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## PROJECT “DIGITIZATION AND CATALOGIZATION OF PHONOARCHIVE OF THE INSTITUTE OF MUSICOLOGY SASA”: EXPERIENCES AND PERSPECTIVES

**Abstract:** This paper discusses results of the project “Digitization and Cataloging of Phonoarchive of Institute of Musicology SASA”, and related to that, significance of collection for further ethnomusicological and musicological research.

**Keywords:** digitization, Institute of Musicology SASA, magnetic tapes

Since establishing in year 1948, Institute of Musicology of Serbian Academy of Sciences and Arts (SASA) deals with collecting, processing and preservation of Serbian musical heritage. This orientation is set by Petar Konjović, composer, academician, and founder of the Institute. Those tendencies resulted not only with large library, but also with archive which contains legacies of famous Serbian composers, musicologists and ethnomusicologists. Archive preserves printed music, textual, photo and other documents as primary sources for researching national musical past, and also very rich collection of sound material – Phonoarchive of the Institute.<sup>1</sup>

This paper will mainly focus on sound archive of the Institute. Judging by rich content and size of the material, this is a project of international, national and regional importance. Work on digitization and catalogization of Phonoarchive started in 2007 on the initiative of director of the Institute, Principal Research Fellow Danica Petrović, PhD. Financial support came from Secretary of Culture of Belgrade and Ministry of Culture of Serbia, which has continued funding in years 2009 and 2010. On digitization, since its beginnings, has worked Rastko Jakovljević (MA, firstly as contracted, than as Research Trainee), with assistance of

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<sup>1</sup> Katarina Tomašević, „Značaj digitalizacije muzikalija i zvučnih zapisa u arhivu i fonoteci Muzikološkog instituta SANU“, *Pregled Nacionalnog centra za digitalizaciju, br.2*, (“The Importance of Digitization of Music Collection at Institute of Musicology“, *Review of the National Center for Digitization, No. 2*), Belgrade, Faculty of Mathematics, 2003, 46-51; Danka Lajić-Mihajlović, *Фонo збирка Музиколошког института (Phono Collection of Institute of Musicology)*, Belgrade, 2009, <http://www.music.sanu.ac.rs/Dokumenta/Fonoarhiv.pdf> (access: 09. 06. 2010.). About other collections of the Institute see: Melita Milin, *Библиотека Музиколошког института САНУ (Library of Institute of Musicology SASA)*, Belgrade, 2009, <http://www.music.sanu.ac.rs/Dokumenta/Biblioteka.pdf> (access: 09. 06. 2010.); Aleksandar Vasić, *Архив Музиколошког института: Колекција докумената, аутографа, преписа, старих нотних издања и фотографија (Archive of Institute of Musicology: Collection of Documents, Autographs, Transcripts, Old Score Editions and Photographies)*, Belgrade, 2009, <http://www.music.sanu.ac.rs/Dokumenta/Arhiv.pdf> (access: 09. 06. 2010.); Biljana Milanović, *Заоставштине композитора (Legacies of Composers)*, Belgrade, 2009, <http://www.music.sanu.ac.rs/Dokumenta/Zaostavstine.pdf> (access: 09. 06. 2010.).

Research Assistants Danka Lajić-Mihajlović (MA) and Jelena Jovanović (MA). Over last months of year 2009 on this project as associates worked Ljiljana Obrenić, Milica Obradović and Marija Dumnić, and that had great influence on acceleration of the project.

The collection of audio carriers of Institute of Musicology SASA contains: wax plates (144) wire reels (37), magnetic tapes<sup>2</sup> (approximately 800), gramophone records (over 2000), audio cassettes (approximately 80), DAT tapes (67), audio CD-s (approximately 200). At this moment is estimated that only on magnetic tapes exist approximately 1500 hours of sound material, and that makes this collection one of the most important and the richest in Serbia.

Unfortunately, it should be noted that in the Institute of Musicology do not exist conditions for digitization of wax plates or wire reels, so this represents a very important task for contributors on the project which should be done as soon as possible because of the value of the recorded material. But, content of several wire reels is converted earlier into magnetic tapes, so today they are indirectly in process of digitization. On the other hand, the aforementioned DAT tapes are result of earlier project of digitization of magnetic tapes, done by sound engineer Zoran Jerković and his students. Because data storage on hard-disk is more sophisticated, the Institute decided for that solution, so now is working on conversion of complete analog material to digital, according to positive experiences of other similar projects.

