Ten years of MIMO
a critical review of a worldwide musical instrument resource for research, promotion and education

ICOM general conference 2019, Kyoto / Japan
Joint session of CIMCIM and CIDOC
Frank P. Bär (Germanisches Nationalmuseum)
Rodolphe Bailly (Cité de la Musique – Philharmonie de Paris)
MIMO – Musical Instrument Museums Online

The initial project

- Runtime: September 2009 – August 2011
- co-financed by European Union
- 11 partners from 6 European countries
- 10 major European museums
- central data delivery to EUROPEANA
## (Inter-) Dependencies, milestones\(^1\) and expected result

### Interdependencies

WP1 is counselled by WP2 in task 1.1 in checking and stocking metadata and images

WP1 provides information – essentially statistics – to WP6 for Newsletters [D6.3, D6.6, D6.8, D6.10, D6.11 and D6.12] and other dissemination tasks [tasks 6.1-6.5]

WP1 provides administrative information to WP4 for the Project Steering Group meetings [M4.3, M4.4, M4.5, M4.7, M4.8]

WP1 takes OAI-PMH-guidelines from WP2 [D2.2] in order to install the OAI-PMH interface on the MIMO database.

WP5 leads user group surveys and sample tests on data provided by WP1 [M5.2]

WP2 leads harvesting tests and harvesting on data provided by WP1 [M2.3]

WP1 reports to all WPs in Project Steering Group meetings [M4.2-M4.5, M4.7-M4.9]

### Milestones:

Milestone M1.1. (M1): Meeting of all stakeholders and external experts to agree on standards on scanning and photographing and create a paper version 1 containing recommendations for photographing musical instruments and defining scanning properties [task 1.1, D1.1]

Milestone M1.2. (M12): Intermediate meeting of all stakeholders and external experts [task 1.8] to create intermediate digitisation report [D1.4], review photographing recommendation paper version 1 [D1.1] to

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\(^1\) Milestones are control points at which decisions are needed, for example concerning which of several technologies will be adopted as the basis for the next phase of the project.

Version of 20/08/2009
MIMO – What we have promised
extract from description of work, 28th August 2008

• a public MIMO website
• a common data model based on existing standards
• the MIMO database
• a simplified model of musical instrument classification
• a dictionary of musical instrument names and synonyms in English, French, German, Italian, Dutch and Swedish
• a list of makers’ names
• content delivery to Europeana
• 45,000 musical instruments online
• 1,250 sound files online
• 300 video files online
• a digitization standard for musical instruments
MIMO – What has been achieved
end of project, 30th September 2011

- a public MIMO website
- a common data model based on existing standards
- the MIMO database
- a simplified model of musical instrument classification
- a dictionary of musical instrument names and synonyms in English, French, German, Italian, Dutch and Swedish
- a list of makers’ names
- content delivery to Europeana
- 45,000 musical instruments online
- 1,250 sound files online
- 300 video files online
- a digitization standard for musical instruments
- Hornbostel-Sachs classification
- Geographic reference: geonames.org
Service website: MIMO back office

www.mimo-db.eu

MIMO-DB Presentation

MIMO began life as a consortium of eleven of Europe’s most important musical instrument museums which came together for a project that aimed to create a single online access point to their collections. The MIMO Project, which was partly funded through the European Commission’s eContentplus programme, ran from September 2005 until August 2011 and successfully achieved all of its objectives.

Over that period the museums photographed their musical instruments collections (which included a large number of items that had never previously been seen in public), provided audio and video files and processed their databases so that all this content, along with supporting information could be made publicly available on the web. This digitized musical heritage is now fully available through this search interface (www.mimo-db.eu) for the professional community (curators, scholars, students, etc.) and for a broader public through Europaeana (www.europaeana.eu), a multilingual access point to millions of digital items from Europe’s cultural and scientific heritage.

Please note that this web site is the technical platform built during the MIMO project in order to manage the metadata harvesting and enrichment. It is NOT the final delivery point of the MIMO project, which uses Europaeana as its true access platform.

