TELEMETA
Audio web Content Management System for ethnomusicological sound archives

Thomas Fillon [1,2], Guillaume Pellerin[1], Paul Brossier[1], Joséphine Simonnot[3]

[1]Parisson, Paris, France
[2]LAM, Institut Jean Le Rond d'Alembert, UPMC Univ. Paris 06, UMR CNRS 7190, Paris, France
[3]CREM, LESC, UMR CNRS 7186, MAE, Université Paris Ouest Nanterre La Défense, Nanterre, France

This work was partially done inside the DIADEMS project
funded by the French National Research Agency ANR (CONTINT)

Telemeta

The project

- The CREM laboratory and Parisson have been developing an innovative, collaborative and interdisciplinary open-source web-based multimedia platform since 2007.
- Goal : fit the professional requirements from both sound archivists and researchers in ethnomusicology.
- Official platform online since 2011 : *Archives sonores du CNRS, Musée de l'Homme*:

`http://archives.crem-cnrs.fr`

The platform

- *Telemeta* is an open-source audio web Content Management System (CMS) dedicated to digital sound archives secure storing, indexing and publishing with database management through (SQL) or Oracle backend.
- The demonstration presents the features of this platform in the context of *ethnomusicological* research.
- It focuses on the enhance and collaborative user-experience in accessing audio items and their associated metadata and on the possibility for the expert user to further enrich those metadata.
  Metadata consist in both Contextual Ethnomusicological Information and Annotations and segmentations (by human or automatic).
- *Telemeta* also provides integrated audio signal processing tools for automatic analysis of sound items through an external component, *TimeSide*.

`http://telemeta.org/`

TimeSide

TimeSide : open web audio processing framework

One specificity of the *Telemeta* architecture is to rely on an external component, *TimeSide*, that offers audio player integration together with low and high level audio signal processing capabilities.

Goals

`https://github.com/yomguy/TimeSide/`

- Do asynchronous and fast audio processing with Python.
- Decode ANY audio or video format into numpy arrays thanks to Gstreamer.
- Analyze audio content with some external audio feature extraction libraries.
- Organize, serialize and save analysis metadata through various formats.
- Draw various fancy waveforms, spectrograms and other cool graphers.
- Transcode audio data in various media formats and stream them through web apps.
- Playback, index, tag and interact on demand with a smart high-level HTML5 extensible player.

Audio features extraction

TimeSide incorporates some state-of-the-art audio feature extraction libraries such as:

- **Aubio:** `http://aubio.org`
- **Yaafe:** `http://yaafe.sourceforge.net`
- **Vamp plugins:** `http://www.vamp-plugins.org`

Given the extracted features, every sound item in a given collection can be automatically analyzed. The results of this analysis can be displayed as a support to ethnomusicological studies. Further works lead by the DIADEMS project will incorporate advanced Music Information Retrieval methods in order to provide automatic annotation, segmentation and similarity analysis.

Demonstration

- **Demo Session #1**
- Wednesday October 16th, 14:30 - 16:00
- In the Hall

- Live demonstration of the *Telemeta* web platform with the CNRS ethnomusicological sound archives
- Live demonstration *Timeside* audio processing framework (Python)