In the initial phase of the project the first technical devices were acquired: computer (with Windows XP system and sound card M-Audio Audiophile 2496), magnetophone (Uher SG 568 Royal), analog mixer (Yamaha MG 10/2) with DIN (audio-in) and RCA (audio-out) connectors, monitor speakers (Yamaha HS50M).<sup>3</sup> Also, for digitization are used gramophone (Technics SL-Q200) and tape recorder (Technics RS-TR777). After that the Institute acquired minidisc (Sony MZ RH1), microphone and video camera (Sony DCR-TRV60E), scanner (Mustek A3 USB), and two external hard-discs (Verbatim 1,5 TB), and currently expecting new equipment for Phonoarchive. Also, there were investments in software, so now are in use Sound Forge 8.0, Nero 6 Ultra Edition, Microsoft Office 2007 (Word, Picture Manager, Excel) and WISIS – Database software for cataloging is obtained from Serbian Broadcasting Network (RTS).

Before presenting of sound material archiving process, it should be mentioned that material on paper is object of digitization, too. That material is being scanned and saved in JPEG format. Until this moment the most vulnerable objects have been digitized, such as manuscripts of music authors and old musical documents.

Hereafter will be presented the process of digitization of magnetic tapes and the result of it, too.<sup>4</sup> Tapes in use are quarter-inch, with two channels, and they have different manufacturers. Most of them are in very good condition, and now they are kept in original boxes in room conditions and distanced from magnetic objects. It should be mentioned that noise on records is mainly made during the recording, which will be explained later.

The first phase of digitization is conversion of all analog material into digital form in almost untouched layout. That approach is essentially ethnomusicological, not audio-engineering: the aim is to record material again without any larger intervention or reparation,

<sup>2</sup> Term “magnetic tape” implies magnetic audio tape on an open reel (also known as “reel tape”).

<sup>3</sup> Cf: Jelena Jovanović & Rastko Jakovljević, “Project of Digitalization in the Institute of Musicology Serbian Academy of Sciences and Arts, Belgrade”, paper exposed on symposium *Technical Challenges and Developments in 21<sup>st</sup> Century Folk Music Archiving*, Budapest, Institute of Musicology Hungarian Academy of Sciences, 2008.

<sup>4</sup> As the most informative presentation of digitization here is used lecture: Dietrich Schüller, “Sound Archiving”, Vienna, 2007, [http://www.aes-media.org/356175118/tutorials/122\\_T4\\_Schueller/](http://www.aes-media.org/356175118/tutorials/122_T4_Schueller/) (access: 09. 06. 2010.).

in the way that researcher recorded it in given circumstances. Of course, this leaves the possibility for processing the material in the second phase, i.e. when the need for publication appears, etc. With this procedure it is achieved not only keeping of certain music material of persons who made the recordings, but also keeping of testimony of former collecting of music (keeping of keeping).

Records from magnetic tapes are conserved as follows: in software Sound Forge 8.0, after testing of speed and signal level, analog signal is recorded in real time in format 44,100 Hz and 32 Bit resolution, as (pseudo)stereo, and it is saved as digital in WAVE format. The only interventions are: marking of tape side change, normalization of written signal, making the fade-in and fade-out effects on silence on the endings.<sup>5</sup> Data are saved in folders which are sorted according to catalog (it will be discussed later). As metadata are saved informations about content, date and place of recording, person who recorded it and the number of tape. The reserve copy of all recordings is saved on external hard.

Although the accent is on saving the content, the Institute is also trying to save the original carriers. The problems that digitization team is facing with are mostly related with quality of some tapes: few of them are demagnetized, and tapes are often broken, so they have to be repaired. From this perspective, the plan is that all magnetic tapes have to be digitized until the end of 2010 and after to begin with digitization of gramophone records and audio tapes. Next phase of the project will be processing of digitized material and preparing for anthology of records edition. Also, the problem is the way of using this archive, because the Institute is financed through science projects, which doesn't leave possibility for engagement of a person who will care only for archive, do the services for users and maybe partly research this material. In the future there is a plan of making the search tool for final metadata base and networking with other similar institutions. There is a plan for making audio-visual-textual presentation and search tool based on the title, musical specifications of melodies, textual component of songs, the instrument, place where was the record made, and also the date, and the name of the person who recorded it, too.

The Phonoarchive stores magnetic tapes that are mostly recorded on the field. There are also recordings from studio (such as radio shows), sound documents of different folklore and scientific manifestations and copies of professional sound material which are conceded to Institute of Musicology by courtesy of similar institutions.<sup>6</sup> Most of the recordings are from the the field, so the sound imperfection is reasonable, because the terms of the recording process (space, equipment, media, microphone placement) were essentially amateur. That is not surprising, because the persons who recorded were mainly ethnomusicologists and musicologists, colleagues from the Institute or from institutions of similar interest.

