Annex I - Gestdem 2017/4050

List of documents

Doc. 1

Powering the Compliance and Licensing of Copyrighted Content on Social Video Networks

Audible Magic Corporation

www.audiblemagic.com

audible magic

Audible Magic Overview

Business Overview

Audible Magic is the *defacto* standard for copyright compliance services to online platforms and networks. The services identify copyrighted music and television/film in user generated video uploads

Customers & Partners

Online platforms including Dailymotion, Soundcloud, Spinnup, Facebook, Twitch, Vimeo, Tumblr

Content owners including Canal+, RTL, PIAS, Merlin, Universal Music, Sony Music, Warner Music, Fox, NBCU, Disney/ABC

Key Strengths

- Industry leader and pioneer of content identification technology
- In production processing over 4B transactions a year
- Accurate and robust technology with over 30 patents granted
- Embedded in customer infrastructure/workflow
- Services paid for by the social video platforms. No financial relationship with content owners

Company Background

- Founded in 1999
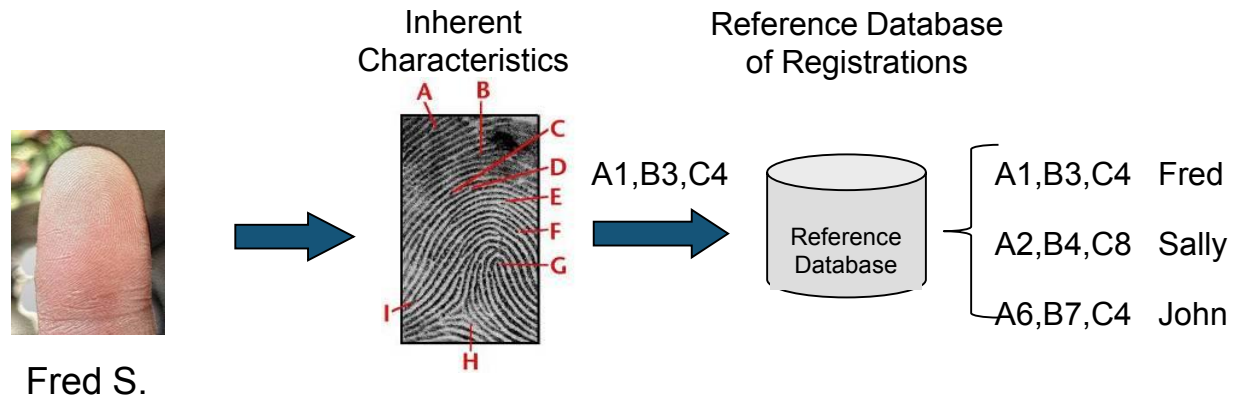- Offices in Los Gatos, Berkeley, and London

Range of Content Identification Technologies

ID Tech	Description	Effectiveness	Cost/file	Comment
File Name	Matches words contained in file name	<5%	<0.001€	Not a good filter High false negative and false positive rates
File Hash	Matches file bits exactly	<10%	<0.0001€	Not a good filter unless paired with other ID technology
Watermark	Matches embedded mark either visual or audible	<10%	<0.01-.05€	Good for identifying premium content. Little content is watermarked
Fingerprint (image, audio, video)	Matches perceptual characteristics compared to original	80-99%	<0.005 - .05€	Standard today for production. Range of accuracy among technologies
Human Review	Manual review	<50%	> 1€	Not practical for primary identification process Good for counter-notice

Effectiveness – How much of the targeted content is matched?

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Content Identification Fingerprinting

1. Building a Reference Database

Inherent Characteristics   Reference Database of Registrations

Fred S.

A1,B3,C4

Reference Database

A1,B3,C4   Fred

A2,B4,C8   Sally

A6,B7,C4   John

2. Matching Unknowns to the References

A2,B4,C8

Reference Database

Match

Sally

Powering Social Video Industry's Copyright Compliance Systems

Online Platform

Ingest

Post/Publish

Uploader

Content Registration

Studios

Music Labels/ Publishers

Copyright Compliance

Reference Database

- Content owners register their works into AM databases

- Online platforms integrate AM services to review at time of ingest (less than a day)

- AM notifies online platform of matches and business rule

- Online platform blocks or allows posting of videos

- Pricing is based upon number of files analyzed per month. Affordable for small online platforms.
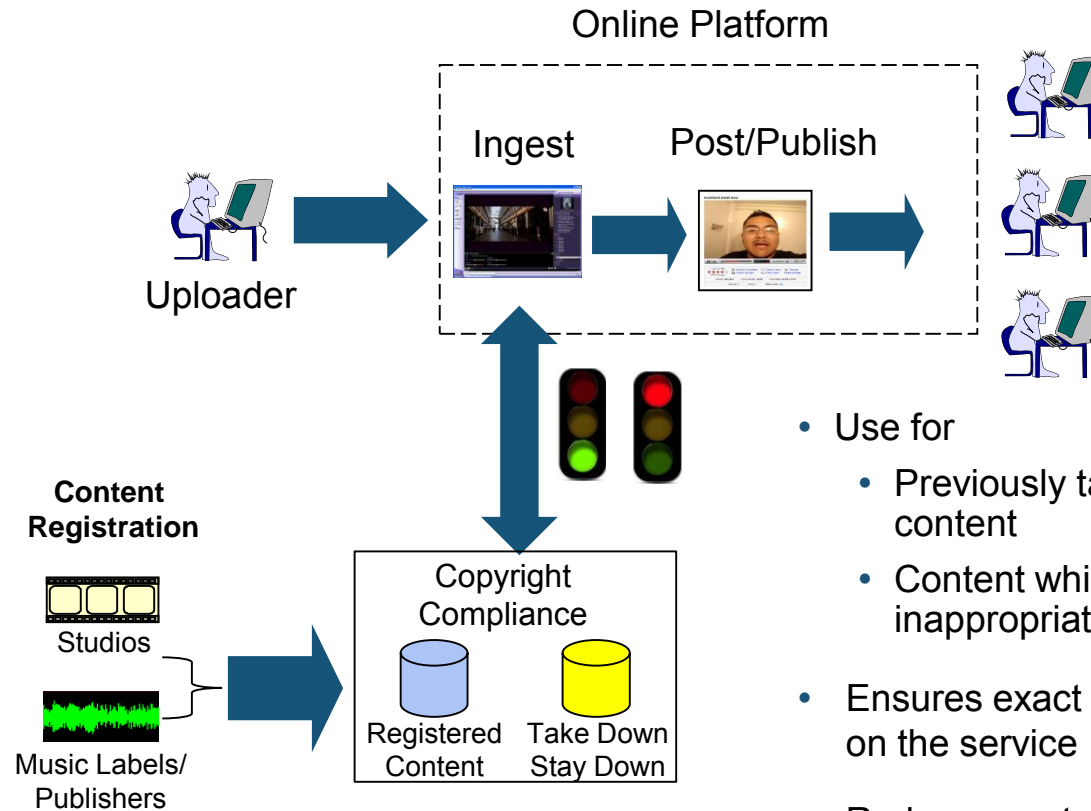
audible magic
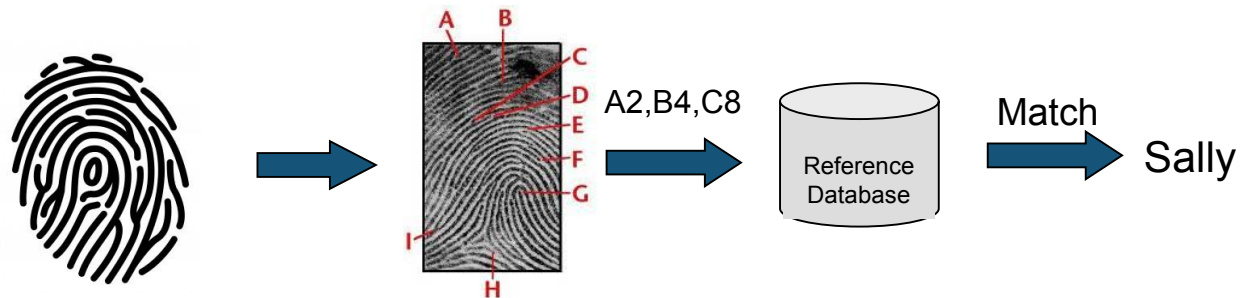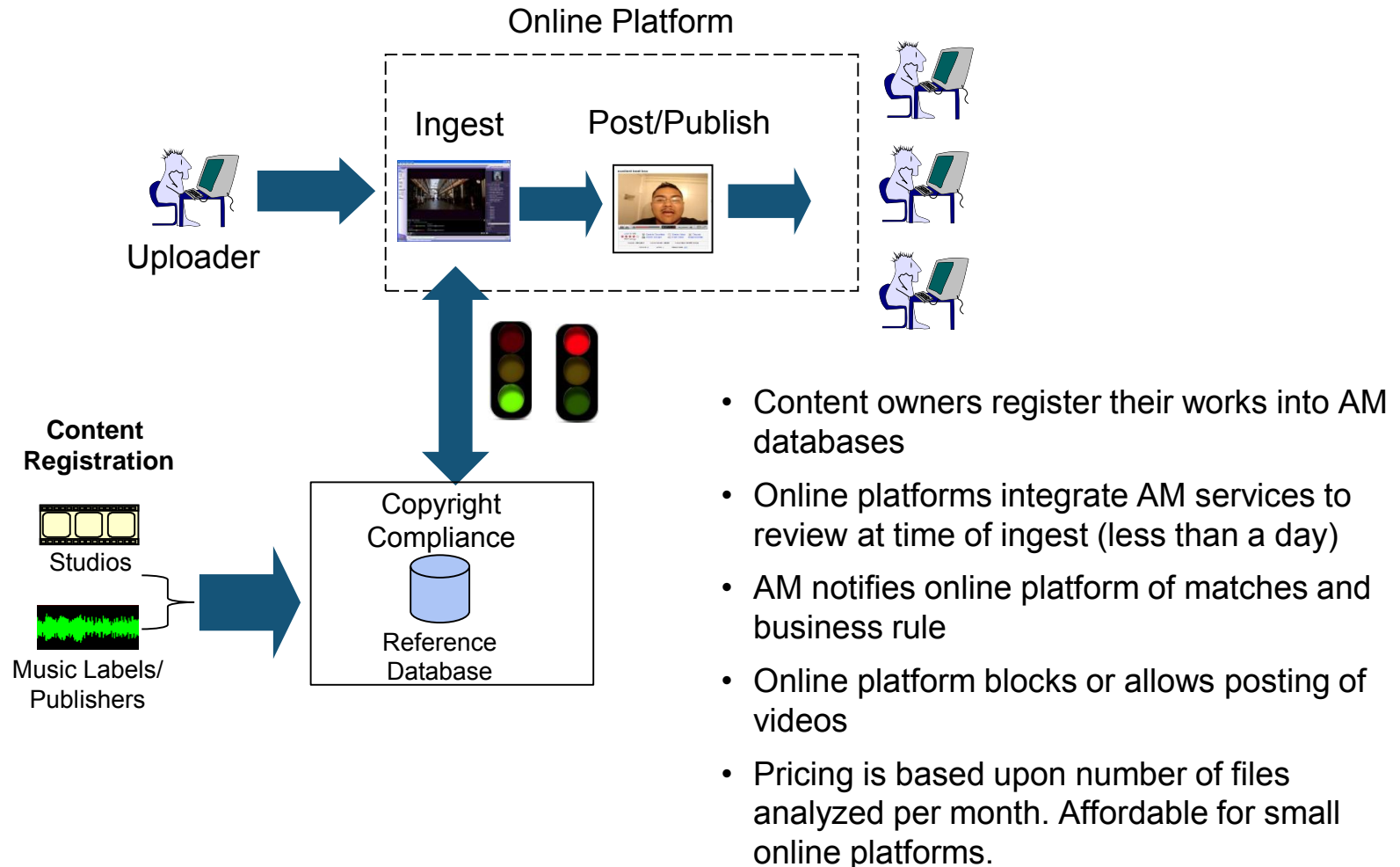
Trusted 3rd Party Mediating Between Content and Online Platforms

Discussion Topics

- Why online platforms pay for content filtering

- Take Down, Stay Down Services

- Fair Use

- Evolution from compliance to licensing

Ability to Implement a Take Down Stay Down Service

Online Platform

Ingest

Post/Publish

Uploader

Content Registration

Studios

Music Labels/ Publishers

Copyright Compliance

Registered Content

Take Down Stay Down

- Use for
  - Previously taken down copyrighted content
  - Content which has been deemed as inappropriate (sex, hate, or violence)
- Ensures exact content does not reappear on the service
- Reduces cost and volume of repeated notice and takedown
- Implemented by Myspace in 2008 and Dailymotion today

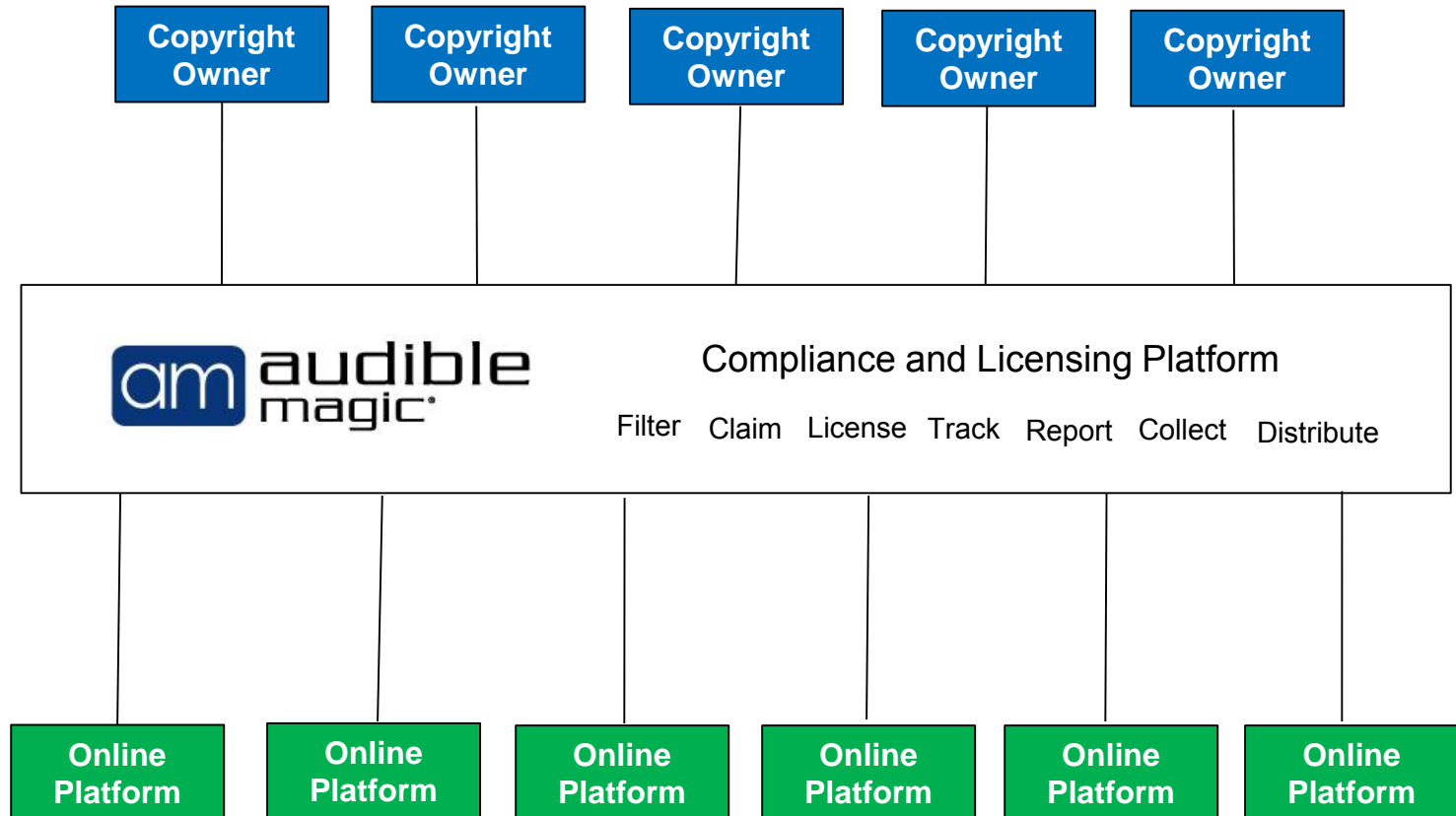# Content Filtering and Fair Use

- Industry practice: Online platforms have counter-notice/dispute resolution practices

