



The Audio Commons Initiative

Name Surname

Place, date or other info about presentation

Outline

- Introduction
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 - AudioCommons project grant
- The Audio Commons Ecosystem
 - Vision
 - Creative Commons content
 - Providers, annotation tools and embeddable tools
 - Business models
- Conclusions





Introduction

Motivation

- Creative Commons (CC) audio content has a huge potential for reuse which *is not being* exploited by the creative industries
 - Limited understanding of CC licenses
 - Content scattered
 - Content not properly labeled, unstructured
 - Lack of tools for seamless integration
- We refer to this content as the Audio Commons content (AC content)

Goals

- Promote publication of AC content and foster its reuse
- Develop open technologies to support publication and reuse of AC content
- Develop open technologies for the semantic annotation of AC content
- Bootstrap the **Audio Commons Ecosystem (ACE)**
- Define standard procedures for joining the ACE
- Develop business models based on open AC content

AudioCommons project

- The **AudioCommons** project will support first steps of the Audio Commons Initiative
- Funded by the European Commission
- Horizon 2020 programme, grant agreement 688382
- 3-year project starting in February 2016

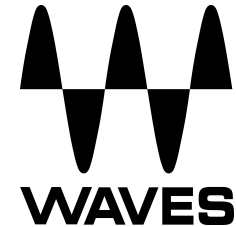


AudioCommons project consortium

- Academic partners:



- Industry partners:





THE AUDIO COMMONS INITIATIVE

The **Audio Commons Initiative** aims at *bringing Creative Commons audio content to the creative industries*. But what does this mean? We realise that significant amounts of user-generated audio content, such as **sound effects, field recordings, musical samples and music pieces** (among others), are uploaded to online repositories and made available under **Creative Commons** licenses. Furthermore, a constantly increasing amount of multimedia content, originally released with traditional copyright licenses, is becoming public domain as its copyright expires. However, we believe that the professional creative industries (e.g. videogames, film and music industries) are **not yet using much of all this content** in their media productions.

There are a number of reasons why such content is not yet extensively used in the professional sector. We think that a major one is the lack of a **shared culture** within the creative industries of open content and its potential use. But there are also **technical and practical issues** that do not facilitate this usage. Despite the amount of Creative Commons audio content available in online repositories such as **Jamendo** or **Freesound**, other potentially useful content remains scattered around the web (if available at all) and typically not properly labeled with specific licenses or reachable through search engines. Also, the nature of this content, coming from a variety of sources and from authors with different levels of expertise, results in unstructured (or **not uniformly structured**) mass of resources, limiting its potential retrieval and reuse possibilities. Moreover, no tools are easily available to search and incorporate Creative Commons audio content in the **production workflows** of the creative industries.

The **Audio Commons Initiative** is therefore aimed at promoting the use of open audio content and at developing technologies with which to support an envisioned **ecosystem** of content repositories, production tools and users (the **Audio Commons Ecosystem**). These technologies should enable the reuse of this audio material, facilitating its integration in the production workflows of the creative industries.

The **Audio Commons Initiative** is supported by the European Commission through the **Horizon 2020** programme (research and innovation grant 688382), and its **project consortium** is formed by leading research institutes in sound and music computing and key players in the creative industries. Do you want to be updated on the progress of the project? Please feel free to **subscribe to our mailing list** or follow us on Twitter at **@AudioCommons**.

www.audiocommons.org, [@AudioCommons](https://twitter.com/AudioCommons)

