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DIGITIZATION AND PRESENTATION OF MUSIC DOCUMENTS IN THE BAVARIAN STATE LIBRARY

Jürgen Diet[1]

English Abstract
The Bavarian State Library has been digitizing a large portion of its holdings for several years. This paper describes the past, the ongoing, and the future digitization projects for the holdings in the music department of the Bavarian State Library.

French Abstract
La Bibliothèque d'État de Bavière a entrepris la numérisation d'une grande partie de ses collections depuis plusieurs années. Cet article décrit les projets de numérisation passés, présents et futurs concernant les collections du département de musique de la Bibliothèque d'État de Bavière.

German Abstract
Die Bayerische Staatsbibliothek unternimmt seit mehreren Jahren große Anstrengungen, um umfangreiche Teile ihres Bestandes zu digitalisieren. Dieser Beitrag beschreibt die früheren, die laufenden und die in naher Zukunft anstehenden Digitalisierungsprojekte für die Bestände der Musikabteilung der Bayerischen Staatsbibliothek.

1. The Bavarian State Library and Its Music Department

The Bavarian State Library ("Bayerische Staatsbibliothek")[2] is one of the most important European general libraries and ranks among the best research libraries on an international scale. It forms Germany's virtual national library together with the Berlin State Library (Staatsbibliothek zu Berlin) and the German National Library ("Deutsche Nationalbibliothek") in Frankfurt and Leipzig. The Bavarian State Library is also the central state library and repository library of the Free State of Bavaria. With 10 million books, about 62,000 current periodicals in printed or electronic form, and about 96,000 manuscripts the Bavarian State Library is one of the most important knowledge centers of the world. Every year approximately 130,000 volumes are added, which are selected and catalogued systematically according to scholarly criteria.

1. Jürgen Diet is an employee at the music department of the Bavarian State Library in Munich, Germany and the president of the German IAML-branch. An earlier version of this paper in German has been presented at the conference of the „Gesellschaft für Musikforschung" in September 2012 in Göttingen and is available online at http://nbn-resolving.de/urn:nbn:de:bvb:12-babs2-0000000828.

2. http://www.bsb-muenchen.de/Aktuelles-aus-der-Bayerischen-Staatsbibliothek.14+M57d0acf4f16.0.html

The library's unique collection profile is characterized by extremely precious manuscripts, rare printed books, and comprehensive special collections from thousands of years of cultural heritage. But, at the same time, the library rises to the challenges of the future: the Bavarian State Library is continuously enhancing its digital and Internet-based services, for example in the areas of electronic journals, mass digitization of its collections, and the development of innovative digitization technologies.[3]

The Music Department of the Bavarian State Library[4] belongs to the list of internationally leading music libraries in view of both the quality and the scope of its historical collection and its traditionally broad acquisition spectrum. Its holdings currently amount to approximately 388,000 scores, 40,000 music manuscripts, 92,000 music sound carriers, 330 archives of musicians, and 164,000 music books and music periodicals.

The Music Department offers its services to a broad range of international music scholars, making sources available and giving comprehensive information. Holding many sources of music which are not available or hardly accessible in other libraries, the Department also continually supplies reproductions of historical works for study and research, performances, and radio or record recordings.

The acquisition budget of the Music Department amounts to around €600,000 per year; a part of this money is supplied by the German Research Foundation ("Deutsche Forschungsgemeinschaft", DFG).

2. The Munich Digitization Center

The Munich Digitization Center ("Münchener Digitalisierungszentrum", MDZ) is an institution within the Bavarian State Library and was founded in 1997. It digitizes the holdings of the Bavarian State Library and presents them on its web pages free of charge. As of March 2014, 1,024,000 objects have been digitized by the MDZ.[5] Several presentation forms are used for the digitized objects, among others 3D-presentations and apps on mobile devices. The digitization projects in the MDZ are of very different kinds and range from mass digitizations using scan robots to so-called "boutique digitizations" with very special requirements and extensive cataloguing.[6] In March 2014, the MDZ used 24 scan systems for its digitization projects. The scan systems, the digitization policy, and the digitization workflow of the MDZ are described on the MDZ web page[7]. The workflow of the MDZ is managed by the "Zentrale Erfassungs- und Nachweisdatenbank" (ZEND), a scaleable self-made workflow tool based on a MySQL database. Every single step of the

3. The text of first two paragraphs has been taken from http://www.bsb-muenchen.de/The-library-in-brief.263+M57d0acf4f16.0.html.

