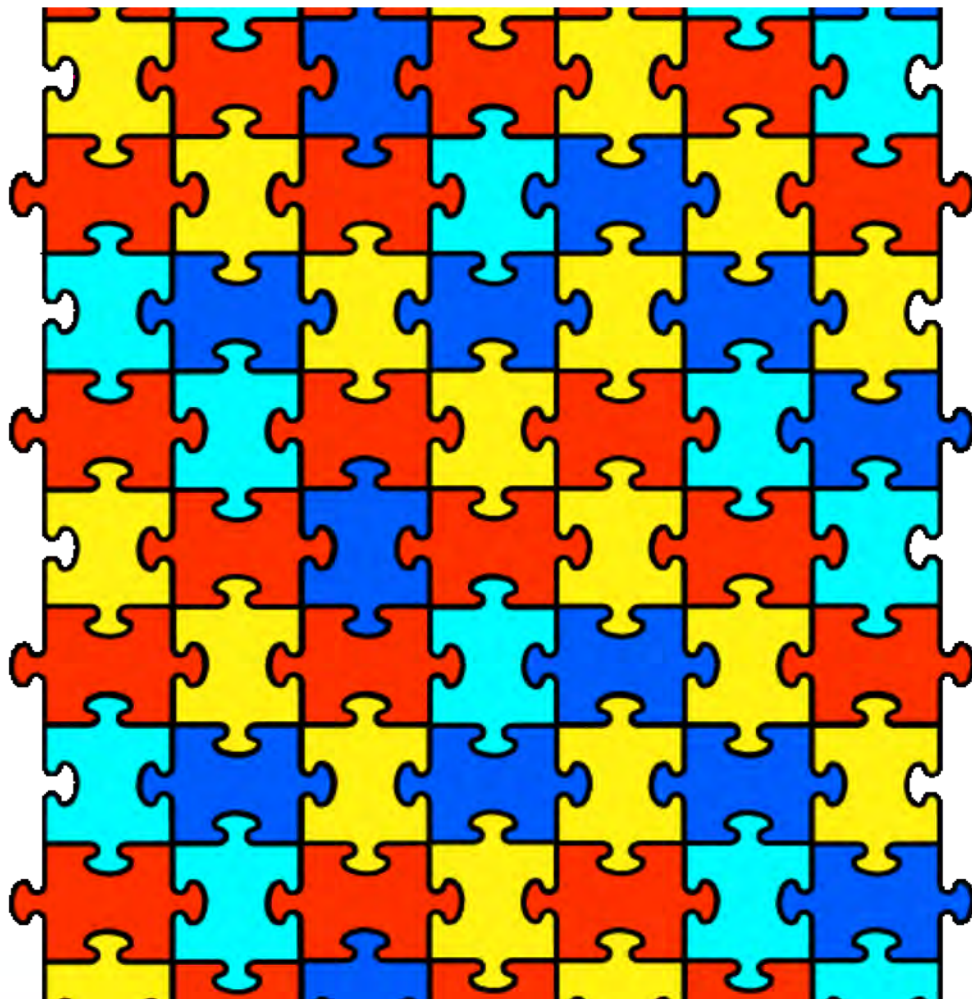
Many ways to distribute music  
(and more to come...)

Each way is comparatively simple

DDEX supports all while making it  
simple for each case (“profile”)



# Profiles



## Release Profiles

- Titles
- Artist names and IDs
- Release structure
- ...

## Life Cycle Profiles

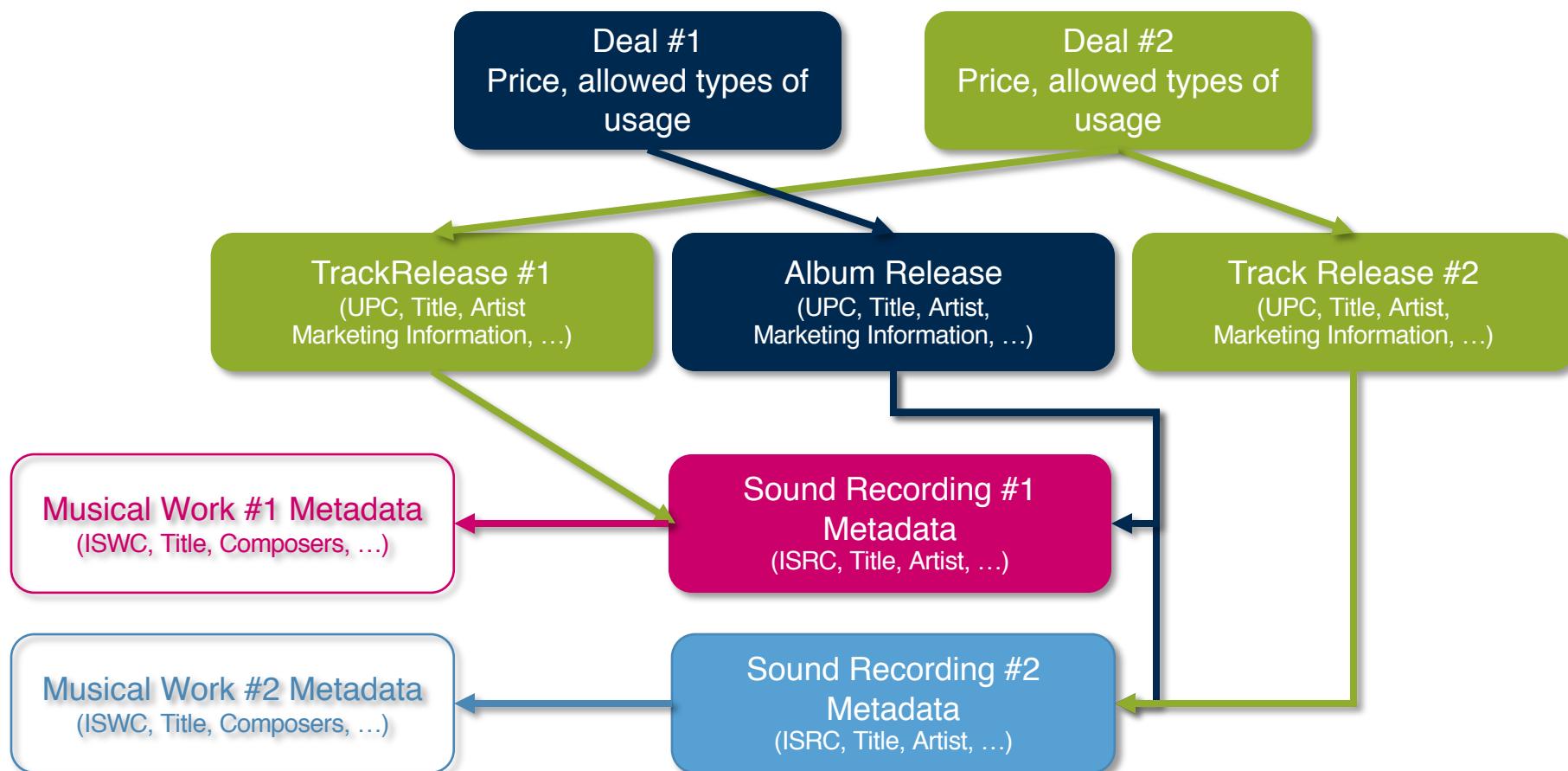
- Takedowns
- Re-deliveries
- ...

