CENTRE IANNIS XENAKIS

The Centre Iannis Xenakis's archives
from the inventory to online publication: when constraints are structuring tools for project management
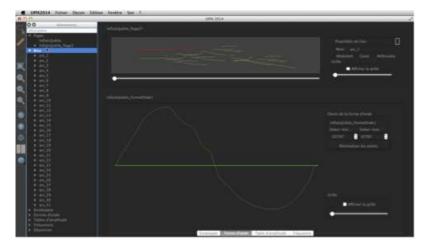
C. DELHAYE, musicologist

The Centre Iannis Xenakis is a continuation of *Les Ateliers UPIC*, later named *CCMIX*, the association founded in 1985 by Iannis Xenakis and Maurice Fleuret, to promote the **machine for composing music by drawing**, invented by Xenakis in 1977, **called UPIC** (Unité Polyagogique Informatique du CEMAMu).

UPIC hardware version *ca* 1986

UPIX 2014-15 software

CIX's outdoor concert on 29 April 2013, MDU, Université de Rouen

Suzy Klein, from BBC, composing using Xenakis' UPIC computer system

Since December 2010, the Université de Rouen (France) welcomes the Centre Iannis Xenakis (*CIX*) on its premises. Under the auspices of the GRHIS (History Research Lab), the CIX has placed its archives on the shelves of the University's Library and connected its UPIC machines on the premises of the Maison de l'Université (MDU, Scientific Culture pole).

CIX's collections, University library of Rouen

Classifying the archives (2010) uncovered traces of work by about 130 composers who worked at the *Ateliers UPIC* and with the UPIC over 25 years of research, such as:

Francois-Bernard Mache, Luc Ferrari, La Monte Young, Alain Bancquart, Julio Estrada, Gerard Pape, Jean-Claude Risset, Aphex Twin, Karlheinz Stockhausen, Horacio Vaggione, Roger Reynolds, David Revill, Curtis Roads, Angello Bello, Daniel Teruggi, Brigitte Robindoré and many others.
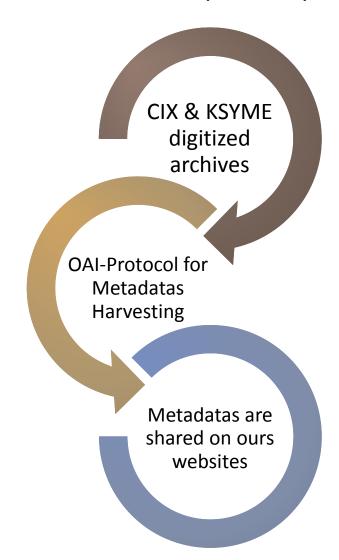
CIX's collection:

- Main collection: records of *Ateliers UPIC, CCMIX* and *CIX*.
- Kanach collection: newspaper clippings, selected drafts and letters by Iannis Xenakis
- Rastoin collection: images of the *Diatope* (1978)
- New collections:
  - Morisset: LP's, images, recordings of IX lectures
  - Dick Lucas: Archives of Pavillon Philips creation / recreation in Eindhoven
  - Robert Dupuy: personal archives of the *Polytope de Cluny*
  - Henning Lohner: Frank Zappa film with Xenakis, unpublished footage and photos with Xenakis
    [but for this legacy, we'll know more after the lunch !]
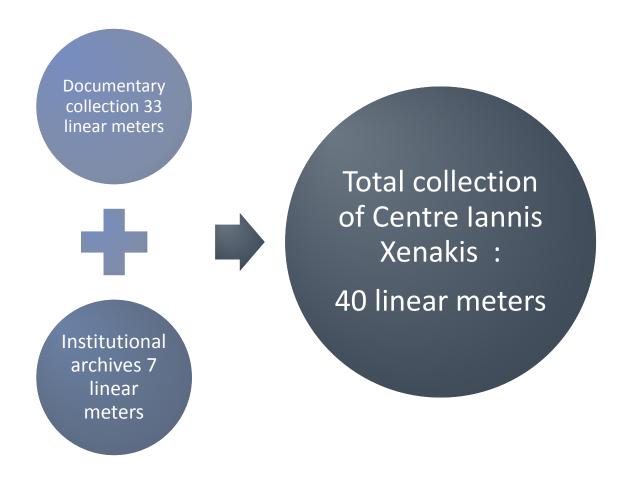
Metadata sharing project with KSYME Center (Athens)

Iannis Xenakis and Manos Hadjisakis (1976). Athens, KSYME archive.

The KSYME Center was founded in Athens in 1979, by Iannis Xenakis, John G. Papaioannou and Stephanos Vassileiadis. The KSYME has acquired one UPIC since 1986 : teaching programs started immediately and many composers have worked with.

CIX & KSYME digitized archives

OAI-Protocol for Metadatas Harvesting

Metadatas are shared on ours websites

Centre Iannis Xenakis's collections

Documentary collection 33 linear meters

Institutional archives 7 linear meters

Total collection of Centre Iannis Xenakis :

40 linear meters

After being inventoried and classified, the archives are now stored in the Library of Arts and Humanities of the Université de Rouen (France).

