



A New Ecosystem of Early Music Studies

COST action 21161

## Report of WG2 (Lisbon, 2023)

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### HOW TO CITE THIS TEXT

Grzegorz Joachim (ed.), *EarlyMuse : Report of WG2 Sources* (Lisbon, 2023), 24p.  
(<https://earlymuse.eu>)

## Introduction

“Many primary sources of early music remain inaccessible and undocumented, necessitating a concerted effort to discover, document, and digitize them to stimulate research and performance. Too many works are available in inappropriate formats. Many sources are under threat due to institutional and/or environmental conditions, necessitating immediate action to preserve them for the benefit of future generations”<sup>1</sup>.

One of the fundamental sources containing information about historical musical sources is the *Répertoire International des Sources Musicales* (RISM) organization, which has been operating for over 70 years. In the last decade, RISM has been intensively transferring data from published volumes, adapting and supplementing them freely within an online database. Due to its scope and diversity, it is sometimes referred to as the „early music catalog“. However, questions arise regarding the adaptability of this database to a broader range of sources, optimization of work, easy access to sources, metadata display, utilization, and integration of existing resources, as well as presenting gathered information and selecting data formats for the future development outlined by RISM leadership.

These questions remain open and require discussion, reflection, and input from various groups of specialists. Before the workshops in Lisbon, RISM leadership sent a letter to members of WG2 Sources with their position<sup>2</sup>. In this letter, the authors pointed to the results of their work to date, its reception within the academic community, as well as the planned areas of database development related to resource integration. A significant focus was placed on sources predating 1600. Their intention is to implement solutions that facilitate data display and resource search to support researchers focused on various types of musical sources. In the context of these issues, cooperation with IT engineers, music encoding in various musical notations, and the possibilities of searching connected online resources become increasingly important<sup>3</sup>. Despite maintaining metadata standards, differences in their recording methods still exist, causing difficulties in integrating different resources and databases<sup>4</sup>. This issue is evident in various areas of humanities databases, including musical sources. These questions remain open and require discussion, reflection, and input from various groups of specialists. Before the workshops in Lisbon, RISM leadership sent a letter to members of WG2 Sources with their

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<sup>1</sup> *Memorandum of Understanding for the implementation of the COST Action “A new ecosystem of early music studies” (EarlyMuse) CA21161*, Brussels 2022, p. 2.

<sup>2</sup> Balázs Mikusi & Klaus Pietschmann, *COST “Early Muse” WG2 workshop, Lisbon 2023: RISM Position Paper*, e-mail correspondence within *EarlyMuse* members, 2023. See “Appendix” this text.

<sup>3</sup> Cf. Tim Berners-Lee, James Hendler and Ora Lassila, “The Semantic Web”, *Scientific American* (May 2001), pp. 29-37; Tom Heath and Christian Bizer, *Linked Data: Evolving the Web into a Global Data Space*, Springer Nature Switzerland AG 2022 – reprint of original edition CA: Morgan & Claypool 2011.

<sup>4</sup> Murtha Baca and Melissa Gill, “Encoding Multilingual Knowledge Systems in the Digital Age: The Getty Vocabularies”, *Knowledge Organization* 42 (2015) no. 4, pp. 232-243.

position<sup>5</sup>. In this letter, the authors pointed to the results of their work to date, its reception within the academic community, as well as the planned areas of database development related to resource integration. A significant focus was placed on sources predating 1600. Their intention is to implement solutions that facilitate data display and resource search to support researchers focused on various types of musical sources. In the context of these issues, cooperation with IT engineers, music encoding in various musical notations, and the possibilities of searching connected online resources become increasingly important. Despite maintaining metadata standards, differences in their recording methods still exist, causing difficulties in integrating different resources and databases. This issue is evident in various areas of humanities databases, including musical sources. Therefore, before the workshops in Lisbon, a meeting was organized for WG2 members with IT engineers<sup>6</sup>. The issues discussed included fundamental topics within digital musicology, which are significant from RISM's perspective, as well as for music librarians and musicologists. These topics included methods for displaying data using *The Music Encoding Initiative* (MEI), the possibilities of standardizing access to digital resources, and identifying these resources with real-world objects based on the *International Image Interoperability Framework* (IIIF) manifest<sup>7</sup>. This subject matter is clearly the domain of information technology professionals, which librarians and musicologists often cannot navigate independently. On the other hand, IT engineers sometimes lack the knowledge and experience in the field of music source studies, both from a library and musicological perspective. The letter from RISM leadership and the meeting with IT engineers working in the area of historical musical sources allowed WG2 members to better understand some of the issues addressed during the workshops in Lisbon and to closely examine selected problems. The participants' workshop topics concerned not only the scope of collaboration with the IT community but also proposed improvements to what currently functions in RISM, allowing for a closer examination of selected sources<sup>8</sup>.

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<sup>5</sup> B. Mikusi & K. Pietschmann, *op. cit.*, p. 19.

<sup>6</sup> *EarlyMuse WG2 / Computational Musicology WG: Joint meeting. Relevance and practicability of a global inventory of machine-readable music scores, with authority-powered metadata interconnection, and promoting best practices?*, Zoom meeting, February 22, 2023. I would like to thank Olivier Lartillot for help in preparing this meeting, especially on the part of the IT engineers of the participants.

<sup>7</sup> Cf. *The Music Encoding Initiative*, hosted institution: the Akademie der Wissenschaften und Literatur in Mainz <https://music-encoding.org/> (accessed: May 2023); *International Image Interoperability Framework*, a consortium of leading cultural institutions, <https://iiif.io/api/presentation/2.1/#manifest> (accessed: May 2023).

<sup>8</sup> *Programme & Abstracts: Workshops of Working Groups 1, 2, and 4 + Core Group Meeting. COST Action CA21161, EarlyMuse: A New Ecosystem of Early Music Studies*, edited by João Pedro d'Alvarenga and Management team of CESEM, Universidade NOVA de Lisboa Faculdade de Ciências Sociais e Humanas Campus de Campolide, Lisbon 6-7 March 2023, online: [https://cesem.fch.unl.pt/wp-content/uploads/2023/02/EarlyMuse-@Lisbon\\_Programme.pdf](https://cesem.fch.unl.pt/wp-content/uploads/2023/02/EarlyMuse-@Lisbon_Programme.pdf) (accessed: May 2023).

## Development of IT infrastructures in relation to the specificity of music sources and research needs

Contribution by **Andrew Woolley** (*Faculdade de Ciências Sociais e Humanas - NOVA FCSH*)

One of the issues pertains to the relationship between compositions and methods of identifying concordances. Andrew Woolley referred to the methodology of philological sciences, taking into account musical structures and computer tools. However, he initiated the discussion from the perspective of 16th-century imitation techniques and improvisational practices<sup>9</sup>. One of the problems concerns the relationship between compositions and methods of identifying concordances. Andrew Woolley drew on the methodology of philological sciences, considering musical structures and computer tools in this context.