  - User can dispute the blocking of their files

  - Human review

- Role of Content Filtering

  - Reviewed file can be fingerprinted and registered with the usage rule so automatically allowed or blocked in future

Too Many Deals Have to Be Done - Overwhelming for Both Sides
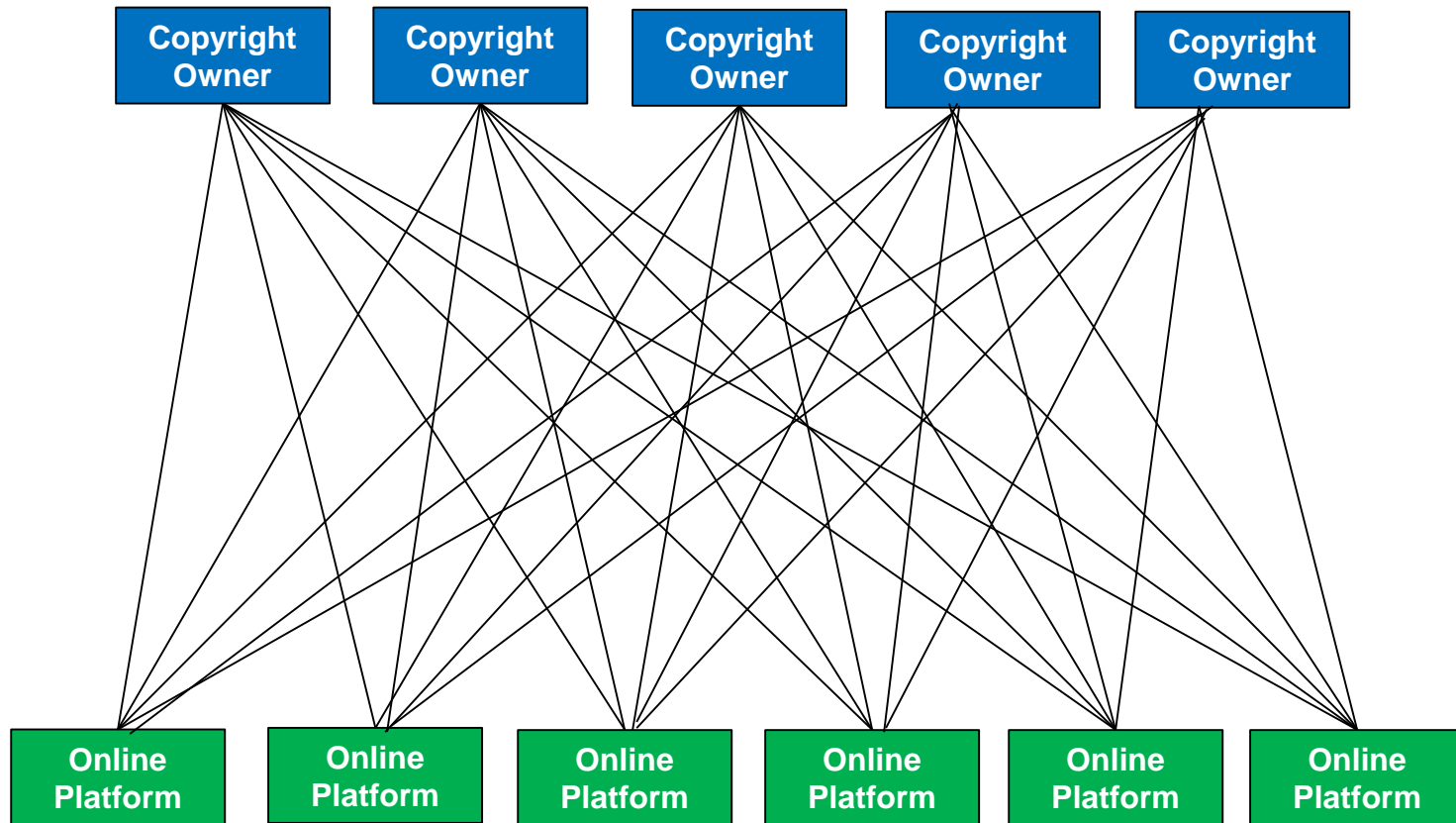
In addition, each online platform has to create a set of tools/systems

A Simplified Solution With Standard Licensing and Comprehensive Tools

The Future of Content Identification

- Technology is not static
  - Manipulations of content
  - Mashups and mixes
  - Musical compositions

- Evolution from compliance tool to enabling licensing and monetization

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am

Content Recognition Technology: Balancing the Needs of Online Platforms, Creators and Users

Audible Magic Corporation

www.audiblemagic.com

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audible magic®

Audible Magic Overview

Business Overview

Audible Magic is a leading provider of automated content recognition technology to online platforms and networks. The services identify copyrighted music and television/film in user generated video uploads

Customers & Partners

Online platforms including Dailymotion, Soundcloud, Spinnup, Twitch, Vimeo, Tumblr.

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Key Strengths

- Industry leader and pioneer of content identification technology
- In production processing over 11B transactions in 2016 (4B in 2015)
- Accurate and robust technology with over 30 patents granted
- Embedded in customer infrastructure/workflow
- Services paid for by the social video platforms. No financial relationship with content owners

Company Background

- Founded in 1999
- Offices in Los Gatos, Berkeley, and London

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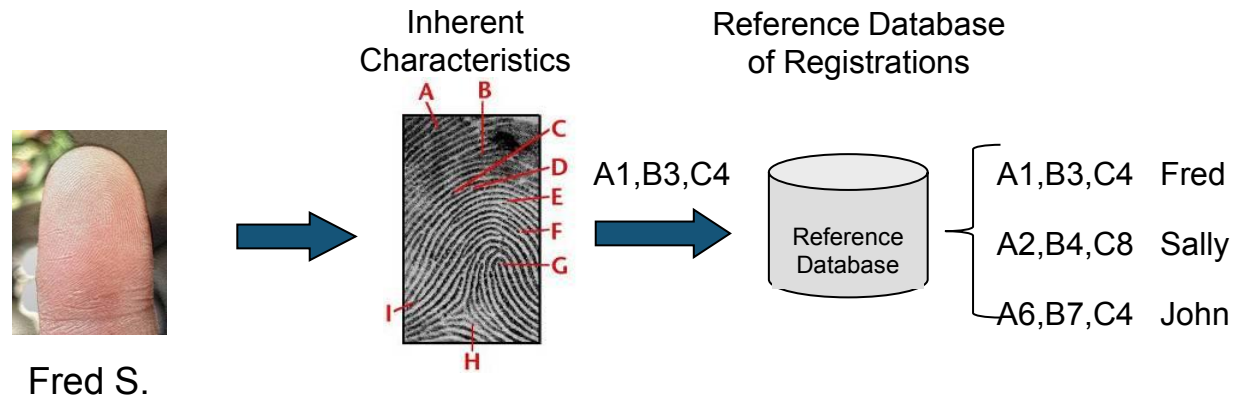# 'Effective': A Range of Content Identification Technologies

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Fingerprint (image, audio, video)	Matches perceptual characteristics compared to original	Up to 99+%	<0.005 - .05€	Standard today for production. Range of accuracy among technologies
Human Review	Manual review	<50%	> 1€	Not practical for primary identification process Good for counter-notice

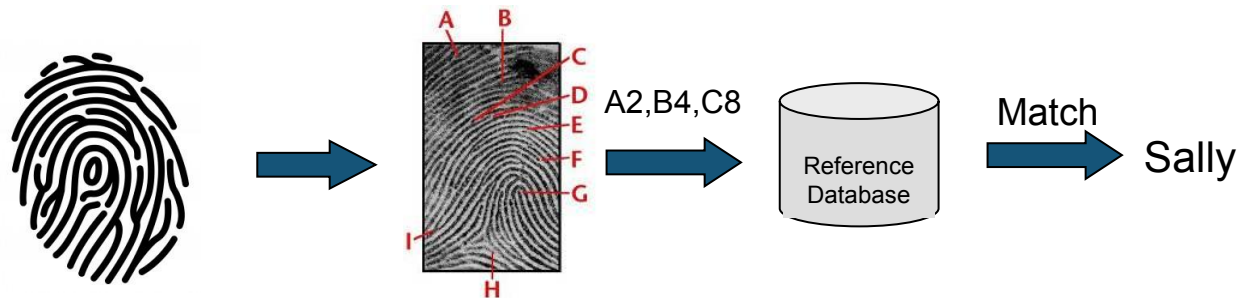Effectiveness – How much of the targeted content is matched?

*Cost per file is Audible Magic's own estimate based on market knowledge, and may not reflect actual prices from individual vendors.

Content Identification Fingerprinting

1. Building a Reference Database
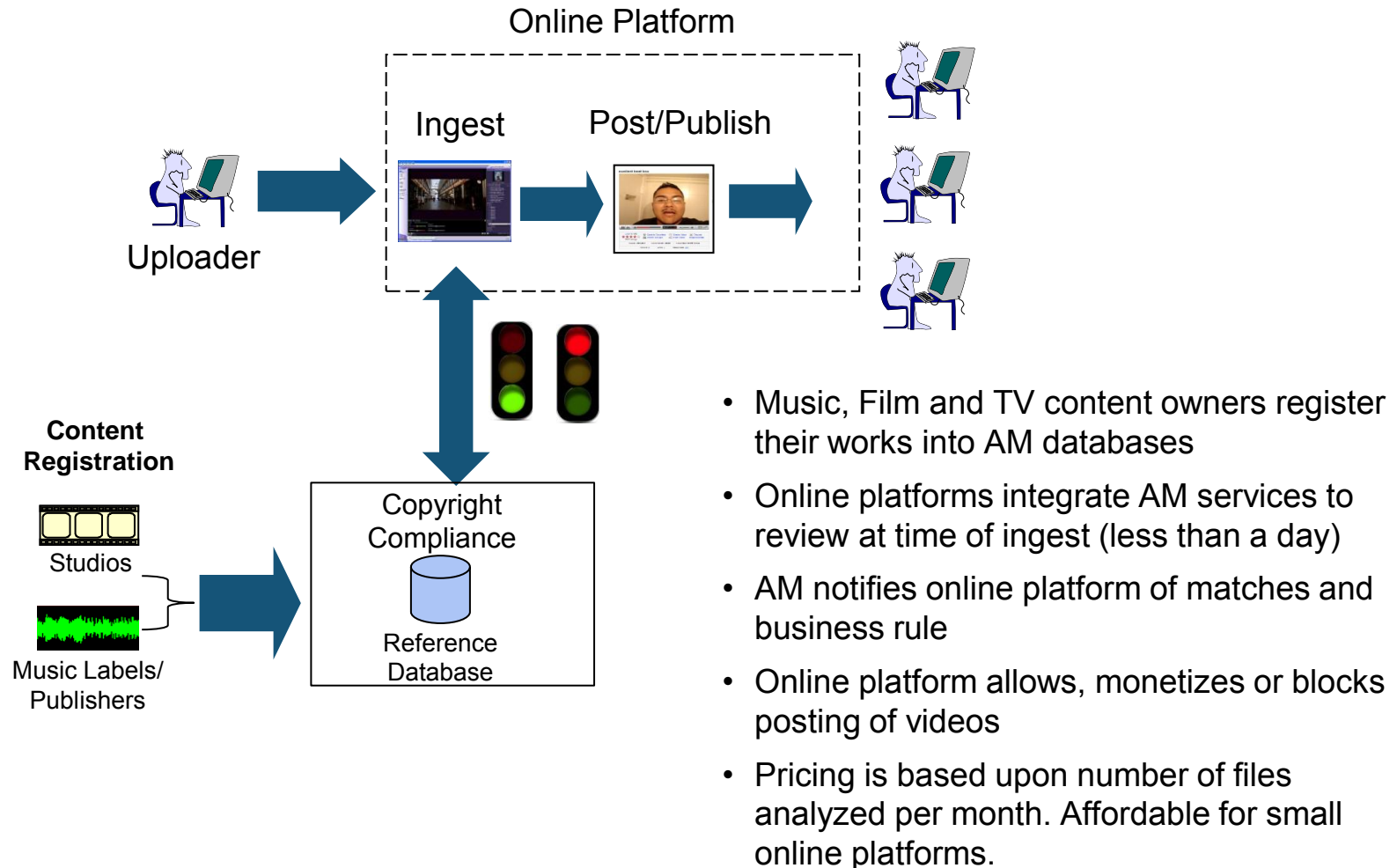

Inherent Characteristics

Reference Database of Registrations

Fred S.

A1,B3,C4

Reference Database

A1,B3,C4 Fred

A2,B4,C8 Sally

A6,B7,C4 John

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Reference Database

Match

Sally

Enabling Online Platforms to Identify Copyright Content

Online Platform

Ingest   Post/Publish

Uploader

Content Registration

Studios

Music Labels/ Publishers

Copyright Compliance

Reference Database

- Music, Film and TV content owners register their works into AM databases

- Online platforms integrate AM services to review at time of ingest (less than a day)

- AM notifies online platform of matches and business rule

- Online platform allows, monetizes or blocks posting of videos

- Pricing is based upon number of files analyzed per month. Affordable for small online platforms.