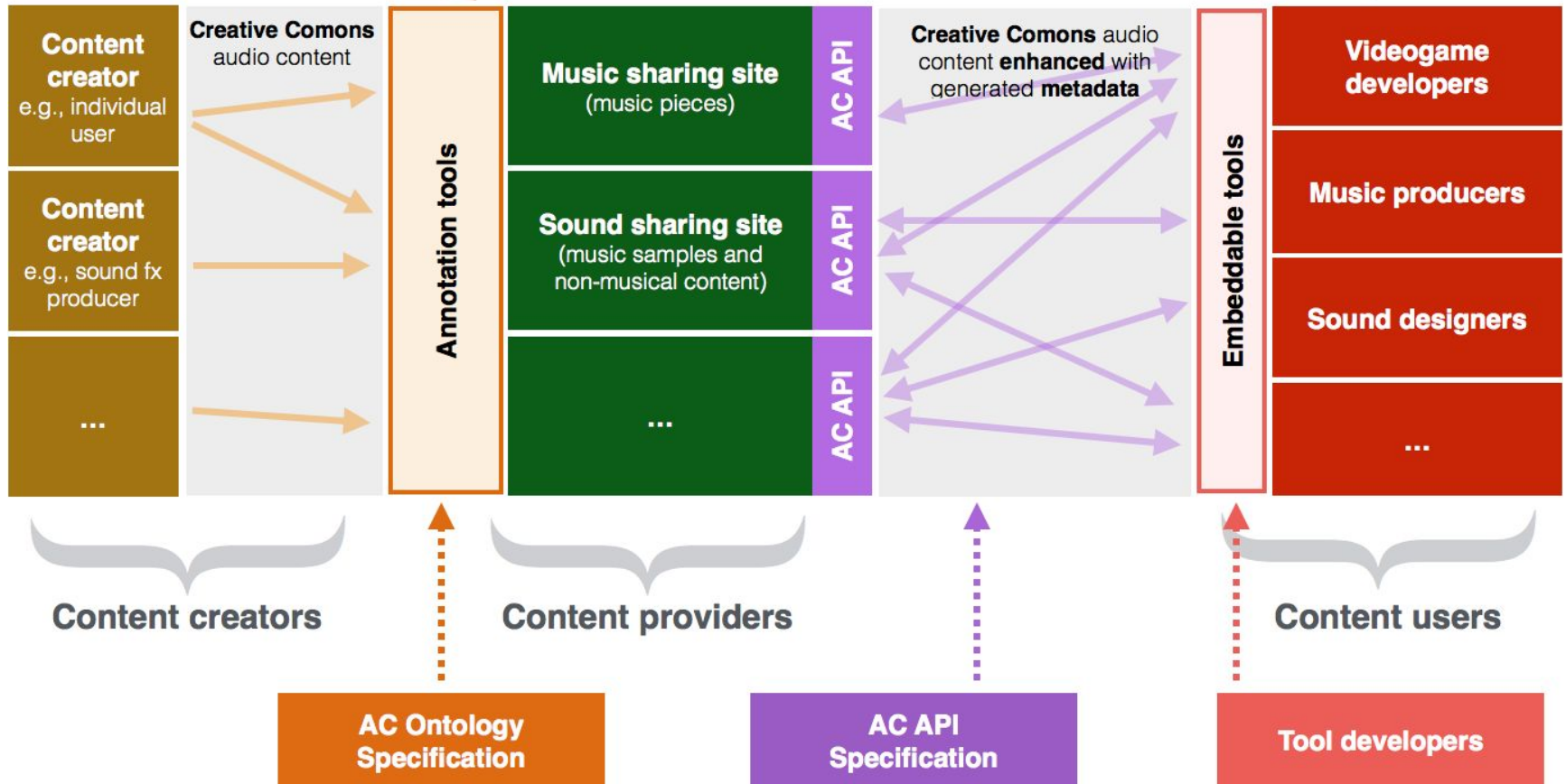
A blurred screenshot of a digital audio workstation (DAW) interface. The interface shows various tracks and controls, including a 'Location Markers' section at the top left, a 'Lead' track, a 'Drums' track, a track labeled '...dead...', and a 'Vocals back 1' track. The main area displays a piano roll with a 'Guitar lead-25.1' track. The overall image is faded and serves as a background for the title text.