# ERN-3

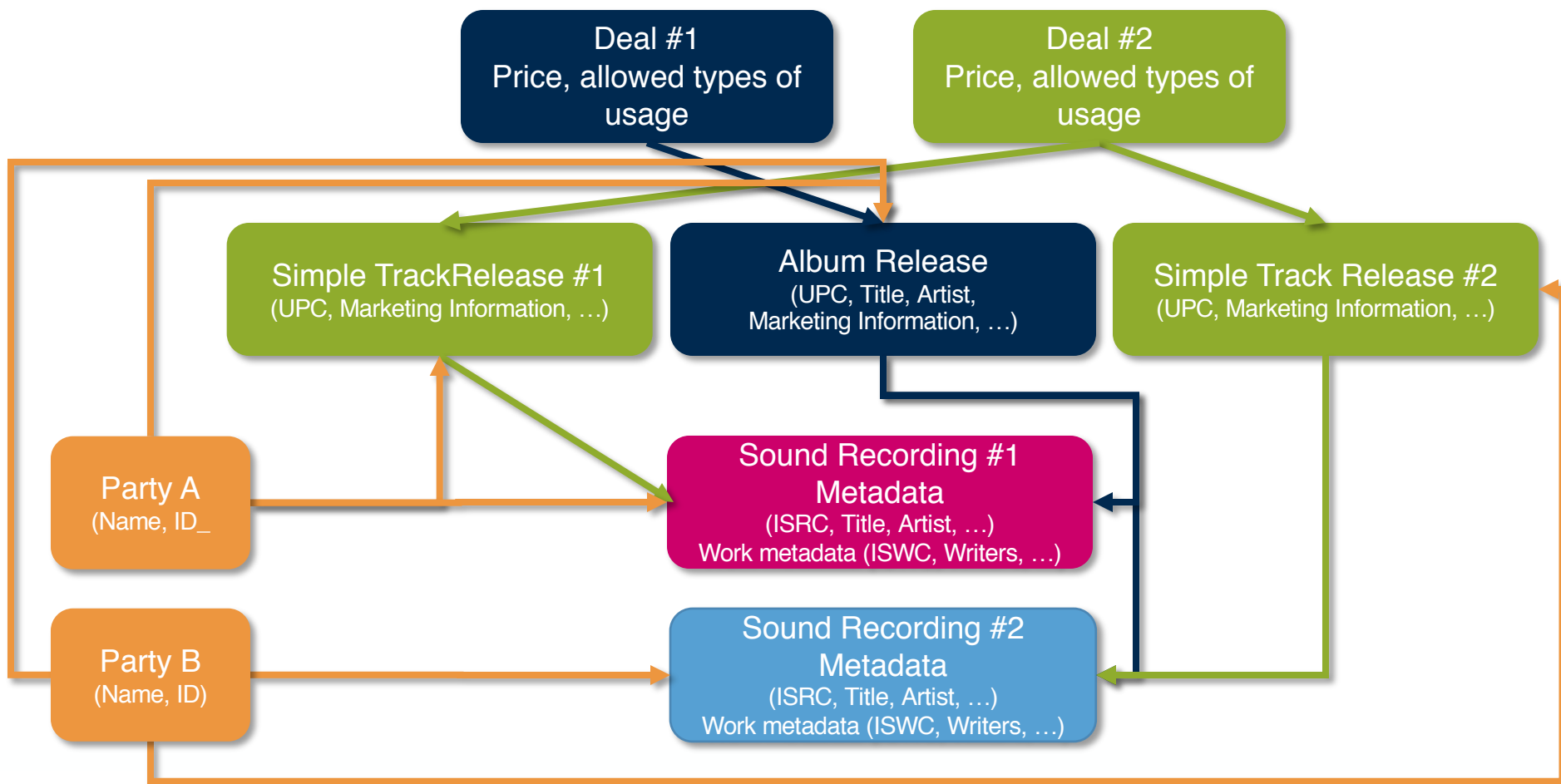
- Developed more than 10 years ago
- Has been widely deployed
- Users have reported issues
  - Complexity
  - Bloated
  - Confusion
  - Duplication of data
  - Costly maintenance



# ERN-3 versus ERN-4



# ERN-3 versus ERN-4



# Territorial Variations of Metadata

- ERN-3
  - One composite containing all data that could differ between countries
- ERN-4
  - Individual data elements can carry attributes
    - Language
    - Script
    - Territory



# Takedowns

## Normal Takedown

- Same approach as with offer reduction
  - Label sends normal update
  - Set all deals to end in past (so that they are inactive now)
- Requires labels to send full Release details

## Purging a Release

- If record company cannot send old Release
  - Right to the Release has been transferred
  - Release metadata has been corrupted (at DSP or record company)
- `PurgeReleaseMessage` only needs core metadata



# Message Exchange Protocols

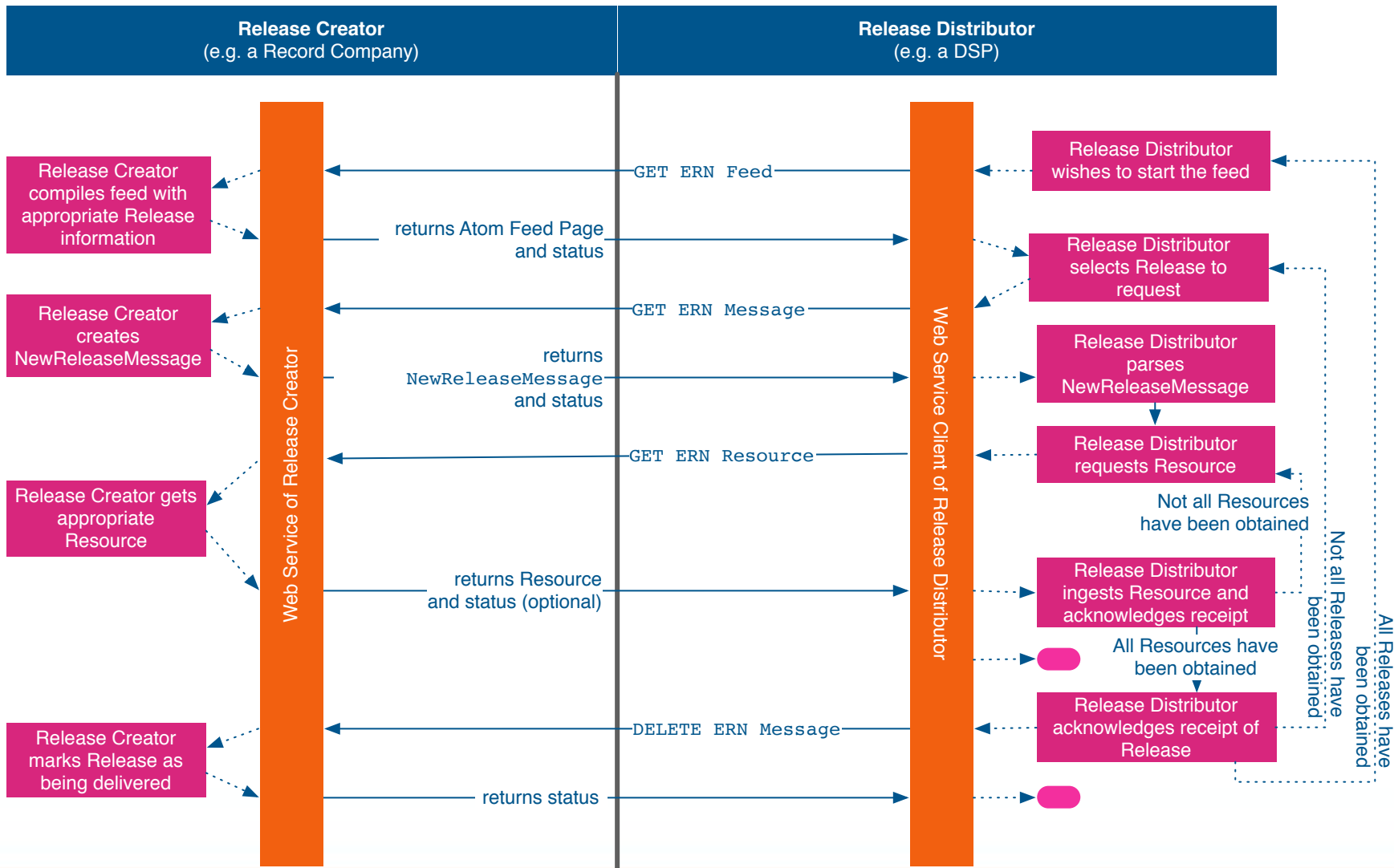
## SFTP

- Ubiquitous and simple
- Three profiles
  - Release-by-Release
  - Batched
  - Hard-disk delivery
- DDEX defines
  - Server structure
  - File naming convention

## Web Services

- Asymmetric approach
  - Labels publish content to be delivered (ATOM feed)
  - Labels publish web services to allow DSPs to access
    - Release metadata
    - Resource files
  - DSP's control the engagement

# ERN Web Service Choreography





# User Experiences Change with Device

Bigger screen size leads to a richer experience



# Enhancing User Experiences

Frank Sinatra's version of The Beatles' "Yesterday" was recorded in 1969

"The Sound of Silence" reached number one only in Japan, South Africa and the US

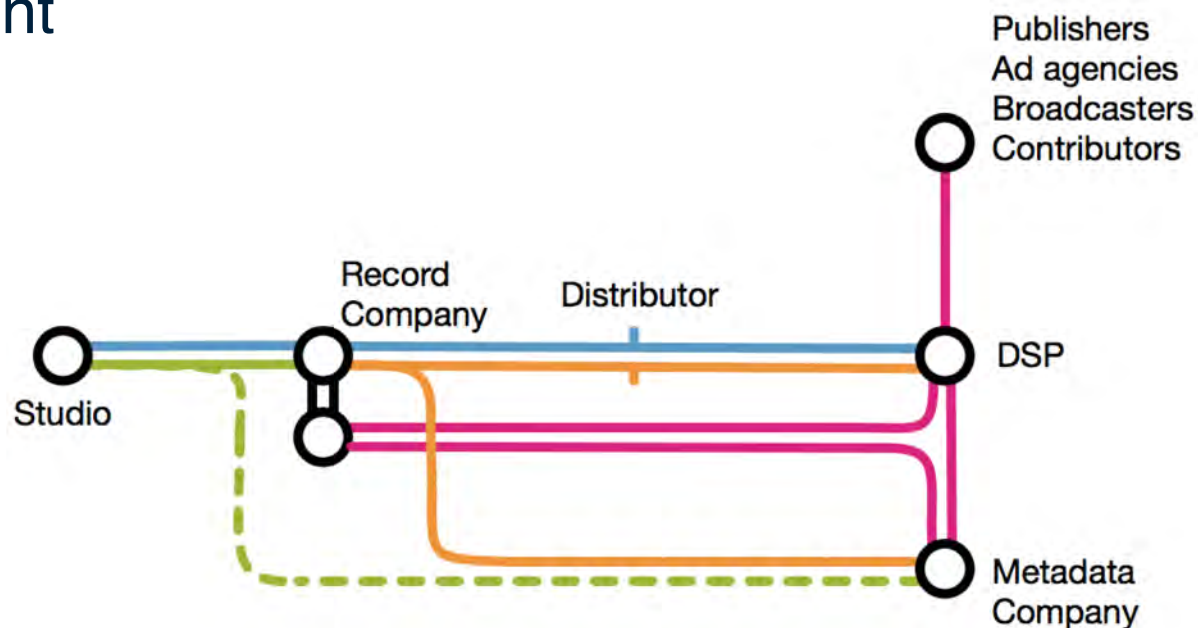
What is this week's focus track for Ed Sheeran?