Trusted 3rd Party Mediating Between Content and Online Platforms

AM Customers Voluntarily Comply

- Highest standards demanded by copyright owners

- Good digital citizens

- Maintain good relations with copyright owners

- Pre-emption v takedown:
  - More efficient & less costly
  - Licensing opportunity
  - Better user experience

SME Case Studies

SPINN UP

- Swedish start-up

- Distribute unsigned artists to paid distribution platforms

- <u>Need</u>: Prevent fraudulent uploads of others' creations

- Under 4,000 uploads per month

- Affordable, proportionate ACR service

- Success: Platinum artist in Sweden, Promotion/distribution deal with Island Records in UK

VNG Thẩm định giá VNG Việt Nam

- Vietnamese start-up

- UGC video platform

- Limited audience and ad revenue potential (Vietnam-only)

- Around 5,000 uploads per month

- Affordable, proportionate ACR service
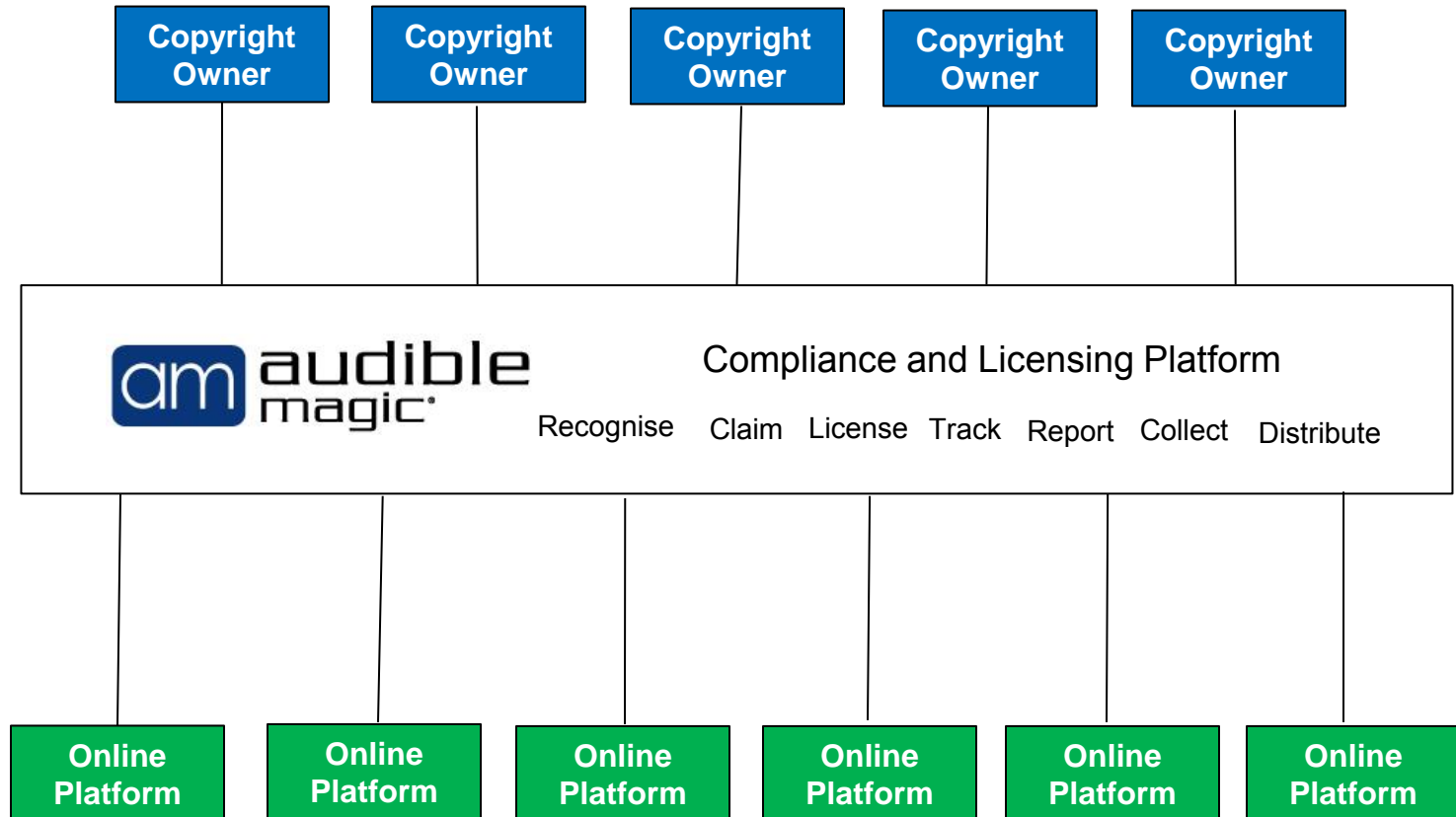
- Growing, sustainable business

Tried & Tested Solution for 10 Years

- Effective and Accurate

  - 99.9% match rate (< 0.1% false negatives).

  - Less than 0.0001% false positives.

- In Use for a Decade
  - On world's most popular online platforms.
  - 11 billion uploads checked in 2016 (up from 4.5 B in 2015)
  - Non-controversial: accepted by users and copyright owners.
  - Small start-ups using the ACR service have grown to be major global online platforms: SoundCloud, Dailymotion.

- Affordable and Scalable: from €500 or less per month.

- Review processes in place for copyright exceptions.
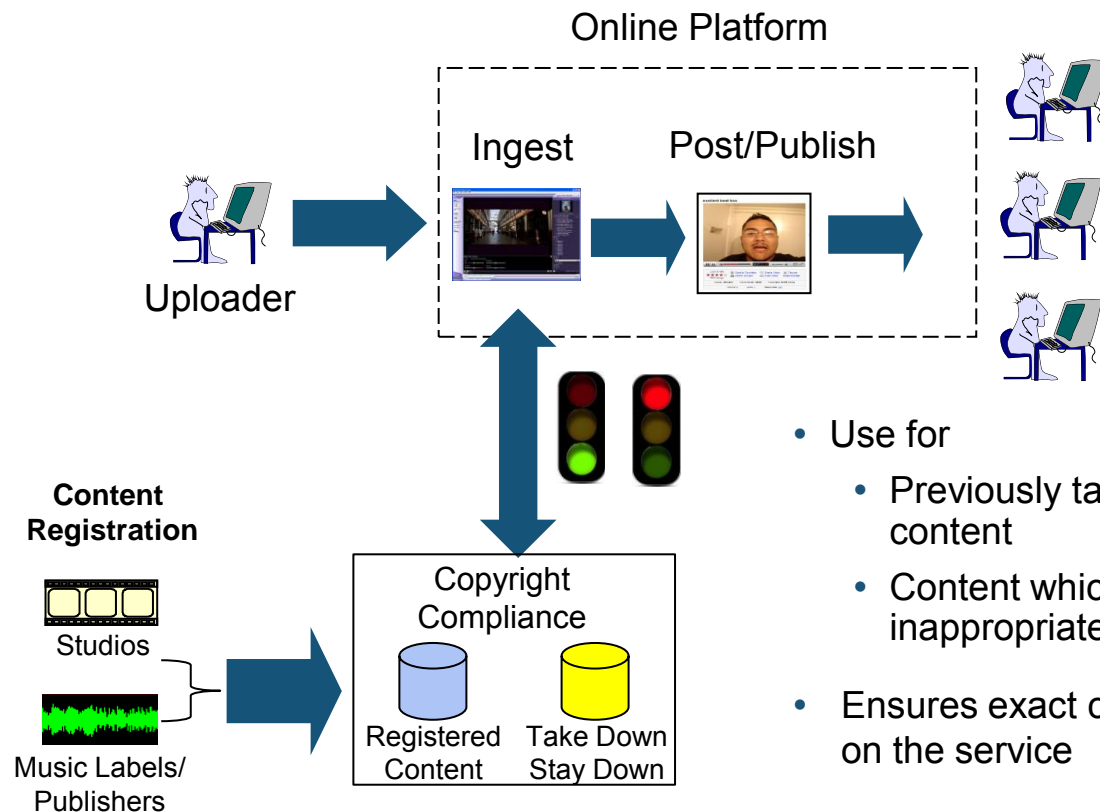
ACR Creates a Level Playing Field

- Enables clear distinction between genuine User-Generated Content and unauthorised commercial music/film/TV uploads

- Removes 'Value gap' barrier to entry for paid online content platforms

- Audible Magic 'white label' ACR + Content Management Systems enable European start-ups to compete on a level playing field with global giants.

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A Simplified Licensing Solution: Standard Licensing and Comprehensive Tools

Copyright Owner — Copyright Owner — Copyright Owner — Copyright Owner — Copyright Owner

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Compliance and Licensing Platform

Recognise   Claim   License   Track   Report   Collect   Distribute

Online Platform — Online Platform — Online Platform — Online Platform — Online Platform — Online Platform

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APPENDIX

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Ability to Implement a Take Down Stay Down Service

Online Platform

Ingest   Post/Publish

Uploader

Content Registration

Studios

Music Labels/ Publishers

Copyright Compliance

Registered Content   Take Down Stay Down

- Use for
  - Previously taken down copyrighted content
  - Content which has been deemed as inappropriate (sex, hate, or violence)

- Ensures exact content does not reappear on the service

- Reduces cost and volume of repeated notice and takedown

- Implemented since 2008: e.g. Myspace and Dailymotion

The Future of Content Identification

- Technology is not static
    - Manipulations of content
    - Mashups and mixes
    - Musical compositions

- Evolution from compliance tool to enabling licensing and monetization

AM SERVICES DESCRIPTION

The AM Software and AM Services provided by Audible Magic ("AM") will operate in accordance with the OEM Application Programming Guide and Customer Support Information documents (Version 22.15g). To the extent of any conflict between the OEM API SDK Programmers Guide and this Agreement, the terms of this Agreement shall control. The specific nature and scope of AM Services to Customer must be documented in the Project Statement, Attachment C of the Agreement. This document may describe services that are ultimately not provided to the customer because they were not included in Project Statement or the Agreement, once concluded.

Overview of Service Functionality

1. The Service's technology consists of a software library installed in Customer's operating environment, a Hosted Service, and a Content Registry that includes reference Fingerprints, Business Rules, Metadata, and Identification Information associated with content files.

2. The software library resides on the Customer's servers. Customer is responsible for installing this software library and AM shall provide support for this installation.

3. The software library processes the unknown content sample and creates an ID request package in the form of an encrypted XML string and will pass an unknown content sample and other specified Metadata to the Content Registry.

4. Customer's application then sends this XML package to AM's Hosted Service. An XML response is returned to the Customer. If a match is made against the Content Registry, corresponding information including Business Rule, Metadata, and other Identification Information is included in the response. Otherwise, notice that no match was found is returned.

5. Customer is responsible for integrating information flow from the return XML and taking the appropriate action.

### Detailed Service Descriptions

All levels of AM Services return a response, whether or not a match was made. If a piece of content is identified, the return information will include the Business Rule, or "action", specified in the Content Registry by the owner of that content. The default action is "Block". Other actions include "Allow" and "Share" where "Share" means to track for revenue sharing purposes.

Type-1 i20 Music Identification Service – This service is intended to match a copyrighted recording present in an unknown file or stream (at the beginning of the unknown) against recordings registered in Audible Magic's Commercial Music Registry.
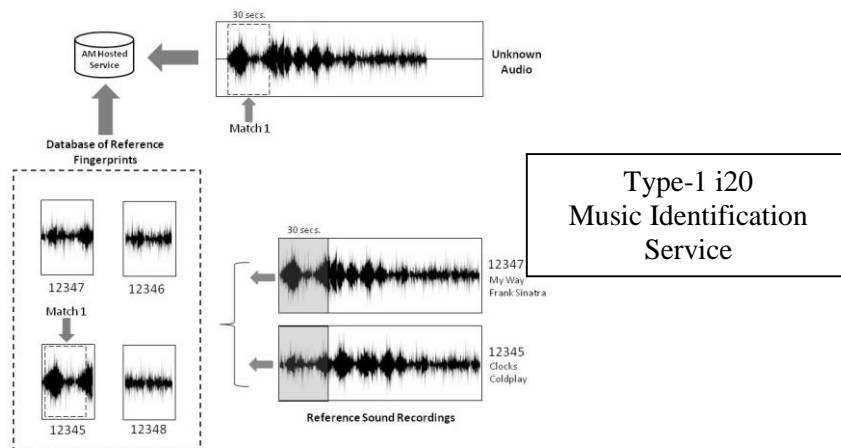
This Service will submit a Transaction consisting of a Fingerprint from the first 30 seconds of the unknown file to the AM Hosted Service using a database containing the initial 30 seconds of all the recordings in the Commercial Music Registry. The service uses a subset of the submitted unknown Fingerprint, starting several seconds in which allows for a few seconds of silence in the beginning. This Fingerprint is then queried against the database for matches with a 10 5 second window, so if a user cuts off the first few seconds or leaves a longer quiet period at the beginning, the file will still be matched.

Type-3 i20 Music Identification Service - This service is intended to match selected samples from an unknown file or stream against recordings registered in Audible Magic's Licensing and Reporting Registry.
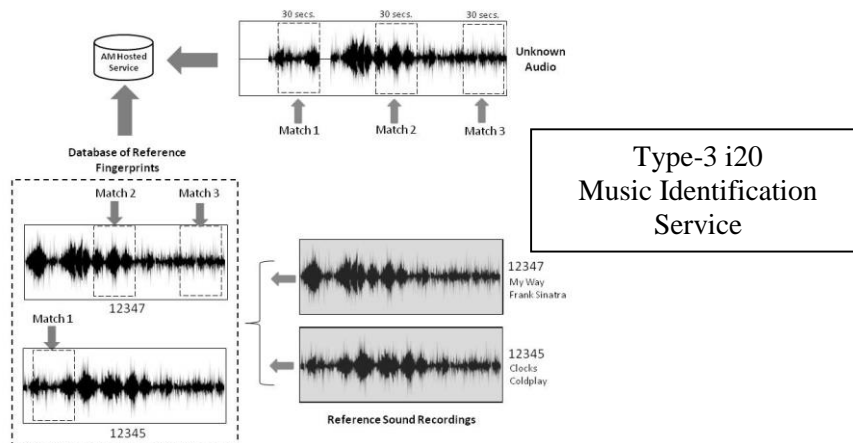
This service will submit one or more Transactions from one unknown file or stream, each Transaction consisting of a Fingerprint of thirty seconds of the unknown to the AM Hosted Service using the AM Licensing and Reporting Registry. The AM Licensing and Reporting Registry is optimized for the identification of music listened to by consumers and utilized in social media. AM uses its proprietary algorithms to identify popular major music label and indie label content which is available worldwide. These algorithms take into account such factors as the content identified by AM services across all of its customers and new music registered by labels participating in its registration program.

Each Transaction is compared against all Fingerprints in the Content Registry. If the Fingerprint matches any part of a song, then that match is returned.

Type-3 i20 TV/Film Clip Identification Service –This service is intended to match selected samples from an unknown file or stream against content registered in Audible Magic's TV and Movies Registry.

2
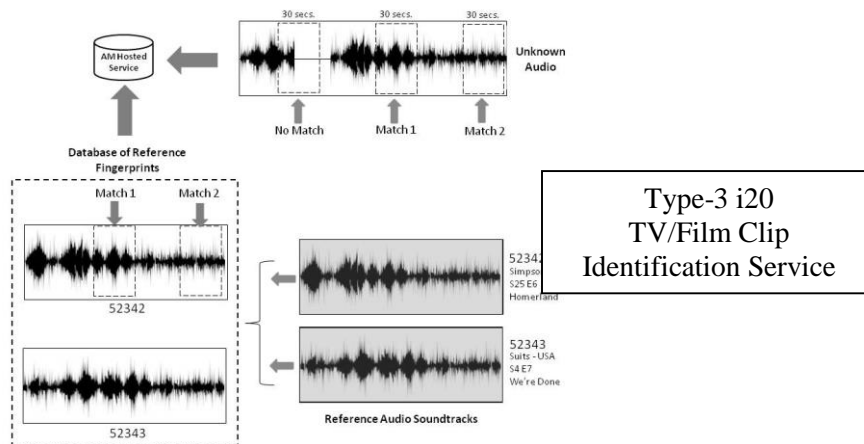
This service will submit one or more Transactions from one unknown file or stream, each Transaction consisting of thirty seconds of the unknown audio soundtrack to the AM Hosted Service using the TV and Movies Registry. The TV and Movies Registry contains Fingerprints of the entire length of all the soundtracks from television and movies registered by the major studios and independents. Generally the major studios register their 'high value' properties and do not register the entirety of their catalogs.

Each Transaction is compared against all Fingerprints in the Content Registry. If the Fingerprint matches any part of a soundtrack, then that match is returned.