4. http://musik.bsb-muenchen.de, in English: http://www.bsb-muenchen.de/en/about-us/departments/department-of-music/

5. http://www.digitale-sammlungen.de/index.html?c=&l=en

6. M. Brantl / I. Schäfer, *Challenges and Experiences in the Mass Digitization of Manuscripts and Rare Books at the Bavarian State Library*, in: *Eikonopoiia, Digital Imaging of Ancient Textual Heritage (Proceedings of the International Conference Helsinki 28–29 October 2010)*, edited by V. Vahtikari, M. Hakkarainen und A. Nurminen (Commentationes Humanarum Litterarum 129), Helsinki 2011, S. 223–249, online available at http://www.digitale-sammlungen.de/content/dokumente/Brantl_Schaefer_Eikonopoiia.pdf

7. http://www.digitale-sammlungen.de/index.html?c=digitalisierung&l=en

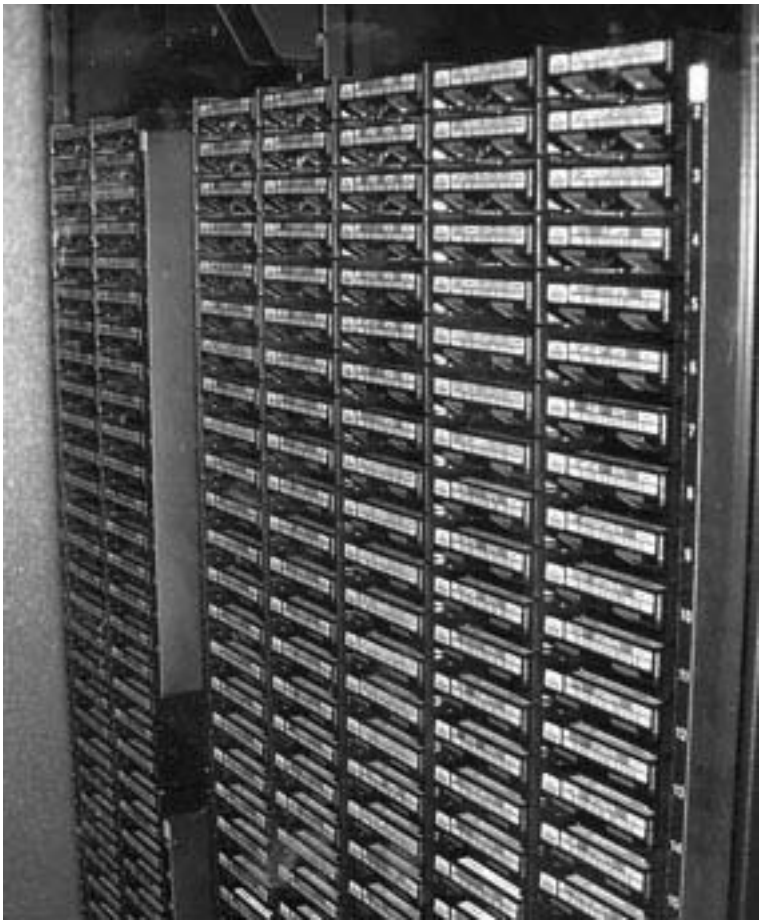

ILLUSTRATION 1 Storage Tape System in the Leibniz Supercomputing Centre

digitization process follows the "Practical Guidelines for the Cultural Heritage Funding Programme"[8] of the German Research Foundation.

Since 2007, the Bavarian State Library has been working with Google in a public-private-partnership where Google will scan around 1,000,000 copyright-free books from the holdings of the Bavarian State Library.

The digital objects that result from the digitization projects are long-term preserved on large tape storage systems. The MDZ cooperates for this task with the Leibniz Supercomputing Centre in Munich.[9] Illustration 1 shows the storage tape system at the Leibniz Supercomputing Centre, where each individual tape stores around 500 Gigabytes of data.