The problem of variability is also known in the field of traditional musicology, which Woolley also tackled. What has distinguished RISM from the beginning is the presence of musical incipits in the manuscript descriptions. However, the problem of RISM and sources before the 1600s lies in the way these incipits are written, adapting them to the appropriate tonality for the compositions recorded, as well as the length of these incipits. All of this is aimed at developing a tool for identifying concordances in terms of authorship and borrowings present in musical works. Woolley specifically pointed out the issue of the low efficiency of musical incipits. Too many results appear when the musical incipit consists of 5-6 notes. He also noted the possibility of including the harmonic element in incipits, referring to the method developed in Bruce Gustafson's catalogs. Each encoded incipit in it takes up about 10 spaces with numbers based on interval relationships, which translates well into the required digital format. The problem is that this system was developed for structures in major-minor tonalities, not in the modal system. As a result, this can cause false concordances. Another issue that needs to be refined is the extensive passages, especially with repeating notes, which can make it difficult to recognize concordances. So how to solve problems of masking concordance variations, especially when the incipits are so short?

During the discussion, several issues were raised, including catalog typology. Unlike the "catalog of musical incipits", a thematic catalog encompasses "themes" and is something of an ideal, a model that requires extensive expertise, as pointed out by Tim Crawford. The greater ideal, however, is fully encoded complete compositions (corpora, full-text sources), based on image recognition or from recordings. Communities present on the internet can often help in this regard. Another problem

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<sup>9</sup> Cf. Rob C. Wegman, Johannes Menke, Peter Schubert, *Improvising Early Music. The History of Musical Improvisation from the Late Middle Ages to the Early Baroque* (= Collected Writings of the Orpheus Institute), Leuven University Press 2014; Julie E. Cumming and Peter Schubert, *The origins of pervasive imitation*, in: *The Cambridge History of Fifteenth-Century Music*, edited by Anna Maria Busse Berger and Jesse Rodin, Cambridge University Press 2015, pp. 200-228 (online: 05 July 2015), DOI: 10.1017/CHO9781139057813.018 (accessed: March 2023).

regarding working with musical sources and their editing is a disconnect that is often seen, mostly between librarians and musicologists, i.e., those who create catalogs and those who edit, as pointed out by David Lewis. It is essential to prepare a strategy for cooperation between both sides at a more fundamental level to bridge the gap between these perspectives. However, it seems we are getting closer to this agreement. The direction we should aim for now is creating a repository of knowledge, not just information. Undoubtedly, a common encoding system should also be adopted, which would allow the use of metadata for various projects while being accepted by all parties. This is necessary for data from different databases to complement each other, to “communicate with each other”. The tools being developed and the solutions being worked out within MEI and IIF are undoubtedly bringing us closer to this goal.

*Contribution by Grzegorz Joachimiak (Uniwersytet Wrocławski), Tim Crawford (Goldsmiths University of London), David Lewis (Goldsmiths University of London)*

The issue presented in this presentation encompassed matters related to lute tablature notation and its limitations in the context of transcription into staff notation, which have led to a limited amount of data from such musical sources in the RISM database. It also proposed the expansion of computer tools that can address this. It is 45 years since Volume VII in the B series was published for RISM by Wolfgang Boetticher<sup>10</sup>. Despite the numerous errors in its descriptive catalogue, it remains a significant point of reference to the information he gathered for his post-doctoral dissertation in 1943, from which a supplement had been published by CNRS in Paris in 1956 as a bibliography of lute music sources<sup>11</sup>.

In the introduction to the 1978 edition, he stated that the data he collected includes 726 manuscripts from 204 libraries in 24 countries<sup>12</sup>. Other works of a similar nature by different authors have emerged over time, but currently, reviewing RISM publications, one might get the impression that Boetticher, without the support of new technologies, has accomplished more in this regard than we do today. This raises the question of what we can do, utilising the vast musical resources of RISM, to make lute tablature music accessible to those who are not familiar with it and cannot read it while adapting the tools to the specific features of lute tablature and baroque guitar alphabeto. Optical tablature recognition, as in the proposed *LuteTabLab* collaborative project may be one of the answers<sup>13</sup>; however, the cutting-edge AI technology being developed is unlikely to produce concrete results within the very

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<sup>10</sup> Wolfgang Boetticher, *Handschriftlich überlieferte Lauten- und Gitarrentabulaturen des 15. bis 18. Jahrhunderts*, vol. B/VII, München, Henle, 1978.

<sup>11</sup> Idem, *Bibliographie des sources de la musique pour luth*, CNRS, Paris 1957.

<sup>12</sup> Idem, *Handschriftlich...*, p. 20\*.

<sup>13</sup> *LuteTabLab* is a working group created in the Institute of Musicology at the University of Wrocław in collaboration with the University Centre for Digital Humanities at University of Wrocław, Poznań Supercomputing and Networking Center, and Goldsmiths, University of London - Department of Computing. The group is currently working on developing tools for the automated recognition of text written in lute tablature manuscripts using machine learning and Artificial Neural Networks.

near future. Efforts made over the past few years by the team of Tim Crawford and David Lewis in the *Electronic Corpus of Lute Music* project (ECOLM)<sup>14</sup> have yielded some promising results. To put lute music into digital form, agreed-upon symbols that can be machine-read are needed. While trying to load it into RISM might yield results, the issue is the special characteristics of lute tablature, which is almost exclusively used in historical sources of this music. This involves not only problems in rhythmic interpretation, but also the tuning of various lute-like instruments, and the musical texture of the compositions. This requires editorial intervention and a critical apparatus, complicating the entire arrangement. The general problem is the lack of a standardized data model that can combine information in RISM with that obtained through the transcription of lute tablature. How should we address this problem, and present the richness of lute music documents in a text format? Currently, MEI is the only solution, and a provisional MEI tablature module has already been developed<sup>15</sup>. This includes other supporting devices for text criticism, as well as elements that can be quoted, as has been done so far in RISM (e.g., using the native *Verovio* format in the RISM browser, which can now display Italian, French and German lute tablature).

Parallel actions must include the construction of source full-text corpora that enable further work. The ECOLM project itself maintains a collection of approximately 2000 pieces in lute tablature which have been encoded diplomatically in TabCode. The intention is to build a more comprehensive corpus including two other existing larger-scale collections of performing editions in lute tablature: Sarge Gerbode's *Accessible Lute Music* collection (encoded using the *Fronimo* application; approximately 8000 edited works)<sup>16</sup> and a corpus edited by John Robinson as attachments/additions to the newsletters of the UK Lute Society (approximately 7000 works encoded in TAB format). Although there are several challenges in reconciling the differences between these resources,<sup>17</sup> the recent development of a software tool for conversion between the different encoding formats<sup>18</sup> makes the task much easier. This activity also highlights the significant role of amateurs/enthusiasts for whom these types of publications are created and who constitute a real audience for this kind of music and source resource development.

However, these are only selected elements of the potential that arises from this. Currently, the biggest problem is the issue of transcription and machine usage through *Optical Music Recognition* (OMR) and *Optical Tablature Recognition* (OTR) technologies. The problem is that human eyes recognize letters, but machines struggle due to the specifics of writing music in the so-called French lute tablatures

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<sup>14</sup> ECOLM - *An Electronic Corpus of Lute Music*, project management: Tim Crawford, online: <http://igor.gold.ac.uk/isms/ecolm/> (accessed: March 2023).