Dido's "Thank You" was sampled in Eminem's "Stan"

The Beatles' "The Beatles" is commonly known as the "White Album"

# AI depends on Good Data

- Focus date for an artist
- Journalistic content
- Where used?
- Lyrics
- Samples
- Biographies
- Locations



# Media Enrichment and Description

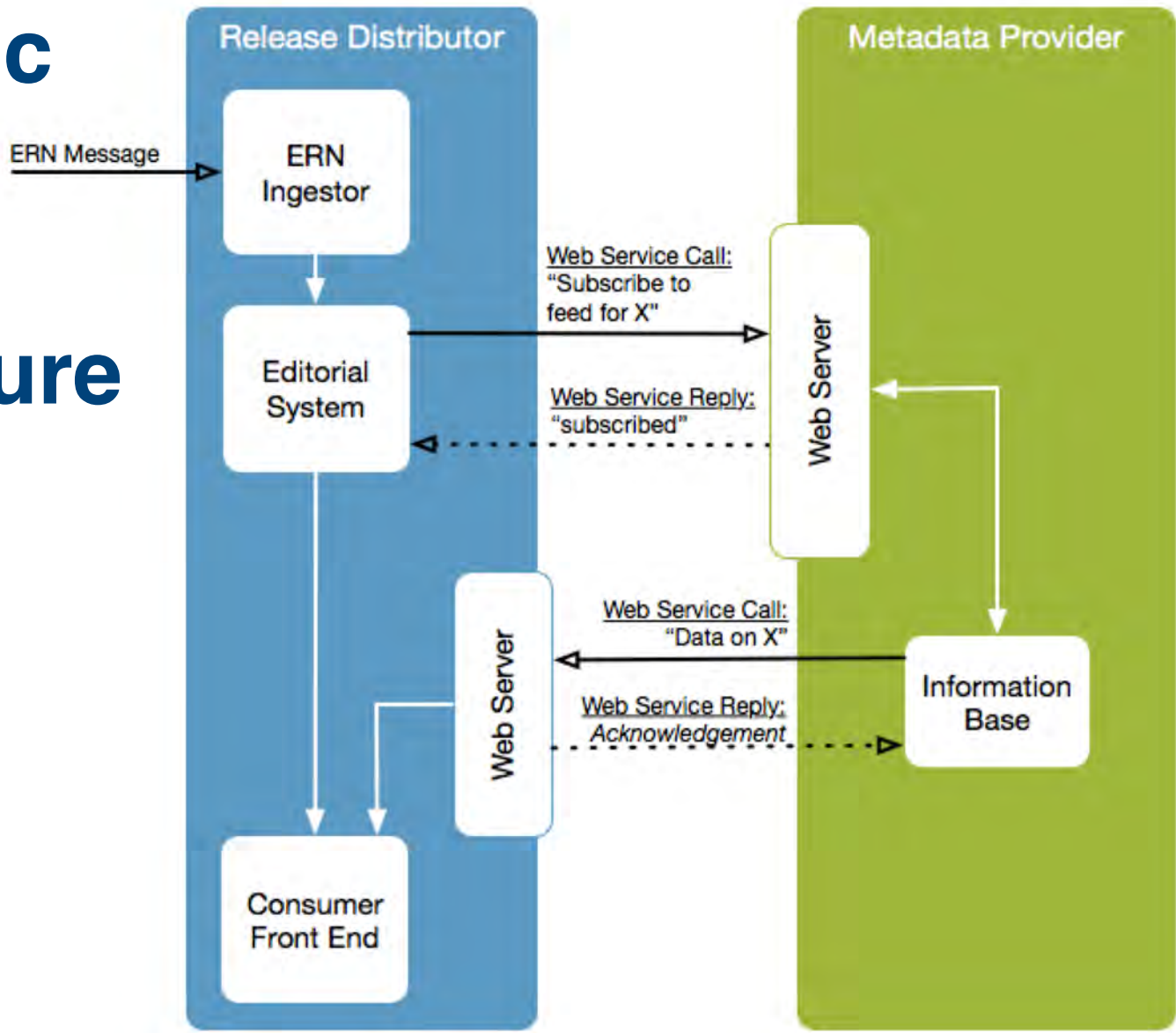
## From Labels to DSPs

- As part of an ERN feed
  - (S)FTP
  - Web Services
  - Media Enrichment and Description (MEAD) files are just like resource files
- As part of an extra feed
  - Label is a “third party metadata provider”

## From Metadata Providers

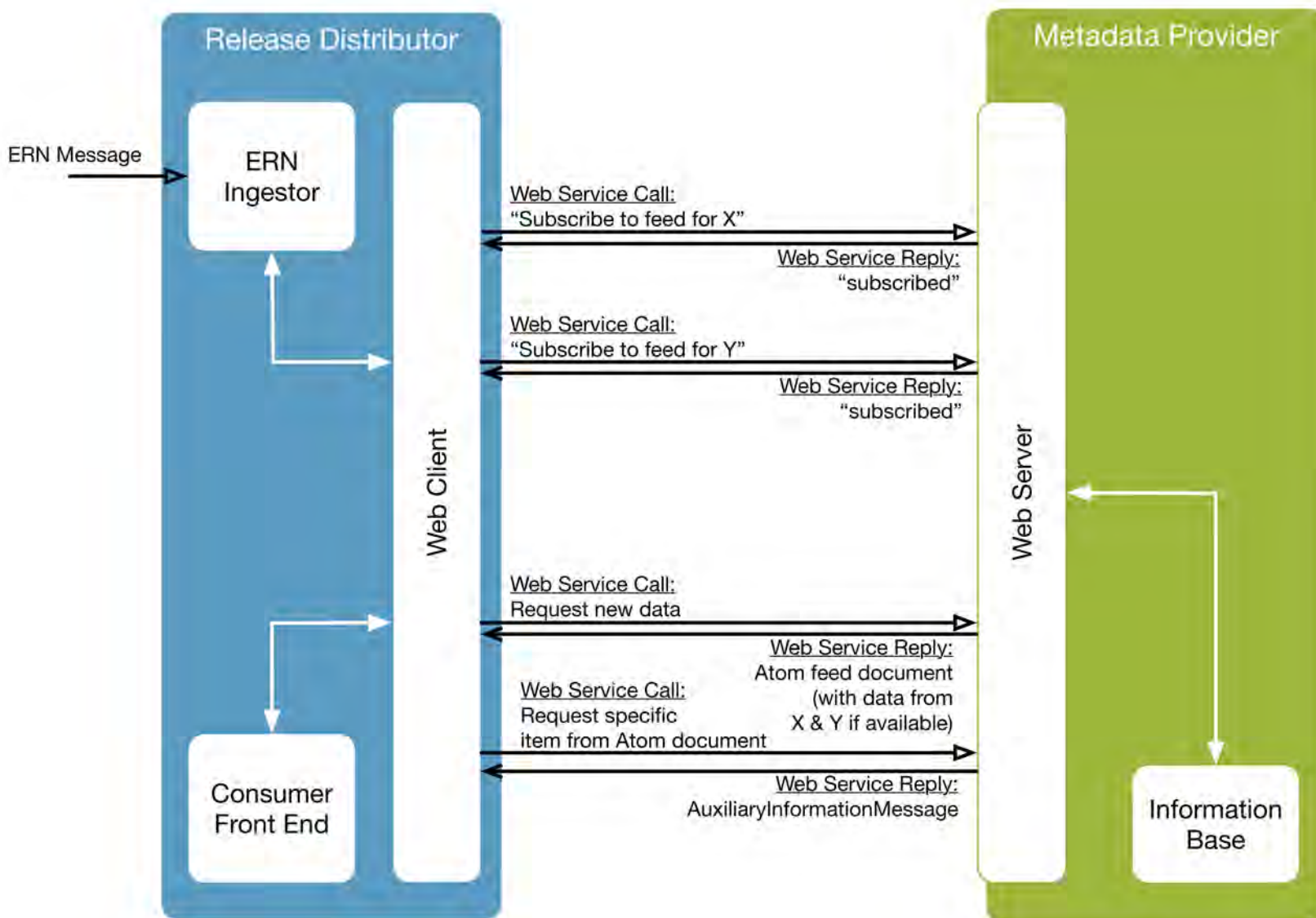
- DSP can subscribe to a metadata feed
- FTP
  - Request message
  - Reply: MEAD message
- Web service
  - Simple query language
  - Reply: MEAD message

# Symmetric Web Service Architecture





# Atom-based architecture



# Current Timetable

11/'18

- Approval of Specification

Q1/'19

- DDEX-internal standard
- Testing of core concepts

2019

- Public "DDEX Standard"
- Implementation and uptake

# Sales and Usage Reporting

Digital Sales Reporting Message Suite  
Standard (DSR)