Type-3 i5 Music Identification Service - This service is intended to match selected samples from an unknown file or stream against recordings registered in Audible Magic's Licensing and Reporting Registry.
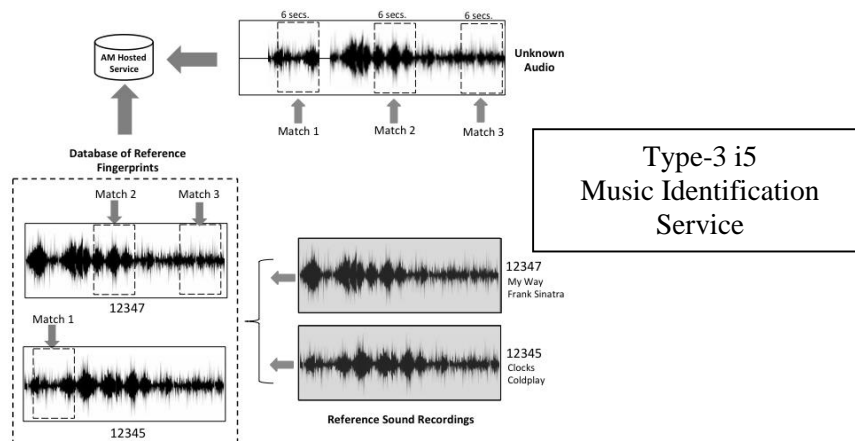
This service will submit one or more Transactions from one unknown file or stream, each Transaction consisting of a Fingerprint of 6 seconds of the unknown to the AM Hosted Service using the AM Licensing and Reporting Registry. The AM i5 Music Registry contains Fingerprints of the entire length of all the songs from major music label and non-major label content which has been i) identified by AM services across all of its customers in the last several months and ii) recently registered by music labels, whether or not it has been identified yet in AM deployment.

Each Transaction is compared against all Fingerprints in the Content Registry. If the Fingerprint matches any part of a song, then that match is returned.

Type-3 i5 TV/Film Clip Identification Service –This service is intended to match selected samples from an unknown file or stream against content registered in Audible Magic's TV and Movies Registry.

3
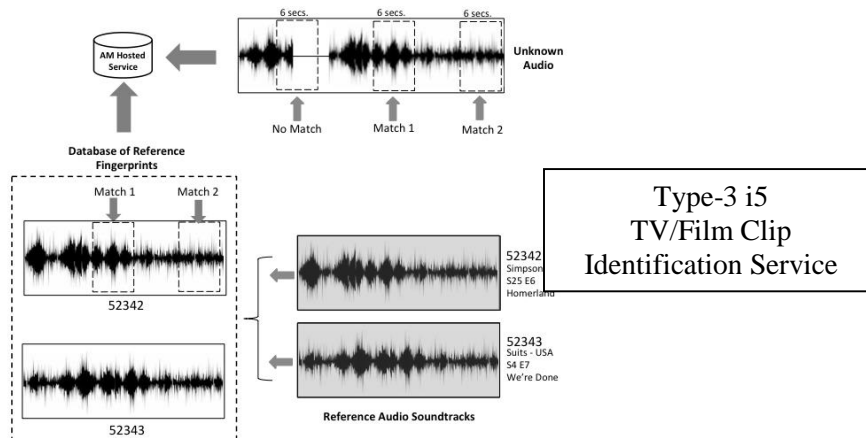
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Each Transaction is compared against all Fingerprints in the Content Registry. If the Fingerprint matches any part of a soundtrack, then that match is returned.

Type-4 i20 Broad Spectrum Music Identification Service - This service is optimized for detection of copyright music with added tolerance for detection of transformations of the original recording by altering pitch, speed or tempo. The service matches a sample selected at regular intervals from an unknown file or stream against reference recordings in the AM Broad Spectrum Content Registry. The service will submit, as a single Transaction, a Fingerprint of all or part of the unknown file or stream, up to a maximum of 10 minutes. To analyze more than the first ten minutes of any unknown file or stream, it may be divided into segments of 10 minutes, and fingerprints of each successive segment submitted as a separate Transaction. The Type-4 process will then take a sample (the "Lookup Sample") from the fingerprints at regular pre-determined intervals (the Hop Value) throughout the duration of the unknown fingerprint and compare each such Lookup Sample against all the fingerprints in the AM Broad Spectrum Content Registry. If the Lookup Sample matches any part of a song, including any version of a song that has been transformed by altering speed, pitch or tempo, then that match is returned. The Accuracy provisions of the Service Level Agreement shall apply to this Type-4 i20 Broad Spectrum Music Identification Service only to the extent that (i) the content in the Lookup Sample that has been submitted to the AM Services has not been transformed by changes in pitch, speed or tempo, and (ii) no fewer than 21 seconds of contiguous audio from the copyrighted recording is present in the Lookup Sample submitted to the AM Services

The Broad Spectrum Content Registry is a database that is compiled and maintained by Audible Magic according to algorithms which take into account detection rates and recent chart activity across multiple markets.

Copyrighted Content Databases – AM's Content Identification Services utilize AM's copyrighted content databases which include the Commercial Music Registry, the Major Label Music Registry, the Reporting and Licensing Registry, and the TV and Movies Registry. These databases consist of Fingerprints, Metadata, and Business Rules registered by Content Owners. This content is ingested and deployed within one day of receipt from Content Owners. AM does not charge or pay Content Owners for registration.

<div align="center">

Additional Services

</div>

Many AM customers have very specific needs, and we have developed additional services to address those needs. These services are only available in conjunction with the content identification service, and pricing for them may or may not already be included in the proposal. AM business development would be happy to explain these services in detail.

Archive Management – Because AM's Content Registries are rapidly growing and the potential delay time between the content owner registering the content and AM ingestion, some files previously submitted by a Customer may match content registered at a later date. This service processes Customer's previously unidentified files to discover newly registered content previously unidentified. Fingerprints of the files not matched on the initial identification attempt linked to the Customer's unique identifier are stored by AM. These stored Fingerprints are then automatically rechecked periodically against newly added Fingerprints. When a match is made, the Metadata and Business Rules associated with the newly identified files are returned to the Customer with Customer's identifier. Customer is responsible for updating its library based on this information.

Backlog Processing – This service enables Customer to batch process existing archives of content using AM Services. Transaction concurrency rates will be jointly agreed to meet the timeframes for processing. The processing period may range from 4 weeks to 6 months.

Custom Business Rules – In order to simplify management of Business Rules, this service provides a custom solution to precisely meet Customer's needs. Possible configurations include limiting service to a subset of the music or video soundtrack registries, or, if Customer has licensed rights from a content owner, this service can be used to manage Business Rules specific to such deals that may differ from the general Business Rules available to other customers.

Submitted Content Database – This service enables Customer to prevent content from re-appearing on their site once a decision to take it down has been made. When the Customer finds content that is unwanted for any reason (examples include inappropriate content, profane speech, pornography, DMCA notice, hate speech, Terms of Use violations, *etc.*) it adds a Fingerprint of it to this custom registry. Customer can then test newly uploaded content against this custom registry, using the methodology used for Type 1 Music Identification service. If a match is made the service returns "block."

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From: ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓@Audiblemagic.com]   Personal Data
Sent: Thursday, April 07, 2016 4:47 PM
To: ▓▓▓▓▓▓▓ (CNECT)
Cc: Ikezoye, Vance
Subject: Audible Magic presentation

Dear ▓▓▓ ,
Thank you very much for seeing Vance and I this morning. It was great to see you again.
I have attached a copy of the presentation that Vance used for our discussion. I would be
very grateful if you could circulate it to all of those who attended the meeting.
Kind regards,

▓▓▓

▓▓▓▓▓▓
Audible Magic LLC
Europe, Middle East & Africa
117 Waterloo Road, London SE1 8UL, United Kingdom
T: ▓▓▓▓▓▓▓▓▓   Personal Data
F: ▓▓▓▓▓▓▓▓▓
M: ▓▓▓▓▓▓▓▓
email: ▓▓▓▓@audiblemagic.com
Skype: ▓▓▓▓
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Powering the Compliance and Licensing of Copyrighted Content on Social Video Networks

Audible Magic Corporation

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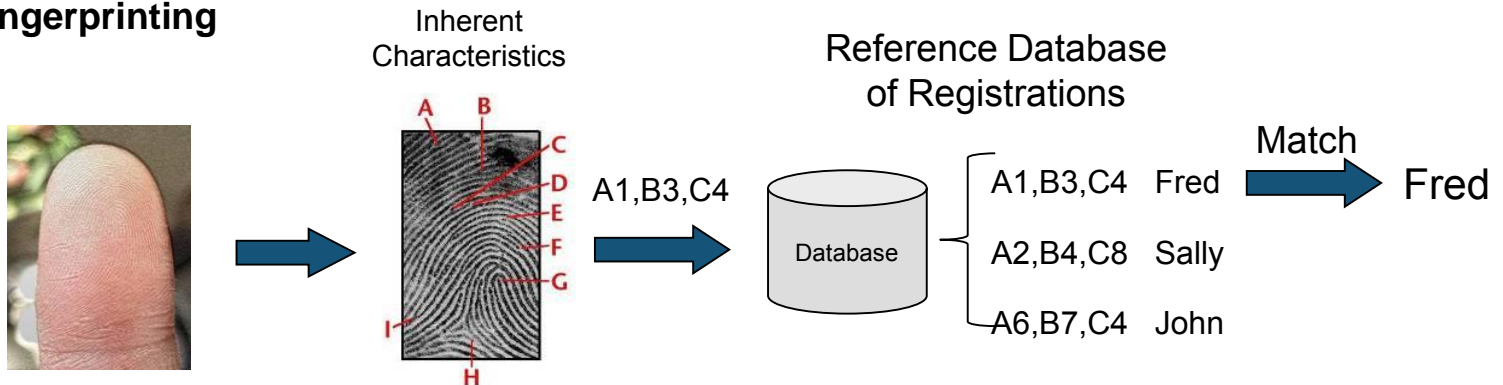|	
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Key Strengths	• Industry leader and pioneer of content identification technology • In production processing over 4B transactions a year • Accurate and robust technology with over 30 patents granted • Embedded in customer infrastructure/workflow • Direct content feeds from content owners
Company Background	• Founded in 1999 • Offices in Los Gatos, Berkeley, and London

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Content Identification
Fingerprinting vs Watermarking

Fingerprinting

Inherent Characteristics

Reference Database of Registrations

A1,B3,C4

Database

A1,B3,C4 Fred

A2,B4,C8 Sally

A6,B7,C4 John

Match

Fred

Watermarking

Applied Characteristics

Reference Database of Registrations

Database

Bob

David

Mary

Match

Bob
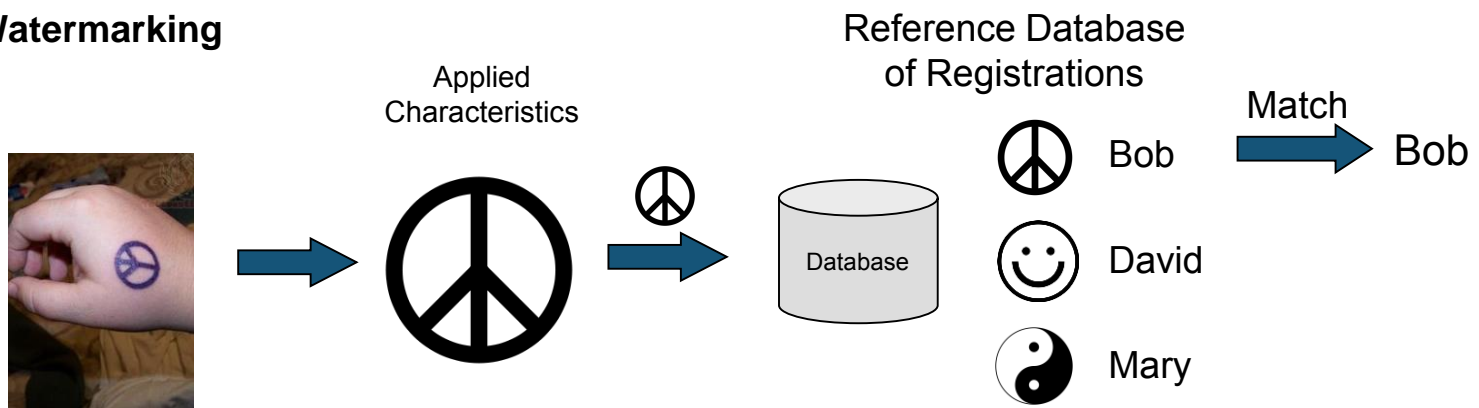
Technology Deployed Across a Range of Applications, Devices, and Infrastructure
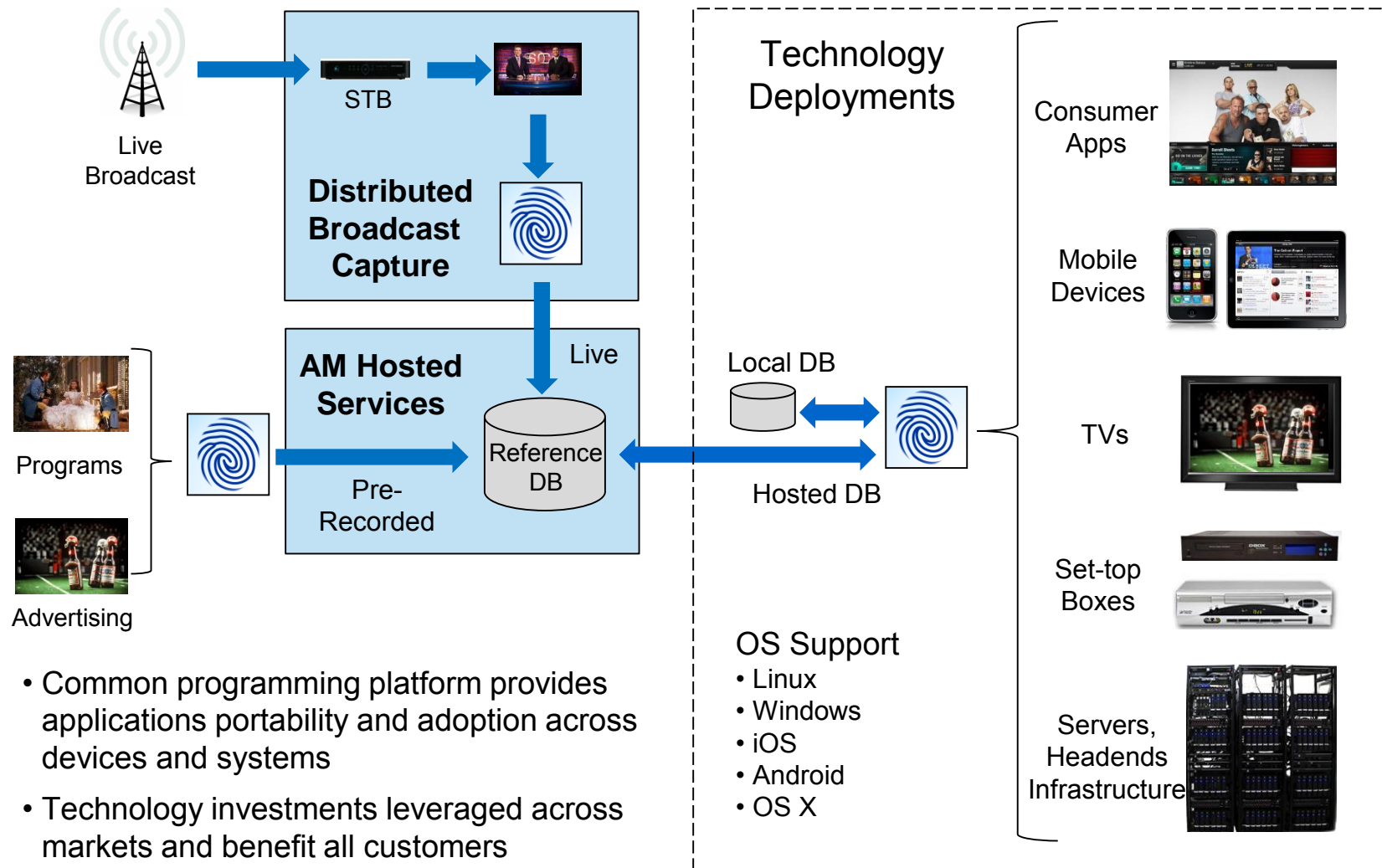
Live Broadcast