The MIMO virtual exhibition - “Explore the World of Musical Instruments” - produced in association with Europaeana, shows the richness and variety of MIMO-DB digital collections, as well as highlighting the benefits of bringing them together in the digital world. For example, it is possible to reconstruct scattered ensembles of one instrument-maker’s production or view the different models of one instrument family over the entire world.

If you wish to find out how other museums can contribute their content to MIMO, information is provided on the MIMO Toolkit website. Alternatively, please contact us at enquiries@mimo-toolkit.com

Quick Search

Search

New MIMO Website (28/03/2014)

Visit our new website: http://www.mimo-international.com

Browse Musical Instruments

- All instruments (9345)
- with images (5655)
- with audio recordings (1253)
- with video recordings (256)

Musical Instruments Families (Highlights)

- WIND INSTRUMENTS (19001)
  - Bagpipe (275)
  - Flute (825)
  - Recorder (31)
  - Transverse flute (1462)
- STRINGED INSTRUMENTS (14700)
  - Lute (1878)
  - Sitar (42)
  - Violin (1552)
  - Zither (203)

Famous Instruments Makers

- Sax (374)
- Pleyel (309)
- Ruckers (483)
- Steadman (14)

Geography (Highlights)

- Africa (297)
- America (1488)
- Asia (3158)
- Europe (16000)
- Oceania (184)

The resource_Portal2_Frame80_Title not defined.

- KEYBOARD INSTRUMENTS (2867)
  - Harpsichord (455)
  - Piano (1031)
  - Harpsichord (13)
  - Grand Piano (1035)

The resource_Portal2_Frame81_Title not defined.

- PERCUSSION INSTRUMENTS (13079)
  - Cymbal (4787)

www.mimo-db.eu
MIMO back office

www.mimo-db.eu

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Browse Musical Instruments

- All instruments (10345)
- With images (5958)
- With audio recordings (1253)
- With video recordings (200)

Musical Instruments Families (Highlights)

- WIND INSTRUMENTS (1600)
- _Bagpipe_ (275)
- _Flute_ (821)
- _Recorder_ (51)
- __ Trombone flute_ (462)

- STRINGED INSTRUMENTS (1670)
- _Lute_ (1878)
- __ Sitar_ (42)
- _Violin_ (1552)
- __ Zither_ (203)

The resource _Portal2Frame80_Title not defined._

- KEYBOARD INSTRUMENTS (2267)
- _Harpsichord_ (455)
- _Pianoforte_ (1035)
- __ Pianoforte_ (13)
- _-_ Grand Pianoforte_ (103)

The resource _Portal2Frame81_Title not defined._

- PERCUSSION INSTRUMENTS (13079)
- _Cymbals_ (4370)
MIMO back office: Hornbostel-Sachs
www.mimo-db.eu
MIMO back office: MIMO keywords

www.mimo-db.eu
MIMO back office: instrument makers

www.mimo-db.eu
MIMO in Europeana
The MIMO Digitisation Standard
Impressionen – Digitalisierungsstandard
www.mimo-international.com
Core management group – web site funding
www.mimo-international.com
Collection search by map – CIMCIM funding
www.mimo-international.com
Search for makers names – CIMCIM funding