# DSR – Purpose

Allow reporting of the level of sales, usage and/or revenue generated from the distribution of products, as well as sales of products based on Releases, to the relevant Rights Controllers

# Sales and Usage Reporting



`SalesReportMessage` for providing Release, Resource and sales/usage information

Two formats

- XML (being phased out)
- Flat file (also called DSRF)



Claim Detail Message for communicating claims and invoice details

# DSR Flat File – Technical Basics

- TSV
  - 1st delimiter: tabulator
  - 2nd delimiter: pipe  
Lennon | McCartney
  - Delimiters can be “escaped”
- UTF-8
- Structured flat file
- Different records for
  - Releases
  - Resources
  - Sales/Usage information
  - Summary information
  - Header and Footer

# XML versus Flat File Variants

## Business

- Added flexibility
  - to report multiple business models in one report
  - to report new business models
- Simplicity for senders and receivers
- Cost
  - Cheaper to implement and to maintain

## Technical

- XML files became too big
- Flat file are 5-10 times smaller
- Processing efficiency
  - XML file needed to be processed in its entirety
  - Flat file can be processed in portions
- Flexibility in terms of evolution of the format

# DSR Flat File – Overall Structure

- Standard defines different record types
  - Header and footer
  - Summary records
  - Release/resource records
  - Sales/usage records
- Records contain identifiers for referencing within report
- Most records are grouped into (self-contained) “blocks” that describe Releases and their usages

Header Record (HEAD)

Summary Record 1

Summary Record 2

...

Summary Record *n*

Block 1

Block 2

...

Block *n*

Footer Record (FOOT)

HEAD	dsrf/3.0/1.1/1.0	BasicAudioProfile	1.1	TCO_201601_152	2016-01-25T09:18:22Z	1
#HEAD	MessageVersion	Profile	ProfileVersion	MessageId	MessageCreatedDateTime	FileNumber
#SY01	SummaryRecordId	DistributionChannel	DistributionChannelDPID	CommercialModel	UseType	Territory
#RE01	BlockId	ReleaseReference	DspReleaseId	ProprietaryReleaseId	CatalogNumber	ICPN
#RE02	BlockId	ReleaseReference	DspReleaseId	ProprietaryReleaseId	UsedResources	
#AS02.01	BlockId	ResourceReference	DspResourceId	ISRC	Title	SubTitle
#SU01	BlockId	SummaryRecordId	SalesTransactionId	TransactedRelease	TransactedResource	IsRoyaltyBe
#FOOT	NumberOfLinesInFile	NumberOfLinesInReport	NumberOfSummaryRecords	NumberOfBlocksInFile	NumberOfBlocksInReport	
SY01	1	Test Company	PADPIDA000001DF1	PayAsYouGoModel	PermanentDownload	FR
RE01	1	1	101101222	UMG::456423413400123	00289 00004763917	
AS02.01	1	2	50456456	GBF079011270	festive overture opus 96	
AS02.01	1	3	50456457	GBF078910342	piano concerto no 2 in f opus 102	
AS02.01	1	4	50456458	GBF079541503	gadfly opus 97	
AS02.01	1	5	50456459	GBF079541508	gadfly opus 97	
AS02.01	1	6	50456460	GBF079812942	sophia perovskaya opus 132	
AS02.01	1	7	50456461	GBF079010993	jazz suite no 1 3 foxtrot	
AS02.01	1	8	50456462	GBF079110776	jazz suite no 2	
AS02.01	1	9	50456463	GBF079211050	novorossisk chimes	
AS02.01	1	10	50456464	GBF078911391	symphony no 9 1 allegro	
AS02.01	1	11	50456465	GBF079814040	24 preludes and fugues opus 87	
AS02.01	1	12	50456466	GBF079010282	symphony no 10 opus 93 2 allegro	
AS02.01	1	13	50456467	GBF078911123	chamber symphony opus 110a 3 allegretto	
AS02.01	1	14	50456468	GBF079010741	symphony no 15 1 allegretto	
AS02.01	1	15	50456469	GBF078100251	symphony no 5 in d minor opus 47	
AS02.01	1	16	50456470	GBF079211040	funeral triumphal prelude opus 130	
RE02	1	17	S-101101222-1		1 2	
RE02	1	18	S-101101222-2		1 4 5	
RE02	1	19	S-101101222-3		11 12	
SU01	1	1	1	1		true
SU01	1	1	1		2	true
SU01	1	1	1		4	true
SU01	1	1	1	17		true
SU01	1	1	2	18		true
SU01	1	1	3	19		true
FOOT	35	35	1	1		

# Profiles

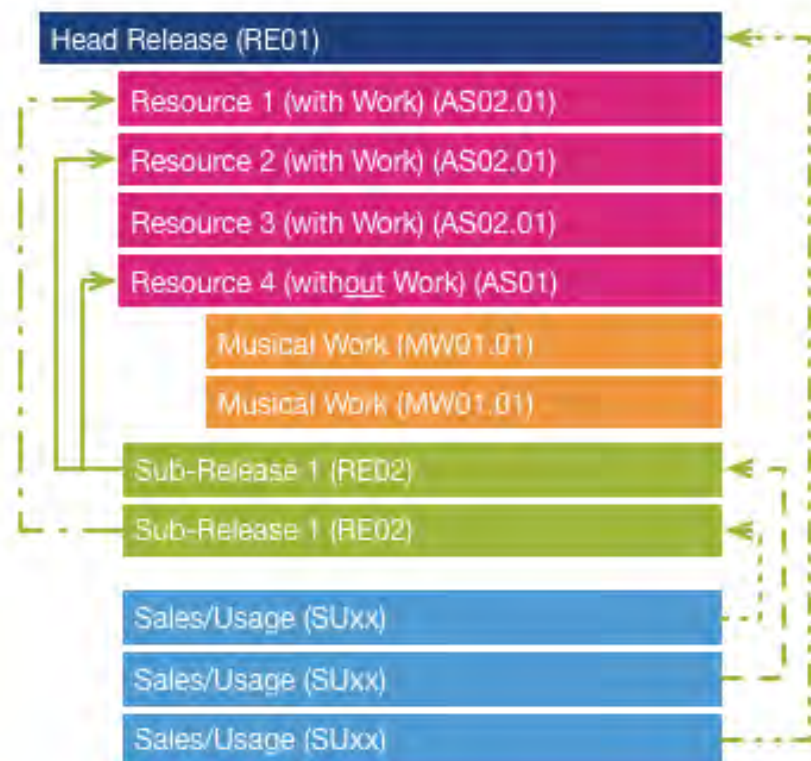
- Basic Audio Profile
- UGC Profile
- Audio Visual Profile
- Royalty Reporting
- Broadcast Profile

Current focus is on sales/usage reports for musical work rights owners

Work on sales/usage reports for sound recording rights owners is well-advanced

# Basic Audio Profile

- Album and singles
- Sub-Releases for unbundled tracks and “complete my albums”





# Basic Audio Profile

- If a DSP does not have Release data

Resource (with Work) (AS02.01)

Sales/Usage (SUxx)

Sales/Usage (SUxx)

Resource (without Work) (AS01)

Musical Work (MW01.01)

Musical Work (MW01.01)

Sales/Usage (SUxx)

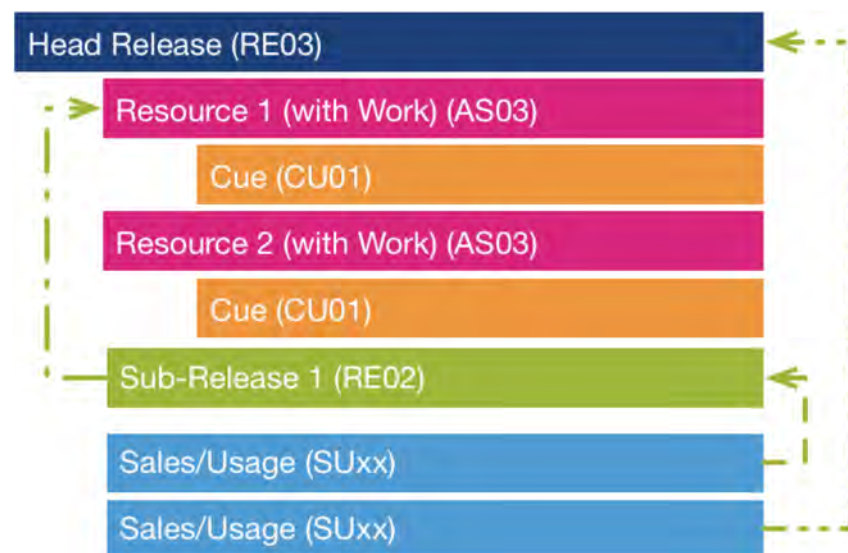
# UGC Profile

- Resource level
  - Sound Recording with Work
- Release level
  - the Videos used
- Licensor level
  - Exact known ownership during Reporting period
- Sub-Period ownership
- Multiple rights types



# Audio-visual Profile

- Release
  - Movie, Season, ...
- Resource
  - Movie, Episode
- Cue
  - Embodied works
- Sub release
- Sales for release and sub-release