After having described the collection as a whole, I will now describe in detail each original support/medium (before digitization)
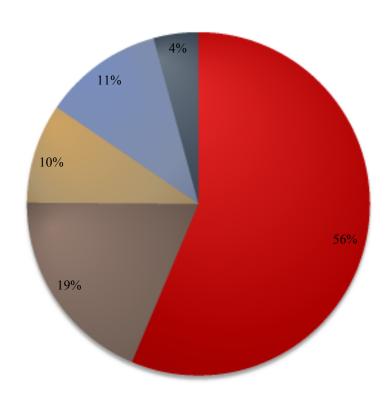
Paper documents
11 linear meters / ca 60 000 p.

Paper archives: tapuscrits, manuscripts

Hardware & software documentation

Newspaper articles

Program notes, ephemera

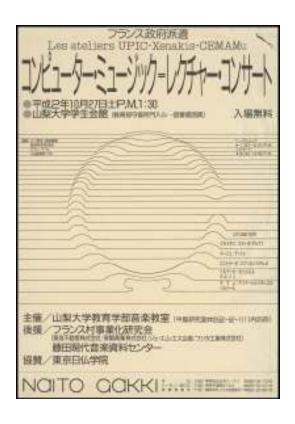**Digitized documents**

4%

11%

10%

56%

19%

Paper documents
11 linear meters / ca 60 000 p.

The classification of this collection is completed, inventorary in progress.

- Cataloguing and online publication is in progress: the priority was placed on already digitized archives (from Kanach's collection in particular).
- But, the extensive processing (digitization and cataloging) of this entire collection requires human means that we do not yet have.
- Nevertheless, the discovery of some documents to illustrate, for example, our traveling exhibition on the UPIC, or while performing research for musicological papers, has already proven the wealth of these records.
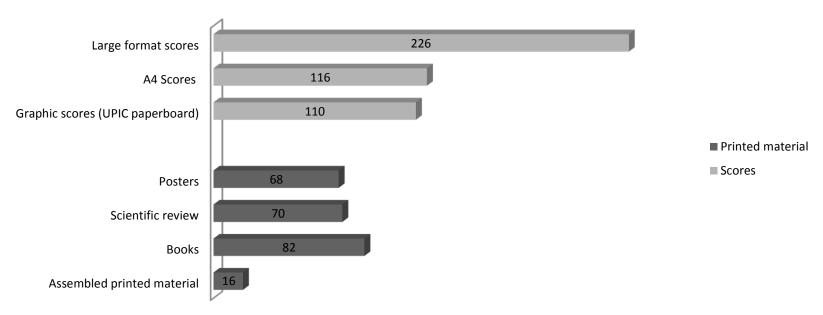
CIX's collection of concert posters

- Digitized urgently, given the fragility of the medium (Arkhênum company)
- Collection is completely catalogued
- The collection is online (see CIX website: www.centre-iannis-xenakis.org)
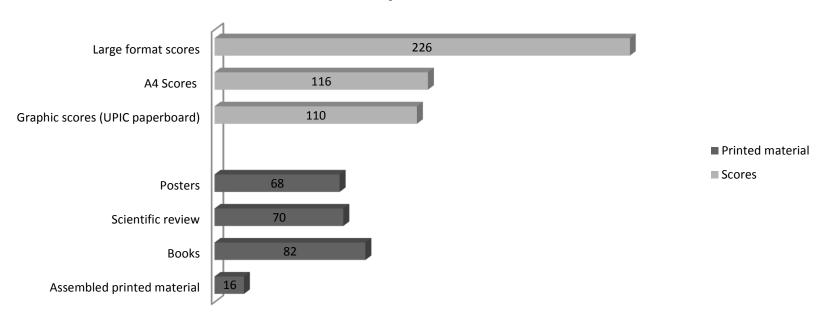
Scores and printed material

Category	Value
Large format scores	226
A4 Scores	116
Graphic scores (UPIC paperboard)	110
Posters	68
Scientific review	70
Books	82
Assembled printed material	16