<sup>15</sup> *Music Encoding Initiative* (MEI), <https://music-encoding.org/guidelines/dev/content/tablature.html> (accessed: October 2023).]

<sup>16</sup> Sarge Gerbode, *Accessible Lute Music*, <https://www.lutemusic.org> (accessed: March 2023).

<sup>17</sup> See Chris Cannam, David Lewis and Tim Crawford, "ECOLM and Lute Tablature", DLfM Sustainability Challenge paper, DLfM, Milan (December 10 2023).

<sup>18</sup> *MarmaladeFoo*, <https://www.marmaladefoo.com/pages/luteconv> (accessed: October 2023).

(staff, ornaments, playing techniques, horizontal and vertical orientation, letters of the tablature are mistaken for the letters of the text titles, etc.). When establishing such projects, the methodology should also be considered.

What constitutes a challenge is not only the issue of technology and specialized knowledge but also the conscious creation of a knowledge repository, not just information. In this context, various dialogues are needed between musicologists, librarians, IT engineers involved in coding, as well as amateurs/enthusiasts and performers. It is essential to remember the different goals of different groups. Enthusiasts just want to play, while musicologists want to know. New projects of this kind are emerging in Wrocław as part of *LuteTabLab*, aimed at learning from past experiences, including manuscripts.

*Contribution by Eva Veselovská (Slovenská Akadémia Vied)*

The researcher presented the issue related to fragments of medieval musical sources that were secondarily used in manuscript books (known as recycling), such as strengthening manuscript bindings. These collections are located in the largest private library in Austria, the Augustinian monastery in Klosterneuburg. Research has been conducted there since 2020 on all recorded fragments from the late 11th to the early 16th century, primarily from liturgical books. The presented strategy and systematic processing of these fragments involve combining selected pieces. Among the issues addressed in the research are codicological-library matters (lack of assigned signatures on the sources) as well as textological issues (lack of content-related analysis). Thanks to the collaboration between the Augustinians in Klosterneuburg, Ján Koláček from Prague, the creator of the *Cantus Index* database, and the E. Veselovská project, a comprehensive registration and analysis of all recorded fragments from the early 16th century was carried out<sup>19</sup>. The presented issues concerned discrepancies between signatures in different catalogs, lack of compatibility, overlapping scopes of various projects, and thus a lack of communication, collaboration, and cooperation among researchers. There were difficulties in searching for information due to incompatible data formats. In the context of future prospects, a proposal was outlined for data import and metadata storage in an online format. During the discussion, fundamental methodological problems were presented, which include actions within the *DIAMM* database, where the stemma criterion, specifically the „place of origin“, serves as the research basis. On the other hand, the RISM database prioritizes the source's category of „former owners“. In the *Cantus Index* network, the entire text of the source is considered, ID numbers are assigned, the modus is determined, and there is also the option to share illustrations that researchers can use. Thus, a unified indexing methodology is

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<sup>19</sup> Cf. *The Slovak Early Music Database - Cantus Planus in Slovakia*, online: <http://cantus.sk/> (accessed: March 2023); *Medieval Music Manuscripts from Austrian Monasteries*, within research project *Cantus Planus in Slovakia: Local Elements - Transregional Connections*, 2020-2024, principal investigator: Eva Veselovská, Institute of Musicology of the Slovak Academy of Sciences, online: <http://austriamanus.org> (accessed: March 2023).

apparent, with interoperable data based on textual information. Elsa De Luca, among others, participated in the discussion and mentioned the work of Lisbon musicologists in a project related to recognizing melodic contours in neumatic singing. The conclusion drawn from this discussion was the need to understand what pilot programs would be required to connect different methodological perspectives and projects with their specialized needs. Creating shared repositories and collaborating on the exchange of information between research projects, including specialized data, is a promising direction.

## Development of the RISM database: perspectives before and after the implementation of research projects

*Contribution by Anne Piéjus (IREMUS – Institut de recherche en musicologie, CNRS)*

The researcher presented the issue of arias published in the French periodical „*Mercure galant*“, which was published monthly in Paris since 1672 and has not been fully cataloged by RISM to date. The source material includes texts, prints, and musical works, including arias. However, access to the complete collection was hampered by the dispersion of the materials. Furthermore, many uncertainties arise regarding the identification and attribution of the preserved musical compositions. A seemingly prosaic problem is distinguishing the texture of arias. In contrast to the song repertoire, solo arias of that time were characterized by „implicit polyphony“, whereas in songs, identity and communication rely on the melodic line. This raises the issue of how these compositions could be included in the RISM database. The author presented several hypotheses for discussion regarding the possibility of integrating this type of repertoire into the database, including automated data transformation, metadata creation, interoperability forms, and linking scientific projects to enrich and connect music sources. As noted, RISM contains very few arias, and those that are present mainly originate from counterfeits published in Amsterdam, which were cataloged by the British Library team. Another issue to resolve is the situation where many of the arias in „*Mercure galant*“ are only transmitted in melodic form. It is the same issue: solo arias are with *implicite basso continuo* and raise the problem of distinguishing monody (so far excluded from the RISM) from polyphony. Polyphonic arias still have to be correctly catalogued, since many are not and others have been catalogued from a counterfeit.

The presented issues were also related to indexing areas, which encompass both images and music sources, using strict cataloguing standards, as well as modern transcriptions<sup>20</sup>. Participatory projects accompanying research on „*Mercure galant*“ in the area of reading the text, singing and playing the aria are also noteworthy<sup>21</sup>.

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<sup>20</sup> They can be exported in MEI, XML and other formats, see: <http://neuma.huma-num.fr/> (accessed: March 2023).

<sup>21</sup> *Voix du Mercure galant*, online: <http://voix-du-mercure-galant.org/> (accessed: March 2023).



This could be an example of valuing, disseminating, and engaging in cultural heritage, something that can be described as „crowdsourcing“. In the realm of interoperability, a strategy for collaboration at various levels has been proposed, involving texts, musical editions, recordings, scientific information, to enable the possibility of reusing data. The goal is to create opportunities to use these resources that require specialized knowledge for recognition, easy access, and collaboration among various researchers and institutions in the realm of intertextuality and intermediality. Anne Piejus is utilizing resources from the *Virtual International Authority File of BnF* and collaborating with the *GitHub* community to achieve these objectives.

During the discussion, questions arose about cataloging methods and the standards used in this context. Guidelines for concordances have been established by the *Centre de Musique Baroque de Versailles* (CMBV), and there are some guidelines regarding texts as well. However, issues arise concerning keywords, methodologies, and authorities. Some elements, like authors and geographic place names, are standardized, but it can be challenging to establish cross-references, especially with historical place names. Concerning images, the suggestion was made to use the *Getty* vocabulary, which is standardized. The conclusions from the discussion indicate that the prospects for collaboration are moving toward a shared repository, although it still seems somewhat distant, especially since MEI is not yet universally accepted. In this context, further discussions are needed on the topic of „unexpected sources“, as well as collaboration with large text projects, such as TCP<sup>22</sup>.