STB

Distributed Broadcast Capture

Programs

Advertising

AM Hosted Services

Live

Pre-Recorded

Reference DB

Technology Deployments

Local DB

Hosted DB

Consumer Apps

Mobile Devices

TVs

Set-top Boxes

Servers, Headends Infrastructure

OS Support
• Linux
• Windows
• iOS
• Android
• OS X

- Common programming platform provides applications portability and adoption across devices and systems
- Technology investments leveraged across markets and benefit all customers

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Strategic Relationships with Content Owners and Distributors

Licensing/Compliance

Powering Social Video Industry's Copyright Compliance Systems

Content Sharing/Social Networks

facebook. vimeo

Ingest

Post/Publish

Uploader

Content Registration

Studios

Music Labels/ Publishers

Copyright Compliance

Registered Content

- Content owners register their works into AM databases

- Social video sites integrate AM services to review at time of ingest (less than a day)

- AM notifies site of matches and business rule

- Site blocks or allows posting of videos

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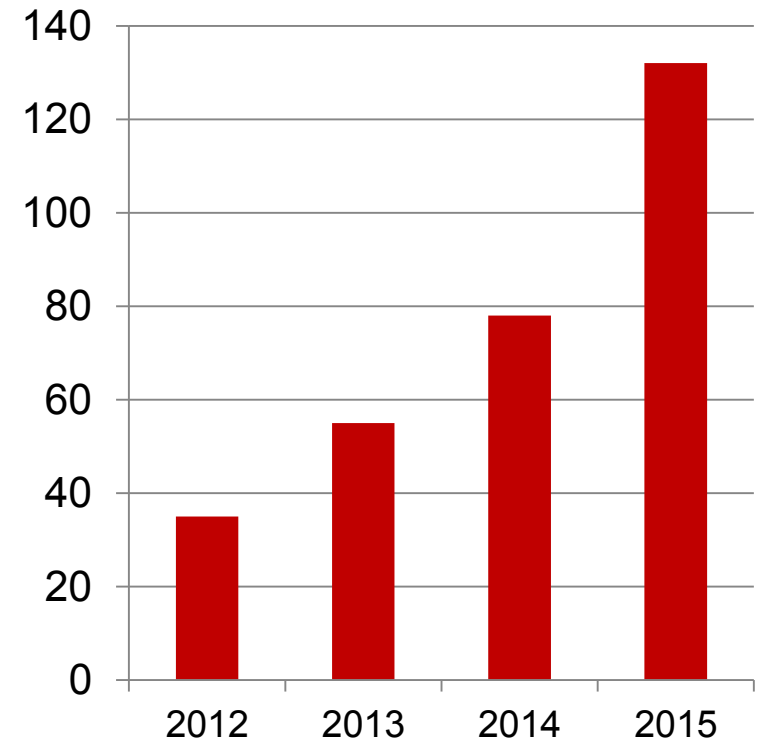
am audible magic®
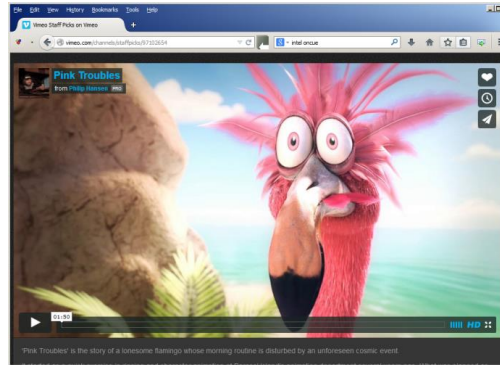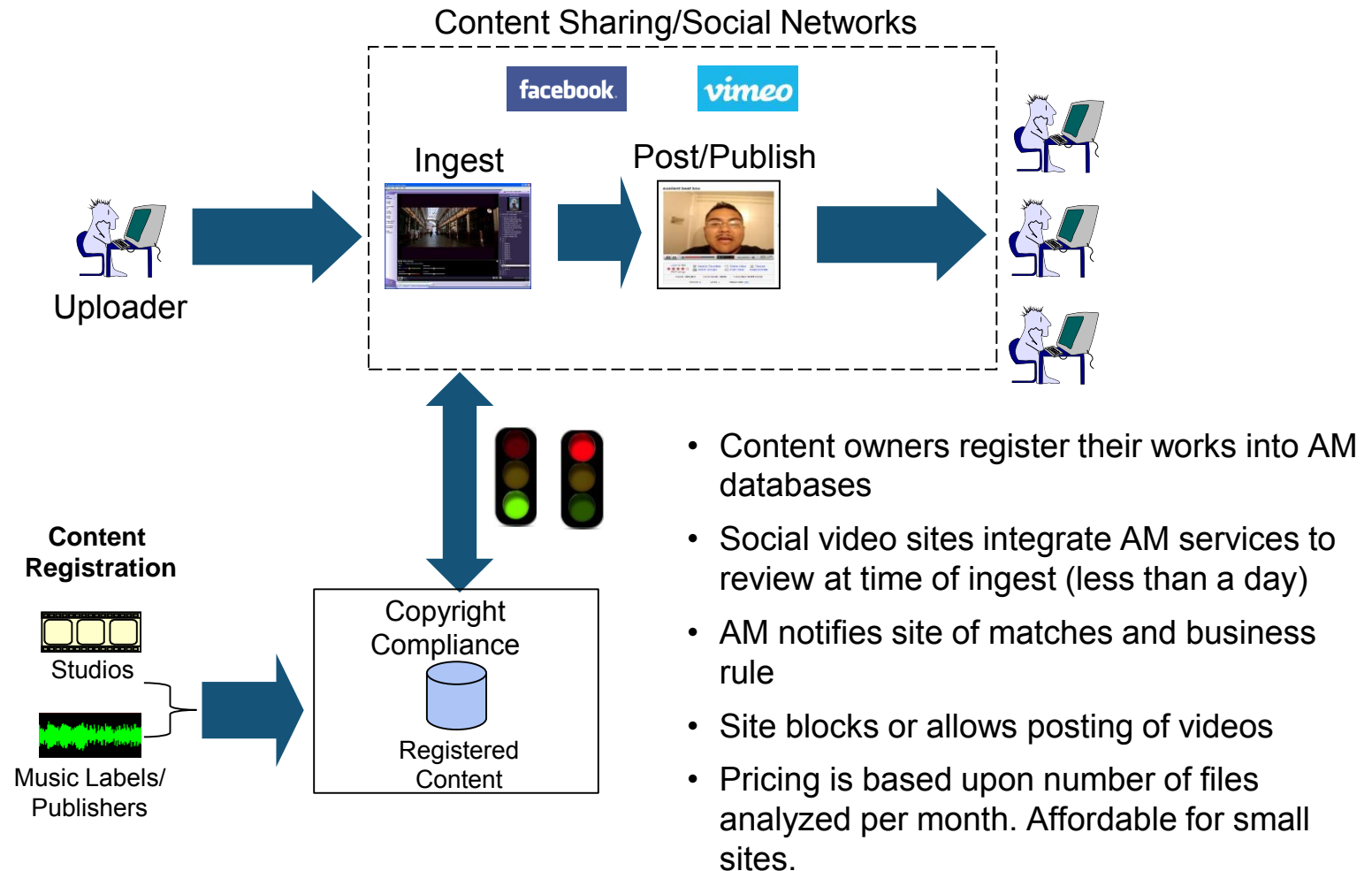
AM Transaction Mirrors Market Growth

Transactions (MM/year)
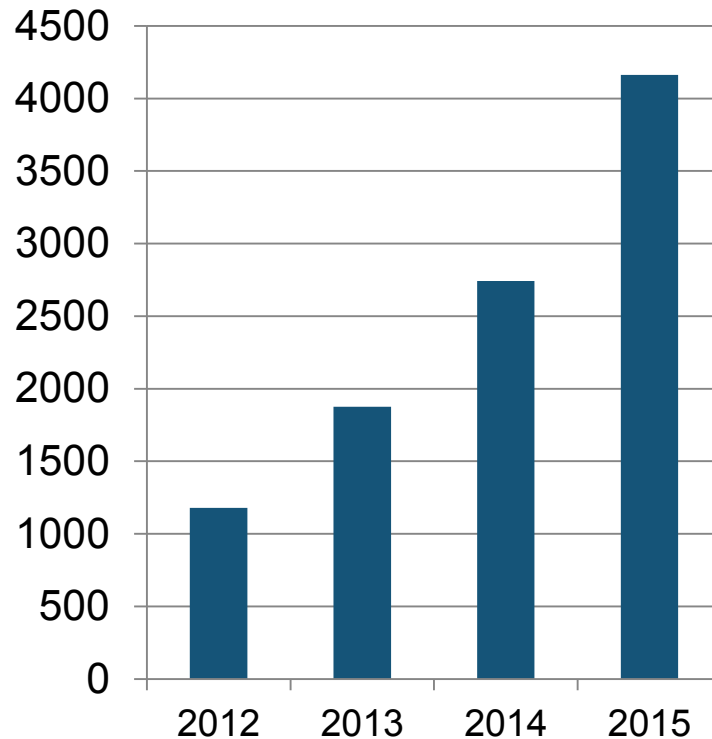
Transactions with Copyrighted Music (MM/year)

Ability to Implement a Take Down Stay Down Service
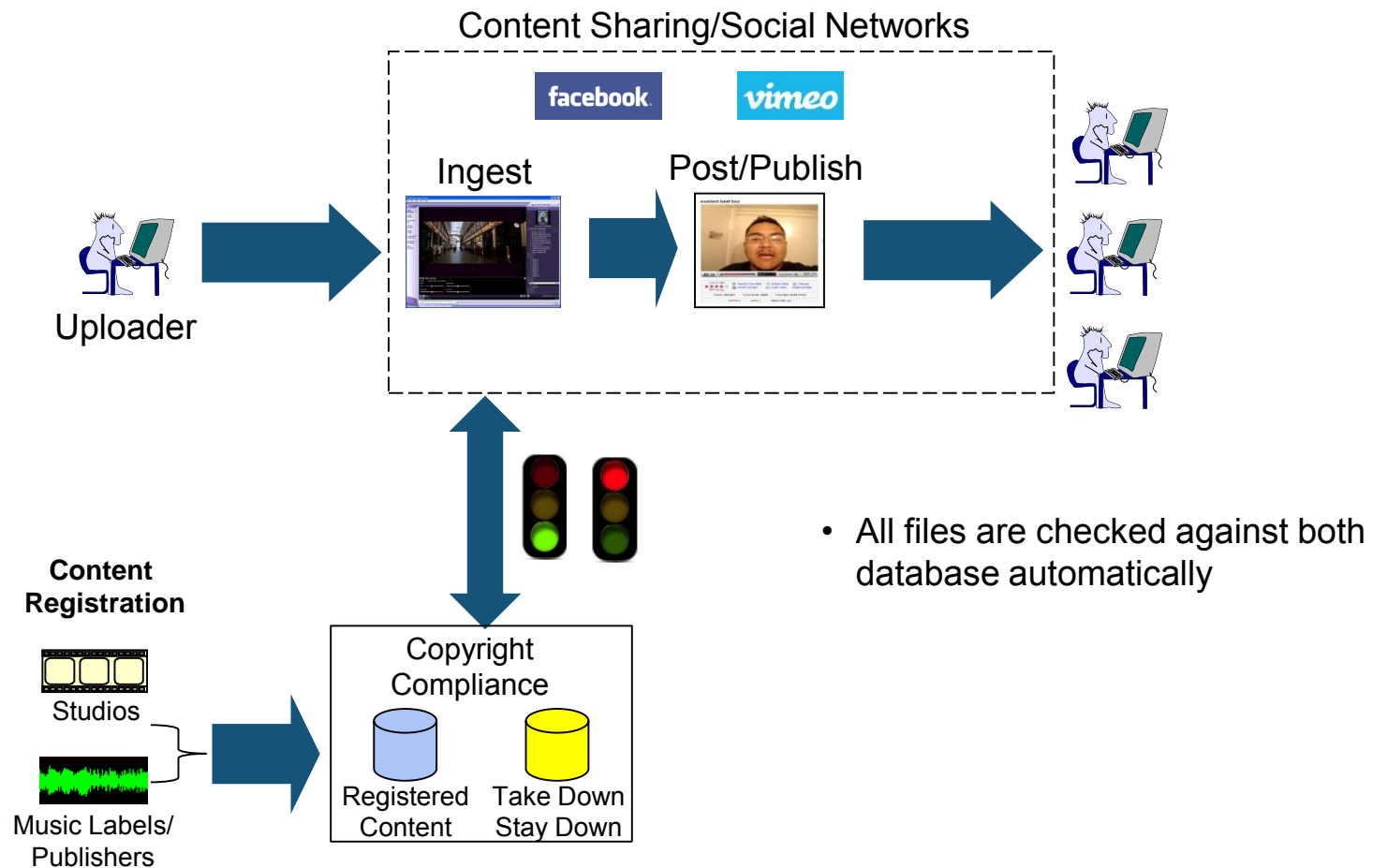

Take Down Staydown

- Use for
  - Previously taken down copyrighted content
  - Content which has not been previously registered.
  - Content which has been deemed as inappropriate (sex, hate, or violence)

- Ensures exact content does not reappear on the service

- Implemented by Myspace in 2008 and Dailymotion today.