<table>
<thead>
<tr>
<th>INSTRUMENT MAKERS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. DOLGE &amp; CO (1)</td>
<td>1868-1883</td>
</tr>
<tr>
<td>A. DUMAS FILS &amp; COLIN (1)</td>
<td>c 1675-</td>
</tr>
<tr>
<td>A. QEYER (1)</td>
<td>1902-1903</td>
</tr>
<tr>
<td>A. LECOMTE &amp; CIE (14)</td>
<td>1869-p 1910</td>
</tr>
<tr>
<td>A. ZULEGER (3)</td>
<td>1872/1873-c 1940</td>
</tr>
<tr>
<td>A.E. FISCHER (9)</td>
<td>1854-1949</td>
</tr>
<tr>
<td>ABASAHED AMINSAHEB (1)</td>
<td>PERSON</td>
</tr>
<tr>
<td>ABDELKERIM RAMAT (1)</td>
<td>1901-2000-</td>
</tr>
<tr>
<td>ACHNER PHILIPP (1)</td>
<td>1772-1803</td>
</tr>
<tr>
<td>ACKERMANN &amp; LESSER (4)</td>
<td>1890-1940</td>
</tr>
<tr>
<td>ADAM (1)</td>
<td>1823-1869</td>
</tr>
<tr>
<td>ADAMY L. (1)</td>
<td>c 1910-</td>
</tr>
<tr>
<td>ADAMER &amp; CO (10)</td>
<td>CORPORATION</td>
</tr>
<tr>
<td>ADLER FRÉDÉRIC-GUILLAUME (9)</td>
<td>PERSON</td>
</tr>
<tr>
<td>ADLER JOHANNES (3)</td>
<td>1899-1963</td>
</tr>
<tr>
<td>ADLER KARL FRIEDRICH (1)</td>
<td>14.03.1796-01.04.1888</td>
</tr>
<tr>
<td>ADLER OSCAR (3)</td>
<td>09.11.1862-27.12.1922</td>
</tr>
<tr>
<td>ADLER (2)</td>
<td>c 1801-1826-</td>
</tr>
<tr>
<td>ADOLPHE SAK &amp; CIE (11)</td>
<td>1843-1884</td>
</tr>
<tr>
<td>ADOLPHUS G. (3)</td>
<td>1887-1932</td>
</tr>
<tr>
<td>AEOLIAN (2)</td>
<td>CORPORATION</td>
</tr>
<tr>
<td>AERINICK HENDRICK (2)</td>
<td>c 1640-p 1708</td>
</tr>
<tr>
<td>AHLMANN &amp; OHLSSON (18)</td>
<td>1856-p 1950</td>
</tr>
<tr>
<td>AHLMGER J. G. (3)</td>
<td>-1780</td>
</tr>
<tr>
<td>AIERNIT ANTONINO (1)</td>
<td>1906-</td>
</tr>
<tr>
<td>ALARD A. PR. (1)</td>
<td>PERSON</td>
</tr>
<tr>
<td>ALBERT EUGÈNE (1)</td>
<td>26.04.1816-11.05.1890</td>
</tr>
<tr>
<td>ALBERT (24)</td>
<td>1895-1914/1918</td>
</tr>
<tr>
<td>ALBERT EUGÈNE (1)</td>
<td>26.04.1816-11.05.1890</td>
</tr>
<tr>
<td>ALBERT (24)</td>
<td>1895-1914/1918</td>
</tr>
</tbody>
</table>
Geographical and language enhancement – CIMCIM co-funding
www.mimo-international.com

Level 1 members
MIMO
Contribution model

- **Level 1 Membership**
  - Museums wishing to participate in the ongoing development and decision making process of MIMO should make a contribution equal to the amount agreed at the 2015 AGM, i.e. 2000 euros for a five-year period. Each level 1 contributor shall have its logo on the front page of the MIMO web site.

- **Level 2 Membership**
  - A lower level contribution minimum of 500 euros for a five-year period will facilitate the ongoing delivery and update of online content only, i.e. no involvement in the development and decision making process of MIMO.

- **Level 3 Membership**
  - Zero contribution will mean that museums can add their collection but data will remain static.
MIMO – development 2011–2019
Audio, video, languages, countries, continents

Audio and video files

<table>
<thead>
<tr>
<th>Audio Files</th>
<th>Video Files (Projected / Achieved)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1250</td>
<td>300</td>
</tr>
<tr>
<td>1540</td>
<td></td>
</tr>
</tbody>
</table>

Languages, countries and continents

<table>
<thead>
<tr>
<th>Languages</th>
<th>Countries</th>
<th>Continents</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>15</td>
<td>3</td>
</tr>
</tbody>
</table>

2011 2019
MIMO – development 2011–2019
Object records, collections

**object records**
- 2011: 45,000
- 2019: 64,070

**collections**
- 2011: 9
- 2019: 248
MIMO – development 2011–2019
Object records, collections

MIMO Development, no. of entries 2011-2019

MIMO DEVELOPMENT, NO. OF COLLECTIONS 2011-2019

MIMO DEVELOPMENT, NO. OF COLLECTIONS 2011-2019
MIMO and aggregators
MINIM-UK

The UK’s largest online collection of historical musical instruments.
MIMO and aggregators