*Contribution by Tomasz Jeż (Uniwersytet Warszawski)*

The presented issues were based on experiences gained from working on a project that culminated in a series called *Fontes Musicae in Polonia*<sup>23</sup>. The strategy outlined in the presentation included discussing the metaphor created by the author, which likened RISM to a memory resource similar to those found in ancient mnemonics, particularly referring to Cicero’s memory palace<sup>24</sup>. Memory was presented in the context of places (*loci*) and images (*imagines*), with musical sources potentially serving as *Ciceronian imagines agentes* if their natural potential (the emotional content conveyed by sound) could be fully realized on the RISM platform. The main problem was identifying RISM as a place that could more fully harness its potential, especially in the context of auditory phenomena. The issues addressed in the presentation pertained to data collection, making research results available, ensuring interoperability, and the possibility of reusing metadata.

In terms of data collection, T. Jeż emphasized the need for caution and careful evaluation of sources, particularly due to their content. This allows for the creation of

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<sup>22</sup> *The Text Creation Partnership*, University of Michigan Library, online: <https://textcreationpartnership.org/> (accessed: March 2023).

<sup>23</sup> *Fontes Musicae in Polonia*, project management: Tomasz Jeż, online: <http://fontesmusicae.pl/fontes-en/> (accessed: March 2023).

<sup>24</sup> Cf. Cicero: *De oratore*; *De inventione*; Cornificius(?): *Ad Herennium*; Quintilian: *Institutio oratoria*.

new contexts and is a key to reconstituting selected resources. Regarding making research results available, he stressed the role of RISM, which, thanks to tools like provenance, enables the establishment of mutual connections between sources that were previously absent in scholarly research. He also highlighted the need for strengthening cooperation to create „shared images“. He advocated thinking in terms of working groups that can integrate workflows effectively. The project he led was related to „The Music Repertoire of the Society of Jesus in the Polish-Lithuanian Commonwealth (1565-1773)“, in which source tracking and reconstitution played a significant role in *Fontes Musicae in Polonia*.

In terms of interoperability and reusing metadata, he proposed collaboration with various institutions to share data. However, he pointed out that it is challenging to gain the trust of institutions to agree to share materials in specific places. One potential solution to such problems and making RISM (or any other database) more attractive to a wider audience is treating these databases as active resources rather than static repositories. The discussion also touched on issues related to printed and digital catalogs. During the discussion, the topic of institutional collaboration was further developed. Changes in the structure of the National Library of Poland, which involved the dissolution of the Polish RISM Center at this institution and the transfer of this scope to the Library of the Fryderyk Chopin Institute in Warsaw, were discussed. This is a complex problem, as it concerns agreements made with the National Library during the project in the context of the accepted metadata but a refusal to provide images in the Digital Library. Meanwhile, the new location of the RISM Center in Poland has its own cataloging project based on different standards. The issue has not been resolved, but renewed cooperation is undoubtedly needed. In the final stages of the discussion, Rebekah Ahrendt emphasized the need for ongoing discussions about European projects like *Cloud Heritage* in agreement with RISM and other ongoing projects of a similar scope, which appears to be increasingly necessary.

*Contribution by Elsa De Luca (Universidade NOVA de Lisboa)*

She presented an extensive research project known as the *Portuguese Early Music Database* (PEM)<sup>25</sup>. This initiative dates back to 2011 and offers free access to a wide range of music manuscripts, mainly written before approximately 1650, held in various libraries and archives in Portugal and surrounding Spanish areas, along with access to metadata. In her presentation, Elsa De Luca emphasized the technical aspects accompanying the digitization and digital sharing of source materials (financial considerations, human resources, technical infrastructure) and explored the perspectives related to digitizing musical heritage resources. Key to this endeavor is interoperability in the realm of data, which is highly developed within PEM. This encompasses not only codicological-paleographical aspects but also the presence of a musical index with transcriptions of entire texts, links to source copies, and

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<sup>25</sup> *The Portuguese Early Music Database*, project director: Manuel Pedro Ferreira, online: <https://pemdatabse.eu/> (accessed: March 2023).

collaboration with the *Cantus Index* database<sup>26</sup>. The project's aim is to safeguard historical and musical heritage and a willingness to share knowledge with others. The project's comparative approach to source exploration was stressed as a means to overcome geographical dispersion of the sources, with the indexing tool enabling the integration of all records. In terms of perspectives and challenges for the project, they include modernizing the IT infrastructure (discontinuing old software and replacing some outdated formats with new ones), as well as bridging disparities between what has already been published in PEM and what remains in the digital archive but has not been published yet. In PEM 2.0, *Drupal 7* infrastructure has been implemented, and images are transmitted through IIIF. However, this technical update has resulted in higher maintenance costs. It is estimated that at least 350,000 EUR has been spent on PEM since its conception. Funding comes from CESEM and 13 projects financed by the National Science Foundation in Portugal. Projects typically involve content creation (by historical musicologists based at CESEM) and various levels of researcher engagement (external IT experts). Individuals who can bridge the gaps between these fields of knowledge are always welcomed. Based on the prior actions in the PEM project and the issues discussed during the session, several key takeaways include:

- the importance of communication in large collaborative projects,
- planning strategies for reducing input errors.

Databases are long-term projects: they are expensive, require a lot of maintenance and interdisciplinary expertise. All the decisions that affect sustainability (short-term and long-term costs, open source *versus* proprietary software, connectivity, need to obtain licenses, sign protocols, secure institutional partnerships, etc.) should be taken before the structure is set.

## Musical sources from unrecognised resources

*Contribution by Ana Čizmić-Grbić (Muzička akademija Zagreb)*

The presented issue pertained to the cataloging of music sources in Croatian libraries and archives. The initial cataloging efforts began in the 1960s and have resulted in the creation of extensive lists and inventory books, many of which are available today in digital form. Since 2013, there has been a noticeable stagnation due to a lack of funding for these activities. The main progress made in this area is driven by individual research and only one large-scale project (CROMUSCODEX70 devoted to medieval music and liturgical manuscripts in Croatia). These works, although valuable contributions to the history of Croatian music and relevant to European heritage, can not replace systematic research and some of the collections

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<sup>26</sup> This concerns the database by Ján Koláček from Prague, mentioned earlier in the context of Eva Veselovská's project. The PEM project was the first online database with available manuscript copies that joined the *Cantus Index* network, which currently encompasses 17 projects.

still await proper processing. Researchers rely on often outdated publications and inventories based in local libraries, encompassing not only early music sources but all music sources. While many of these are included in RISM, it is often a partial inclusion. In the context of the general orientation on these resources, publications released by RISM are still relevant<sup>27</sup>. The issue of conducting field research in the field of cataloging music sources is still a lively topic in many European countries. The researcher presented some of her observations and proposed several solutions, some of which were open to broader discussion. Among the most pressing problems faced by early music historians in Croatia, the researcher mentioned:

- Limited access to sources for cataloging, resulting in incomplete data or even the absence of some music sources,
- Lack of public awareness of the value of preserved collections,
- Failure to identify and adequately store sources at risk of physical destruction,
- Lack of standardized methods for processing music sources,
- Lack of interoperability among institutions.