# Radio Broadcast Profile

- Global usage reporting (all countries)
- Multiple stations
- Continuous listening (similar to traditional radio)

Head Release (RE01)

Resource (with Work) (AS02.01)

Sales/Usage (SU05)

Resource (without Work) (AS01)

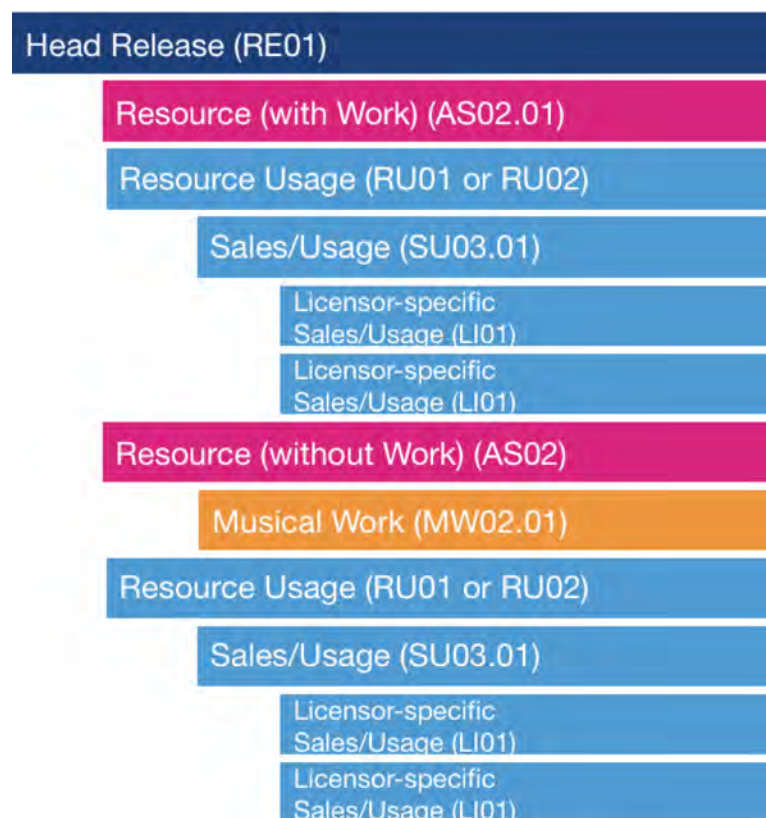
Musical Work (MW01.01)

Musical Work (MW01.01)

Sales/Usage (SU05)

# Royalty Reporting Profile

- Reporting by `RightsType`
- Global Reporting for all countries
- Covers any `CommercialModel` and `UsageType`
- Reporting against
  - Release
  - Resource
  - UGC content
  - Any combination



# Claim Detail Message I

- Allows licensors to inform licensees
  - About what licensors claim to own/represent
  - About what licensees are to pay for usage of claim on those works
- Needs to be closely aligned to DSR
  - Consistent semantics of terms
  - Clear linking between sales/usage “lines” and claim/invoice “lines”
  - Clear rules how to use the two together

# Claim Detail Message II

- DDEX is in the process of agreeing requirements
  - Based on a format known as CCID and
  - To meet additional requirements
- Technical solution is likely to be based on Architecture of the DSR Standard (Part 1)



# Work Notification and Licensing

Musical Work Right Share Notification  
Choreography Standard (MWN), US Musical Work  
Licensing Choreography Standard (MWL) and US  
Letter of Direction Choreography Standard (LoD)



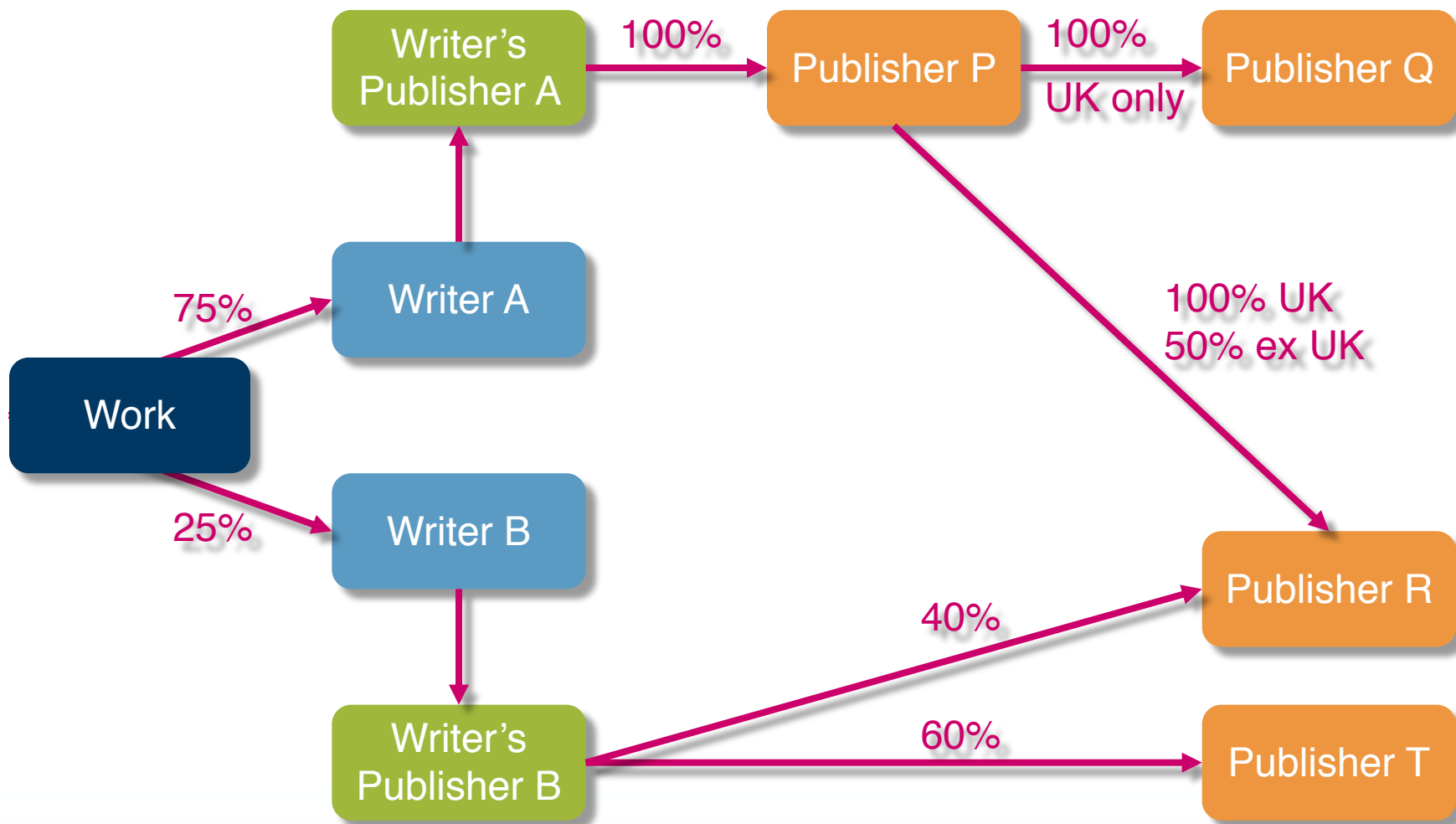
# Process to get a licence

Find out who owns shares in the work(s)

Get a licence from the share owner(s)

Licensor informs Licensees if something changes (“Letter of Direction”)

# What is a Share?



# To License a Share...

... you need to know who  
can license (or collect) a  
share based on which  
original publisher share  
for which writer share

