



## DIGITIZATION OF MARIEMMA'S LEGACY AUDIOVISUAL COLLECTION the challenge of preserving intangible heritage

La digitalización de la colección audiovisual del legado de Mariemma:  
el desafío de preservar patrimonio inmaterial

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### ABSTRACT

*This article analyzes the digitization process and the difficulties encountered along the way, as a project that involved audiovisual technicians, academic researchers, and a famous Spanish dancer's legacy: the audiovisual documents Guillermina Martínez Cabrejas, Mariemma, left to a museum located in her hometown. The specific criteria used to decide on the differences that arose in the process, provides great results and, also, a critical view on the limitations of the international preservation guidelines of digital objects*

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### PALABRAS CLAVE

Patrimonio  
Danza  
Música  
Digitalización  
Audiovisual  
Sonido  
Normativas

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### RESUMEN

*El presente artículo analiza el proceso de digitalización, así como las dificultades encontradas, que ha involucrado a técnicos audiovisuales, investigadores académicos y al legado de la famosa bailarina española Guillermina Martínez Cabrejas, Mariemma: los documentos audiovisuales que la artista donó al museo del mismo nombre ubicado en su pueblo natal. Los criterios específicos utilizados para decidir sobre las distintas dificultades encontradas en todo el proceso han otorgado unos resultados óptimos y, además, han evidenciado una visión crítica sobre la limitación que supone acatar las normas internacionales sobre preservación de objetos digitales.*

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## 1. Introduction

The musical heritage stored in sound and/or audiovisual archives is an important source of unpublished materials that allows multiple research approaches in different areas of knowledge. This is especially noticeable in ethnomusicological research, which involves a large amount of audio and video recordings, from which we extract relevant information for our research. However, although we usually know their location and content, in many cases it is impossible to access them and, almost always, several technological procedures are required to access their contents, which are not within the reach of any researcher or institution involved in the study or preservation of this type of documents.

On the other hand, the amount of analog audiovisual materials that are awaiting migration to the digital environment for preservation is often unaffordable for the archives that preserve them, either due to lack of technical knowledge or short supply of human or budgetary resources (UNESCO, 2003).

Within the framework of a technological cooperation agreement between the Mariemma Museum of Iscar, located in the province of Valladolid (Spain), and the MAEP (Music, Performing Arts and Heritage) research group of the University of Valladolid, a process of study and digitization of a considerable part of Mariemma's audiovisual legacy (except for the photographs, a project that will begin in the coming months) was carried out by the Audiovisual Service of the University of Valladolid, regularly supervised by members of the MAEP.

The entire process was carried out in accordance with international digital objects guidelines on audiovisual media. However, in the course of following these regulations, some considerable changes were introduced which, considering the main prescriptive principles, have led to modifications of the originally proposed procedures.

This article analyzes the digitization process and the difficulties encountered along the way, the specific criteria used to decide on the differences that arose in the process and provides a critical view on the limitations of the international guidelines, ending with a discussion on PDAs or Personal Digital Archives.

## 2. Analog media and digitization

The introduction of recording and reproduction of sound media at the end of the 19th century radically altered the way music was listened to. This was undoubtedly the most significant change of the 20th century in the field of audiovisual development, as a result of the new technology of the digital era, which brought with it new challenges, offered numerous opportunities and prompted the emergence of new professionals with specific knowledge in this field. But the responsibility for engaging with this knowledge falls on academic institutions, from planning specific strategies to delivering results.

The media transfer or re-digitization of digital audiovisual media is currently facing the same challenges as analog media, such as degradation and obsolescence. In fact, according to some experts, digitization is largely a way of providing access to rare materials, which are at risk of disappearing, rather than a permanent solution for preservation (Schüller, 2008, p. 77).

Human knowledge which is preserved on digital media (presumably for life) deteriorates faster than the old analog media, such as paper, wood, microfilm, or acetates. In the coming years, digital media will no longer be used and music listening, and distribution will shift exclusively to cloud computing environments, such as streaming platforms or video repositories.