As for the proposed solutions, at least some of the listed issues could be addressed through digitization, which would help preserve materials at risk of destruction and expedite cataloging work. In the area of cataloging, it's essential to establish common principles with standardized metadata fields, which could be achieved through workshops in collaboration with RISM. To optimize fieldwork, it's crucial to create a sort of guide for working with collections, define priorities, and determine where cost-cutting is permissible and how tasks can be divided. Finally, continuous communication, identification, sharing of methodologies, and sources are vital.

During the discussion, several questions were raised, including those related to cataloging standards and their adaptation to different types of sources, access to digitization equipment, and the possibility of setting up a portable digitization workstation. Questions also emerged about the issues surrounding inter-institutional relationships. Proposed ideas included the implementation of procedures used in the museum and conservation department world for cooperation and sharing, as well as borrowing equipment agreements. Additionally, questions emerged about establishing basic guidelines regarding the information to be acquired during the digitization process, the most crucial metadata fields for data interoperability, and whether we should consider archiving and disseminating the guidelines that we have been working on. The range of questions raised indicates that there is still much work to be done and needs to be addressed in the optimization of work on music sources, including their cataloging.

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<sup>27</sup> James B. Moldovan, Lilian Pruett, *Directory of music research libraries*, vol. RISM C/V: „Czechoslovakia, Hungary, Poland, Yugoslavia”, Bärenreiter, 1985.

*Contribution by Marek Bebak (Uniwersytet Jagielloński)*

During the IAML Congress in Prague in 2022, the results of cataloging music sources in RISM were presented, with Poland being highlighted as one of the leaders in Europe. The quality of these descriptions varies due to the different qualifications of young Polish catalogers, the lack of a unified cataloging method, and supervision of published records, limitations in the database (metadata quality, non-searchable musical incipits, limitations in provenance, unavailability of catalogs online, and lack of access to information about private collections).

Marek Bebak proposed several areas for optimizing work that could have a positive impact on the development of research on early music. One of the suggestions is to support catalogers, especially those with limited experience, by providing them with proper guidelines. This support can take place during musicology studies or by ensuring the quality of records in the RISM database to minimize errors in basic elements like titles, composer and scribe names, ownership, dates, scores, and locations. Therefore, support for verifying records in RISM and guidance during fieldwork is essential, as well as developing awareness and education to prepare individuals for such work.

The problem of the lack of content from early music catalogs in RISM can be addressed by putting this information online, but a higher-quality solution would be to integrate them into RISM records. Repetition of errors in RISM due to the use of outdated catalogs is another concern, especially in practical manuscripts, as shown through examples from the collection of the Cathedral Chapter Library in Kraków, featuring the work of Józef Tadeusz Benedykt Pękalski.

During the discussion, Andrew Woolley raised questions about whether we have greater expectations from RISM than it initially aimed to provide, and whether we can expect RISM to include more information than originally intended. In response, David Lewis stated that RISM has been quite flexible, open to cooperation and adaptation, and these expectations continue. He pointed out that the problem with musical incipits is essentially a „text search“. The more we sensitize this database to musical aspects, the slower the search process becomes. A question was also raised about the next generation of catalogers and how to support and encourage them in this work. Tomasz Jeż emphasized that many cataloging projects depend on fast, albeit relatively inexperienced work, but this requires the participation of editing experts. Therefore, it is crucial to train and support more people for such work.

Given the issues and expectations presented, it is essential to question what RISM actually is: just a repository of information or a source of knowledge? Rebekah Ahrendt suggested the idea of crowdsourcing, combining RISM with Wikipedia and local projects as a form of a global catalog. In response, D. Lewis noted that other fields use data collaboration projects for their catalogs. Music is a very small field, but perhaps it's an excellent example of how to combine a small field with a large amount of knowledge. Merging the projects of 4Rs (Refuse, Reduce, Reuse, Recycle)

would be a logical step, but they are currently following their own paths. The discussion ends with an open alternative about the future of RISM and the expectations of introducing solutions: consolidation with further development of what we have, or creating an entirely new project?

*Contribution by Marija Bratic (Univerzitet u Nišu), Sanja Kovačić (Univerzitet u Novom Sadu), Tatjana Pivac (Univerzitet u Novom Sadu)*

The prepared material was presented by Marija Bratic on behalf of three authors who are not musicologists but teach tourism and hospitality-related subjects at universities. The elements of research presented, conducted in Serbia at the University of Novi Sad and the University of Niš, revolved around preserved tapes of early music. These materials are connected to a project carried out by *The International Association of Sound and Audiovisual Archives (IASA)*<sup>28</sup>, which positions itself as a guardian of the audiovisual heritage. Additionally, the *Magnetic Tape Alert Project*, sponsored by UNESCO, focused on the preservation of magnetic tapes<sup>29</sup>. The project involved Serbians, including representatives from the Serbian Academy of Sciences and Arts in Belgrade. Many of them were involved in traditional (folk) music, which is quite typical in Serbia due to the extensive ethnographic collections. However, other branches of music also appeared. Belgrade hosts musical institutions such as the Academy of Arts in Belgrade and ensembles dedicated to early music, for example, the *Ensemble Studio for Early Music*, and the „Josip Slavenski“ music school in Belgrade. This confirms that early music is also represented in Serbia. In 2020, a new strategy was established that includes early music in the areas of digitization and promotion, funded by the Serbian Ministry of Culture. However, the digitization process requires investments in personnel. There is still much space to fill in the cultural and artistic life in Serbia and to incorporate it into the research field. During the discussion, questions were raised regarding other existing institutions related to early music and the possibilities of establishing collaborations in the field of cultural tourism.

## Women in early music: Gender studies projects

*Contribution by Ascensión Mazuela-Anguila (Universidad de Granada)*

The presentation focused on a segment of Georg Braun's (1572-1618) *Civitates Orbis Terrarum*, which features musical scenes concentrated in the region of Andalusia. These scenes depict women dancing and playing musical instruments such as tambourines and frame drums. What makes this unique is that there are no primary sources documenting the activities of women in early modern Spanish music history. The presentation aimed to introduce methodological concepts related to the use of sources other than those traditionally used in musicology, which mainly focuses on

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<sup>28</sup> *International Association of Sound and Audiovisual Archives*, online: <https://www.iasa-web.org/> (accessed: March 2023).

<sup>29</sup> *Magnetic Tape Alert Project*, online: <http://www.mtap.iasa-web.org/> (accessed: March 2023).

male composers and written music. The researcher highlighted how using „non-musical“ sources, such as iconography, inquisition records, notarial and accounting documents, literary sources, and oral traditions, in combination with technological tools, enables the discovery of information about women's musical practices in the context of early modern music culture.