8. http://www.dfg.de/download/pdf/foerderung/programme/lis/praxisregeln_digitalisierung_2009.pdf
9. http://www.lrz.de/english/

3. Digitizations of Holdings in the Music Department of the Bavarian State Library

3.1 Monographs

The copyright-free monographs on musicology from the holdings of the Bavarian State Library are already completely digitized. This totals 4,500 monographs. They can be found via several catalogues. All musicological monographs of the Bavarian State Library are listed in its catalogue (OPAC) and can be found by entering "Mus.th.*" in the search field "Shelfmark" in the advanced search[10]. The selection of the digitized monographs is possible by choosing the value "Online resource" in the field "Media type". The result list contains the buttons "Online lesen" with links to the digitized objects.

The digitized musicological monographs are also contained in the European Digital Library "Europeana"[11] and in the German Digital Library ("Deutsche Digitale Bibliothek"[12]). If they have been scanned by Google, then they are also available via Google Books[13] where the search in the full text is possible.

Another full-text search in the digitized musicological monographs of the Bavarian State Library is offered by the Virtual Library of Musicology[14]. Around 2,000 monographs from the period 1800 until 1870 are included in this search.

3.2 Musicological Journals

The journal overview of the Virtual Library of Musicology offers the search and browsing in the table of contents of around 180 musicological journals.[15] Additional services are included in order to get to the full-text of the journal articles (like the lending systems of German libraries, the inter-library loan of German library networks, and the document delivery system "subito"[16]).

3.3 Sheet Music

Over the past few years, the Music Department of the Bavarian State Library has put an emphasis on digitizing complete editions of selected composers. The editions are old enough so that they are copyright-free. These digitizations can be found in the music section of the MDZ-homepage[17] and in www.vifamusik.de in the category "Digital Library – Digital Collections – People". They include the following complete editions:

- Ludwig van Beethoven (Breitkopf & Härtel, 1862–1865)
- Georg Friedrich Händel (edited 1858–1902 by Friedrich Chrysander)
- Franz Liszt (ed. 1907–1936 by Carl Alexander)
- Felix Mendelssohn Bartholdy (ed. 1874–1877 by Julius Rietz)
- Franz Schubert (Breitkopf & Härtel, 1884–1897)
- Robert Schumann (ed. 1879–1893 by Clara Schumann)

10. https://opac.bsb-muenchen.de/metaopac/search.do?methodToCall=start
11. http://www.europeana.eu
12. https://www.deutsche-digitale-bibliothek.de/?lang=en
13. http://books.google.com
14. http://www.vifamusik.de/metaopac/start.do?View=mus&db=17&Language=en
15. https://www.vifamusik.de/literature/journal-overview.html?L=1
16. http://www.subito-doc.de/index.php?lang=en&mod=page&pid=Dokumentlieferung
17. http://www.digitale-sammlungen.de/index.html?c=sammlungen&kategorie_sammlung=8&l=en

Nowadays, there exist newer editions of the works of the above mentioned composers, but most of the newer editions are not yet completed as in case of Beethoven[18], Händel[19], Schubert[20], and Schumann[21]. The old editions of the 19th century are still useful because they are copyright-free, complete and of historic value.

A separate digital collection contains early prints of Richard Wagner's musical works[22], some of which are famous items that have been used in historical performances (e.g., the scores from the world premieres of *Tristan and Isolde* and *Die Meistersinger von Nürnberg*).

More sheet music from the Music Department of the Bavarian State Library is available on the website that contains the digitizations on demand (DoD).[23] The DoD-service has been established by the MDZ to allow users to order and pay for the digitization of copyright-free works that have not yet been digitized.[24]

Almost all digitized sheet music from the Bavarian State Library is also contained in the IMSLP/Petrucci library in a separate category "Scores from the Bayerische Staatsbibliothek".[25] Exceptions are the digitizations with restricted access that can only be viewed at in-house in the Bavarian State Library.

3.4 Music Manuscripts

The digitized music manuscripts of the Bavarian State Library are presented on a special webpage.[26] In February 2014, this webpage contained around 1,400 music manuscripts, from composers such as Hugo Distler, Michael Haydn, Gustav Mahler, Max Reger, and Josef Rheinberger. These manuscripts are copyright-free in Germany and many other countries because the composers have been dead for more than 70 years. Illustration 2 shows the opening folio of the holograph of Mahler's Symphony No. 8.

