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
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).
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  - Henning Lohner: Frank Zappa film with Xenakis, unpublished footage and photos with Xenakis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 !]
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.
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.
The classification of this collection is completed, inventory 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
- 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 (Arkhenenum company).
- CIX is currently tracking down entitled owners of rights to facilitate the cataloging and authorize online posting of unpublished scores.
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)

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Audio</th>
<th>Video</th>
<th>Data</th>
<th>Iconography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photography</td>
<td>130</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slides</td>
<td></td>
<td>370</td>
<td></td>
<td></td>
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<tr>
<td>Data cartridge tape</td>
<td>33</td>
<td></td>
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<td>Syquest cartridge tape</td>
<td>3</td>
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<tr>
<td>Minifloppy disk</td>
<td>30</td>
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<tr>
<td>Microfloppy disk</td>
<td>101</td>
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<tr>
<td>ZIP disk or JAZ</td>
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<tr>
<td>DVD</td>
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<tr>
<td>VHS</td>
<td>20</td>
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<td></td>
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</tr>
<tr>
<td>DAT / DAC</td>
<td>174</td>
<td></td>
<td></td>
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<tr>
<td>Magneto optical disk sony</td>
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<td></td>
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<tr>
<td>Magnetic tapes</td>
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<tr>
<td>Compact discs</td>
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<td>1130</td>
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<tr>
<td>Audio cassette tapes</td>
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<td>LP</td>
<td></td>
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<td>880</td>
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</table>

IAML/IMS New York 2015 "Music Research in the Digital Age", Centre Iannis Xenakis : C. Delhaye
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).
**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.
- All of the 174 DATs 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 inches 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 illegible 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 – 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?

Important digital informations to highlight the creative process but:

- How can we emulate these old softwares?
- How catalog and value these files? METS? MODS? DC?
- Can we upload these files to be easily read by user?
Still
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
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
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
## Why Dublin Core?

<table>
<thead>
<tr>
<th>Why Dublin Core?</th>
<th>Internationally recognized schema of metadata (ISO 15836)</th>
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<tbody>
<tr>
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<td>12 data fields, that can be complemented by other fields that will not be harvested</td>
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<tr>
<td></td>
<td>Maximum data interoperability</td>
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<td></td>
<td>Usable with limited technical knowledge and library science</td>
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<td></td>
<td>Omeka allows to automatically convert the DC in MODS with the OAI-PMH plugin (based on Library of Congress fields mapping)</td>
</tr>
</tbody>
</table>
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
  - Dublin Core + additionnal metadata
  - Tags: Fonds Sharon Kanach

- Greece, Poland and new music
  Id 136
  - Dublin Core + additionnal metadata
  - Tags = Fonds Sharon Kanach

- Who is Who in modern music
  Id 1543
  - Dublin Core + additionnal metadata
  - Tags = Fonds Sharon Kanach

- Le Fabuleux rendez vous de Montréal
  Id 543
  - Dublin Core + additionnal metadata
  - Tags = Fonds Sharon Kanach
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
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.
Le Centre Iannis Xenakis (CIX) se place dans la continuité des Ateliers UPIC, l'association fondée en 1985 par Iannis Xenakis et Maurice Fleuret, destinée à promouvoir la machine d'aide à la composition par le dessin inventée par Xenakis en 1977 nommée UPIC. Depuis décembre 2010, l'Université de Rouen accueille le CIX en ses murs. Sous les auspices du GRHIS (Groupe de Recherche d'Histoire), le CIX a placé ses archives dans les rayons de la Bibliothèque Universitaire (SCD de Lettres et Sciences Humaines) et branché ses machines UPIC (Unité Polylogique Informatique du CEMAMu) dans les locaux de la Maison de l'Université (MdU), au pôle de culture scientifique. Le MdU accueille la dernière version de cet outil (2001), de nouveau en développement aujourd'hui au sein de l'université (UPIX 2014).

Ce site internet présente les activités du centre : recherche musicale, expositions, ateliers, conférences, concerts, colloques internationaux (Continuum 2015-16), etc. Ce site héberge également les archives numérisées du CIX : navigation par collections, recherches multicritères, expositions virtuelles, écoutes d'extraits audio et vidéos, etc.

Actualités du CIX :

*Mise en ligne de la captation vidéo de la conférence...*  
UTLC - Xenakis, un artiste utopique - 29/03/2015 - MdU. Captation vidéo de cet événement  
8.04.2015 6:52:09 AM

*Exposition virtuelle : Iannis Xenakis et l'UPIC*  
Interactive Timeline L'exposition virtuelle * Iannis Xenakis et l'UPIC * est en ligne : il s'agit de l'édition électronique de l'exposition linéaire...
CIX’s exhibit: Iannis Xenakis and UPIC

Available in French and English, this interactive 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 precede by the handwritten 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 Letters et Sciences humaines, Université de Rouen, rue Cassiopée, F-76821 Mont-Saint-Aignan, hereby referred to as CIX and the author or her legal heir of the works listed in the annex of the present contract, hereby 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-nc-nd/3.0/fr/), it is agreed the following:

Article 1
The original author, legal heir:
- name:
- address:
- email:
- telephone:

The Centre Iannis Xenakis (CIX), French association under the regime of the law from 1901, Siret number 789 078 961 00016, domiciled at UFR Letters et Sciences humaines, Université de Rouen, rue Cassiopée, F-76821 Mont-Saint-Aignan, hereby referred to as the Centre Iannis Xenakis, to reproduce, represent and republish, for the term of protection defined below, the works(s) listed in the annex for which the author or the legal heir owns the royalties as defined by the laws governing intellectual property. The annex listing the works(s) is an integral part of the present contract.

Article 2
- Means of exploitation
  - Computer database of the Digitized Archives of the Centre Iannis Xenakis, comprising the Archives of the Archives du UKP (Centre de création musicale Iannis Xenakis) and the CIX, the name 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 European, available for consultation at the links listed here:
    - http://www.centre-iannis-xenakis.org
    - http://www.europeana.eu

- 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 850x650 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 crowdsourcing / 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.

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a) The original author or legal heir accepts to render accessible to the Centre Iannis Xenakis a copy of the works(s) described in Article 2, paragraph 2 according to the terms of the creative commons license n° 3, Attribution-NonCommercial-NoDerivs http://creativecommons.org/licenses/by-nc-nd/3.0/fr/

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.

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/her access among certain organizations, in particular some universities such as MIT, Harvard, Columbia, Princeton, Yale, etc. http://creativecommons.org/licenses/by-nc-sa/3.0/fr/

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

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

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

The author of the original rights is not the author who instead take a larger piece of the entire work, except, as otherwise stated, she/he must provide proof of this status by an authentic document, meaning, in France, an attestation signed by a notary public or bailiff or, in other countries, an attestation signed by a legal authority certified.
cyrille.delhaye@centre-iannis-xenakis.org

This presentation is on slideshare: [http://bit.ly/1RxidNk](http://bit.ly/1RxidNk)

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