Several academic references have been written on the same subject: in many issues of the IASA bulletin, similar cases on digitization of collections in different media are presented, such as Wallaszkovits (2008), Seay (2011), Malssen (2013) or Purdy (2019). Other recent examples apart from this journal are Rodríguez (2018) and Liew (2019).

### 2.1. Mariemma: the artist

Guillermina Martínez Cabrejas, known worldwide as Mariemma (Iscar, 1917- Madrid, 2008) was a dancer, choreographer, and pedagogue of great relevance in the development of Spanish dance throughout the 20th century, especially from the 1940s, when she began her artistic career in Spain after a first stage in Paris (Delfin, 1983, p. 294).

Since her return, she has had a career of international renown and great prestige, endorsed by the stage circuits in which she performed: Teatro de la Scala in Milan, the Teatro Municipal of Caracas, the Opera of Paris, and many cities such as Rome, Florence, Amsterdam, Dusseldorf, etc.

She established collaborations and professional relationships with institutions of great relevance, such as the Ballet Nacional of Spain, as well as with numerous dance personalities, among them Léonide Massine or George Wage, and film personalities as Sacha Guitry or Anthony Mann (Cavia, 2010, p. 47). She held institutional positions since she won the academic tests at the Real Escuela de Arte Dramático y Danza in Madrid in 1969 and received national and international awards, for instance the National Dance Award in 1950, the National Choreography Award in 1955, the Honor Award at the I Certamen Nacional de Danza Española in Seville in 1964, the Gold Medal at the 1964 World's Fair in New York and the *Sagittario de Oro* International Prize in Rome in 1976. In 1986 she

was named member of the Real Academia de Bellas Artes de la Purísima Concepción of Madrid and in 1987 she became one of the 7 *Divine Dancers* of Pissa, Italy. She received the title of *Chevalier de L'Ordre des Arts et des Lettres*, awarded in 1996 by the Ministry of Culture of the French Republic (Cavia, 2009, p. 394).

The heuristic importance of the dancer is even greater when the documentary legacy she left in the hands of the city council of her hometown, Iscar, in 2002 is revealed. Currently, it is in the Mariemma museum where a heterogeneous collection of great value for the study, not only of her figure but of the whole artistic context of Spanish dance in the second half of the twentieth century and even of other cultural contexts in which she developed her career, for example the Paris of the 1930s or the posterior international dance scene, is deposited.

This set of materials includes a collection that brings together personal objects like records, books, numerous costumes (some of them inherited from Antonia Marcé, *la Argentina*) and the collection of photographs, negatives and slides that narrate a great compendium of years of artistic and personal activity. Of all these, the main object of study of these lines is the collection of audio and video tapes in different analogical media.

As can be seen below, the Mariemma museum has the entire legacy of the dancer classified in 6 main categories and 17 subcategories, some of them with specific content specification:

**Chart 1.** Mariemma’s legacy categories

Category	Subcategory	Item
Audiovisual material	001 Audio	
	002 Video	
	003 Photography	
Documentation	004 Library	Books
		Catalogs
		Others
	005 Newspapers library	Articles
		Interviews
		Critics
		Others
Premieres	006 General	
	007 Concert programs	
	008 Posters	Playbills
		Flyers
	009 Theatre pops	
Music	010 Musical instruments	
	011 Scores	
Costumes	012 Bodywear	
	013 Footwear	
	014 Models	
	015 Accessories	
Personals	016 Documents	Letters
		Annotations
		Bills
		Others
	017 Fixtures	

Source: Mariemma museum. 2005.

Of the entire collection, the object of interest on the part of those responsible for the digitization was limited to the subcategories 001-Audio and 002-Video. The 003-photography has been part of the field of study of the researcher Miguel Jerez, whose preliminary results have been reflected in a Final Project of the Degree of History and Sciences of Music of the University of Valladolid (Jerez, 2020).

### 3. Objectives and motivation

The approach to an audiovisual collection is always motivated by the interest aroused by its content, inaccessible by natural means or by mere visual or tactile contact. The material contained in the media requires a methodological process instituted by the regulations and which reliability and results have been corroborated by various subsequent experiences. The main objective of the whole process was to elaborate a first catalog and digitization of the audio tapes and audiovisual media that keep the images concerning the artistic figure of Mariemma and her great artistic valuable choreographic creations.