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Take Down Stay Down Implementation

Content Sharing/Social Networks

- All files are checked against both database automatically

Benefits

- Online Services
  - Reduces the cost and effort of dealing with take down notices
  - Reduces the volume of unauthorized copyrighted content on the site

- Copyright Owners
  - Reduces the cost and effort of dealing with take down notices
  - Reduces the volume of unauthorized copyrighted content

Too Many Deals Have to Be Done - Overwhelming for Both Sides
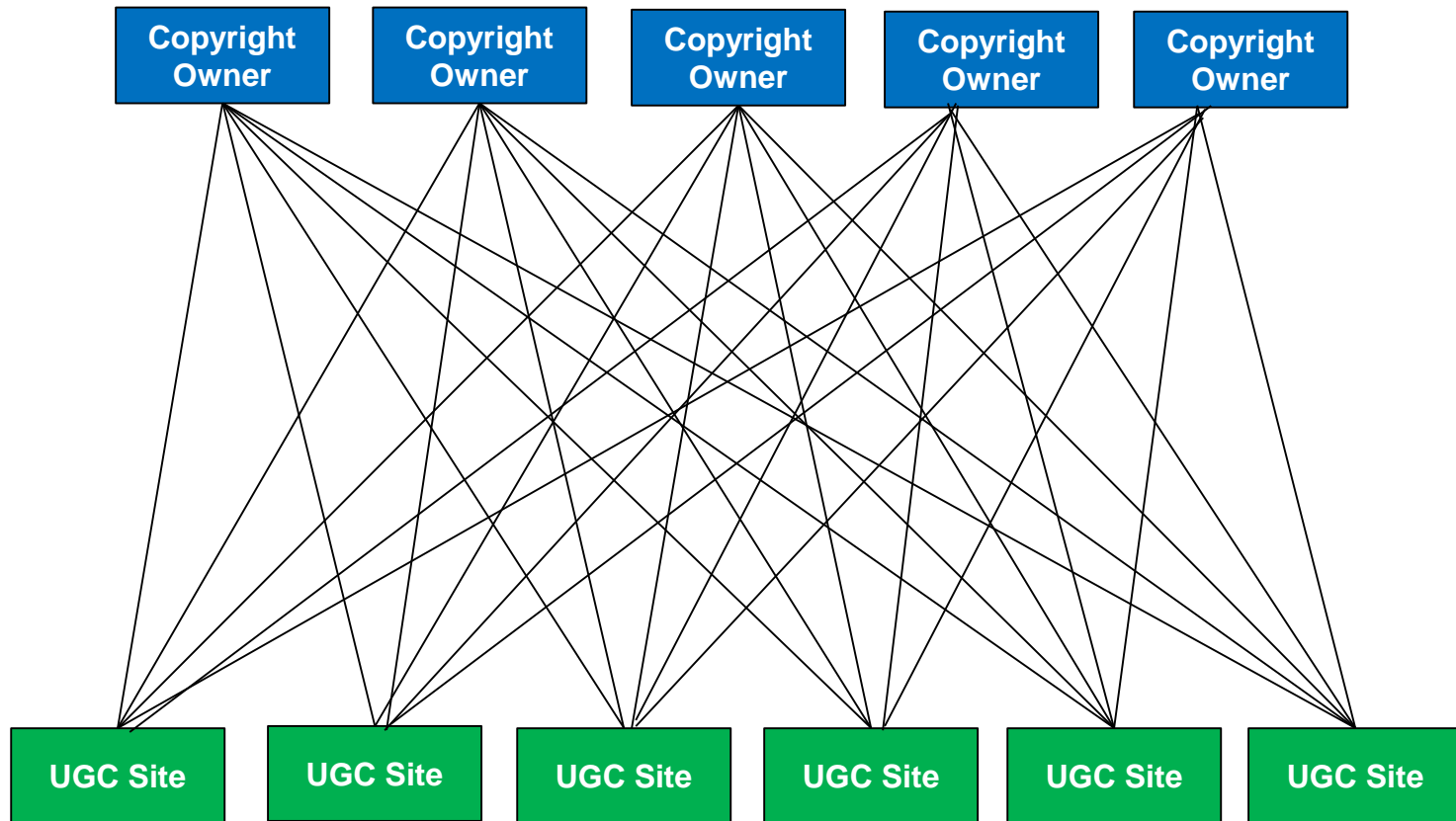
In addition, each site has to create a set of tools/systems

Doc. 5

Personal Data

From: ████████████████████@Audiblemagic.com]
Sent: Thursday, April 07, 2016 7:32 PM
To: ████████████ (CNECT)
Cc: Ikezoye, Vance
Subject: RE: Audible Magic presentation

Hi ████,
I mentioned the response that we made to the US Copyright Office questionnaire on S.512.
It is probably been published on the copyright office website by now, but if not, here is a
copy. You may find it to a useful supplement to the slide deck I sent earlier. It is now a public
document, so you may of course distribute as you wish.
Kind regards,

████

Comment Regarding Section 512 Study
United States Copyright Office

Commenter Background

These comments are respectfully submitted by Audible Magic Corporation. Audible Magic Corporation is a technology company which provides copyright compliance and licensing services. Audible Magic products and services are used by social media and video platforms, higher educational institutions, software developers, and media companies. Executives from the company have testified before Congress about solutions to digital intellectual property protection and submitted an amicus brief to the US Supreme Court which was later cited in *MGM Studios, Inc. v. Grokster, Ltd.* Audible Magic holds 27 U.S. patents and 7 European patents. Audible Magic was founded in 1999 and is a U.S. Corporation.

The company has in-depth expertise with certain aspects of intellectual property protection. Our comments come from this expertise. We are pleased to offer our perspective to the US Copyright Office in response to the section 512 Study.

Since 2006 Audible Magic has provided copyright content filtering services to online social media services that operate sites distributing user-uploaded content, and has become the de facto standard for voluntary filtering, widely accepted by both site operators and content owners. Our technology and services are described in detail in our response to question 15 below.

Interested parties are encouraged to contact Vance Ikezoye as Audible Magic's representative in this matter. Our contact information is:

Audible Magic Corporation
985 University Avenue
Suite 35
Los Gatos, CA 95032

Phone: (408) 399-6405
Email: v_ikezoye@audiblemagic.com

Notice-and-Takedown Process

> **7. How efficient or burdensome is section 512's notice-and-takedown process for addressing online infringement? Is it a workable solution over the long run?**

Audible Magic: The section 512 notice and takedown process while providing a 'last resort' means of addressing online infringement, is not necessarily the most efficient or effective process for either the online service provider or the copyright owners. Because this process occurs 'after the fact', it adds unnecessary operational and financial burdens on both sides. This process is increasingly automated and has become an 'arms race' between the copyright owners and the users of the online service providers. In addition, since there is a built in delay to recognize the infringement, the process is ineffective as a feedback mechanism to the original user or uploader.

With more than ten years' experience in providing copyright compliance services to online social media and storage services; we can state that the voluntary adoption of automated proactive filtering has proved to be effective and efficient for both the online services and the copyright owners. Copyright owners are able to ensure that their entire catalogue of copyright content is protected as the result of a single, simple registration with our company.

Likewise, online services that are customers of Audible Magic are able to install and implement our compliance service in a very simple process, and thereafter are able to automatically prevent the upload of infringing files, thus drastically reducing the burden of dealing with millions of individual takedown notices.

---

8. In what ways does the process work differently for individuals, small-scale entities, and/or large-scale entities that are sending and/or receiving takedown notices?

Audible Magic: Here again we can show the advantages of voluntary pre-emptive filtering over the issuing/receiving of takedown notices. Individual creators of copyright content and small companies have the same opportunity as large companies to register their content with Audible Magic. For even the smallest copyright entities or individuals, registration can be achieved free of charge through a simple drag-and-drop online process.

For the online services, lack of scale is no barrier, either from a technical point of view or from cost. Audible Magic has mature APIs that have been tried and tested in the market for more than a decade. They are quick, simple and inexpensive to install, and once installed will require very little in the way of maintenance to ensure copyright compliance year after year. While prices vary with scale and the types of services provided, compliance services can be obtained for less than $1,000 per month.

---

9. Please address the role of both ''human'' and automated notice-and takedown processes under section 512, including their respective feasibility, benefits, and limitations.

Audible Magic: Audible Magic's technology is used by the operators of over one hundred college networks in two ways: 1) to pre-emptively detect and initiate enforcement activities against unauthorized transfers of copyright files, 2) to automatically review the correctness of any copyright claims made in notices received by the network operators from copyright owners under section 512. This automated process provides substantial savings compared to the cost of human reviews of claims.

---

10. Does the notice-and-takedown process sufficiently address the reappearance of infringing material previously removed by a service provider in response to a notice? If not, what should be done to address this concern?

Audible Magic: The problem of dealing with repeated uploads of the same infringing material is frequently raised by online service providers and by copyright owners. Audible Magic provides a simple and inexpensive automated solution for this problem. In addition to our Music, and Film & TV Soundtrack Identification services, Audible Magic offers customers a Private Content database service. This service enables the customer to prevent content from re-appearing on their site once they have decided for any reason to take it down, whether because it is infringing

copyright, or because it contains inappropriate content, profane speech, pornography, hate speech, Terms of Use violations, etc.

The 'takedown and staydown' service adds a fingerprint of the unwanted material to a private registry used only by that customer. The customer can then test newly uploaded content against this custom registry as well as against our general copyright databases.

---

11. Are there technologies or processes that would improve the efficiency and/or effectiveness of the notice-and-takedown process?

Audible Magic: See the response to questions 7, 8 and 10 above.

---

12. Does the notice-and-takedown process sufficiently protect against fraudulent, abusive or unfounded notices? If not, what should be done to address this concern?

Audible Magic: As set out in our response to Question 9 above, our technology is currently being used by many of our network operator customers to review the correctness of takedown notices by checking network logs at the time and date of the alleged infringing file transfer to verify whether an unauthorized transfer of the infringing file actually took place.

---

15. Please describe, and assess the effectiveness or ineffectiveness of, voluntary measures and best practices - including financial measures, content ''filtering'' and takedown procedures -that have been undertaken by interested parties to supplement or improve the efficacy of section 512's notice-and takedown process.

Audible Magic: In this section we will describe and discuss the services we provide to enable sites to carry out voluntary copyright content filtering of content uploaded by the public.

Audible Magic's Technology
Audible Magic's technology and services are based upon its patented media identification and classification technology, and its extensive reference database of digital fingerprints of copyrighted music and other digital content. Its digital fingerprinting and filtering technology is designed to filter, monitor, track, and manage copyrighted multimedia content. Digital fingerprinting is an audio recognition technology. It provides a robust method of precisely identifying digital music and movie/video soundtrack content, regardless of source or format (e.g., MP3 download, WAV file, streaming audio signal, compact disc, DVD, or radio broadcast). The analysis performed by Audible Magic's technology produces a set of mathematical values called a "feature vector" or "digital fingerprint," which is unique to a particular master recording. In essence, each digital fingerprint identifies a master recording, much as a human fingerprint identifies a person. The "fingerprints" are precise enough to differentiate between various live and studio performances of a single song. The fingerprints are also very small, which makes their use practical in blocking or monetizing the unauthorized distribution and copying of recordings.

Audible Magic's Reference Databases
Audible Magic maintains a vast database of copyrighted music and audio-visual soundtracks. The database is populated by both large and small copyright owners from all over the world. Registration of fingerprints with Audible Magic is free of charge. Larger content owners and

those with adequate technical resources are able to incorporate Audible Magic's signature generation software into their digital supply chains. We have also authorized several digital services providers to carry out this function for those content owners who do not have the resources or who choose not to carry out this function themselves. Smaller companies and individual creators are able to register their content free of charge through an easy-to-use web portal. Copyright owners have the facility to register business rules that will inform individual sites how their content should be handled. Common business rules are "Block", "Allow" or "Monetize". Audible Magic has ingested over 24 million fingerprints of copyright content since its establishment in 1999, and currently ingests new fingerprints at a rate of around 250,000 each month.

Audible Magic's Services

Industry-leading social media, user-generated-content sharing and cloud file sharing networks have made Audible Magic the premier provider of copyright compliance information services for more than a decade. Platform providers dramatically reduce copyright-infringing media sharing using Audible Magic software and hosted services. The process detects registered audio and video content in the user upload stream. Hosted information services then report back the copyright-handling wishes registered by copyright owners. Many social platforms also manage direct-licensing arrangements with content owners using the same Audible Magic identification services. Online services that use our Audible Magic copyright compliance services include Facebook, Dailymotion, SoundCloud, and Twitch.

The diagram below illustrates how the service is implemented.
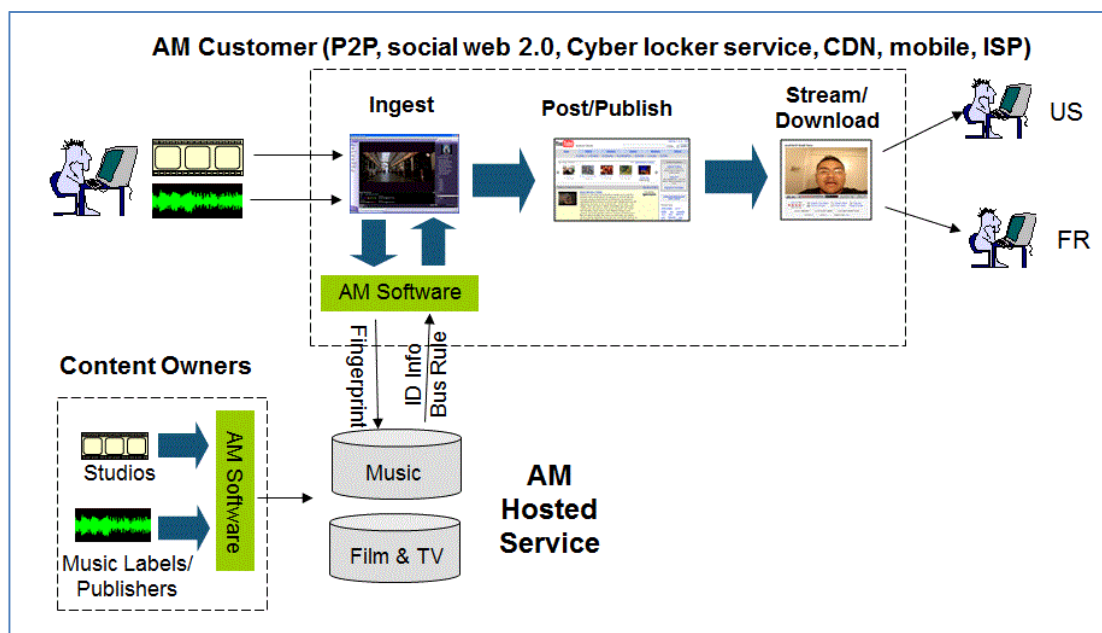
The Effectiveness of Content Filtering

In the last 12 months, customers using Audible Magic's services have prevented over 150 million files containing copyright protected music, film or TV clips from being uploaded and distributed via their sites without the authorization of the copyright owners. This process goes on

automatically, in the background, 24 hours a day, seven days a week without any further effort on the part of the copyright owner or the site operator.

The process has led to a change in user behavior. When content filtering services were first introduced over a decade ago, user uploads in which copyright content was detected accounted for an average of 15% to 20% of all uploads. With our automated compliance services in place, this average across Audible Magic's customer base has declined to between 5% to 8% of all uploads. Clearly, the users of these sites have reduced their copyright violating activity.

Although, as we have illustrated, the vast majority of attempted uploads of copyright sound recordings are detected and prevented at the point of upload, a small minority of attempts to upload copyright content goes undetected by our system. This may be due to a number of reasons:

- *Content not in the reference database at the time of upload*:
  - Not all copyright owners avail themselves of our free service to register their content with Audible Magic.
  - Some content 'leaks' from the copyright owner's production process prior to registration.
  - Live performances by artists, e.g. on TV appearances, are often not recorded and registered by the copyright owners
- *Deliberate Obfuscation:*
  - Users will deliberately obfuscate copyright sound recordings to evade detection by filtering systems by introducing additional audio artifacts, or increasing or decreasing speed, pitch or tempo.

As a result of these deliberate obfuscation techniques, the filtering services that were extremely effective ten years ago, would be less effective today. Audible Magic gathers feedback on the effectiveness of its content filtering technology as an ongoing process. We have used this data to improve our services and develop new services to meet these challenges. Today Audible Magic offers services that can detect these deliberately obfuscated recordings.

It is worth noting that this constant evolution of services is being carried out in a flexible, voluntary, unregulated environment. The copyright infringement issues change over time and it is important that technology is able to evolve to meet any new challenges. If legislators were to consider more prescriptive regulation, it is important that any such regulation does not have the effect of 'freezing the technology in time'.

Trusted Third Party
There is value in content filtering being carried out by a third party trusted by both copyright owners and online services. Audible Magic has built close relationships with all the major record labels (UMG, Sony, Warner) and the major music aggregators/associations (Orchard, IODA, IRIS, Merlin), which manage content from thousands of independent labels and artists. We also have close relationships with the major TV and movie studios, including NBCU, Fox, Viacom/MTV, Warner Bros, Sony Pictures, Disney/ABC, canal+ and RTL. We have ingested over 25 million sound recordings and film and TV soundtracks. We currently ingest around 250,000 new fingerprints every month. We invest a great deal of resources in continually developing and expanding our database, to the extent that today we have the most comprehensive database of its kind.