In the collection of magnetic tapes of the Institute, according to available informations, the oldest original recording originates from 1953, when Radio UNESCO recorded and processed in studio International Festival of Folk Dances in Biarritz (France), where also is the music of Serbian dances (tape 551).<sup>7</sup> During the second half of the XX century this collection became richer by research activities of Milica Ilijin, Radmila Petrović, Miodrag Vasiljević, Ana Matović, Dimitrije Stefanović, Danica Petrović, and recently Jelena Jovanović and Danka Lajić-Mihajlović, making a huge contribution to the preserving of diverse heritage in this area. Different recordings are made:

<sup>5</sup> Cf. Jelena Jovanović & Rastko Jakovljević, *op. cit.*, 5.

<sup>6</sup> There are also recordings with content which is not very important for the Institute of Musicology (such as recordings of audio courses), so they will not be discussed.

<sup>7</sup> About history of the whole collection of Phonoarchive of Institute of Musicology more in: Jelena Jovanović & Rastko Jakovljević, *op. cit.*, 1-4; Danka Lajić-Mihajlović, *Фоно збирка Музиколошког института...*, 1-3.

1) Field recordings originate from almost all areas of former Yugoslavia. The most of them are from Serbia and there are also recordings made out of mentioned borders, with Serbian performing, but with others, too. There are sound recordings of vocal, instrumental, vocal-instrumental rural, urban and ritual folklore music, and also of orthodox and glagolitic chant. Except that, there are recordings of conversation with informants on the field which contain important informations about living in the past and context in which the mentioned music was being performed. Related to that, it should be mentioned that recordings of Milica Ilijin and Radmila Petrović, despite of very good quality, do not offer information like that. Hence, they are compensated with detailed 'back cards' (side notes), with all written data.

2) Selected examples of Yugoslav music tradition which are used in different presentations and in education. Most of them are legacy of Radmila Petrović.

3) Recordings of the festivals of folk music, such as festivals and competitions in Sokobanja, Orahovac, Topola, Leskovac, Guča, Kučevo, Sarajevo, Belgrade, but also in Ohrid, Biarritz, etc. It is very interesting that in some cases exist recordings of the same manifestation from different years, so someone can hear music from various districts in different times.

4) Recordings from various conferences and similar happenings, where can be emphasized sound recordings of academic gatherings in organization of Dragutin Gostuški regarding debates about science and art called "Discussions", then recordings from sessions of symposium "Sociology of Music" in organization of International Musicological Society of Yugoslav Academy of Sciences and Arts.

5) Recordings of music of Serbian composers of the XIX and XX century, which Stana Đurić-Klajn used in her lectures. Special emphasis is placed on recordings with compositions of Ljubica Marić, and on her legacy with work in progress recordings, too.

The first mentioned recordings present the biggest and the most important part of the collection, so they will be especially discussed. Field recordings are made during the systematic researches in certain localities in real situations and organized interviews. There were researchs in areas with different music dialects: southeastern, northeastern, central, southwestern, northwestern Serbia, Vojvodina, Kosovo and Metohija, countries of former Yugoslavia, in orthodox monasteries in mentioned areas, but also in Hungary, and especially interesting existence of recordings from Hilandar. There are also more than 50 tapes donated to the Institute with folk music from different countries: Japan, Turkey, Romania, Russia, USA, etc.

With some tapes there are cards with old catalogue number of the tape, place of recording on the tape expressed in the number of wheel turns, informations about content, researcher, date and place of recording, informants and comments. Unfortunately, with huge number of tapes there are no data like this, which will make work on project more difficult, so it should be instructive for further work and improvement to relation for someone's own recorded material.

All magnetic tapes are sorted in the mentioned way and listed in a catalogue which has more than 70 pages. The first criterion for their sorting was the content, so they can be divided in: tapes with recorded field research and folk music, tapes with art music and tapes with other content. Then the first and largest group was divided according to geographical and chronological criteria. The catalogue obtains following sections: locality of fieldwork or the name of art composition, date of recording, researcher/recorder, places where tape and converted recording are, and comments. In the last one are noted all the comments related to the content and quality of the recording. In the beginning special catalogues are made according to the content of undigitized tapes, and then data about tapes are being moved in

special catalogue of digitized tapes at the same time when recording is converted, keeping the order from the previous catalog. Tapes are digitized in order from the catalogue and according to priorities of researchers from the Institute.

The collection of Phonoarchive of Institute of Musicology SASA has very good recordings which have a heterogeneous content, and that is the reason why it is one of the most important in Serbia, parallel with collections in Radio Belgrade, Faculty of Music and National Library of Serbia. Phonoarchive has already been used by scholars – ethnomusicologists for scientific papers, for many lectures in country and abroad and two degree thesis.