The following music manuscripts are already digitized but can only be looked at in the digital reading room of the Bavarian State Library because they are not copyright-free:

- 91 manuscripts of Carl Orff (1895–1982)
- 181 manuscripts of Hans Pfitzner (1869–1949)
- 84 manuscripts of Richard Strauss (1864–1949)
- 175 manuscripts of Ermanno Wolf-Ferrari (1876–1948)

The library was able to digitize these with the permission of the copyright holders, with the proviso that they be made available only in the Library. This helps us preserve the manuscripts while also providing access.

The music manuscripts of Karl Amadeus Hartmann (1905–1963) are a special case. On the occasion of the 50th anniversary of his death in 2013, the Bavarian State Library has

18. http://www.beethoven-haus-bonn.de/sixcms/detail.php?id=39059&template=&_mid=39059
19. http://www.haendel.de/Gesellschaft/HallischeHaendelAusgabe
20. http://schubert-ausgabe.de/en/
21. http://www.schumann-ga.de/index.php/schumann-gesamtausgabe
22. http://www.digitale-sammlungen.de/index.html?c=kurzauswahl&adr=daten.digitale-sammlungen.de/~db/ausgaben/uni_ausgabe.html?projekt=1350302053&recherche=ja&ordnung=sig&l=de
23. http://daten.digitale-sammlungen.de/~db/ausgaben/uni_ausgabe.html?recherche=ja&ordnung=sig&projekt=1199863919&l=en
24. http://www.digitale-sammlungen.de/index.html?c=digitalisierungsauftrag&l=en
25. http://imslp.org/wiki/Category:Scores_from_Bayerische_Staatsbibliothek
26. http://daten.digitale-sammlungen.de/~db/ausgaben/uni_ausgabe.html?recherche=ja&ordnung=sig&projekt=1257941081&l=en