Legend: ■ Printed material ■ Scores

Scores

- 450 scores, many unpublished. Most come from the calls for candidates for courses organized by the CCMIX.
- Large format scores were digitized for preservation purposes (Arkhenum company).
- CIX is currently tracking down entitled owners of rights to facilitate the cataloging and authorize online posting of unpublished scores.
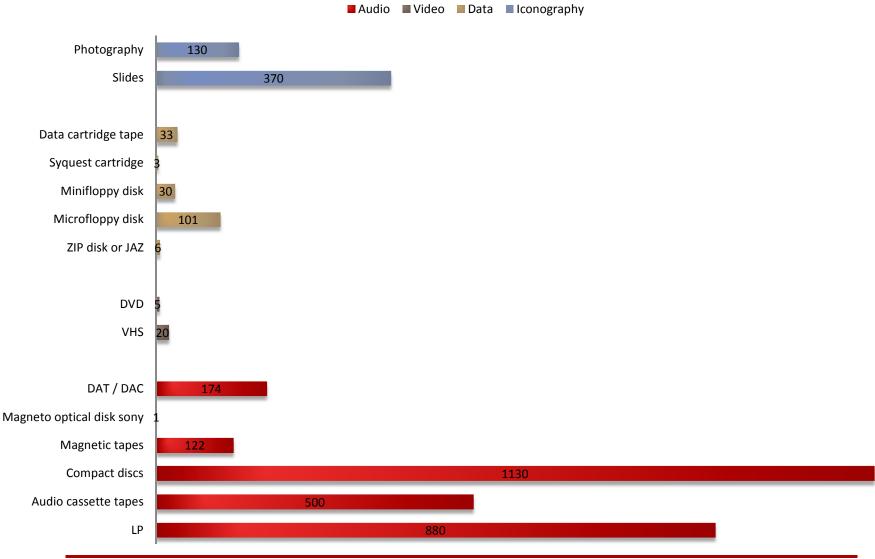
Scores and printed material
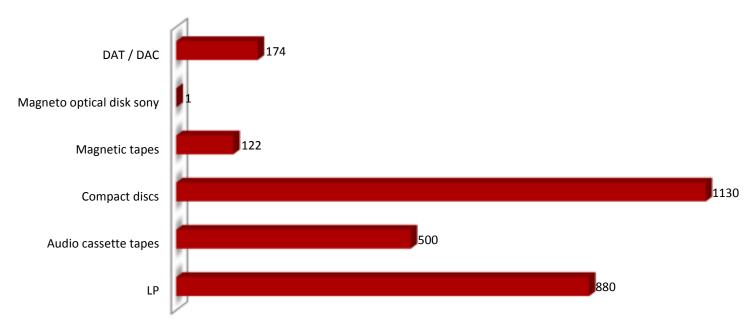

Printed documents
- Many academic works (Estrada's PhD, for instance).
- Non-priority documents for digitization (already published)
- Classification and inventory are finished, cataloging has yet to begin.

Typological distribution of multi-media sources (3500 items)

■ Audio ■ Video ■ Data ■ Iconography

Category	Value
Photography	130
Slides	370
Data cartridge tape	33
Syquest cartridge	3
Minifloppy disk	30
Microfloppy disk	101
ZIP disk or JAZ	6
DVD	5
VHS	20
DAT / DAC	174
Magneto optical disk sony	1
Magnetic tapes	122
Compact discs	1130
Audio cassette tapes	500
LP	880

Audio supports details

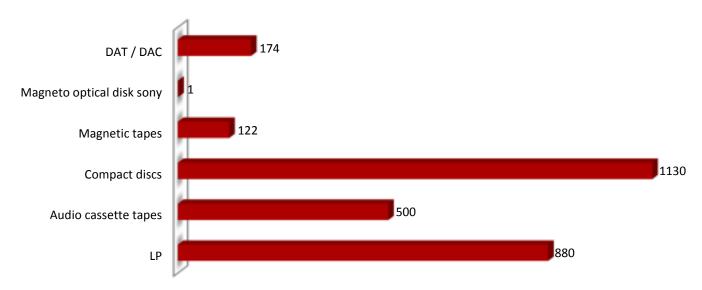| Support	Count
DAT / DAC	174
Magneto optical disk sony	1
Magnetic tapes	122
Compact discs	1130
Audio cassette tapes	500
LP	880

The DATs, burned CDs, and tapes are unpublished works (concerts recordings, sound banks, works).
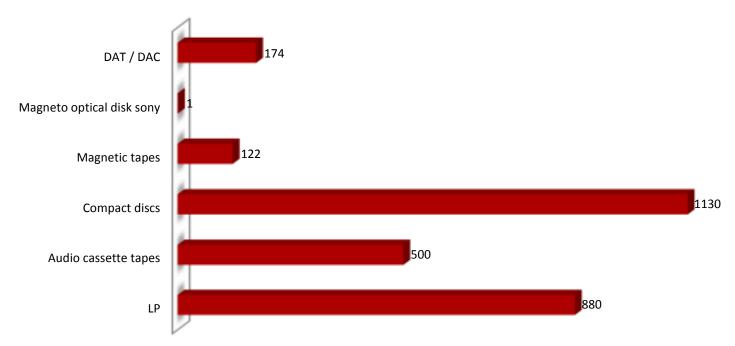- All unpublished audio documents have been digitized for purposes of conservations (Daniel Teige, Hammersnail and « Musiques de la Boulangère » for the tapes).

Audio supports details

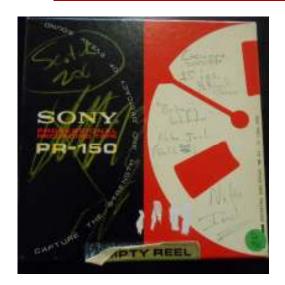| Support	Value
DAT / DAC	174
Magneto optical disk sony	1
Magnetic tapes	122
Compact discs	1130
Audio cassette tapes	500
LP	880

- Burned CDs: only 5 discs out of 1130 are no longer readable.

They contain sound files, computer files, videos, etc. because they were widely used by composers as backups. These supports generate cataloging difficulties but they are important to inform the creative process.