The first European woman to publish music was Gracia Baptista in 1557. Surviving sources lead researchers to convent sources, providing insights into the musical abilities of nuns in Spain. The presentation emphasized that contemporary musicologists should examine sources differently to avoid overlooking significant aspects of the music culture created by women, as their stories are still somewhat hidden. Examples presented by Ascensión Mazuela-Anguita highlighted the role of women in convent spaces in Barcelona and the networks created by women, including certain musical activities in convents in Italy and Spain<sup>30</sup>. The methodological tools used in this research included an application with a map of convents and musical networks in early modern Barcelona<sup>31</sup>. It also involved using the methodology of folk culture research to find additional sources, such as wills. Oral tradition sources were also considered important.

The presentation shed light on the ongoing development of tools that expand the perspective of gender studies in early music research. This encompasses topics such as transnational musical networks, musical patronage, engaging in discourse about musicians, and oral musical tradition. It also provides an opportunity to rethink the traditional way of writing music history.

During the discussion, questions arose regarding song transmissions performed by women, but only the lyrics had been preserved without the melodies. Considering previous discussions and issues related to dealing with not only musical but also non-musical sources, Tim Crawford posed a relevant question about how to analyze such a vast array of non-musical sources?

## Conclusions and Recommendations

The issues presented primarily highlighted the immense value that the RISM database brings. Ensuring its **continued optimized development** is essential. The various perspectives presented during the workshops in Lisbon can be helpful, including ongoing efforts **to integrate resources** from different databases, **emphasizing non-musical sources and museum materials**. What repeatedly emerged in discussions was the need **to strengthen interoperability**. There are barriers between groups that impact the functionality of the RISM database, primarily involving **music librarians, musicologists, and IT engineers**. Encouraging these

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<sup>30</sup> Ascensión Mazuela-Anguita, *Women in Convent Spaces and the Music Networks of Early Modern Barcelona*, Routledge, New York 2023.

<sup>31</sup> *Urban convents and music networks in early modern Barcelona*, online: <http://arcg.is/14e55P> (accessed: March 2023).

groups to engage in discussions to address the most critical aspects of each group's work is vital. **Preparing a cooperation strategy to bridge the gaps between these perspectives can also be beneficial.**

Moving toward consolidating data centered around the RISM database, **initiatives for cooperation** and mutual understanding among people and institutions will be required. **Opportunities like the Conference on Digital Libraries for Musicology are promising in connecting librarians with IT engineers but have room for dialogue with more musicologists.** A similar issue exists between **IAML members, musicologists, and IT engineers involved in MEI.**

There is an increasingly visible need for the broad use of sources, including non-musical resources and materials of ethnological nature. Within ICTM, a working group titled **"Sources and Archives for Music and Sound Studies"**<sup>32</sup> has been established, **and collaboration with them** could bring new opportunities, not only for research but also for the RISM database. **To achieve tangible results, it is necessary to step out of one's comfort zone.** As Tim Crawford mentioned in Lisbon, „the key issue is democratization; we need to present a broader image to larger groups [...] It would be a valuable project to suggest what would happen if we thought much more broadly, about the entire history of music... We already have so many images, images of notes, so where to now? **Encouraging the use of sources will make them more visible"**. The question to consider is whether this should move toward „crowdsourcing“ or the professionalization of tools and sustainable development? One example of a project that combines various sources of information, as highlighted by D. Lewis, is MMM<sup>33</sup>. Considering that RISM provides its data for free and reaches a very broad international community, it remains a relevant proposal in the context of the ideas of openness and information accessibility<sup>34</sup>.

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<sup>32</sup> *International Council for Traditions of Music and Dance: "Study Group on Sources and Archives for Music and Sound Studies"*, online: <https://ictmusic.org/studygroup/musa> (accessed: June 2023).

<sup>33</sup> *Mapping Manuscript Migrations (MMM)*, online: <https://mappingmanuscriptmigrations.org/en/> (accessed: June 2023).

<sup>34</sup> Mark Gotham, "Connecting the Dots: Engaging Wider Forms of Openness for the Mutual Benefit of Musicians and Musicologists", *Empirical Musicology Review* (12 Dec 2021), n. pag., DOI:10.18061/emr.v16i1.7644.



## Appendix: RISM Position Paper

*Balázs Mikusi & Klaus Pietschmann*

The Répertoire International des Sources Musicales (RISM) aims to comprehensively document extant musical sources worldwide: music manuscripts, printed music editions, writings on music theory, and libreB that are found in libraries, archives, churches, and private collections. It is an indispensable tool not only in the international library landscape, but also for the current research trends in digital musicology, due both to its globally recognized standards of source cataloging and to its authority data management. Without exaggeration, RISM can be described as one of the few global projects in the humanities that function as a “lighthouse” for other disciplines by providing singular access to the world’s written musical heritage. With its global network, supported by a Commission Mixte delegated by the International Musicological Society (IMS) and the International Association of Music Libraries (IAML), it forms a central interface between music librarianship and musicology worldwide. RISM’s Editorial Center (Zentralredaktion) is located in Frankfurt am Main and is maintained by the association “Internationales Quellenlexikon der Musik e.V.,” which receives its funding from the Akademie der Wissenschaften und der Literatur | Mainz in the context of the German Akademienprogramm.

### BACKGROUND AND CURRENT SITUATION

The Répertoire International des Sources Musicales was founded as a joint effort of the IMS and IAML: after an initial planning session of the steering committee in 1952, the first secretariat led by François Lesure was established in Paris at the Bibliothèque nationale de France. The idea of an inventory that aims at documenting musical sources worldwide arose from a general reorientation that took place in the humanities after 1945. Inspired by the tragic experiences of World War II and the preceding years, the field of musicology also experienced a desire for international cooperation in the documentation and study of musical sources that had been dispersed and stored under disparate conditions. Even under the changing conditions of globalization, enjoying the advantages of tight networking and the digital transformation, the efforts of RISM’s Editorial Center in Frankfurt and the newly founded Digital Center in Bern remain fundamentally indebted to this ideal.

Whereas for decades the main interest lay in producing printed bibliographies of sources, the 1980s saw a gradual shift toward computer-assisted data collection, and eventually publication on CD-ROM or through commercial database systems like EBSCO. The cooperation with the state libraries in Munich and Berlin, initiated under Christoph Wolf’s term as RISM’s president, made it possible to provide the data to a larger audience at no cost through an online catalog (today officially called “RISM Catalog”). This decision was an important step that superseded the commercial database and contributed significantly to the international acceptance of RISM.

In 2016 the open-source cataloging application Muscat, originally developed by the RISM national working groups in Switzerland and the United Kingdom, became the central cataloging program for all RISM contributors as part of a cooperation between RISM Switzerland (since 2021: RISM Digital Center) and the Editorial Center, while as third partner the Berlin State Library took over the hosting of the servers. At the same time, the online RISM Catalog was further developed by the Bavarian State Library and eventually integrated into its musicconn service. At their initiative, and with the involvement of the working groups, it proved possible to release the data as Open Data in 2013, and as Linked Open Data the following year. Parallel to this Muscat was also further developed by RISM Switzerland with funds from the Swiss National Science Foundation (Schweizerischer Nationalfonds), and their contributions culminated in the launch of RISM Online as an additional search interface in 2022. RISM Online has opened up new perspectives among others by providing direct access to authority data, using stable and thus directly cite-able URL's, offering searches in "national collections" (i.e. the sources in a given country), as well as an incipit query that considerably highlights the searched-for notes in red.