In the end of this paper I would like to mention importance of active phonoarchive for ethnomusicology. First, archiving is an interesting and responsible task because it represents expert selection, processing and storage of sound data, but also introducing with older sound material made in different media conditions. The widespread opinion is that archives are close type institutions in which expert material is stored for further researches, but, in the XXI century there is a tendency for revitalization of this testimonies, i.e. to open archives for public and new users. With popularization of the Internet archives have got wider potential auditorium, larger exhibition space and users have got easier access for searched material (even a possibility to download it), so that is the reason why digitization is one of important tasks of contemporary science, and culture as well.

The significance of audio recordings for ethnomusicology is certainly huge – precisely empirical-technological aspect of ethnomusicology was important for establishing it as a science, because its verifiability is based on possibility of noting given musical practice on the field in real time, and later reproducing of that with some technical resources. Pioneers of the discipline were aware of this, too: except that for the beginning of ethnomusicology is taken the invention of Alexander Ellis' cent-system, Jaap Kunst thought that ethnomusicology could have never become a science if the gramophone hadn't been invented.<sup>8</sup> Significance of recording and archiving in contemporary ethnomusicology is large, too, which is reflected in a fact that scholars from different aspects are contributing to this current problematic – with questions about ethics,<sup>9</sup> esthetics,<sup>10</sup> former and future technical solutions,<sup>11</sup> and opening archives to the public.<sup>12</sup>

It is especially intriguing position of the phonoarchive in new founded applied ethnomusicology. Namely, although the one of its founders once made artificial gap between academic (therefore, archiving) and practical science,<sup>13</sup> today that opposition is overcome. Except that, eminent ethnomusicologist Bruno Nettl realized the importance of archive in

<sup>8</sup> Jaap Kunst, *Ethnomusicology: A Study of Its Nature, Its Problems, Methods and Representative Personalities to which Is Added a Bibliography*, The Hague, Martinus Nijhoff, 1959, 12.

<sup>9</sup> Mark Slobin, "Ethical Issues", *Ethnomusicology – An Introduction*, New York – London, W. W. Norton & Company, 1992, 329-330.

<sup>10</sup> Nielsen Kaargaard, "Music and Musicking in the Digital Age", *Danish Yearbook of Musicology*, Vol. 37, Copenhagen, Danish Musicological Society, 2009, 9-12.

<sup>11</sup> Dietrich Schüller, "Ethnomusicology and Audiovisual Documents: Challenges and Solutions at the Dawn of the Digital Age", paper exposed on symposium *Technical Challenges and Developments in 21<sup>st</sup> Century Folk Music Archiving*, Budapest, Institute of Musicology Hungarian Academy of Sciences, 2008; Katharina Biegger, "Problems and Promises of the Digital Age for Archives", *Revista de Etnografie și Folclor – Journal of Ethnography and Folklore*, Vol. 1-2, București, 2009, 5-10; Maurice Mengel, "The Challenge of Technology: Ethnomusicological Archives in the Past and Present", *Revista de Etnografie și Folclor...*, 31-48.

<sup>12</sup> Richter Pál, Pávai István & Mórocz András, "Folk Music Archives on the Way of Becoming Public", *Revista de Etnografie și Folclor...*, 49-52.

<sup>13</sup> Jeff Todd Titon, "Music, the Public Interest and the Practice of Ethnomusicology", *Ethnomusicology*, Vol. 36, No. 3, SEM, 1992, 315.

applied ethnomusicology, i.e. the use of ethnomusicological ideas and data in social engagement, indicating that it can be production of instructive material, support for festivals, revitalizing of some cultures, and all that by audio and video of practices which are not performed anymore.<sup>14</sup> Gradually the idea of appliance of phonoarchive developed, because it became obvious that global availability of local contents of digital phonoarchives contributes to betterment of the society and development of the culture.<sup>15</sup>

According to the importance of phonoarchive and its own goals, Institute of Musicology SASA will continue to follow contemporary methods in digitization and to enrich its collection, and we hope that in near future it will be able to store and process audio-video material.

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<sup>14</sup> Bruno Nettl, *The Study of Ethnomusicology: Thirty-one Issues and Concepts*, Urbana & Chicago, University of Illinois Press, 2005, 163. This type of applied ethnomusicology is called urgent ethnomusicology, because the goal of these scientists is to save traditions which are being lost. More about this problematic see in: Marija Dumnić, *Примењена етномузикологија: Историјат, концепти, перспективе у Србији (Applied Ethnomusicology: History, Concepts, Perspectives in Serbia)*, MA thesis, in manuscript), Belgrade, Faculty of Music, 2010.

<sup>15</sup> See: Daniel Sheehy, "Making a Recording More Than a Recording", paper exposed on symposium *Invested in Community: Ethnomusicology and Musical Advocacy*, Providence, Brown University, 2003; David Font, "Alan Lomax's iPod?": Smithsonian Global Sound and Applied Ethnomusicology on the Internet (MA thesis, in manuscript), College Park, University of Maryland, 2007.