Audio supports details

Support	Count
DAT / DAC	174
Magneto optical disk sony	1
Magnetic tapes	122
Compact discs	1130
Audio cassette tapes	500
LP	880

- All of the 174 **DAT**s have all been successfully digitized.
Most are audio backups (rarely masters), containing: sound banks, intermediate states of work, or recordings of concerts.
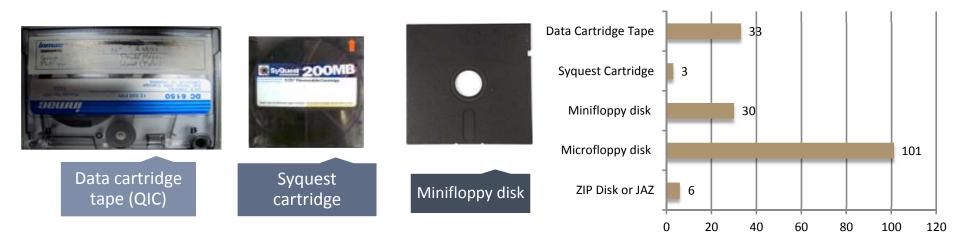
- The 120 **magnetic tapes** were all successfully digitized (except for two-2 inchs tapes). The online posting of audio files (extracts) is hampered by waiting for authorizations from entitled owners of rights. However cataloging and on-line records in this collection are completed.

Each catalog entry includes a photograph of the box / container to encourage crowd-sourcing: writing is sometimes illigible or the information is not sufficient to precisely catalog the sound file. By doing so, we can also rely on user feedback to complete our catalog entries.
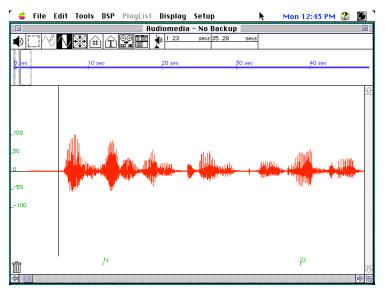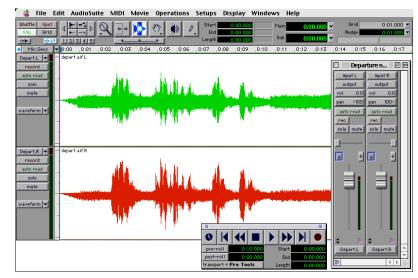
Out-dated media carriers (173 items)

Details of outdated data carriers

Data cartridge tape (QIC)

Syquest cartridge

Minifloppy disk

Carrier	Value
Data Cartridge Tape	33
Syquest Cartridge	3
Minifloppy disk	30
Microfloppy disk	101
ZIP Disk or JAZ	6

Out-dated media carriers – one of our main préoccupations – how to preserve and maintain contents recorded on floppy disks, Syquest and QIC data cartridges? Although classified and inventoried, they remain to be digitized and catalogued.

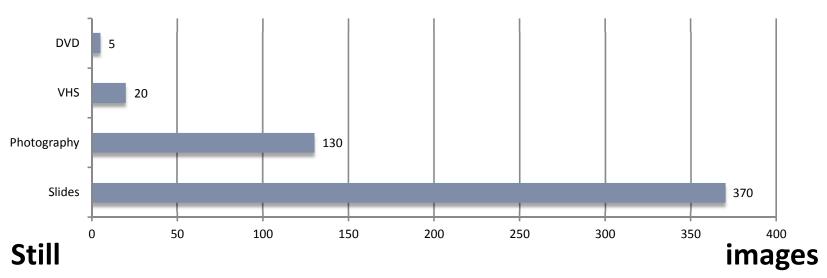# What to do with the computer files of obsolete softwares ?

Audio media, before Pro Tools in 90's

Pro Tools 5 in 90's

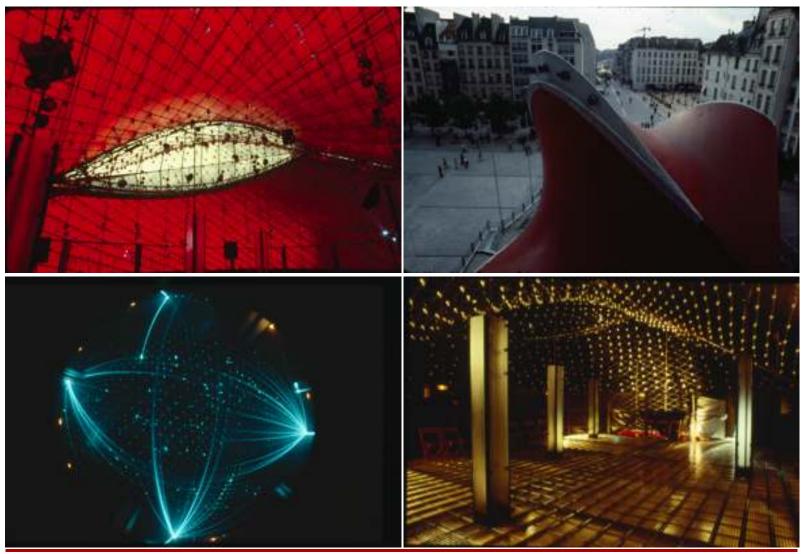Important digitals informations **to highlight the creative process** but:

- How can we emulate theses old softwares ?
- How catalog and value theses files ? METS ? MODS ? DC ?
- Can we upload these files to be easely read by user ?