The multiple artistic manifestations that use the body as an element itself with its own differentiating and expressive language, mostly linked to dance, adopt, and appreciate the use of filming to reproduce the movements of a dancer.

The use of movement recording obeys different but fundamental aspects for the history of dance, ethnographic studies or works in which recording and editing are revealed as an essential part of the creative process, both from its artistic and from its experimental or choreographic laboratory perspective. (Cavia, 2010, p. 47)

The development of the second part of the process will be described in the following lines, which motivation is given by the following conditioning factors and premises:

1. The celluloid material itself has risks of quality loss due to its natural components (silver salts and cover surface) (IASA, 2009, p. 208). Therefore, having this material digitalized makes it possible to preserve it without the risk of disappearance or loss of quality.

2. Once in the digital environment, there is the certainty that this material will be preserved, with the possibility to treat it and, in many cases, to recover part of its original quality.

3. In many of these cases, the material contained in videotape (VHS, Hi-8) has a great artistic and educational value and being impossible to find it in another type of media or format. It is, therefore, highly recommended to transfer these recordings to media that allow their preservation reproduction and exploitation.

4. The Mariemma museum will benefit from having this material in adapted and easily accessible formats to promote the inspection and research of the artistic figure of Mariemma, and thus also go for a greater potential demand and attraction of visitors to the museum.

5. In addition, the familiar and local character (referring to the context of the Villa de Íscar, where the dancer was born) of some of the celluloid reels, suggests that this digitization would ensure the durability and preservation of the part corresponding to the local historical memory that Mariemma and her collaborators contributed throughout her life.

The choice of this particular legacy derives directly from the existing collaboration agreement between the Aula de Música of the University of Valladolid and the Museo de Íscar. Thanks to the relationship between both institutions, there is a potentially very productive space for work and research on the performing arts and Spanish dance through the figure of Mariemma. For this specific project, Susana Merlo, Mariemma museum director and Professor Victoria Cavia, on behalf of the Aula de Música, were very willing to help, thanks to whom it has been possible to establish a specific cession agreement for the exclusive use of the audiovisual heritage of the institution in this text.

### 4. Method

The audiovisual service located at the University of Valladolid carried out this digitization during the period between 2010 and 2012 and was in charge of the technicians Juan Carlos Aragón and Luis Sanz. Far from being able to dedicate their full time to the process, both technicians worked on the digitization in their free time and in a totally altruistic way.

The total amount of sound or audiovisual analog materials comprised a total of 161 supports including open reel tapes, cassettes, Shellac discs, 8 mm, super 8 mm, 16 mm and 35 mm films, and also home video tapes in Umatic, Betacam and VHS formats. In addition, 150 CDs and DVDs in digital format were included, from which several conservative copies had to be made.

Chart 2. Total media types and amount

	<b>Total Amount</b>
<b>Media type</b>	<b>Audio</b>
Open reels	12
Shellac Discs	16
Domestic & commercial cassettes	102

Domestic CDs & DVDs	150
<b>Video</b>	
35 mm	1
16 mm	1
8 mm	15
Super-8 mm	5
VHS	7
UMAtic	1
Betacam	1

Source: Audiovisual services. Universidad de Valladolid. 2006.