The Audio Commons Ecosystem

Content users negotiate license for CC-BY-NC content with content creators

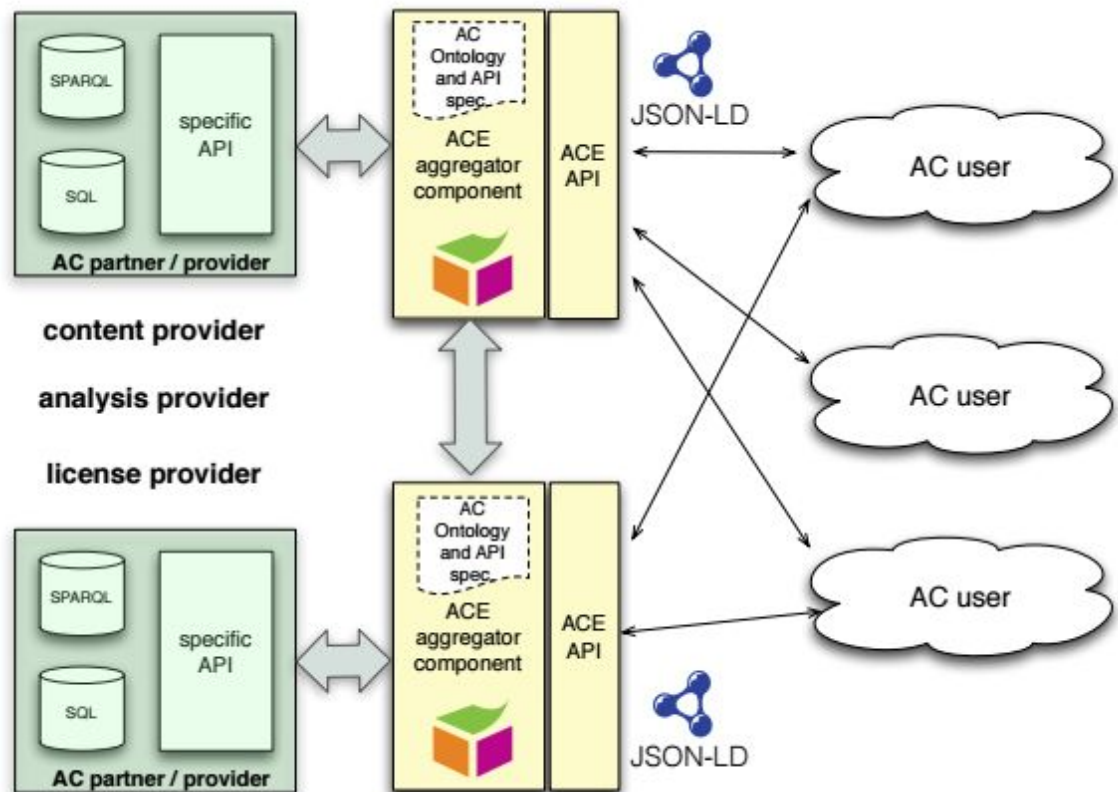
Licensing procedures

Content users can become content creators by publishing derivative or new content



Distributed framework

- Designed to incorporate an undetermined number of services and clients
- Support sustainability of the ecosystem



Creative Commons audio content

- More than 1 billion Creative Commons licensed works (not necessarily audio) available online
Source: "State of the Commons 2015"
- Creative Commons licenses offer better and clearer opportunities for content reuse than traditional copyright models
- Authors establish the rights for the reuse of their content (CC0 - public domain, CC BY, CC BY-NC...)
- Allow circular co-creation model



Example Creative Commons licenses



Public domain, no restrictions on use and redistribution, no attribution to source needed



You can copy, modify and redistribute the sound, but you need to give an attribution to the original source



You can copy, modify and redistribute the sound, but you need to give an attribution to the original source and you cannot use it commercially

Remixing Creative Commons content

License of sound of A	B wants to distribute the new sound under	Can B do this?
cc0	cc0	Yes
cc0	by	Yes (*)
cc0	by-nc	Yes (*)
by	cc0	No
by	by	Yes (**)
by	by-nc	Yes (**)
by-nc	cc0	No
by-nc	by	No
by-nc	by-nc	Yes (**)

(*) If a third user C uses the sound from B, she must attribute to B.

(**) B must attribute the sound to A. If a third user C uses the sound from B, she must attribute both A and B.

Licensing procedures for CC resources

- Uncertainties about licensing for using CC content in commercial productions
- Lack of standardized procedures for (re)licensing content with CC licenses
- **Our goal:** clarify usage of CC licenses in complex reuse scenarios and provide clear and standard ways in which to license AC content

Business models on top of open content

- Uncertainties about business models based on CC audio content but...
- ... business do exist on top of CC music pieces for commercial use (e.g. jamendo.com, magnatune.com, ...)
- **Our goal:** identify emerging business models that can make the Audio Commons Ecosystem self-sustainable

Shared goals with Creative Commons

KICKSTARTER

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Search Projects

Made with Creative Commons: A book on open business models



Let's write a book that shows the world how sharing can be good for business.

Created by
Creative Commons



1,687 backers pledged \$65,420 to help bring this project to life.

Content providers

- Will populate the Audio Commons Ecosystem with CC licensed audio content
- Will annotate their content with Audio Commons tools using a unified metadata representation (AC Ontology)
- Will offer their content through an API that implements a commons specification (AC API specification)
- **Our goal:** make it easy for potential content providers to connect to the ACE

ACE initial content providers



300k sound samples



470k music pieces

footsteps

Automatic by relevance search

Show advanced search options

previous next 1 2 3 4 5 6 7 ... 104 | 2982 sounds



Footsteps, Light Mud, A.wav ★★★★★

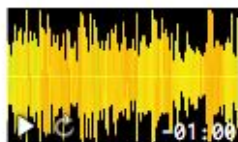
Raw audio of **footsteps** in some semi-watery mud, not nearly as squidgy or moist as the 'Footsteps, Muddy', but still ...

footstep footsteps Muddy Steps foot Light steps Foot step mud Step squidgy muddy Footsteps

4 more results in the same pack "Footsteps, Muddy"

InspectorJ

November 26th, 2015
556 downloads
1 comment



Footsteps, Puddles, C.wav ★★★★★

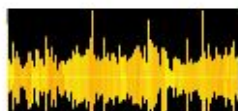
Raw audio of **footsteps** splashing in small puddles and some mud. Please comment on where you intend to use the ...