Our customers are the websites, social networks, and digital services. We do not pay, nor are we paid by, the copyright owners. Nevertheless we are regarded by the copyright owners and online services as a highly trusted third party. As such we have been able to facilitate dialogue and the settlement of disputes, and to encourage and facilitate licensing agreements between these parties.

Content filtering carried out by a third party intermediary benefits all parties. For the online services, the filtering service is a turnkey solution. With the high cost of developing a highly effective content identification technology and system, the online service does not need to make this investment nor are they forced to make judgments about how the filter performs – the answer they receive is either that the content is registered in our database or it is not. Once the online service deploys this filter, the copyright owner has the responsibility to ensure their content is registered and therefore protected. Since it is free, there is no excuse for not registering.

Copyright owners are skeptical of content filtering owned and controlled by the online service itself, because online services may be motivated to deploy a 'leaky filter'. Leaky filters would identify and block less content. As they say, you don't want the fox to be in charge of counting the number of chickens in the hen house. This skepticism destroys the trust that is essential for the development of copyright licensing arrangements, which in turn are necessary for the prosperity and growth of the online content marketplace.

Since Audible Magic is an independent 3rd party, copyright owners have confidence that their content is identified correctly.

Legal Standards

> **19. Assess courts' interpretations of the ''actual'' and ''red flag'' knowledge standards under the section 512 safe harbors, including the role of ''willful blindness'' and section 512(m)(1) (limiting the duty of a service provider to monitor for infringing activity) in such analyses. How are judicial interpretations impacting the effectiveness of section 512?**

Audible Magic: We will refrain from making direct comments on the court's interpretations of "actual" and "red flag" knowledge, as we do not feel qualified to address these policy standards. However, we feel that it would be helpful to examine whether the use of copyright identification and filtering services, such as Audible Magic, are encouraged or discouraged by section 512 monitoring limitations.

Online services use Audible Magic technology to prevent the unauthorized distribution of copyrighted content. When the Audible Magic technology identifies the presence of copyrighted content within a user upload it notifies the online service provider. Our customers' systems will then automatically block the file from being distributed and will generally notify the user of this violation of their terms of use.

This voluntary monitoring by the online service providers clearly benefits the copyright owners and dramatically reduces the unauthorized distribution of copyrighted content, which is the ultimate objective of section 512. Therefore, online service providers should not be discouraged from utilizing systems such as ours.

Although not directly addressed by the courts, the legislature's intentions were clearly conveyed in the House Conference Report for reconciliation of the DMCA that "This legislation is not

intended to discourage the service provider from monitoring its service for infringing material. Courts should not conclude that the service provider loses eligibility for limitations on liability under section 512 solely because it engaged in a monitoring program." *House Conference Report 105-796 at 73 (October 8, 1998).*

Thus we suggest that any rulings or decisions with respect to voluntary monitoring for the purpose of reducing the unauthorized distribution of copyrighted works should remain consistent with the overall intent of section 512, and should not discourage the voluntary actions of well intentioned online service providers.

Other Issues

30. Please identify and describe any pertinent issues not referenced above that the Copyright Office should consider in conducting its study.

Audible Magic: The internet of today has changed dramatically since 1998 when section 512 was enacted. Since then we have experienced changes which have gone beyond the processes and requirements of the DMCA and established new norms which could not have been contemplated in 1998.

In the first phase in this evolution, which covered the period of 1998 until 2006, the processes defined by section 512 and the DMCA were the sole means of dealing with unauthorized transmission of copyrighted content by online service providers. This period was characterized by the rapid adoption of new technologies and platforms with few controls over copyright content.

In 2006, companies such as YouTube[i] and Myspace adopted services and technologies from Audible Magic that are now accepted as the de facto standard for copyright compliance for social media content-sharing sites around the world. These services were adopted voluntarily and benefited both the online services and the copyright owners. During this present period, the focus of these processes has been exclusively on the prevention of unauthorized transmission of copyright content.

Now, some ten years later, the online services have developed more mature business models and along with the evolution of licensed content downloading and streaming services, the focus is shifting to the monetization of copyright content on these online services; services provided by Audible Magic to prevent infringement are being repurposed to enable licensing and monetization.

We are now at an inflection point, where using technology and services such as Audible Magic can provide the foundation for a new world of access and creative use of copyright protected material for the benefit of the online services and the copyright owners. There is obviously room for improvement to ensure a reasonable balance between copyright holders' and online services' responsibilities and obligations with respect to the processes outlined by section 512. On the other hand, it is our hope that whatever changes are contemplated, do not hinder the market's ability to evolve but rather encourage the development of services and business improvements to the benefit of copyright owners, online service providers, and consumers.

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[i] YouTube no longer utilizes Audible Magic services. They have developed their own version of the technology, called ContentID.

Doc. 6

From: ▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮@Audiblemagic.com]
Sent: Thursday, January 12, 2017 5:12 PM
To: ▮▮▮▮▮▮▮ (CNECT)   Personal Data
Cc: ▮▮▮▮▮▮
Subject: Information video on Content recognition technology

Dear ▮▮▮ ,
We have prepared a short information video in English on how content recognition
technology works in relation to internet platforms that allow user uploads of copyright
music, film and TV content.
It can be viewed at https://vimeo.com/198929871
Please feel free to share the link with whoever you would like.
I look forward to speaking to you tomorrow.
Kind regards,

▮▮▮▮

▮▮▮▮▮▮   Personal Data
Audible Magic LLC
Europe, Middle East & Africa

Studio 405, The Metal Box Factory
30 Great Guildford Street
London SE1 0HS
United Kingdom

T : ▮▮▮▮▮▮▮▮
M: ▮▮▮▮▮▮▮▮
email: ▮▮▮▮▮▮▮▮▮▮▮▮▮@audiblemagic.com
Skype: ▮▮▮▮▮▮
www.audiblemagic.com

Doc. 7

From: ▨▨▨▨▨ ▨▨▨▨▨ @Audiblemagic.com>

Sent: 29 June 2017 13:22
To: CAB ANSIP WEB; ANSIP Andrus (CAB-ANSIP)
Cc: CNECT DESK
Subject: Audible Magic - pricing
Attachments: 2017-04-19 AM Content Recognition for UGC.pptx; Audible Magic_Content recognition technoloogy.pdf

For the Attention of Vice-President Andrus Ansip
and
Commissioner Roberto Viola

Dear Vice-President,
I have noticed in the last week two articles that have been published online which call into question the Audible Magic pricing you have correctly quoted in a meeting with the JURI Committee of the European Parliament:
http://copybuzz.com/analysis/things-money-cant-buy/ and https://edri.org/proposed-copyright-directive-commissioner-confirms-it-is-illegal/

I would like to confirm that the prices that you are reported to have quoted are actual prices that we have agreed in contracts with SMEs, both in the EU and elsewhere, where their initial requirement was to check up to 5,000 files per month. We are continuing to provide these examples in presentations we are making to MEPs and to the IP Attachés of the member states' Permanent Representation to the EU (see slides 9 and 10 of the attached slide deck).

Both articles also make reference to pricing which appears on Audible Magic's website. While it is common to find that actual prices agreed with customers of any business, particularly if the customers are SMEs, are discounted from published price lists, the price list on our website is actually compatible with the prices we have referenced in our presentations, and that you have reportedly quoted.
For total transparency, I should point out that we updated the price list after becoming aware of the first of the articles referenced above, which drew our attention to the fact that a five year old, and much out of date, price list was still on our website. We updated it to accurately reflect our current pricing.

I have also attached a brief two-page information document on content recognition technology which we are in the course of distributing to MEPs, at the end of which is a short, two minute information video on content recognition technologies.

Please do not hesitate to contact me if you or any of your staff require any further information.

Kind regards,

▨▨▨▨▨

Audible Magic LLC

Studio 504, The Metal Box Factory
30 Great Guildford Street
London SE1 0HS
United Kingdom

T : ▨▨▨▨▨
M: ▨▨▨▨▨
email: ▨▨▨▨▨ @audiblemagic.com

Skype: ▨▨▨▨▨▨
www.audiblemagic.com

Content Recognition Technology: Balancing the Needs of Online Platforms, Creators and Users

Audible Magic Corporation

For further information, please contact:

****,

Suite 504, The Metal Box Factory
30 Great Guildford Street
London SE1 0HS
United Kingdom

Email:@audiblemagic.com
Tel:

Personal Data

www.audiblemagic.com

Audible Magic Overview

Business Overview

Audible Magic is a leading provider of automated content recognition technology to online platforms and networks. The services identify copyrighted music and television/film in user generated video uploads

Customers & Partners

Online platforms including Dailymotion, Soundcloud, Spinnup, Twitch, Vimeo, Tumblr.

Content owners including Canal+, RTL, PIAS, Beggars Group, Merlin, Universal Music, Sony Music, Warner Music, Fox, NBCU, Disney/ABC

Key Strengths

- Industry leader and pioneer of content identification technology
- In production processing over 11B transactions in 2016 (4B in 2015)
- Accurate and robust technology with over 30 patents granted
- Embedded in customer infrastructure/workflow
- Services paid for by the social video platforms. No financial relationship with content owners

Company Background

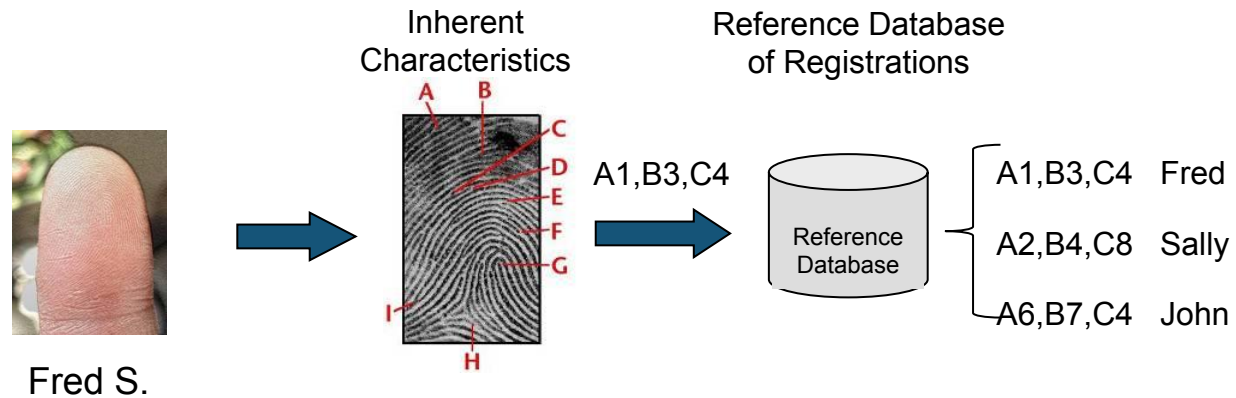- Founded in 1999
- Offices in Los Gatos, Berkeley, and London

'Effective': A Range of Content Identification Technologies

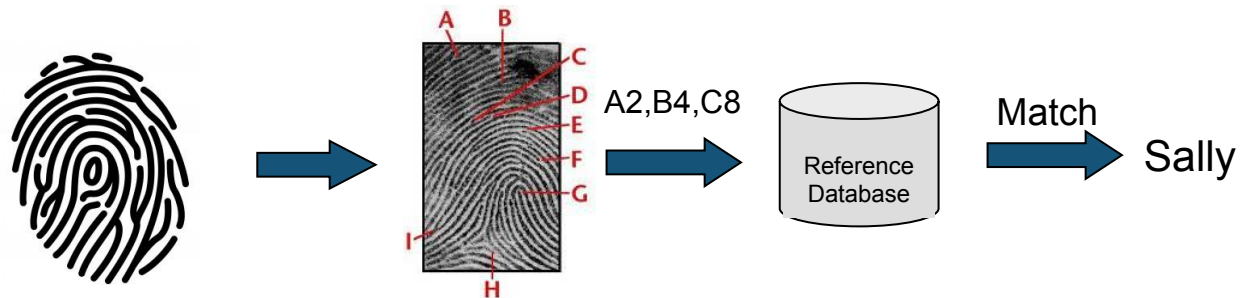| ID Tech	Description	Effectiveness	Cost/file	Comment
File Name	Matches words contained in file name	<5%	<0.001€	Not a good filter High false negative and false positive rates
File Hash	Matches file bits exactly	<10%	<0.0001€	Not a good filter unless paired with other ID technology
Watermark	Matches embedded mark either visual or audible	<10%	<0.01-.05€	Good for identifying premium content. Little content is watermarked
Fingerprint (image, audio, video)	Matches perceptual characteristics compared to original	Up to 99+%	<0.005 - .05€	Standard today for production. Range of accuracy among technologies
Human Review	Manual review	<50%	> 1€	Not practical for primary identification process Good for counter-notice

Effectiveness – How much of the targeted content is matched?
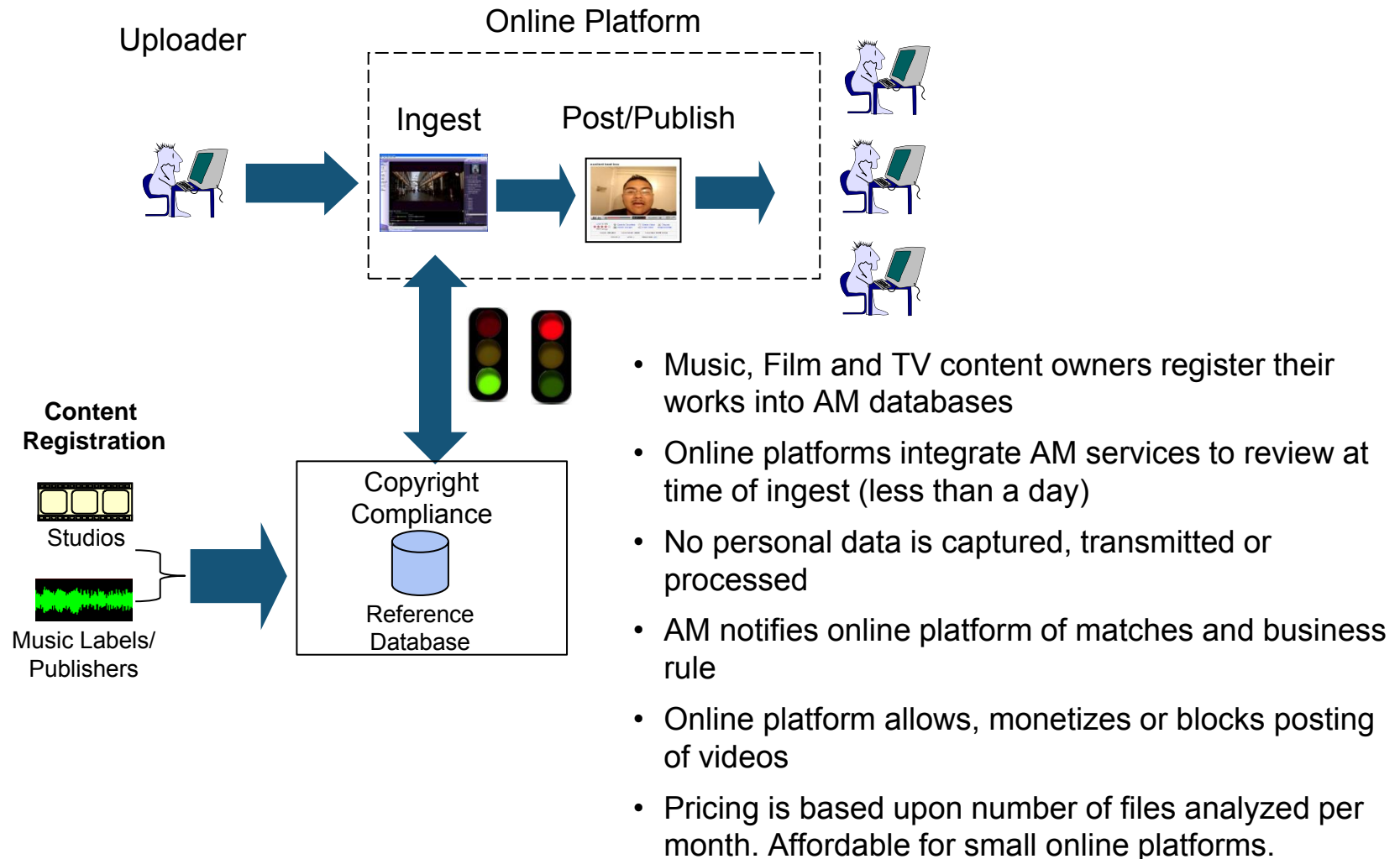
Content Identification Fingerprinting

1. Building a Reference Database

Inherent Characteristics

Reference Database of Registrations

Fred S.