Chart 3. Partial list of digitized materials

Tape	Description
8 mm	
21	Palm Beach / Aranjuez / Making Off
23	TVE Danza del fuego filmed by Mr. E. Luzuriaga
212	Amateur film shot during the rehearsals of Mariemma- Ballet de España for the movie <i>Preludio a España</i>
62.a	Travels around the world
62.b	Teatro alla Scala 2 February 1967 + Rehearsals Madrid (Retiro)
62.c	Casa Conde del Sert + Mariemma and Enrique together
62.d	Mariemma vestidor + Salzburgo + Entrega en Salzburgo de Piedad de Valladolid + Viena + Toros Iscar Mariemma dressing room + Salzburg + Delivery in Salzburg of Piedad from Valladolid +Vienna + Bullfighting Iscar
62.e	World travels II
69	Mariemma and Mari Carmen dance several dances together
86	Mariemma dances + other folk dances on stage
230	Mariemma dances + Mother (doña Eulogia)+folk dances
P8	Mariemma singing
P9	Beautiful images E. Luzuriaga
P11	Dina - Vicky
P12	Rehersals at Vienna
<b>Super 8 mm</b>	
75	Notes on Dance filmed by don E.Luzuriaga
P2	Reel Zapateado, super
P3	Playbill with the tittle FIN painted in tempera+ Enrique Luzuriaga.
P5	Mariemma with friends
P7	Mariemma accompanied+ collage of head son bodies of drawings (Mariemma with red dress and Mr. Enrique at the piano)
<b>VHS</b>	
141	Rehearsals Dance and Tronío (company studies)
147	Mariemma teaches + Tanguillo y Tarantos
98	El Norte de Castilla Awards
102	Donne-Moi Tes Yeux
145	Dance and Tronío. Spanish National Ballet. Choreography: Mariemma. Music: Boccherini, Soler, García Abril.

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119	Workshop to teachers with Eloy Pericet, from minute 24 to minute 36
101	Masterclasses. Gala Bolera School. 1992. Royal Professional Conservatory of Dance.

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Source: Audiovisual services, Universidad de Valladolid. 2006.

#### 4.1. Digitization of the collection

The processes of digitization of sound and audiovisual collections have been dealt with in great detail in several texts: IASA TC-04: *Guidelines on the Production and Preservation of Digital Audio Objects*, published by the IASA Technical Committee in 2004 (first edition) and 2009 (second edition); IASA TC-06: *Guidelines for the Preservation of Video Recordings*, edited by Carl Fleischhauer and Kevin Bradley and published by the same committee in 2018; *Sound Directions. Best Practices for Audio Preservation*, published jointly by Indiana University and Harvard University in 2007.

The IASA texts are recognized as a standard similar to a manual or guide for audio and video digitization processes. Sound Directions is the result of applying a controlled protocol to the sound collections of the aforementioned universities that reflect, halfway between a detailed report and a standard, the most recommended methods for digitizing collections comparable to those housed in their audio Libraries. Despite they are largely based on the first IASA text, but also provide new recommendations (best practices) as a result of the application of a digitization program of proven effectiveness.

During the realization of the work that shows these lines, a position similar to those of the Sound Directions publication was adopted: starting from the established regulations (except for the IASA TC-06 publication, since it was published after the date the digitization of Mariemma's legacy was undertaken), they were applied to the collection with small adaptations derived from the typology of the media, the available hardware (as no investment was made in the inventory section) and the time required for the Audiovisual Media service to work (Schüller, 1997, p. 286). Therefore, they selected all the media except Shellac discs and other commercial tapes that could be found in other repositories, Archives or sound Libraries.

#### 4.2. Players and hardware available

Sony has recently announced that from the end of March 2023 it will no longer support the latest versions of ½-inch Betacam tape players manufactured in 2016, the DWV-2000P and MSW-2000P models.<sup>1</sup> This news is relevant in the field of preservation for obvious reasons concerning obsolescence, but it is also because the company puts an end to 40 years of permanence of one of the highest quality analog video technologies in the audiovisual industry, both in professional and home environments.

This format is just one of the 4 different ones that houses the Mariemma collection, each with its own particularities and associated problems in terms of conservation, deficiencies observed over time in the production of some of the original supports or the problems of playing some formats using playing equipment that has not been calibrated or tuned up for quite some time.

Despite these difficulties, the audiovisual media service began the digitization of the media by using its own machines, which had previously prepared to provide them with a series of necessary arrangements, such as cleaning and calibration of the heads, checking of electrical voltages, demagnetization, etc.

The equipment used for the digitization of the analog sound and audiovisual supports were:

- A Yamaha tape deck, model K-350.
- A Revox open reel tape player, model B77 MK-2.
- A Sony Betacam video tape player, model PVW 2800.

Two Sony Umatic video playback units, model VO 9850.

Different players were used for the film reels:

- A 35 mm. projector located in the Aula Mergelina of the Law School of the University of Valladolid.
- A 16 mm. projector, Bell & Howell brand, model TQ II.