Puddle footsteps steps Splish Footstep water Footsteps foot Steps step puddles splash footstep

3 more results in the same pack "Footsteps, Puddles"

InspectorJ

November 26th, 2015
412 downloads
3 comments



Footsteps, Dry Leaves, C... ★★★★★

Raw audio of **footsteps** through dry crunching leaves down a footpath. Please comment on

InspectorJ

November 26th, 2015
203 downloads

licenses

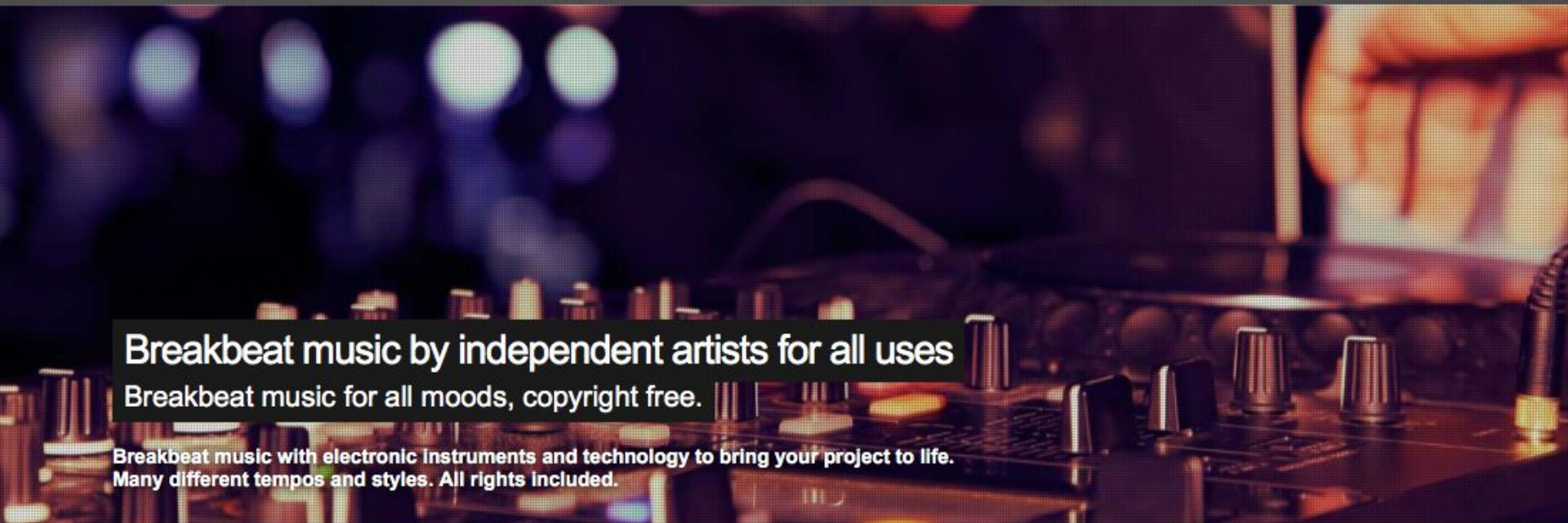
- Attribution (1174)
- Attribution Noncommercial (318)
- Creative Commons 0 (1399)
- Sampling+ (91)

tags

ambience **ambience** ambient atmosphere birds city
concrete **feet** field-recording floor
foley foot **footstep** **footsteps**
forest gravel nature people run running
shoes snow stairs **step** **steps** voice
walk **walking** water wood

type

- aif (117)
- aiff (104)



Breakbeat music by independent artists for all uses

Breakbeat music for all moods, copyright free.

Breakbeat music with electronic instruments and technology to bring your project to life. Many different tempos and styles. All rights included.

[Home](#)
 GENRES
 ELECTRONIC
 BREAKBEAT

What are you looking for? (ex: happy, rock, nature..)