Base nationale des instruments de musique (F)
MIMO Technical Insights
From CIDOC 2012 Presentation
MIMO Technical insights

Support for Aggregators

MUSEUM 1
MUSEUM 2
MUSEUM N
MUSEUM X
MUSEUM Y
MIMO – Spreadsheet to transfer data

2017: Possibility to use an excel spreadsheet

XSLT

LIDO

MIMO
# MIMO Thesaurus

## Work chain to add new terms

<table>
<thead>
<tr>
<th>Page</th>
<th>Term</th>
<th>Language</th>
<th>Type</th>
<th>Description</th>
<th>Entry</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>119</td>
<td>Yak</td>
<td>한국어</td>
<td>Flutes</td>
<td>Wind instruments</td>
<td>The yak is a vertical wind instrument which used to be arranged in court ritual and ceremonial music, it is made of bamboo with three finger holes. Not as a music instrument, but as a dance prop, a smaller size yak is also used in court ritual civil dance. The dancers hold yak in their left hand.</td>
<td>Aerophone</td>
</tr>
<tr>
<td>120</td>
<td>Nagak</td>
<td>한국어</td>
<td>Sora</td>
<td>Horns</td>
<td>The nagak, also called &quot;sora&quot; as it is a large seashell played as a horn. It is made by making a mouth hole at the end of a big seashell.</td>
<td>Aerophone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>Hwa</td>
<td>한국어</td>
<td>Mouth organs</td>
<td>Wind instruments</td>
<td>The hwa is a mouth organ with 13 bamboo pipes mounted vertically in a windchest made of dried gourd. Small metal boards resonate and make sounds as the musician blows in the air to the mouth piece or inhales.</td>
<td>Aerophone</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

**New terms added**

- New keyword
- Term becomes synonym

**Notes**

- Shells belong to the family of the trumpets, not the horns.
- Yes, Nagaks belong to the trumpets.
- Mouthpiece is not added to traditional Nagak. Even though it's added usually now.

**Additional Notes**

- 423.111.2 End-blown conches with mouthpiece
- 423.111.1 End-blown conches without mouthpiece
- 412.133 Sets of free reeds
MIMO: SPARQL Endpoint for the Thesaurus
http://data.mimo-db.eu

SELECT * WHERE {
} LIMIT 1000

Query results
MIMO – Use of the Thesaurus

Current known projects using the Thesaurus

Musices : 3D CT for musical instruments

CrowdHeritage : CrowdSourcing campaigns for Europeana

INSIGHT : AI for cultural heritage (Belgian research project)

Doremus : Musical metadata from BnF, Radio France & Philharmonie (French research project)
MIMO – Use of the thesaurus

Example in project DOREMUS: http://data.doremus.org
MIMO – Use of the thesaurus

Example of project Doremus: [http://overture.doremus.org](http://overture.doremus.org)
MIMO Users

Web site audience

Source: Google Analytics
MIMO Users – per country

Users (last year)

Source: Google Analytics
MIMO Users - Online Survey

Number of survey participant / country

United States: 33
Germany: 20
United Kingdom: 20
France: 13
Belgium: 9
Spain: 8
Sweden: 6
Italy: 5
Brazil: 4
Australia: 3
Canada: 3
Korea, South: 2
Norway: 2
Switzerland: 2
Argentina: 1
Austria: 1
Chile: 1
Croatia: 1
Denmark: 1
Finland: 1
Georgia: 1
Hong Kong: 1
Israel: 1
Japan: 1
Malta: 1
Netherlands: 1
Portugal: 1
Reunion: 1
Romania: 1

Source: Online survey
MIMO Users – Online survey

What is your age group?

145 responses

- Under 16: 46.9%
- 16 - 25: 22.8%
- 25 - 40: 24.8%
- 41 - 65: 22.8%
- Over 65: 0%

Source: Online survey
What are your main reasons for using the MIMO web site?