Iconographic collection (525 items)

DVD	5
VHS	20
Photography	130
Slides	370

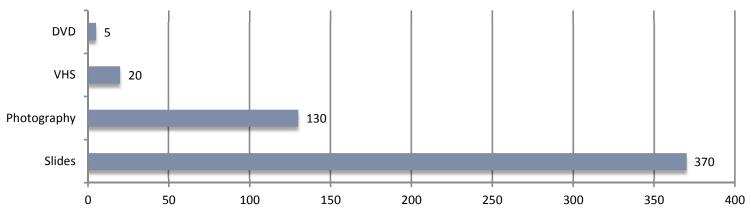(Axis: 0, 50, 100, 150, 200, 250, 300, 350, 400)

Still **images**

1. Many images of courses at *CCMIX* and *Ateliers UPIC*

2. Rastoin's collection contributes to the richness of the collection (images of the *Diatopes*'s installation in Bonn and Paris, UPIC sessions at Les Halles in Paris, etc.)

- Collection fully digitized (D. Teige, Hammersnail)

- Cataloguing and current online posting

- Rastoin's collection is protected under **Creative Commons 3**

Rastoin, Bruno, Photographer. (1978). *Images of Iannis Xenakis's Diatope*.
Université de Rouen, Archives of Centre Iannis Xenakis.

Iconographic collection (525 items)

Category	Value
DVD	5
VHS	20
Photography	130
Slides	370

Moving pictures

Not a lot of videos, but they are all very relevant because they show composers in action, or training around the UPIC, including Xenakis himself promoting the UPIC and projecting its future.

- All these videos were digitized for preservation purposes.

- This collection is complemented by digital recordings of concerts and conferences organized by the CIX on the campus of the Université de Rouen since 2010.

How to choose a CMS and a cataloguing protocol under several strong constraints:
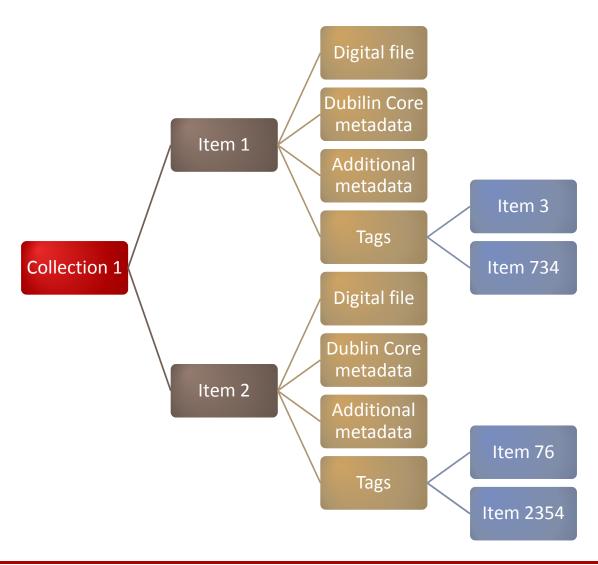
- CIX members are **volunteers**, musicologists, non-specialists in library science
- Minimal cost

- Open source CMS

- Basic knowledge in php/mysql

- Interoperability of metadata

- Integration of the old filemaker file (2500 catalogued items)

- OAI-PMH friendly

- Compatible with the Contemporary Music Gateway (MODS modified)

- Third-party developer failed to integrate all of these constraints

Constraints ➤➤ CMS Omeka   www.omeka.org

Omeka is :
- Simple but meets the standards
- Used by the Library of Congress and Europeana (for virtual exhibits)
- Open source
- Adapted for smalls collections (< 100 000 items)
- Natively in Dublin Core
- Interoperability, OAI-PMH with MODS mapping
- Enables collections to be curated in virtual exhibits

Principe of data tiering in Omeka

Dublin Core and metadata harvesting

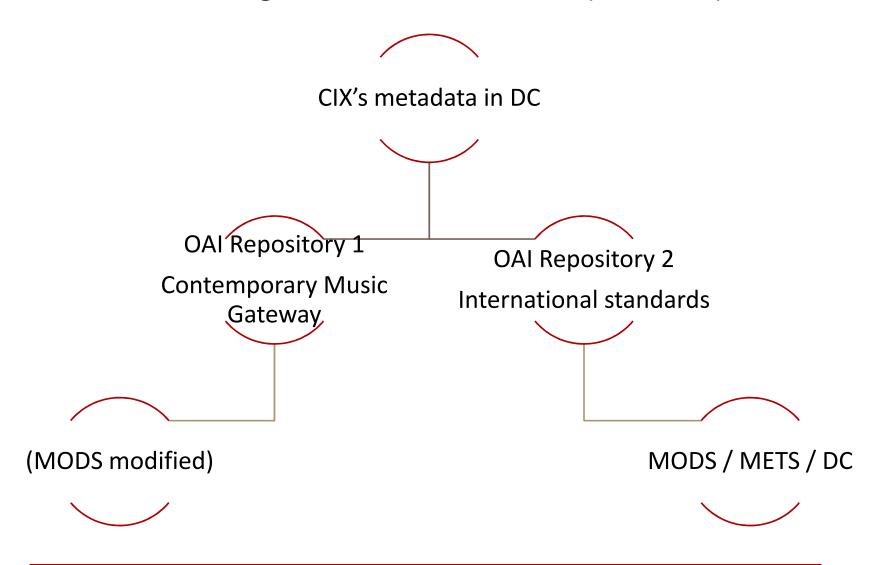| **Why Dublin Core ?**	Internationally recognized schema of metadata (ISO 15836)
	12 data fields, that can be complemented by other fields that will not be harversted
	Maximum data interoperability
	Usable with limited technical knowledge and library science
	Omeka allows to automatically convert the DC in MODS with the OAI-PMH plugin (based on Library of Congress fields mapping)