The successful work of the Editorial Center has for decades relied on close cooperation with the RISM working groups; a network that has developed gradually and extended to over 35 countries worldwide. The cooperation is most intensive with the German working group, which is also financed through the Akademienprogramm and - with its two centers in Munich and Dresden - acts (together with a group of catalogers in the Berlin State Library) as a crucial supplier of new data for RISM. However, in recent years Poland has shown equally impressive activity, while there is also lively exchange with the other working groups in part mediated by the Coordinating CommiKee, currently consisting of five experts from Austria, the Czech Republic, Germany, Poland, and South Korea .

One important development of recent years has been the intensive expansion of the core data set made available to RISM's users. Thanks also to extensive imports from the catalogs of the Istituto Centrale per il Catalogo Unico, the Bibliothèque nationale de France, the Österreichische Nationalbibliothek and the Swiss RISM working group, our users can now access close to 1.500.000 source descriptions - implying not merely a quantitative, but indeed a qualitative change, since the ever more complete coverage of regions previously underrepresented in the RISM database effectively foster the reconstruction of historical cultural networks.

At the same time, the ongoing advancement of technology requires continuous reconsideration of the available options, e.g. to what extent the contents of external databases could be included in RISM (meta)searches even if the data itself has not explicitly been imported to form an integral part of the RISM data set (for a preliminary case study, see the considerations regarding DIAMM further below). Besides, the future potential of other aspects of the data pool needs also to be contemplated, e.g. in what ways RISM's name authorities could be used in larger contexts, or how the vast amount of information regarding musical works inherently

included in our source descriptions could also be made available in the form of work authorities or catalogs. Overall, RISM arguably has the potential to serve as a central hub not merely for source descriptions but also for certain authorities - while it needs to keep improving its connectivity with other data providers in the case of authority files less specific to music (e.g. places).

### RISM AND "EARLY MUSIC"

Because of its long-standing focus on the cataloging of manuscript sources from 1600 to 1800, RISM can in fact be understood as a catalog of "Early Music" in the broader sense. At the same time, it is not usually considered as a primary research tool for pre-1600 music by the MedRen community. This impression, however, is somewhat misleading. From the very beginning, RISM showed a strong interest in renaissance music: series A/I and B/I document printed music of the 16th century, and other volumes of the B series describe manuscripts featuring polyphonic music, tablatures, and hymns. The Census-Catalogue of Manuscript Sources of Polyphonic Music 1400-1550, compiled by the University of Illinois Musicological Archives for Renaissance Manuscript Studies and published in 5 volumes between 1979 and 1988, in many respects surpassed RISM's somewhat disparate efforts to catalog manuscripts before 1600, and so scholars of renaissance music tended at times to lose sight of RISM, also overlooking helpful new tools offered by the online RISM Catalog.

As mentioned above, from its very beginning medieval and renaissance music played a prominent role in the planning and conception of RISM's printed catalog volumes. Especially important for renaissance music were the 1972 volumes on "Handschriften mit mehrstimmiger Musik des 14., 15. und 16. Jahrhunderts," edited by Kurt von Fischer together with Max Lütolf, and dedicated to the trecento repertoire and the organum-like music sources of the 15th and 16th centuries. These volumes paved the way for other catalogs of renaissance manuscripts with polyphonic music, and the intention was to follow this path in the context of RISM, too. Nanie Bridgman's catalog of 15th- and 16th-century Italian music manuscripts was conceived as a further step in this direction, but it had a complicated history: preparations took a long time, as did the insertion of the numerous corrections requested by peer reviewers. When the catalog finally appeared in 1991 as volume 5 of RISM's B/IV, it was not very well received for falling back in many respects behind the Census catalog volumes which had appeared in the meantime. Bridgman's volume had a noteworthy revival in the context of DIAMM, where the entries stand side by side with the descriptions of the Census-Catalogue, and on occasion offer an insightful "second view" on the respective manuscripts. Nevertheless, it is fair to say that the enormous achievement of the Census-Catalogue brought the RISM series B/IV to an end - an interpretation also underlined by the fact that for Cristina Urchueguía's inventory of polyphonic masses, mass sections, and Requiem masses as transmitted in sources from Spain, Portugal, and Latin America between ca. 1490 and 1630, a new series (B/XV) was created.

By consequence, in the following years the cataloging of renaissance music manuscripts in RISM came to a standstill, while the Census-Catalogue came to be viewed as the standard research tool, and thanks to its integration in DIAMM its contents are now easily accessible online at no cost. With regard to printed music the situation is quite different, but in the MedRen community RISM's reputation appears shaken nonetheless. The two series of major interest for renaissance scholars are A/I and B/I. Series A/I documents printed music editions published between 1500 and 1800 that contain works by a single composer. Nine volumes were published by Bärenreiter between 1971 and 1981, with 5 Addenda and Register volumes added until 2003. A CD-ROM that incorporates all of the descriptions from the printed volumes was released in 2011, featuring over 100,000 entries. The contents of the CD-ROM were added to the RISM Catalog in 2015, thanks to which the latter has become a more useful tool that covers all known individual prints of the 16th century. Still, the present format has certain flaws; one misses in particular a detailed list of contents for most prints - a deficiency that was originally accepted by the editors of the printed volumes of the A/I series only for practical reasons. Since renaissance scholars have excellent editions, work catalogs and catalogues raisonnés of many 16th-century composers and printers at their disposal, RISM understandably remains but a second choice for the search of individual prints.

Volume B/I containing printed collections of the 16th and 17th centuries was published as edited by François Lesure in 1960, and became the only authoritative RISM catalog in the context of renaissance music research - the numbering it introduced with the chronological list of collections is still in common use. It is worth noting that, according to the original plans, RISM B/I should have appeared in two volumes. The first one containing the chronological list of 16th- and 17th-century anthologies is the one you know, whereas the second one, which should have included all the indexes to volume I, never appeared. That said, the first volume itself features two indexes (one for publishers' and printers' names, the other for titles or authors of the collections), whereby the second index unfortunately lists only the composers mentioned in the *titles* of the anthologies, but not all the composers actually represented in them. An index making up for this deficiency was prepared by Tomaso Ferrari in 1981, and edited by Pietro Zappalà as late as 2010; it is now available on RISM's website.

With the enormous progress in renaissance music research after the appearance of Lesure's pioneering volume the need for a revision soon became evident. It was Howard Mayer Brown who took over this task for the first half of the 16th century, and when he died in 1993 he left behind an impressive manuscript, which on the one hand was another testimony of his outstanding scholarship, offering extremely valuable information, while on the other it was not complete enough to be published as a book. The solution came about only a few years ago, when RISM's cataloging software Muscat was further developed (in cooperation with one of our most important partners, the Dresden State and University Library) to accommodate proper descriptions of such printed collections. With additional financial support it

became possible to integrate Howard Mayer Brown's data into Muscat, and the same was soon done for Gertraud Haberkamp's unfinished continuation of the B/I revision, targeting the second

half of the 16th century. Thanks to these additions, RISM now allows for much more efficient online search strategies into printed collections of the 16th century.