A1,B3,C4

A1,B3,C4 Fred

A2,B4,C8 Sally

A6,B7,C4 John

Reference Database

2. Matching Unknowns to the References

A2,B4,C8

Reference Database

Match

Sally

Enabling Online Platforms to Identify Copyright Content

- Music, Film and TV content owners register their works into AM databases

- Online platforms integrate AM services to review at time of ingest (less than a day)

- No personal data is captured, transmitted or processed

- AM notifies online platform of matches and business rule

- Online platform allows, monetizes or blocks posting of videos

- Pricing is based upon number of files analyzed per month. Affordable for small online platforms.

Trusted 3rd Party Mediating Between Content and Online Platforms

AM Customers Voluntarily Comply

- Highest standards demanded by copyright owners

- Good digital citizens

- Maintain good relations with copyright owners

- Pre-emption v takedown:
  - More efficient & less costly
  - Licensing opportunity
  - Better user experience

SME Case Studies

- Swedish start-up

- Distribute unsigned artists to paid distribution platforms

- <u>Need</u>: Prevent fraudulent uploads of others' creations

- Under 4,000 uploads per month

- Affordable, proportionate ACR service

- Success: Platinum artist in Sweden, Promotion/distribution deal with Island Records in UK

- Vietnamese start-up

- UGC video platform

- Limited audience and ad revenue potential (Vietnam-only)

- Around 5,000 uploads per month

- Affordable, proportionate ACR service

- Growing, sustainable business

Tried & Tested Solution for 10 Years

- Effective and Accurate

  - 99.9% match rate (< 0.1% false negatives).

  - Less than 0.0001% false positives.

- In Use for a Decade
  - On world's most popular online platforms.
  - 11 billion uploads checked in 2016 (up from 4.5 B in 2015)
  - Non-controversial: accepted by users and copyright owners.
  - Small start-ups using the ACR service have grown to be major global online platforms: SoundCloud, Dailymotion.

- Affordable and Scalable: from €500 or less per month.

- Review processes in place for copyright exceptions.

ACR Creates a Level Playing Field

- Enables clear distinction between genuine User-Generated Content and unauthorised commercial music/film/TV uploads

- Removes 'Value gap' barrier to entry for paid online content platforms

- Audible Magic 'white label' ACR + Content Management Systems enable European start-ups to compete on a level playing field with global giants (following slide).

A Simplified Licensing Solution: Standard Licensing and Comprehensive Tools
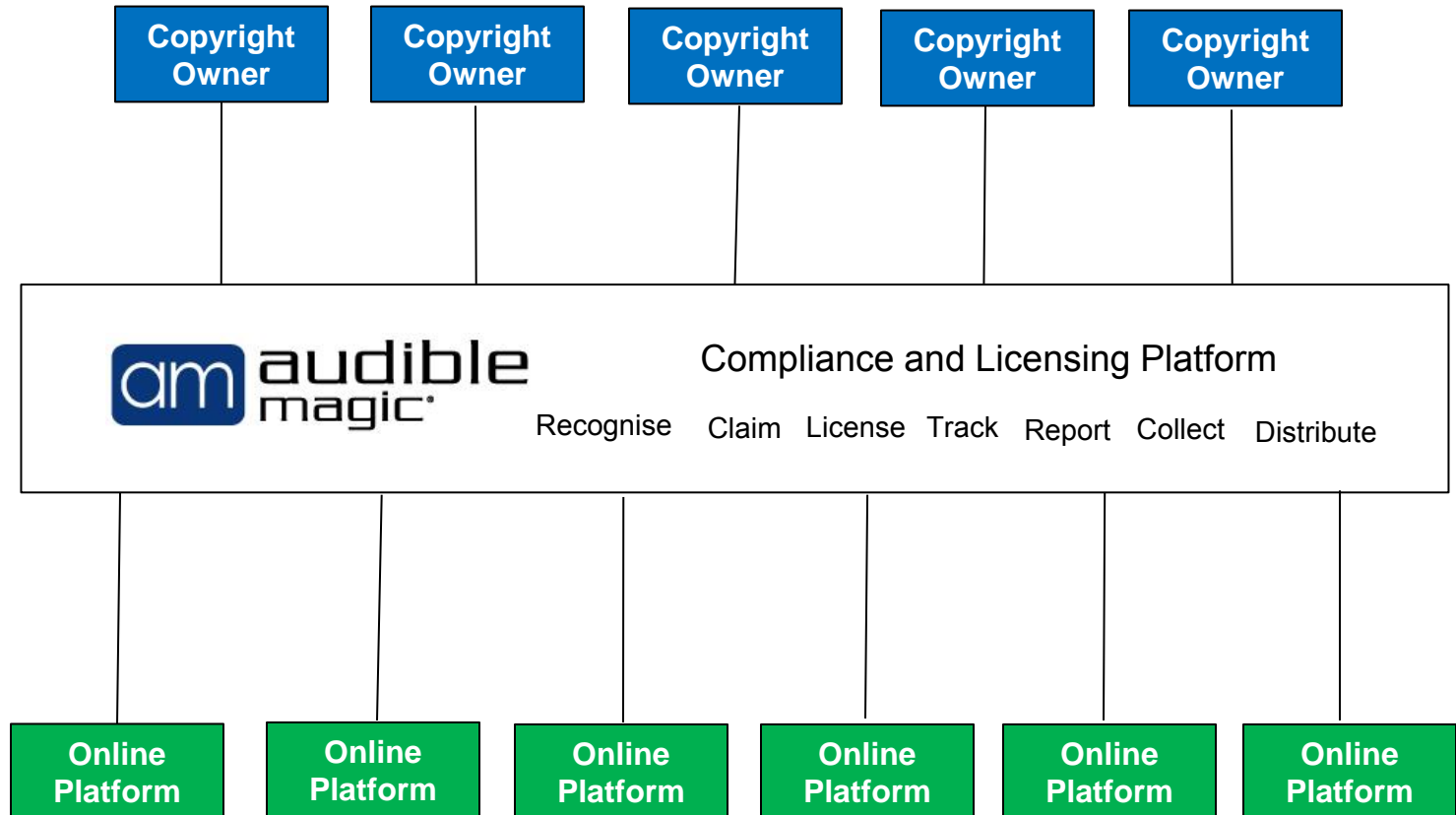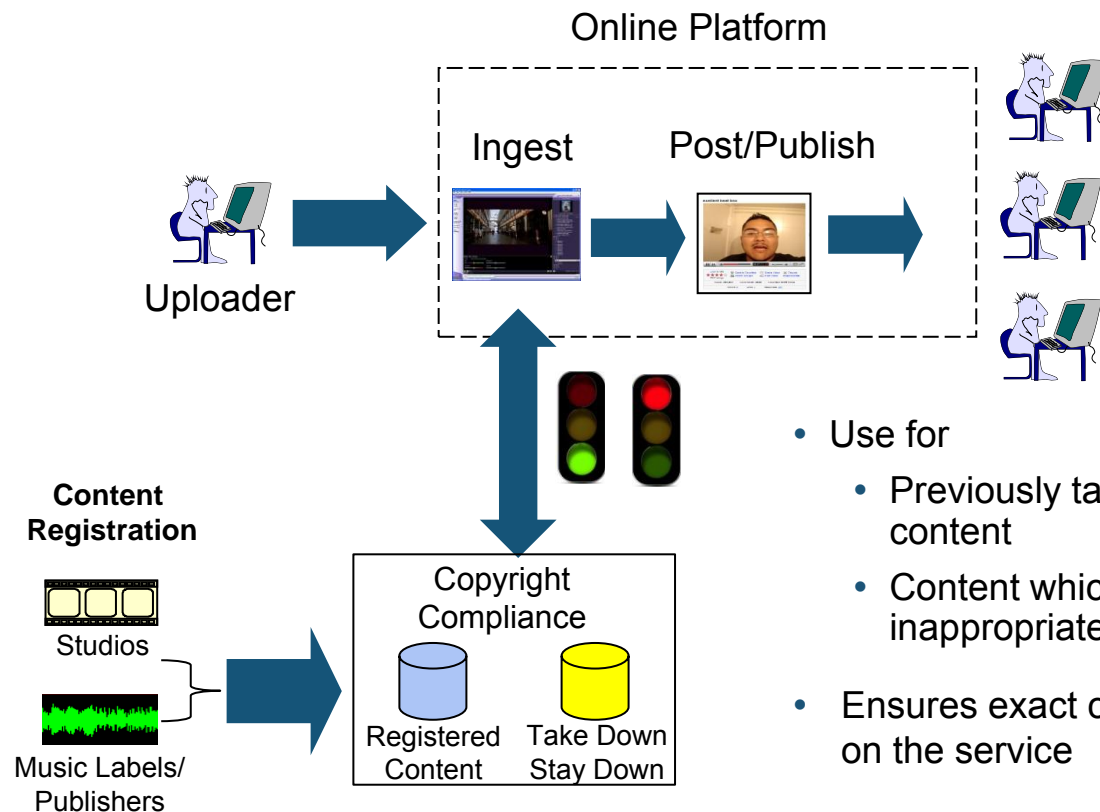
Issues that have been raised

- Effectiveness

- Copyright Exceptions

- Fundamental Rights

- General Obligation to Monitor?

- Cost/ the effect on growth

- Applicability of content recognition technology to diverse types of copyright works.

APPENDIX

Ability to Implement a Take Down Stay Down Service

Online Platform

Ingest

Post/Publish

Uploader

Content Registration

Studios

Music Labels/ Publishers

Copyright Compliance

Registered Content

Take Down Stay Down

- Use for
  - Previously taken down copyrighted content
  - Content which has been deemed as inappropriate (sex, hate, or violence)

- Ensures exact content does not reappear on the service

- Reduces cost and volume of repeated notice and takedown

- Implemented since 2008: e.g. Myspace and Dailymotion

audible magic®

The Future of Content Identification

- Technology is not static
  - Manipulations of content
  - Mashups and mixes
  - Musical compositions

- Evolution from compliance tool to enabling licensing and monetization

- Important that legislation remains flexible to deal with evolution of (i) problems and (ii) solutions

CONTENT RECOGNITION TECHNOLOGY

What is Content Recognition Technology?

Content recognition using digital audio and video fingerprinting technologies was developed in the 1990's. It measures characteristics of online sound or moving images to create a unique digital fingerprint of sound or audio-visual recordings.

Audible Magic – one of many content recognition technology companies operating in Europe – has been providing content recognition services for more than 17 years. Its technology has been used by internet platforms for the last decade, including by the biggest in the world: SoundCloud, Dailymotion, Facebook, Vimeo, Instagram, Twitch, Tumblr, YouTube (no longer an Audible Magic customer) and by smaller, less well-known platforms such as Spinnup, Jemando and many others.

  o **No data privacy issues:** no personal data is seen, captured or processed. It is impossible for Audible Magic to identify who uploaded a file or even from which country it was uploaded.

  o **No negative effect on growth:** Some of our customers have grown from medium sized enterprises when they first started to use content recognition technology to be global internet giants.

  o **Scalable, affordable and accurate:** the service and costs scale with volume, with even the smallest platforms able to process their content cost effectively. False negative rates of less than 0.1% and false positive rates of less than 0.00001%.

How is our Film and TV Content Recognition Service Used by Online Platforms?

  o Only audio and audio-visual files detected - all other uploaded files bypass the detection system.
  o The process is very similar to the way every computer nowadays checks new files to ensure they do not contain harmful viruses. A fingerprint taken from an uploaded audio/video file is compared against all the fingerprints in our reference database. All matches are communicated to the internet platform together with metadata describing the recognised content and business rules (e.g. 'License' or 'Block') specified by the copyright owner.

- Only metal is detected
- Other materials pass through
- No personal information is collected

- Only ferrous metal is detected
- Other objects, even those of same type are not detected

The system only recognises content which has been affirmatively registered by the copyright owners and is totally blind to everything else. UGC files are like objects run past a magnet, or airline passengers going through metal detectors in pre-boarding checks - only metallic objects with specific characteristics are detected. Everything else passes straight through the system without being analysed or categorised.

Content recognition technology is used in many ways today, including:

o Administering broadcast and public performance: Content recognition technologies from companies such as Audible Magic, Soundmouse and BMAT have been in use for many years throughout the world to identify music that is broadcast on radio and television, or played in public venues. The technology is essential for the accurate logging of works used to properly compensate the creators.

o Online Content Management Systems: For over ten years many of the world's most popular internet platforms have used content recognition technology to manage music, film and TV copyrights.

o Fun: "*What's that song*?!" Shazam, SoundHound

o Accessibility: Free apps for mobile devices developed for the Swedish Film Institute use Audible Magic content recognition technology to provide synchronized Audio Description and spoken subtitles for films for vision- or reading-impaired viewers.

> *"This is true democracy"*
>
> ("Detta är sann demokrati"):
> Swedish Culture and Democracy Minister, Alice Bah Kuhnke, at launch of the Swedish Film Institute's Accessibility platform.

o Audible Magic UGC Licensing Support Services – Audible Magic has made a considerable investment in adding Licensing Support Services to the suite of services it provides to online platforms. This removes barriers to entry for even the smallest sites to get licenses and enables them to provide the same levels of sophistication in content management, tracking and reporting as the internet giants.

Who is Audible Magic?

Audible Magic is a technology company founded in 1999. It pioneered digital audio fingerprinting for content recognition and has remained at the cutting edge of the development of content recognition technologies ever since. It is a leading provider of automated content recognition services to online platforms and networks. The services identify copyrighted music and television/film in files uploaded by users. Audible Magic is a 3rd party - independent from both the online platforms and copyright owners.
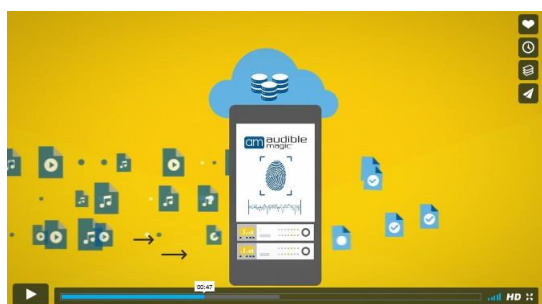
Watch our short video:
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