An 8 and super 8 mm. projector, EUMIG brand, model MARK S 712.

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1 The new was announced in its own web: [www.sony.co.uk/pro/article/broadcast-products-vtr-announcement](http://www.sony.co.uk/pro/article/broadcast-products-vtr-announcement)

**Figure 1.** Film analog media, several sizes



Source: Mariemma museum. 2005.

The intermediate digital conversion unit consisted of two sound cards: Terratec EWS88 and Canopus CDVC 110, both with standard IEE1394 digital port and domestic quality converters but considering the technical requirements specified in the IASA TC-04 manual. The audio was recorded in WAV file format, 16 bits deep and 48 KHz resolution, and the video was captured using Microsoft's proprietary DV (Digital Video) codec, which required 13 Gb per hour of recording; hence it was converted to mpeg-2 format files, a standard video compression format. Media containing a single audio track in monaural format (left channel or right channel) had the same audio signal duplicated to the opposite channel, without incurring false stereo.

The software used was Adobe Premiere version 10 for video capture and editing, and Audition, within the same software suite, for audio capture and editing. The whole process was performed without any additional restoration or added filters, only audio normalization was applied where necessary, as well as video format adaptation in VHS players that need to rescale the image by 103% and the image capture was adjusted to 720x576 dpi. to read the last video band that some players cannot play on screen.

The digitized files were stored on different types of media. One copy was stored in a high-quality DVD collection, as a long-term preservation element. A second copy was inserted in redundant hard disks (duplicated) for permanent or sporadic access, and a further copy was also inserted in hard disks but stored at the University of Valladolid, 44 km. away from the town of Íscar, as it is advised by the guidelines in case of natural disasters (IASA, 2009, p. 145).

**Figure 2.** DVD collection and hard disks



Source: Mariemma museum. 2005.

The process described took into account the proper preparation of workflows and the output specifications of the resulting formats for a typical project based on the transfer of a collection of analog videotapes in an uneven state of preservation, but by no means very deteriorated. The quality of the original signal (some supports are second copies) and the precise technical characteristics of the recordings in this collection are mostly unknown to us, as well as difficult to deduce, so that the decisions made to favor long-term preservation make it difficult to make the most important decisions in the design of a workflow based on the transfer of signals, or digitization. Therefore, efforts were made to maintain signal quality without compromising essential preservation principles.

In making this type of decision, a circumstance that conditions the outcome is the confrontation between two best practices in the world of audiovisual archiving: on the one hand, maintaining the technical characteristics of the original signal (Freixenet, 2010; Mezzo, 2002; Schüller, 2008); and, on the other hand, limiting the number of formats of the master files in the Archive, in order to increase the manageability of the archive formats (Choy et al., 2016).

For that reason, for videotape transfer it is necessary to have a good understanding of which parameters within the process chain are particularly critical for optimal playback and digitization, in order to provide accurate preservation copies. In the case of a video tape recorder, the key extraction parameters are (Gabler, 2016, p. 52):