### **FUTURE PERSPECTIVES...**

With Muscat and RISM Online we now have at our disposal two powerful open source tools developed mainly by the staff of the RISM Digital Center in Switzerland, including Laurent Pugin, Andrew Hankinson, and Rodolfo Zitellini. As RISM Online is increasingly discovered and recognized by musicologists, it seems worthwhile to contemplate its potential for cooperating with similar projects, especially those whose long-term sustainability is not guaranteed. In the context of Early Muse the most important cooperation plan regards DIAMM, which probably many of you view as an indispensable tool for your research. DIAMM and RISM A/II have different scopes. DIAMM mainly focuses on polyphonic music manuscripts up to c. 1600, while RISM's A/II series deals with non-plainchant music manuscripts after 1600. S/II, DIAMM contains many sources from the 17th century, and conversely, RISM's database also features sources written before 1600. While the scope regarding pre-1600 sources is similar, with respect to the 17th century a major difference lies in the repertoire: RISM registers also contemporary compositions, while DIAMM is invested exclusively in sources with a retrospective repertoire. Notwithstanding that, there are ca. 740 overlapping records, affecting more than 300 different sources (even though this is not too many as compared to the total number of manuscripts, in DIAMM's case nearly 4000).

With that in mind, it would seem a worthwhile effort to make these records searchable in RISM Online. Needless to say, there are considerable obstacles to overcome, including the vast differences between the source descriptions and the underlying cataloging guidelines, but the main set of information is comparable. Both databases record the library siglum (which may occasionally differ), the shelf number, and provide a material description comprising remarks on the binding, notes on watermarks, dates, and format, as well as a general description and a bibliography. While DIAMM registers the remote provenance of the source (i.e., the place of origin), RISM tends rather to focus on its immediate provenance (former owners). The most substantial difference, however, lies in the listing of the contents of a manuscript. RISM describes each piece individually, while DIAMM refers to an authority file of "compositions." (In this context it is worth recalling that an authority file for "works" has recently been introduced also in RISM, which should facilitate the harmonization of the two systems considerably.)

Another notable difference concerns the commenting options offered to users: DIAMM provides them (after an initial log-in) with a "Public Comments" and a "Contribute a Change" feature, whereas in RISM the comment function allows users

(without requiring a log-in) to send a message directly to the editors, who then review the suggestions and adjust correct the record accordingly. By the same token, DIAMM gives credits for each record (“Contributors”), while in RISM users do not have access to the authors or the version history of the records (a policy that might need to be reconsidered given the increasing number of research projects where such measurement of the output might prove useful). In any case, there are obvious affinities between DIAMM and RISM, so we are optimistic that a cooperation could be realized to mutual advantage in the not too distant future.

### ... AND CHALLENGES

Against this background several key issues arise that have a bearing on our plans for the future. These issues are closely intertwined, and their complexity requires a collective, well-calculated effort on the part of all parties involved.

#### **Internationality**

Securing the long-term acceptance and visibility of RISM assumes ongoing outreach activity on a global level. In-depth information about data growth, technological advances, and perspectives for the future must be conveyed through all possible channels, emphatically including personal communication, which promises the best results also when dealing with potential criticism and suggestions arriving from contributors and users. Even in our globalized world, one encounters skepticism toward a project based in Europe, as if RISM wanted to “appropriate” the data of others – such reservations must be countered by consistently emphasizing the service aspect of the project. This sensitive area has long been managed rather successfully by the staff of the RISM Editorial Center, at present primarily by Balázs Mikusi and Jennifer Ward. The continuation of such outreach efforts must by all means be guaranteed also beyond 2025, when substantial changes in the financing of the editorial work will likely require changes also in the structure of RISM.

#### **Coordinating the interests of musicologists and music librarians**

Another key challenge for the Editorial Center involves processing the records submitted by the national working groups and curating RISM’s authority records, of which the name authorities are also exported for the Virtual International Authority File (VIAF). While complying with globally accepted music library standards, to make the data sustainable and interchangeable, RISM also needs to build on its reputation as an essential research tool, the data of which needs continuously to be scrutinized, supplemented, and at times corrected in the course of source-based research. With that in mind, the continuous evaluation and integration of feedback from the greater RISM community – including not only music scholars and librarians, but also performing musicians – remains essential, once again confirming that the editorial supervision of the data must be guaranteed also beyond 2025.

#### **Further developments on the technical level**

The coexistence of Muscat, the RISM Catalog and RISM Online currently allows for manifold data management strategies, offering further opportunities for all partners involved. Shortcomings pointed out by users concerning unexpected search results, or the display of certain records, can continuously be addressed and improvements implemented as soon as possible. At the same time, we witness technological developments day by day that open up new opportunities, but also require the continuous adjustment and further development of our tools, in close cooperation between the technical and the editorial staff. Only thus can the long-term availability and relevance of RISM be guaranteed.

### **Financial support**

Together with our major partner libraries (in Berlin, Munich, and Dresden), the Prussian Cultural Heritage Foundation, the German Society for Music Research, and RISM Germany, RISM International has made a push to obtain long-term funding from the Federal Republic of Germany and the German states of Hesse, Bavaria and Saxony for a RISM coordinating office that could take over the essential tasks of the Editorial Center after 2025.

### **PRELIMINARY CONCLUSIONS**

Given that sustainability has increasingly become a central concern for potential sponsors, more and more projects relying on third-party funding seem interested in cooperating with RISM as a final and safe harbor for the data they produce. While this trend opens up new perspectives for RISM, it also requires certain adjustments – e.g. in order to be able to serve as a central hub for projects with vastly diverse research interests, RISM should become ever more open to include special source types (like inventories, or single-voice sources) that would traditionally have been viewed as “not for RISM.” Paradoxically, the increasing expectation of diverse communities that RISM should serve as a safe harbor for ever more (and ever more diverse) data assumes the intensification of editorial work – precisely in a period when the activities of the Editorial Center are partially impeded by the uncertainties of the unavoidable restructuring. At the same time, the unshakable professional consensus that RISM’s continuity must by all means be ensured, since it maintains an infrastructure indispensable for countless other stakeholders, is in fact our most powerful argument in the course of the ongoing negotiations regarding the new structure after 2025.

It should also be noted that not only the catalogers of RISM’s diverse working groups formulate increasingly specific technical requests, but our users also have ever higher expectations based on their experiences with other online services and applications. Following the inclusion of IIIF images, it has recently become possible also to append MEI files to our source records – a development that opens up vast opportunities with respect to the inclusion of fully encoded music sources (while the Plaine & Easie format is still meant to be kept as the basis for incipit search and comparison). As new opportunities arise on the horizon, further technical expansion will no doubt be

desirable, whereby one needs to keep in mind that RISM has committed itself to free access and open-source solutions, a strategic decision that has inevitable consequences also as regards any further resources RISM records should directly be linked with.