Electronic

- Breakbeat
- Breakcore
- Club
- Dance
- Dark Ambient
- Drum 'n' Bass



Organique Love

5:51 / Emorej

breakbeat, electronic, jumpstyle

GET A LICENSE

SEE SIMILAR TRACKS ADD TO PLAYLIST



breakbeat retro

4:06 / Waykyky

GET A LICENSE

Some other sites with CC audio content

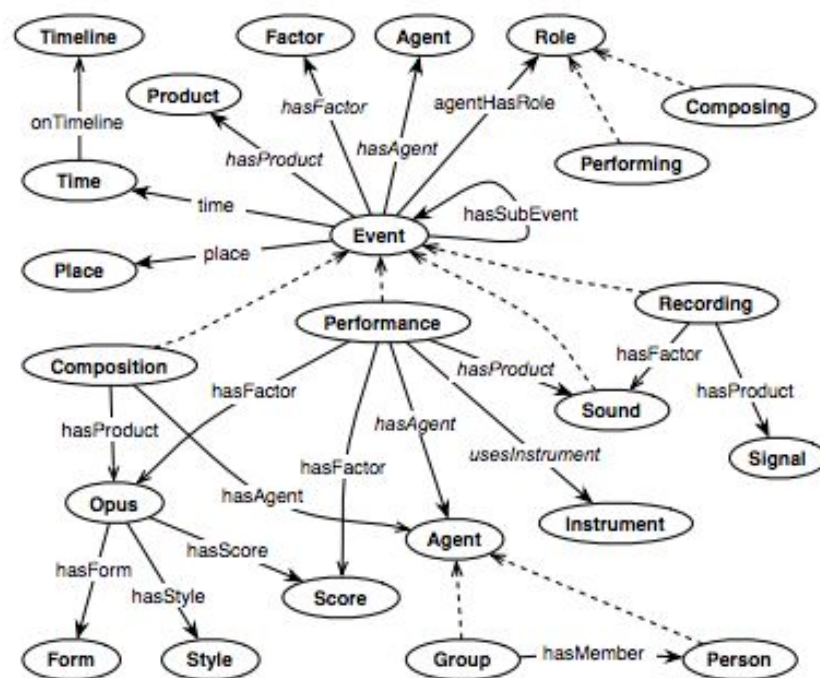


Some other sites with CC audio content

	Content type	Size	CC-licenses	License friendly	API	Access via API	Licensing tools
Jamendo	Music pieces	470k	All 6 CC variants + CC0	Yes	Yes	Yes	Yes
Freesound	Music samples, sound effects, field-recordings	300k	CC0, CC-BY, CC-BY-NC	Yes	Yes	Yes	No
CC-mixer	Music stems, music pieces	38k	All 6 CC variants + CC0	Yes	Yes (old)	No	Yes
Free Music Archive	Music pieces	89k	All 6 CC variants + CC0	Yes	Yes	No	No
Internet Archive	Music pieces, radios, live concerts	2.6M	All 6 CC variants + CC0 + non-CC licenses	No	Yes	No	No
Europeana		574k	All 6 CC variants + CC0 + non-CC licenses	Yes	Yes	No	No
Looperman	Music stems, music pieces	196k	No (looperman open license)	-	No	No	No
Soundcloud	Music pieces, audio books, radios	?	All 6 CC variants + non-CC licenses	No	Yes	No	No
Bandcamp	Music pieces	?	CC-BY, CC-ND, CC-NC, CC-BY-NC-SA, CC-BY-NC-ND	No	No	No	Yes
Magnatune	Music pieces	?	CC-BY-NC-SA	-	No	No	Yes

Semantic annotation of sound and music

- Standardized generic metadata for media content (e.g. Dublin Core ontology, ...)
- Existing sound and music specific models (e.g. Music Ontology, Europeana Data Model, MusicBrainz...)
- Rights management ontologies in the media domain (e.g. MPEG-21, Media Value Chain Ontology...)



Semantic annotation of sound and music

- **Our goal:** define an Audio Commons Ontology that contains audio properties and relations useful for its reuse, provide automatic annotation tools for sound and music collections that annotate the content according to this ontology, with the focus on:
 - High-level music description (genre, mood, instrumentation...)
 - Musical properties (notes, tempo, tonality...)
 - Perceptual qualities (timbre aspects)

Audio annotation tools

	Low-level features	Machine learning based features	Open license	Core language	Interface to other languages	Easy for large scale analysis	Last release
Essentia	Yes	Yes	Yes	C++	Python, Matlab, Javascript	Yes	Nov 2015
jMIR/jAudio	Yes	Yes	Yes	Java		No	Oct 2013
LibROSA	Yes	No	Yes	Python		No	Oct 2015
Aubio	Yes	No	Yes	C	Python	Yes	Aug 2015
MIRtoolbox	Yes	Yes	Yes	Matlab		No	Dec 2014
Marsyas	Yes	Yes	Yes	C++		Yes	Feb 2015
Sonic Annotator	Yes	Yes	Yes	C++	Python	Yes	Nov 2015
LibXtract	Yes	No	Yes	C	Python/Java	Yes	Jul 2014
yaafe	Yes	No	Yes	C++	Python/Matlab	Yes	Nov 2011