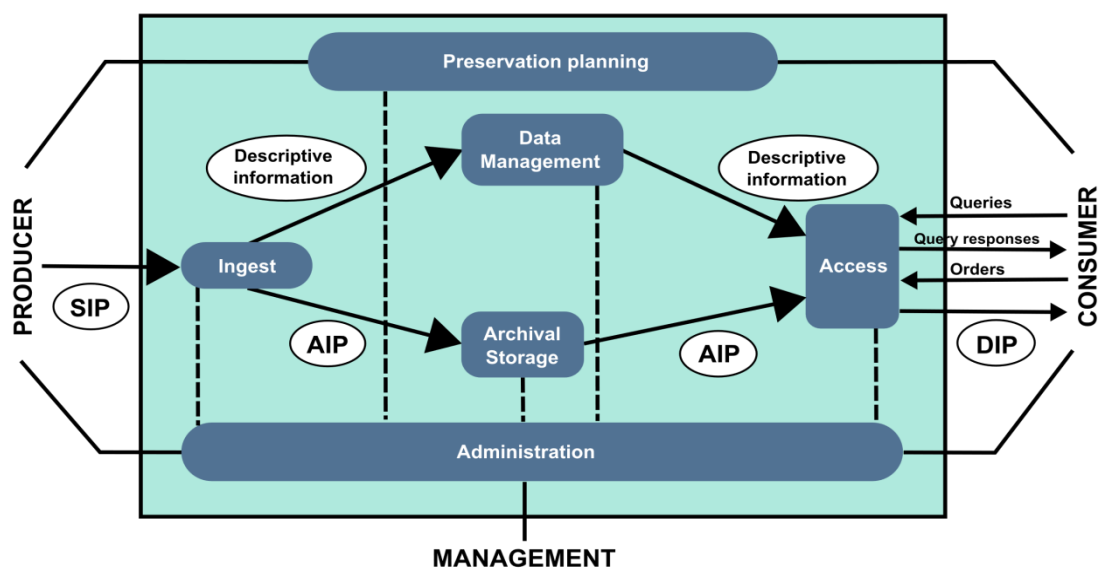
- Intact tape head system.
- Provision of an accurate time base.
- Composite to component video conversion (for composite recording systems).
- Correct signal levels.

### 4.3. Information ingest system

After the digitization process itself, there follows a stage of digital object archiving, which consists of entering the data (referring to the digital objects and their adjacent information, such as peritext or metadata) into an orderly digital storage system. Although there are several open licensing and open access options, the recommended one by most standards (IASA, IFLA, etc.) is the OAIS model.

The Open Archival Information System (OAIS) reference model defines the criteria, objectives, and methods for the organized ingest of archives resulting from a migration process to digital environments and provides clear guidance for the design of monolithic or microservice systems. The available documentation on the OAIS system also provides a set of terminology to describe the basic components and functions of an Archive, as well as a structure that divides the workflow between presentation, dissemination, and archive management. The workflows that link these states are referred to as *ingest*, while *access* refers to the point at which content moves from file management to dissemination. Content as a digital object before ingest workflows and after access workflows is referred to as Presentation Information Package (SIP), Archive Information Package (AIP) and Dissemination Information Package (DIP).

Figure 3. OAIS data intake and control system summary table



Source: Commons Wikimedia, CC license. Undated.

By defining a consistent, OAIS-inspired archival storage structure, a microservice environment can be developed with the ability to further develop and expand as the Archive integrates materials and various functions. Storage techniques must clearly distinguish between the document that is the subject of preservation and any derived archives or metadata that support access to and knowledge of those objects.



Although monolithic digital records management systems are still considered an essential requisite (this same project derives from its initial phase a corpus of monolithically stored digital objects), Archives generally do not aspire to such systems to maintain the same level of permanence expected for the carriers and metadata in their holdings.

Over time, as digital files become obsolete or are moved to another single-stream and single-direction mass storage system, obtaining the information by accessing the stored file on its own digital medium, migration of media and metadata often becomes a complex, expensive and/or risky inflection point in the timeline to which records management is ascribed. (Fyffe et al., 2005, p. 98)

The use of microservices architectures in audiovisual archives puts the media and metadata itself, rather than the system, at the center of archive management. Individual microservice components can be enhanced or replaced in a way that facilitates a more natural evolution of the gradual expansion of an archive in terms of additional components, functions, and adherence to standards.

## 5. Results

Once the digitization and ingest work was completed, the tasks carried out during this time were as follows:

1. Digitization in Standard Definition (4:3 ratio) of 32 films in 8, 16, 35, and Super 8 mm. formats.
2. Digitization in Standard Definition (4:3 ratio) of 107 videotapes in U-Matic, Video-8, Betamax and VHS formats, and digitized audio tracks treatment (noise reduction filtering, normalization of the audio signal and conversion to 2 mono channels).
3. High quality digitization of various audio sources (1 reel-to-reel tape, 2 cassettes and 1 LP vinyl).
4. Creation of 146 DVDs with the digitalized video sources (due to the length of the VHS tapes, some of them have been split into 2 DVDs).
5. Recording of 4 hard disks storing all the digitized information, but stored separately in different institutions at a distance of more than 40 km.
6. Creation of 4 CDs with the digitized audio sources.