Licensing Share

Collection Share

Original Publisher  
Share

Manuscript Shares

# Step 1 – Find Share Owners



MusicalWorkShare-Request for

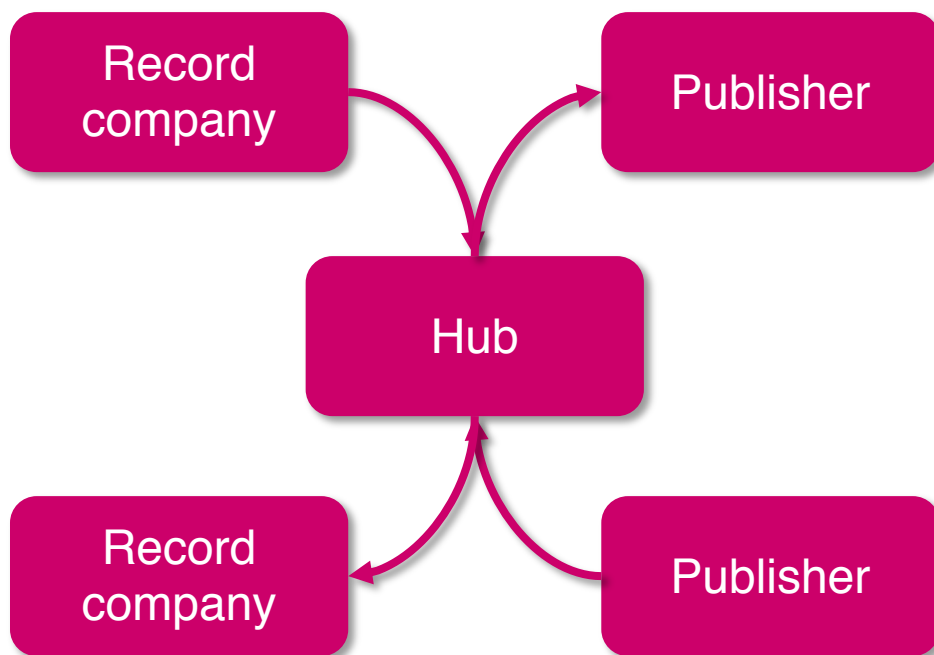
- Work
- Territory
- Usage



MusicalWorkShare-Notification for

- Work
- Territory
- Usage
- Percentage

# Step 1 – Hub-centric Approach



MusicalWorkShare-Request for

- Work
- Territory
- Usage

MusicalWorkShare-Notification for

- Work
- Territory
- Usage
- Percentage

Can be done using SFTP  
or Web Services

## Step 2 – Get a Licence

Prospective  
Licensee



Prospective  
Licensor

MusicalWorkLicense-  
Request for

- Work
- Territory
- Usage

Prospective  
Licensee



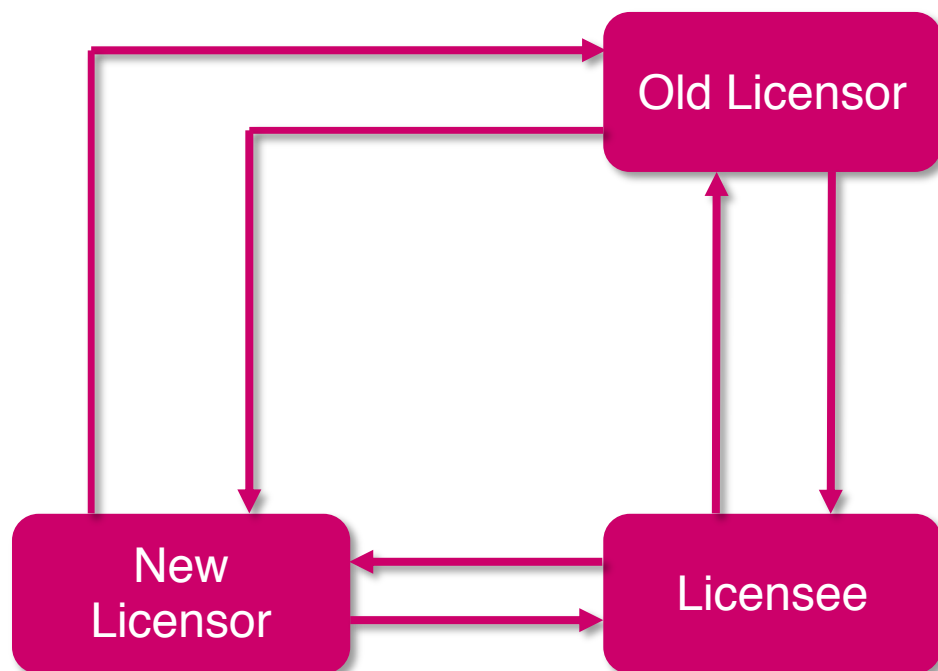
Prospective  
Licensor

MusicalWorkLicense-  
Message for

- Work
- Territory
- Usage

Can also be used for  
confirmation where a licence  
already exists

## Step 3 – Maintain a Licence



Exchange of Work information and proprietary identifiers prior to “Letter of Direction”

Confirmation with the old licensor

Please pay **me** from now on

Please ask **me** for new licences from now on

Core: Licensee-New Licensor



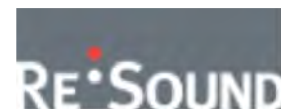
# Music Licensing Companies' Communication

Music Licensing Companies Message Suite and Choreography Standard (MLC)

# Music Licensing Companies

- MLCs represent
  - Producers of sound recordings and/or
  - Performers on sound recordings
- International network of “collecting societies” similar to the one for musical works
- Need to communicate amongst themselves and with repertoire owners, such as record companies and performer representatives

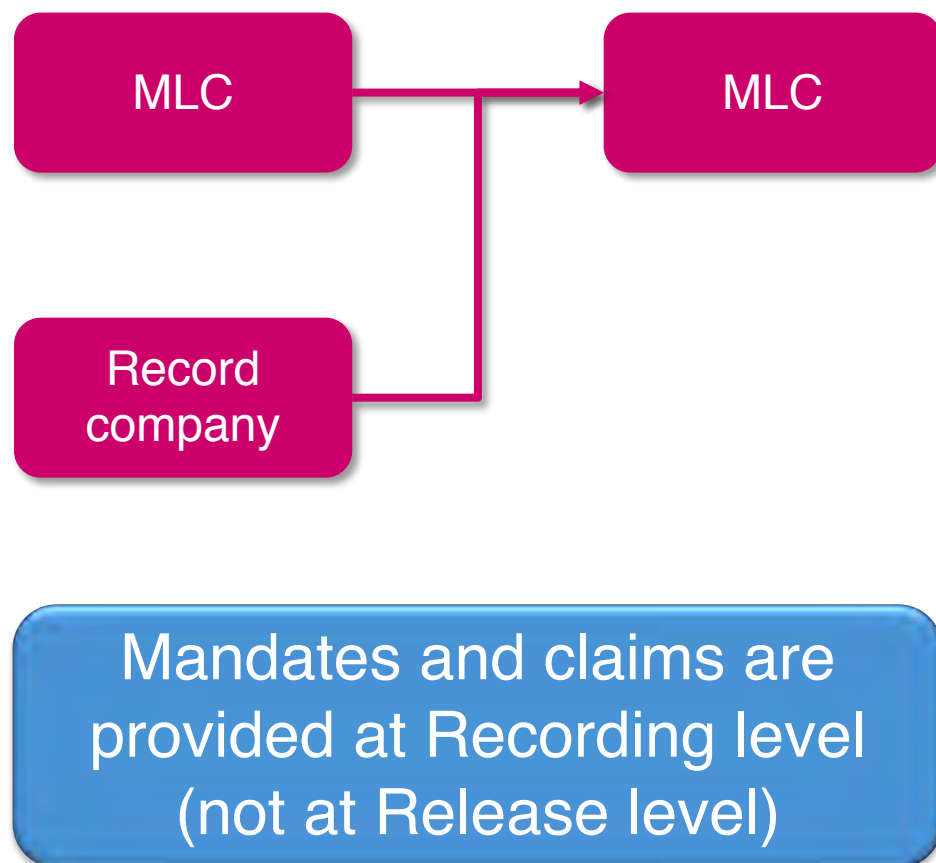
## MLCs in DDEX



한국음반산업협회



# MLC Messaging (1)

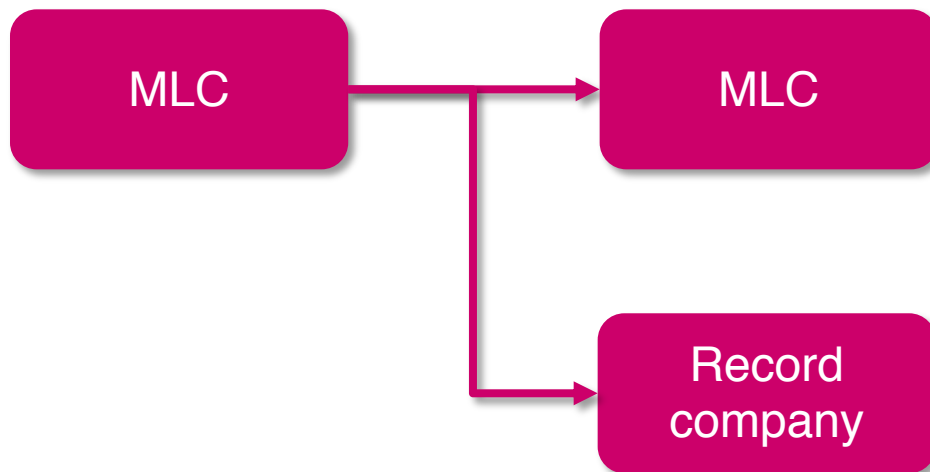


`DeclarationOfSoundRecordingRightsClaimMessage` for declaring claims/mandates on a sound recording or music video

`RevokeSoundRecordingRightsClaimMessage` for revoking such claims

`RequestSoundRecordingRightsClaimMessage` for requesting such claims

## MLC Messaging (2)



`SalesReportMessage` for providing sales and usage figures

`DeclarationOfRevenuesMessage` for declaring revenues from sales/usages and other income