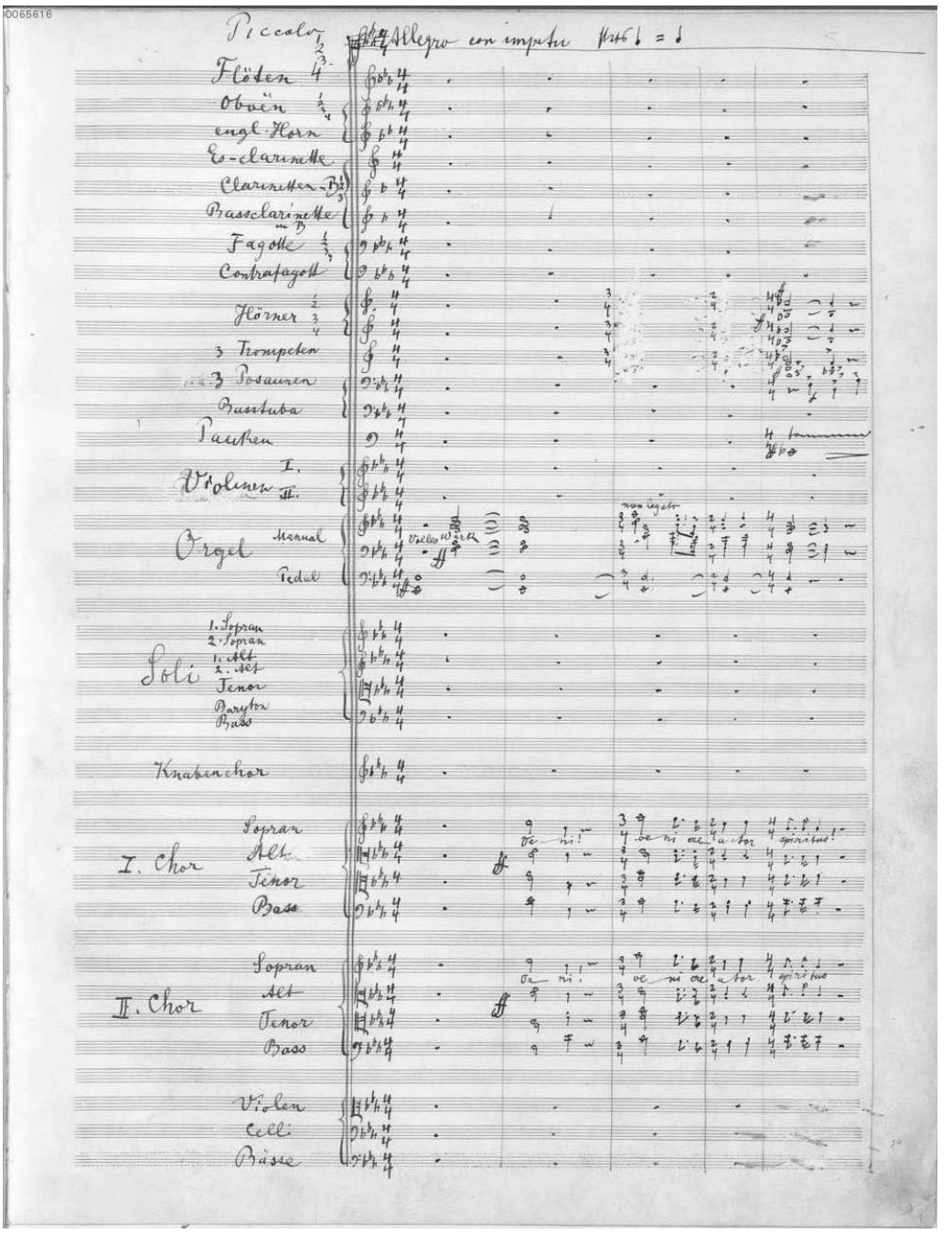

ILLUSTRATION 2 Beginning of Gustav Mahler's 8th symphony in the composer's manuscript (Mus.ms. 13719)

digitized the music manuscripts of his bequest and presents them with the permission of his family and the Schott publishing house.[27] It was the explicit wish of Karl Amadeus Hartmann's son, Dr. Richard Hartmann, that the digitized versions of his father's manuscripts are not only shown in-house in the Bavarian State Library, but also online for all internet users.

3.5 Sound Carriers

In Germany, the performers and other contributors of a sound recording have the ancillary copyright until 70 years after the recording date. Therefore, the digitization of newer sound carriers in the Bavarian State Library is currently going on only for preservation purposes. Several hundred music cassettes and a few dozen video cassettes have been digitized, mostly from bequests of musicians and composers. The digitization of our 1,100 magnetic tapes is still a desideratum.

3.6 Libretti

From 2010 until 2013, the German Research Foundation funded a project at the Bavarian State Library where all 5,700 librettos from the "Christian Her" Collection were digitized, catalogued and presented online.[28] This project also included the implementation of a libretto portal for the common presentation of the librettos of the Her Collection and of the German Historic Institute in Rome.[29]

4. Digitizations in the Near Future

Since February 2012, the Bavarian State Library has been digitizing and cataloguing music prints from the 16th and 17th century. These are mostly part books. The project is funded by the German Research Foundation and will last until spring 2016. It aims for digitizing around 2,000 music prints. As of February 2014, 1,000 music prints have already been digitized and can be seen on the project website.[30] Illustration 3 shows 3 partbooks of Johann Knofel's *Neue Teusche Liedlein* (Nürnberg : Katharina Gerlach und Johann vom Berg Erben, 1581).

In December 2012, the Bavarian State Library started a three-year-project to digitize and catalogue 162 choir books.[31] These large-size and prestigious music manuscripts are mostly from the 16th and 17th century and are a challenge for the digitization because of their format and their fragile condition. Illustration 4 shows folio 189r with Orlando de Lassus' "Eternam dona eis…" with Lassus' name written at the top in a later hand and with 3 paper repairs on the bottom half of the page. The page itself measures 44.5cm x 29.5 cm.

