



AMLive™ for Live Streaming Platforms

The Challenge

Live steaming platforms, which enable users to live stream from their desktops or mobile devices, may discover some users rebroadcasting television and other programming over their platform. This particularly can be a concern with pay-per-view live sporting events intended for subscription audiences only. It also can extend into other types of media such as pre-recorded shows and DJ's broadcasting music without authorization and the necessary licensing.

The Solution

AMLive addresses these challenges. With this service, live streaming platforms can automatically detect in real-time if any live stream contains authorized or unauthorized works registered by copyright owners. Audible Magic offers solutions that are highly effective in detecting music, or pre-recorded television and movies, and is just as effective in detecting real-time live broadcasts, such as live sports games, detecting content within a few moments from when they are broadcast from the source feeds.

Using our proprietary digital fingerprint technology, Audible Magic maintains reference registries of copyright works. Rights owners register the works they control with Audible Magic, either as pre-recorded content or from a live broadcast program. Then, for each live stream, the live streaming platform transmits fingerprints of the unknown user stream, which are then compared to our reference registries. If a match is detected, that information is communicated back to the live streaming platform with information about the match and a related business rule for the platform to take appropriate action.

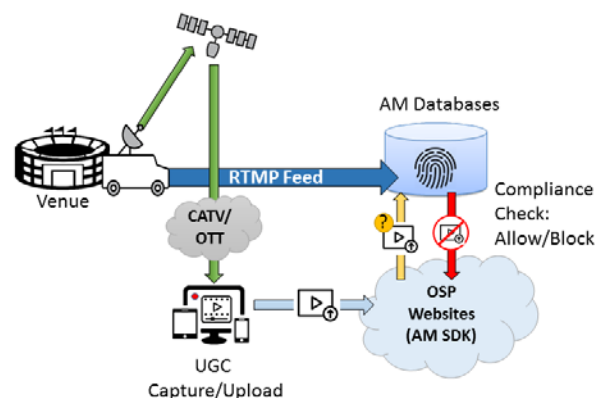
The Technology

Audible Magic's Content ID powers AMLive. Detection is based on the perceptual characteristics of the audio, which allows it to accurately identify content across file formats, codecs, bit rates, and compression techniques. This approach is highly accurate and requires no dependence on metadata, preproduction inserting of watermarks or file hashes. It is also immune to many typical transformations, compression techniques and background noise. In early 2018, video identification will be incorporated with AMLive.

How it Works

Content owners register their live events with Audible Magic. At the time of the event, AMLive takes the broadcast feed, and in real-time creates digital reference fingerprints of the audio and video and stores them in the AMLive Registry. (Note: video ID will be available in 2018).

Through the Audible Magic SDK, each participating online service platform (OSP) can integrate content identification of UGC live streams into their incoming media-handling processes. The OSP sends fingerprints of uploaded media to Audible Magic's information service, where they are compared to reference fingerprints in targeted Content Registries that are generated from content feeds supplied directly by content owners. These registries include the AMLive Registry and a wide variety of broadcast television and popular music registries. Content owners provide reference media for popular music and pre-recorded television programs directly to Audible Magic for fingerprinting.



The Audible Magic service returns results indicating a match or no-match condition. A no-match condition implies that the content in question has not been registered in one of Audible Magic's databases. In the event that matching content is found, the content owner's business rules are returned by our information service. Business rules express the content owner's wishes to either block or allow content sharing in a media-sharing environment.

Audible Magic Corporation

985 University Avenue #35, Los Gatos, CA 95032 | (408) 399-6405
www.audiblemagic.com



Beyond Live

The AMLive service compares live UGC streams to any of the several registries Audible Magic maintains of content proactively registered by content owners of the content they want protected. The Audible Magic content registries are:

REGISTRY	FOCUS
AMLive Registry	Real-time, live broadcast events such as sports and award shows.
Film/TV Registry	Pre-recorded movie & television media
Full Music Registry	Maximizing coverage of commercial sound recordings.
Licensing & Reporting (L&R) Music Registry	Major and indie tracks typically found on social media platforms
Music Charts Registry	Most popular music tracks which takes into account new releases and sales chart activity in multiple countries.
Private Registry	Allows for the customer to add their own content.



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