Harvesting metadata model of CIX (OAI-PMH)

CIX's metadata in DC

OAI Repository 1

Contemporary Music
Gateway

OAI Repository 2

International standards

(MODS modified)

MODS / METS / DC

June-September 2014 : IT development

1. Installing Omeka

2. Developing a plugin, automatically generating letters to request authorization from the entitled copyright owners

3. Development of a connector to convert the old filemaker database in Dublin Core (fields mapping, concatenating data)

4. Plugin modification of OAI-PMH Omeka to ensure compatibility with the harvesting protocol Contemporary Music Gateway

Majid Tasserie & Cyrille Delhaye

June - September 2014: first cataloguing campaign

Writing a link document for cataloging in DC and how to use Omeka's back office

Integration of controlled vocabulary RAMEAU from BNF (subject field), actually concatenated but in progress

Work on international data interoperability (date field: AAAA-MM-DD / creator field: qualified, but concatenated)

Work on the language field = ISO 639-1

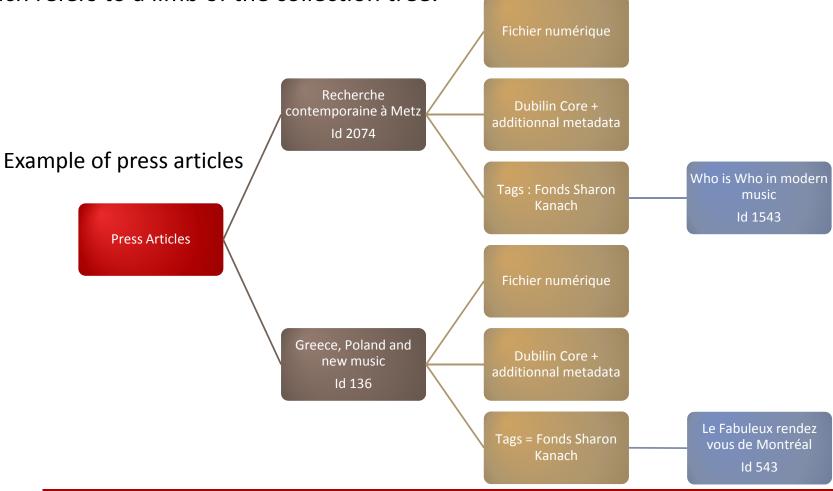Writing indicative summaries for each item (description field)

Consideration of the use of tags (google pagerank)

Hélène Brière & Cyrille Delhaye

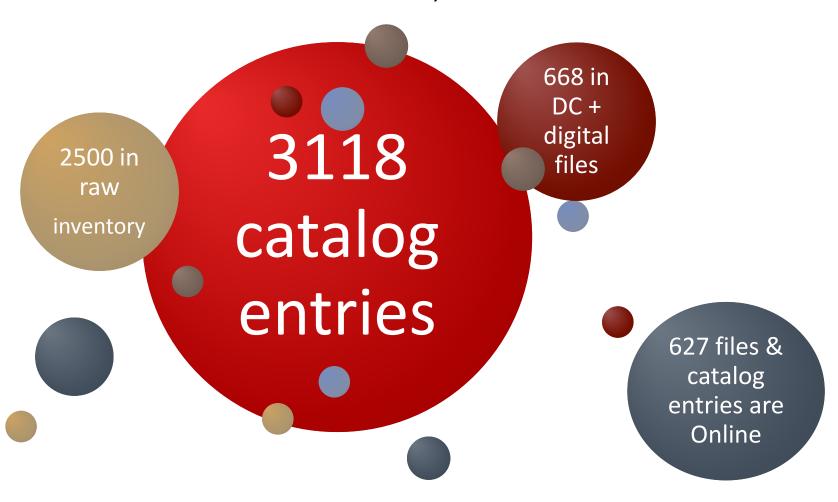# Reflection on the structuring of the database

Organization of digital archives by their original hardware support: hardware support each refers to a limb of the collection tree:

Example of press articles

- Press Articles
  - Recherche contemporaine à Metz Id 2074
    - Fichier numérique
    - Dubilin Core + additionnal metadata
    - Tags : Fonds Sharon Kanach
      - Who is Who in modern music Id 1543
  - Greece, Poland and new music Id 136
    - Fichier numérique
    - Dubilin Core + additionnal metadata
    - Tags = Fonds Sharon Kanach
      - Le Fabuleux rendez vous de Montréal Id 543

Catalog entries
State of the art, June 2015

3118 catalog entries

2500 in raw inventory

668 in DC + digital files

627 files & catalog entries are Online

CIX old static website & old filemaker database

Transition to Omeka

data compliance and redesign of static website

OPAC & CIX's new website are born

Omeka allowed to merge in a single interface the various activities of CIX (UPIC computer development, organization of seminars, residencies, exhibitions, publications) and OPAC of digital archives, while not dispersing the digital presence of the association through multiple domain names.