Essentia



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Music extractor

Usage

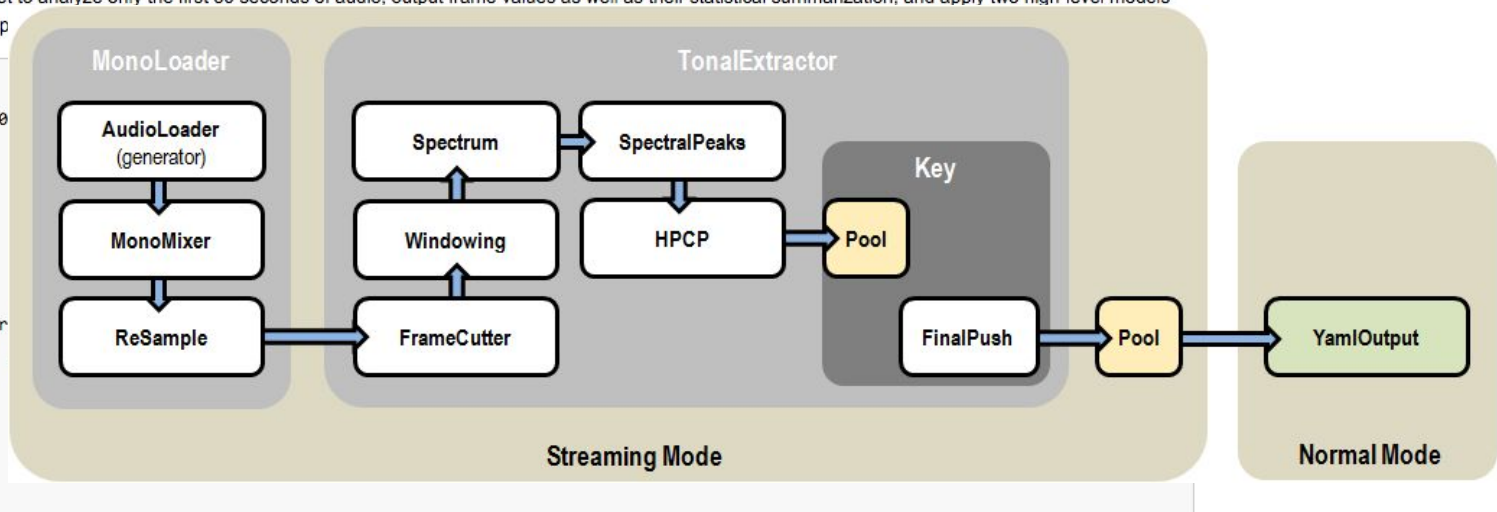
`streaming_extractor_music` computes a large set of spectral, time-domain, rhythm, tonal and high-level descriptors. The frame-wise descriptors are **summarized** by their statistical distribution. This extractor is suited for batch computations on large music collections and is used within [AcousticBrainz project](#).

It is possible to customize the parameters of audio analysis, frame summarization, high-level classifier models, and output format, using a yaml profile file. For example, in the following profile, the extractor is set to analyze only the first 30 seconds of audio, output frame values as well as their statistical summarization, and apply two high-level models associated with the respective filep

```
startTime: 0
endTime: 1e6
analysisSampleRate: 44100.0
outputFrames: 0
outputFormat: json
requireMbid: false
indent: 4

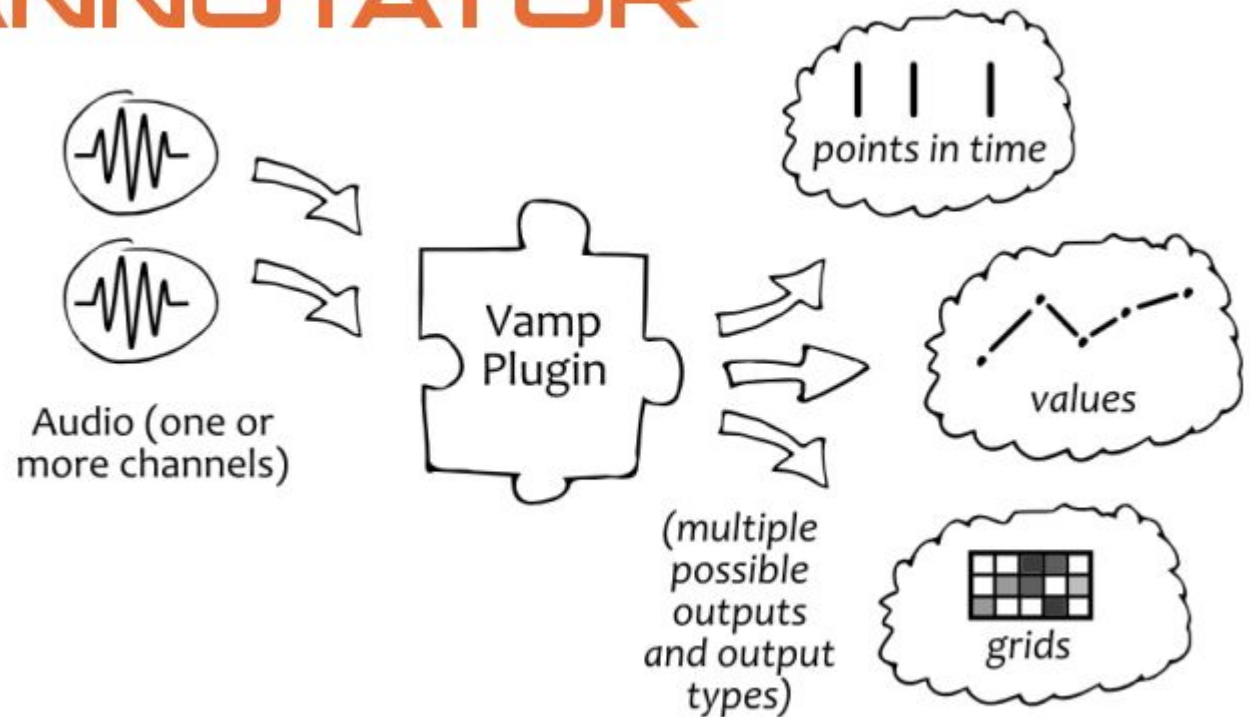
lowlevel:
  frameSize: 2048
  hopSize: 1024
  zeroPadding: 0
  windowType: blackmanhar
  silentFrames: noise
  stats: ["mean", "var",

average_loudness:
  frameSize: 88200
  hopSize: 44100
  windowType: hann
  silentFrames: noise
```