In the summer of 2014, all volumes of the journal *Phonographische Zeitschrift* will be digitized. *Phonographische Zeitschrift* (PZ) (and its successors *Phonographische und Radio-Zeitschrift* and *Phonographische, Radio- und Musikinstrumenten-Zeitschrift*) was published

27. http://musik.bsb-muenchen.de/hartmann

28. http://www.muenchener-digitalisierungszentrum.de/index.html?c=kurzauswahl&adr=daten.digitale-sammlungen.de/~db/ausgaben/uni_ausgabe.html?projekt=1266488950&recherche=ja&ordnung=sig&l=en

29. http://libretti.digitale-sammlungen.de

30. http://www.digitale-sammlungen.de/index.html?c=kurzauswahl&l=de&adr=daten.digitale-sammlungen.de/~db/ausgaben/uni_ausgabe.html?projekt=1328176523&ordnung=sig&recherche=ja&l=en

31. http://www.digitale-sammlungen.de/index.html?c=kurzauswahl&l=de&adr=daten.digitale-sammlungen.de/~db/ausgaben/uni_ausgabe.html?projekt=1257941718&recherche=ja&ordnung=sig&l=en

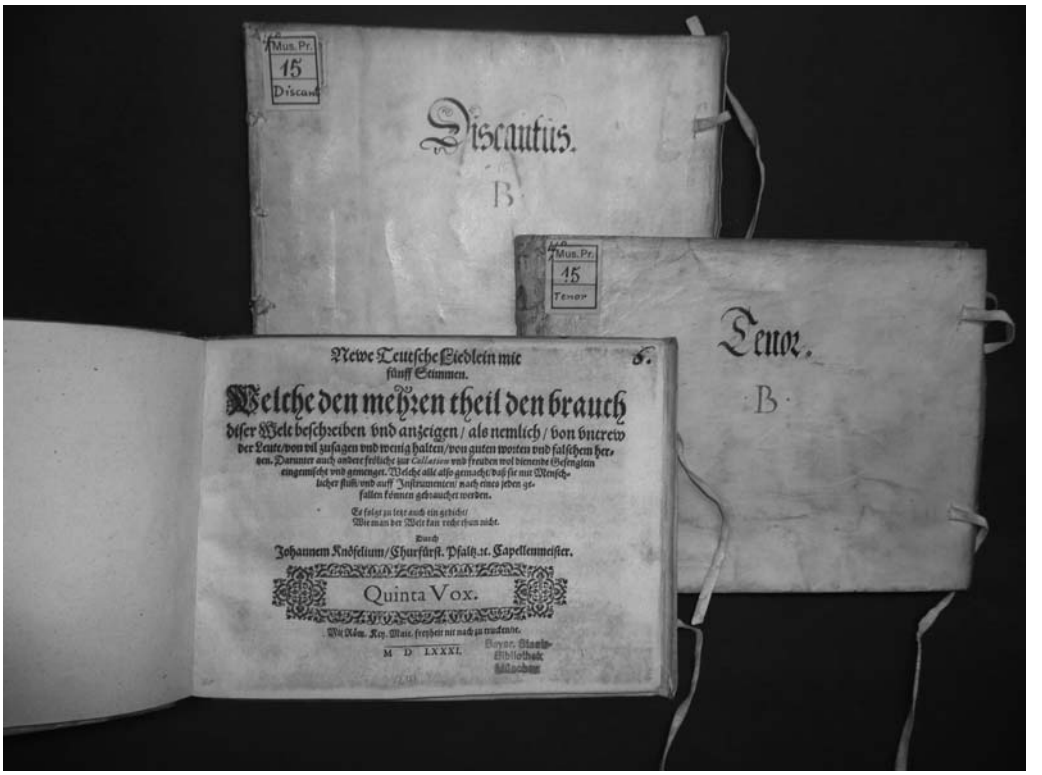

ILLUSTRATION 3 Three part books (4 Mus.pr. 15)

from 1900 to 1938, running to over 34,000 pages in that period. As "the journal serving the entire music and voice-equipment industry" (its subheading until 1933), the publication is a unique source of information, in text and images, on phonography in the first third of the 20th century. In Germany, there are only two copies of the PZ in the State Library in Berlin ("Staatsbibliothek zu Berlin") and in the library of the German Museum ("Deutsches Museum") in Munich that come close to being complete, and they are being merged here to produce a virtually complete copy.[32]

In 2014, Google will start to scan the music prints from the Music Department of the Bavarian State Library whose publication dates lie between 1700 and 1872 and whose formats allow an easy integration in the mass digitization process. Around 15,000 music prints fall into this category and will increase the current number of around 8,000 digitized music prints considerably.