Depuis 2012, une exposition interactive et itinérante, éditée par le Centre Iannis Xenakis, a vue le jour. Disponible en français et en anglais, elle a pour but de présenter l'outil d'aide à la composition musicale par le dessin (nommé UPIC), créé par le compositeur et architecte Iannis Xenakis à partir des années 1960.

Ce parcours permet de retracer l'histoire de l'UPIC en s'appuyant sur des documents issus des archives du Centre Iannis Xenakis : correspondance, affiches de concert, photographies, témoignages vidéos mettent en lumière les expériences de compositeurs, ou encore les multiples ateliers pédagogiques menés avec des enfants ou encore des non-voyants autour de l'UPIC.

Après avoir parcouru des éléments de biographie concernant Iannis Xenakis, le visiteur est invité à consulter trois panneaux illustrés reprenant les grandes phases de développement de l'outil. Puis, une chronologie interactive met en regard l'évolution de l'UPIC avec les dates marquantes de l'histoire de la musique électroacoustique. En outre, un focus s'opère autour de la première œuvre composée par Iannis Xenakis sur l'UPIC : pour découvrir Mycènes Alpha, le visiteur dispose d'une station d'écoute vidéo (témoignage de Iannis Xenakis et diffusion vidéo de la partition graphique de l'œuvre), mais aussi de la mise en situation des fac similé de la partition originale sur un panneau dédié. Enfin, l'expérience est complétée par une seconde borne de visionnage vidéo (compilation de témoignages de compositeurs et d'un film documentaire) et les nombreux QR codes renvoyant vers des contenus multimédias (archives numériques en ligne, pièces musicales composées sur l'UPIC, vidéos) qui permettent de prolonger le parcours hors les murs.

En outre, une éditorialisation web de l'exposition a été réalisé pour prolonger l'expérience et faire le lien avec le catalogue des collections numérisées du Centre Iannis Xenakis.

Exemple d'accrochage à Athènes pour le 35th CRMC Festival (2014) :

Available in French and English, this interctive exhibition (via QR codes) traces the history of the UPIC based on documents from the archives of the Centre Iannis Xenakis.

Iannis Xenakis and UPIC : a CIX's digital exhibit

Heirs and online collections: a double bind

French ministry of culture gives funds **if**

the archives are online and valorised, **but**

Collective rights management companies limit these practices

Heirs and online collections : a double bind

For the partners of the Contemporary Music Gateway, agreements have been concluded:

1. Audio Streaming documents should not exceed 3 minutes of the total time of the work or 25% of its total time for the works of more than 12 minutes

2. Printed and iconographic documents will be accessible only in low resolution

However, the CIX has chosen to request the authorization to broadcast entire works for all multimedia (sound, still and moving images) to entitled heirs, under his own domain name (not that of Contemporary Music Gateway)

Contract which combines French rights and international law (**Creative Commons**)

Worldwide, royalty-free, non-exclusive assignment of license for the website of the CENTRE IANNIS XENAKIS

Please
1. date and sign the present document as well as the annex preceded by the hand written sentence "read and approved without reserve";
2. initial each page on the left side of each page of the entire document.

Between the **Centre Iannis Xenakis**, a not-for-profit French association under the regime of the law from 1901, Siret number 789 078 961 00016, domiciled at UFR Lettres et Sciences humaines, Université de Rouen, rue Lavoisier, F-76821 Mont-Saint-Aignan, heretofore referred to as CIX

and

the author or her/his legal heir of the works listed in the annex of the present contract, heretofore referred to as the legal heir or original author according to the definition given in the Creative Commons License (see: (http://creativecommons.org/licenses/by/3.0/legalcode)

it is agreed the following:

Article 1

The original author, legal heir:
- name :
- adress :
- email :
- telephone :
authorizes the **Centre Iannis Xenakis (CIX)**, French association under the regime of the law from 1901, Siret number 789 078 961 00016, domiciled at UFR Lettres et Sciences humaines, Université de Rouen, rue Lavoisier, F-76821 Mont-Saint-Aignan, to reproduce and represent, solely for the type of exploitation defined below, the work(s) listed on the attached annex for which the author or the legal heir owns the royalties as defined by the laws governing intellectual property.
The annex listing the work(s) is an integral part of the present assignment.