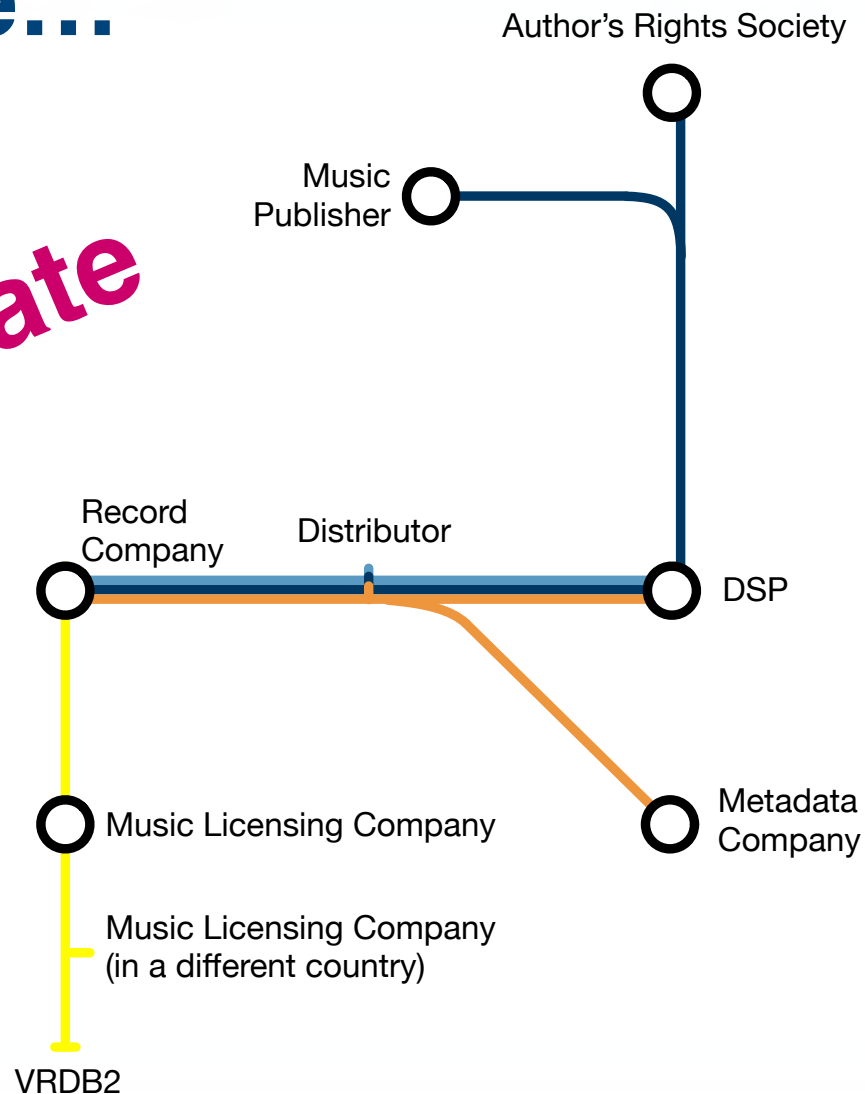
Additional messages for managing other communications in progress

# Collection of Studio Metadata

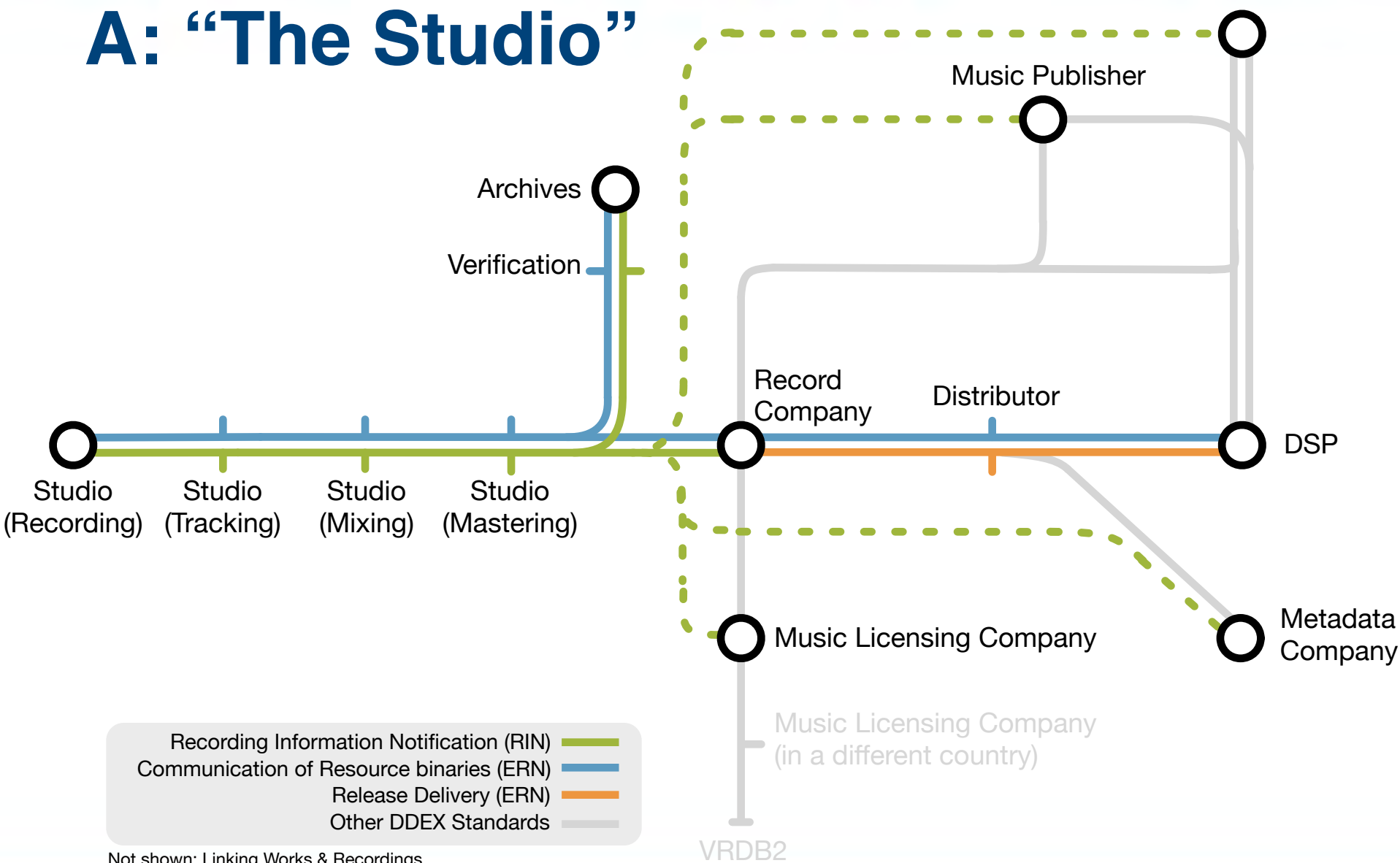
Recording Information Notification Standard (RIN)