Sonic annotator, Vamp audio analysis API

SONIC ANNOTATOR

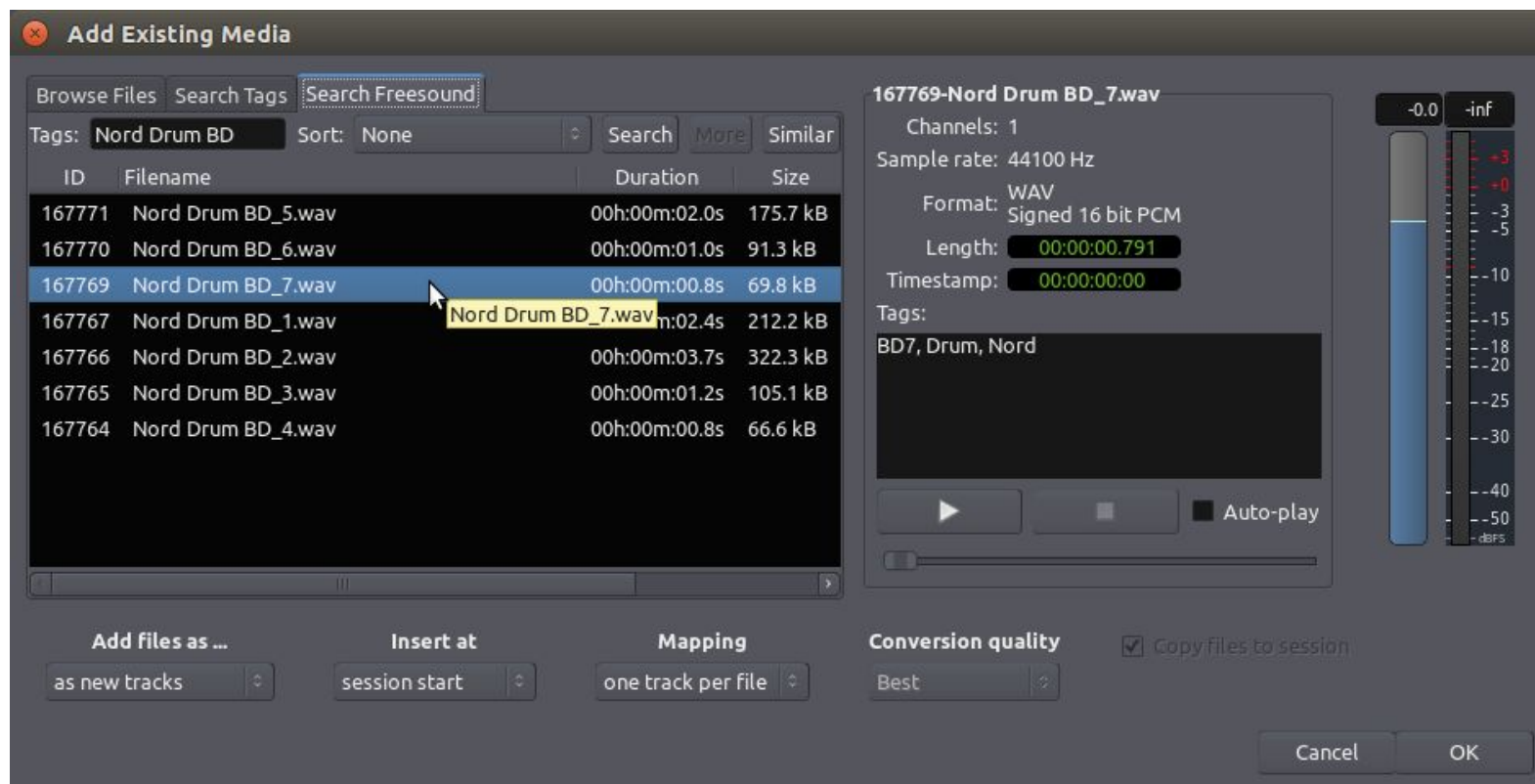


Embeddable tools supporting AC content

- Some tools exist that integrate CC audio content in the production workflow but...
- ...these need to be improved, and new tools need to be created that take full advantage of the ACE (browsing, licensing, uploading...)
- **Our goal:** develop tools (e.g., audio plugins) that take advantage of the ACE