Article 2

- Means or type of exploitation
- Computer database of the Digitized Archives of the Centre Iannis Xenakis, comprising the Archives of the Ateliers UPIC, the CCMIX (Centre de creation musicale Iannis Xenakis) and the CIX son the website of the Centre Iannis Xenakis, available for consultation at: http://www.centre-iannis-xenakis.org.
- The present assignment will be extended to the search engines of the Portal de musique contemporaine (Contemporary music portal) and the European database Europeana, available for consultation at the links listed here:
  - http://www.centre-iannis-xenakis.org
  - http://www.musiquecontemporaine.fr
  - http://www.europeana.eu

- Seeing that this project adheres to the principles of Digital Humanities and Open Archives (OIA), the data and metadata included in our own digital archives could be harvested via the OAI-PMH (Open Archives Initiative – Protocol for Metadata Harvesting)[1] protocol by other institutions, always with the goal of increasing the visibility of the content of our digitized collections on the internet and to improve and multiple its accessibility.

- Type of documents (general conditions)
- For original documents on paper (program notes, posters, scores, correspondence, sketches, manuscripts) or photographs: full reproduction, at either low resolution (72 dpi) or medium resolution (comprised between 640x480 and 800x600 pixels); a higher resolution up to 1600x1200 pixels (but always at 72 dpi) is also acceptable but exclusively for engravings, printed material and manuscripts.
- For sound and video documents (musical works, recorded concert performances, sound objects), the excerpts will be made available in the MP3 standard, with a maximum duration of three minutes or 25% of the total duration of any given work, which ever is shorter.
- It is understood that, on the one hand, the quality of the image, or sound or video will not enable any type of editorial or commercial exploitation.
- It is understood, on the other hand, that these excerpts are thus made available online entirely free of charge and royalties.

- Conditions of presentation
- The name of the artist as well as the copyright mention will be specified in each work's individual listing, as long as the creator of the work has been duly identified. If the name of the creator is not known, a technical device such as crowd-sourcing / online commentaries will be in place to enable users to participate in identifying such a temporarily anonymous work.
- The present assignment's only object of contract is to authorize online access of excerpts of the works listed on the attached annex.

Article 3

a) The original author or legal heir accepts to render accessible to the Centre Iannis Xenakis a copy of the work(s) as described in Article 2, paragraph 2 according to the terms of the creative commons license n° 3: Attribution-NonCommercial-NoDerivs.
The original author or legal heir authorizes the Centre Iannis Xenakis to share the work (s) listed in the attached annex according to the following conditions:

- Exclusive of commercial or editorial use: the original author or legal heir authorizes the Centre Iannis Xenakis to reproduce and disseminate the work(s) listed in the attached annex for any use other than commercial or editorial, unless the CIX previously obtains an authorization.
- No modifications: the CIX is not authorized to distribute or disseminate any modification of the work(s).

b) However, the original author or legal heir can choose to render accessible to the Centre Iannis Xenakis a copy of the work(s) as described in Article 2, paragraph 2 according to the terms of the creative commons license n° 6, "Attribution-ShareAlike," which is likely to facilitate its/their access among certain organizations, in particular private American universities such as MIT, Harvard, Columbia, Princeton, Yale, etc.

- Attribution and share alike in the same conditions: the original author or legal heir authorizes any use of excerpt of (?) the original work(s) (including commercial purposes) as well as the

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[1] http://www.openarchives.org/pmh/

creation of derivative works, as long as it/they are distributed under an identical license as that of the original work(s).
The original author or legal heir specifies her/his choice by signing the present contract of assignment.

Article 4

Results of the present assignment:

- The work(s) is/are protected by the laws governing literary or artistic property as well as any other applicable laws. Any/all use of the work(s) other than those authorized in the chosen creative commons license is reserved.
- The exercise of any rights on the work(s) rendered accessible to the CIX implies the acceptance of the terms of the chosen license due to the contractual nature of each license.

The original author or legal heir and the CIX confirm having read the provisions relatives to creative commons licenses, as they appear on the website http://creativecommons.org and accept them without reserve. A copy of the licenses can be addressed by email by the CIX to the original author or legal heir upon request.

The original author or legal heir chooses (please check the box that corresponds to your choice):
- ☐ to render accessible a copy of the work(s) listed in the attached annex according to **the creative commons license n° 3**
- ☐ to render accessible a copy of the work(s) listed in the attached annex according to **the creative commons license n° 6**

Original author, Legal heir   for the Centre Iannis Xenakis

If the owner of the original rights is not the author her/himself but a legal heir (next of kin, assignee, or other), she/he must provide proof of this status by an authentic document, meaning, in France, an attestation signed by a ministerial officer (notary or bailiff) or, in other countries, an attestation signed by a legal authority certifying

cyrille.delhaye@centre-iannis-xenakis.org

This presentation is on slideshsare : http://bit.ly/1RxidNk

Xenakis Project of the Americas

XPA is a member of the Brook Center for Music and Documentation and research at the CUNY Graduate Center. XPA continued the same goals as CIX in Americas

Related publications

- Delhaye, C. & Bourotte, R. (2013). Learn to Think for Yourself: Impelled by the UPIC to open new ways of composing. *Organised Sound* vol. 18/02. August 2013, p. 134-145., Published online: 11 July 2013.
- Castanet, PA & Kanach, S. [dir.] (2014). *Xenakis et les arts*. Rouen: Points de vue. ISBN 978-2-37195-000-9.