# We looked at these...

**Question:**  
**Where does all  
this data originate  
from?**



# A: "The Studio"



Not shown: Linking Works & Recordings

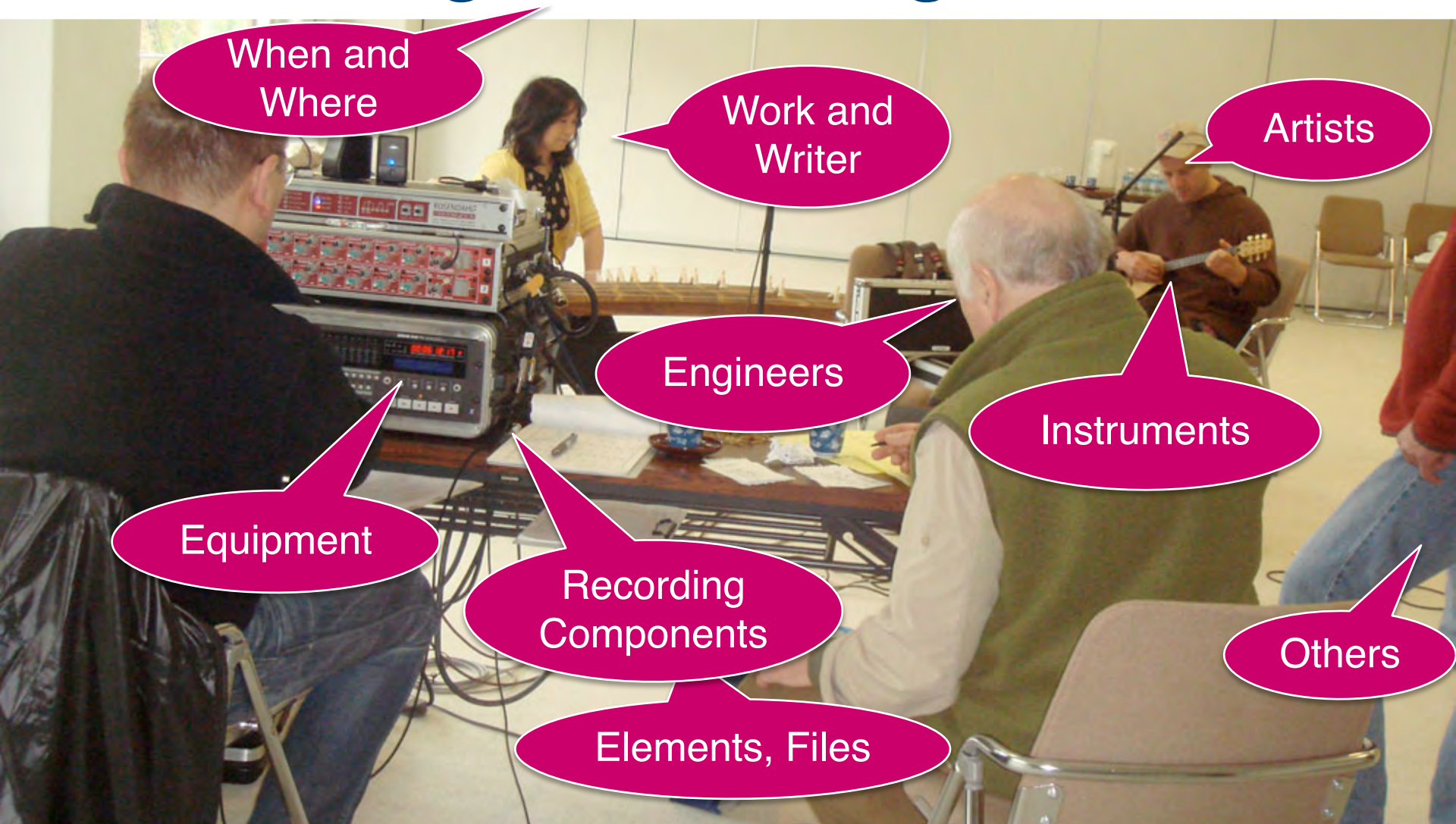


# Recording Information Notification

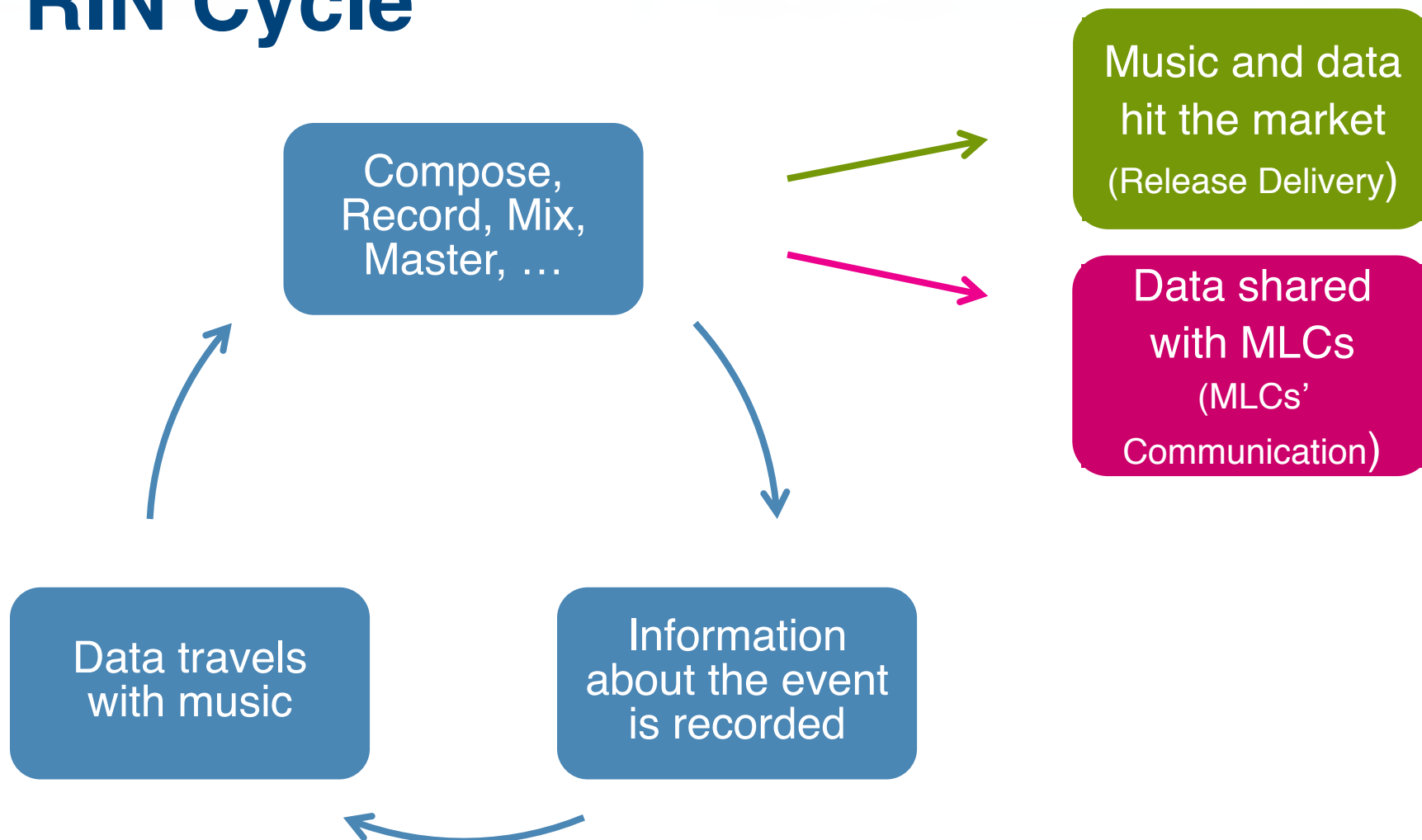
- Collecting content metadata
  - At source
  - At the time
- Without good data
  - Consumers can't buy
  - Musicians/engineers won't get paid



# Describing a Recording Session



# RIN Cycle



# RIN Implementations

- DDEX works with Digital Audio Workstation manufacturers
  - Support for RIN
  - User-friendly means to collate “studio data”
  - Communicate RINs between DAWs
- DDEX works with record companies/MLCs
  - Ingesting RIN files
- DDEX works with archival service providers
  - Ingesting RIN files

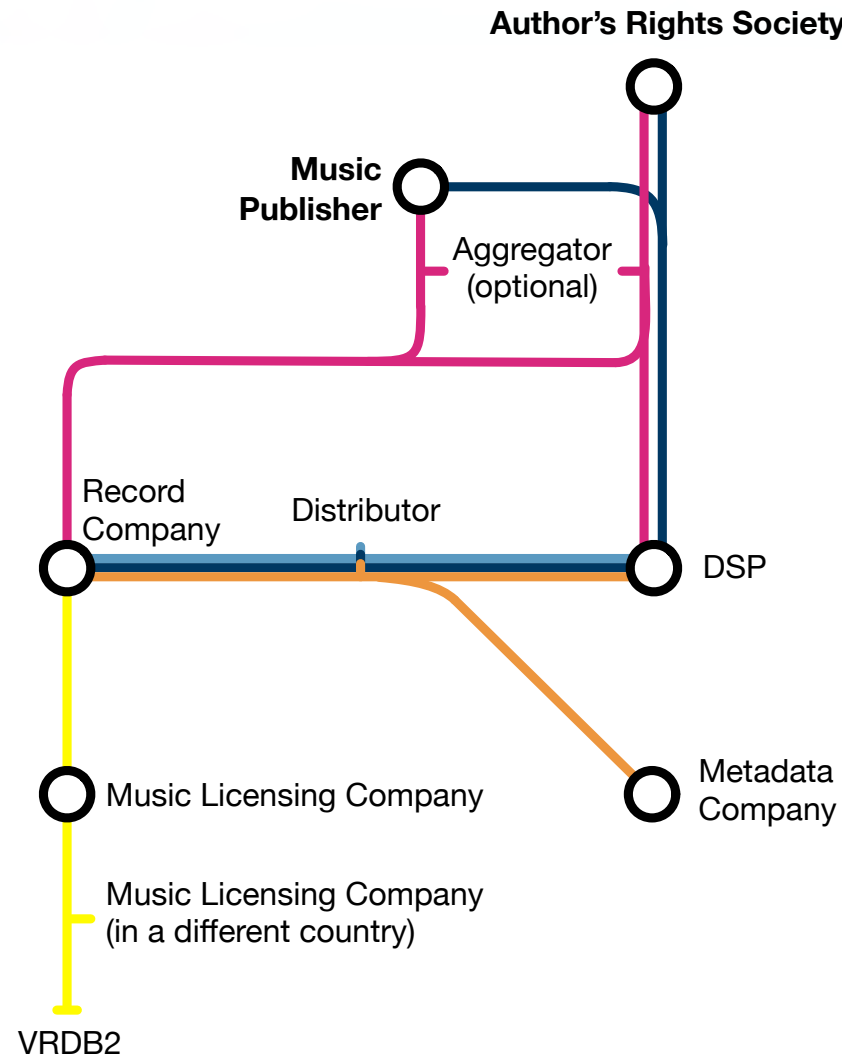
# Linking Works and Recordings

Communicating Links between Resources and Musical Works (Linking)



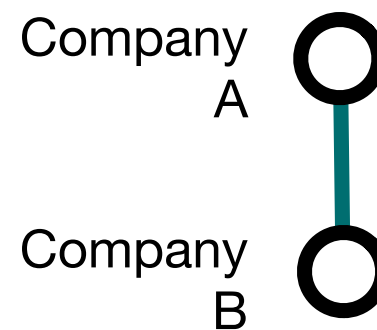
# Question

- How does a Publisher or Society know whom to pay?
  - Labels send ERNs focusing on Releases and Resources
  - Publishers' or Societies' first sight of a Release is in a DSR message
  - DSPs report usages on Releases and Resources not Works



# One further tool

- Message for communicating work-recording links
  - “A claims that recording X is based on Work Y”
  - No claim of authority
- Specification currently a “Candidate Standard”







# Digital Data Exchange, LLC

## A high-level overview of DDEX

January 2019