145 responses

- General interest: 63.4%
- Student interest: 10.3%
- Work based interest: 11.7%
- Education (as a school or university): 1.7%
- Research: 1.7%
- Independent researcher: 1.7%
- Independent researcher in organology: 1.7%
- Interest in historical flutes: 1.7%

Source: Online survey
MIMO Users - Online Survey

Source: Online survey
MIMO Users - Online Survey

How often do you visit the MIMO web site?

145 responses

- Once or more a day: 35.2%
- Once a week: 31.7%
- Once a Month: 24.8%
- Less than once a Month: 7.6%
- Once a day: 24.8%

Source: Online survey
MIMO Use - Online Survey

On average, how long do you stay long for visit?

145 responses

- 24.8% Less than 5 minutes
- 26.9% 5 - 10 minutes
- 20.7% 11 - 15 minutes
- 22.1% 16 - 30 minutes
- 26.9% Over 30 minutes

Source: Online survey
# MIMO Use - Online Survey

Please tell us more about how you are using MIMO, especially for education

<table>
<thead>
<tr>
<th>I use it mainly to locate an instrument or a type of instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a part of my research for the university</td>
</tr>
<tr>
<td>As a tool for organology</td>
</tr>
<tr>
<td>As an instrument maker and scholar to look up particular instruments especially for the photographs and some measurements.</td>
</tr>
<tr>
<td>as expert, research of similar instruments from specific makers</td>
</tr>
<tr>
<td>ausschließlich für Recherche - Ankauf, Vergleichsinstrumente</td>
</tr>
<tr>
<td>Best resource source of organology info (that is used for crossing information with other social sciences). Very useful for obtaining contacts of actual builders as well.</td>
</tr>
<tr>
<td>collectionneur de timbres sur les instruments de musique.</td>
</tr>
<tr>
<td>Comparative research</td>
</tr>
<tr>
<td>Compare and contrast with instruments in my collection</td>
</tr>
<tr>
<td>Comparing instruments in our collection to those in other collections.</td>
</tr>
<tr>
<td>Curation in museums</td>
</tr>
<tr>
<td>Descriptive informations and pictures</td>
</tr>
<tr>
<td>discovering new instruments</td>
</tr>
<tr>
<td>Early Music instruments research</td>
</tr>
<tr>
<td>for examples of the Sachs-Hörnbostel Classification</td>
</tr>
<tr>
<td>For musical instrument related research</td>
</tr>
<tr>
<td>For reference, to track down instruments for comparisons, to answer enquiries from other people</td>
</tr>
<tr>
<td>For search information about the lute-mandolin maker and search images of baroque mandolin for my study and work.</td>
</tr>
<tr>
<td>For teaching at the University, for my research project on mus. instruments</td>
</tr>
<tr>
<td>I am a historical flute Professor so I use it but mostly in my private research which then influences my teaching.</td>
</tr>
<tr>
<td>I am a musician, composer and music teacher in Brazil</td>
</tr>
<tr>
<td>I am a professional conservator of instruments</td>
</tr>
<tr>
<td>I am looking for images of a musical instrument to use in a publication.</td>
</tr>
<tr>
<td>I am using MIMO for research related inquiry to find instruments and their location.</td>
</tr>
<tr>
<td>I am usually looking for specific makers or models and trying to locate best samples.</td>
</tr>
<tr>
<td>I don't use it directly for education, but e.g. for guided tours for schools and students, I point to MIMO as a valuable resource. Virtually all groups know MIMO, especially those from universites</td>
</tr>
</tbody>
</table>
MIMO Use - Online Survey
Please tell us more about how you are using MIMO, especially for education

Source: Online survey
MIMO Use – Online Survey
What would you suggest to add or modify in order to improve MIMO website?

SUGGESTIONS TO IMPROVE MIMO

- Description of instruments: 20%
- Search: 19%
- Museums/Collections: 17%
- Images: 16%
- Website functionalities: 13%
- Classification system: 8%
- Sound & video: 4%
- Makers: 3%

Source: Online survey
MIMO Use – Online Survey

I love it

Very good to me

Nothing to improve

Very useful

The site is great!

Only source of information for some museums
Thank you!

www.mimo-international.com