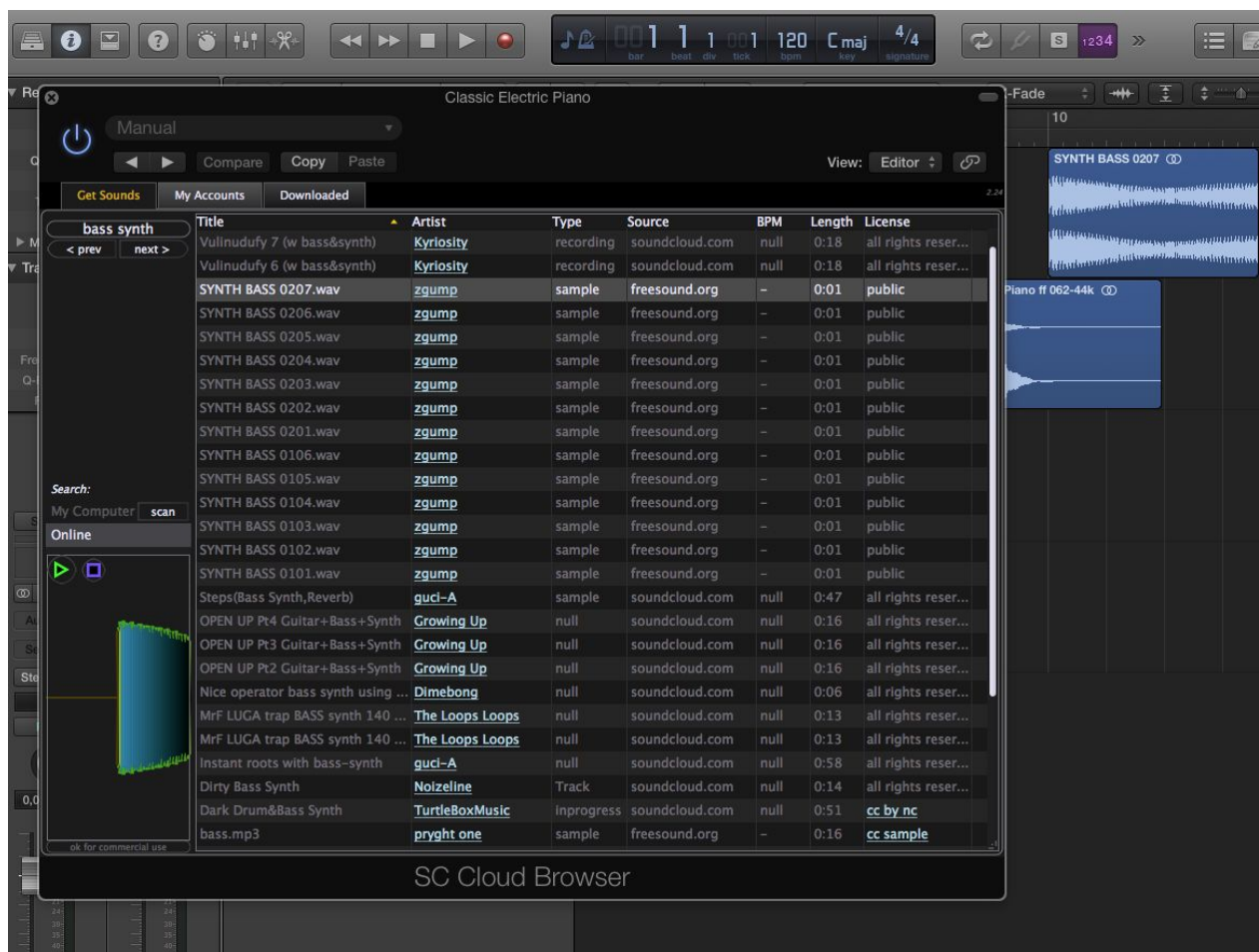


Ardour (DAW integration)



www.ardour.org

Cloud browser (audio plugin)



www.stagecraftsoftware.com



Conclusions

Example potential applications of ACE

- Music production tools: sampler, drum machine, loop browser, sound transformation...
- Music browser
- Sound FX browser
- Video editors
- Soundscape generator
- Audio SDK for video games
- ...

To sum up... (1/2)

- We propose the ACE as an extendable ecosystem of users, tools and services
- The ACE will be bootstrapped with Jamendo and Freesound content, and embeddable tools by industry partners in the AudioCommons consortium
- Our aim is to engage new stakeholders, content providers, tool developers...

To sum up... (2/2)

- Audio Commons challenges current licensing procedures, supports the use of CC content
- Audio Commons challenges traditional business models based on copyright licensing
- Audio Commons can serve as an example model to be applied in other multimedia domains



The Audio Commons Initiative

Name Surname

Place, date or other info about presentation