The Bavarian State Library has made a considerable investment in digitization, using it as a way to preserve unique and fragile materials and to enhance the visibility of its holdings. The Library has seen use of the collection via the internet grow considerably and thinks that this was a worthy and timely investment in the history and the future of German library materials.

32. http://www.digitale-sammlungen.de/index.html?c=sammlung&projekt=1386147579&l=en

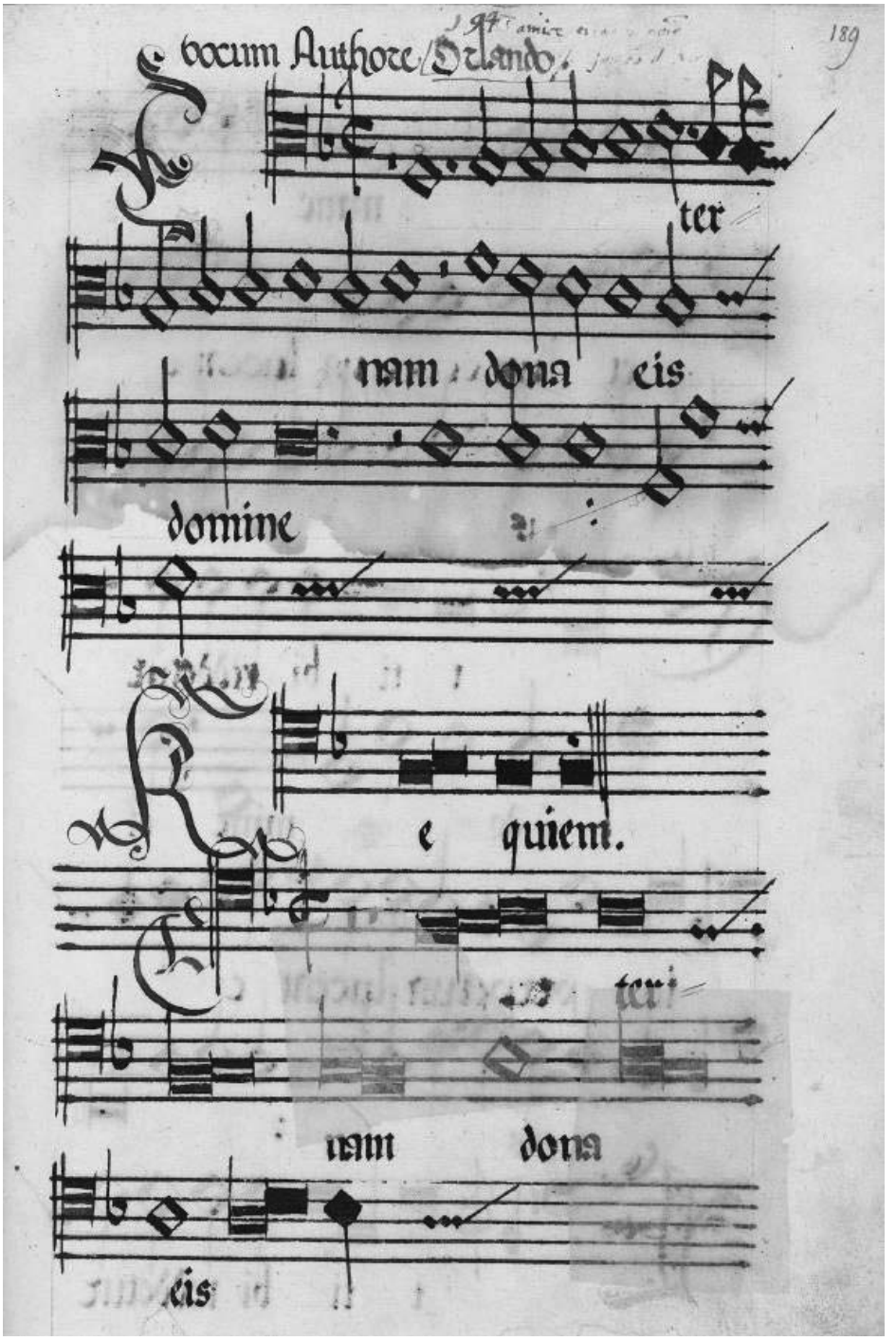

ILLUSTRATION 4 Choir book (Mus.ms. 79, folio 189r)