In addition to the current digitization of the audiovisual materials, which included several access and security copies, during the process an initial inventory of all the media was carried out, most of which could be viewed to establish a prioritization of documentary relevance, with the intention of initiating academic approaches in the form of research on the artist's choreographies, as well as pedagogical resources, scenography, etc.

In this way, the main objective of audiovisual digitization is fulfilled, which is to recover the heritage contained in the media, that would not be accessible by other means (Wallaszkovits, 2012), as well as the adequacy of an ingest and access system not subject to the criteria of imminent obsolescence typical of monolithic systems.

The rapid evolution of video capabilities, usage, and formats over the past two decades means that digital video technology will continue to change and develop for the foreseeable future. The only certainty is that change is inevitable. However, by developing an understanding of the underlying principles and practical considerations of video compression coding, it is possible to specify and implement audiovisual media capture, storage and distribution systems that can deliver good image quality and that can adapt to the constant changes in digital video technology.

### 5.3. Direct costs

Direct and indirect costs in a digitization process are never negligible, but rather depend on many factors ranging from the condition of the media and intellectual property permits and licenses to the technical realization of the digitization process itself.

The valuation of the work carried out, according to the rates of the Audiovisual Media Service approved by the Governing Council of the University of Valladolid on February 22, 2005, is 9,367 euros. Since it is an organization not belonging to the University of Valladolid, in accordance with the current rates, an increase of 20% (1,873.4 euros) should be applied to this amount. To this amount it would have to add 18% VAT<sup>2</sup>, so that the final price of the work carried out would be 13,263.68 euros.

## 6. Discussion

During the last international meeting of the *XXXVI European Seminar in Ethnomusicology*, held in Valladolid from September 13 to 18, 2021, within the more than 40 communications and papers presented, at least 7 of them were directly or indirectly related to the digitization or processing of audio or video media. This denotes the concern, topicality of the subject and interest of the scientific community to adapt to its methodological principles the necessary strategies to conserve, preserve or, where appropriate, migrate all the information related to their research field to a more durable medium in time than the original media themselves. In addition, many of the

<sup>2</sup> The current VAT rate for economic activities of a similar nature is 21%, but the 3 difference percentage points correspond to an estimate date prior to September 1, 2012, the year in which the tax was updated by the Spanish Government.

other speakers at the conference left evidence of the close contact they had at some point in their research with this type of material from which they were able to extract valuable information. All the participants, in short, had or will have to face some kind of difficulty trying to digitalize, store, manipulate or extract any type of data from the materials they work with, although the current technological reality does not provide a single and unequivocal solution to intervene definitively on the media, while defining a long-term preservation strategy of an indefinite nature at the same time. Innovations in the field of digitization adopt the principle of uncertainty in a particular way, since further development in the progress and miniaturization of systems entails a greater risk of loss due to the sensitivity and interdependence of the systems themselves to external elements such as the Internet and its associated risks (DNS failures, attacks on servers...) or the external contaminating agents that endanger the digital information, such as the sensitivity to magnetic fields of some media, relative humidity, temperature or the obsolescence of the information reading devices and the lack of updating of the associated software.

As an active member of IASA and its Training & Education Committee, I am obliged to promote the consultation of the manuals that explain all the small but so important rules or guidelines that must be taken into consideration when being responsible for part of an intangible heritage such as all the content stored in the various audio and video media, both analog and digital.

However, despite the fact that a large number of institutions of considerable size have specialists hired on a permanent basis who are able to perform this work, as well as to host large and automated storage systems that can ensure an access protocol, anyone is responsible for its own PDA or Personal Digital Archive, as many initiatives promulgated years ago; this is the case of the Library of Congress<sup>3</sup>, the University of Michigan<sup>4</sup>, Purdue University<sup>5</sup> or the NSLA of Australia<sup>6</sup>, and also, the international conferences that are held every year on this subject<sup>7</sup>.

All the rules can be summarized in these four (Redwine, 2015, p. 14):

1. Identify what you want to keep
2. Decide what is most important to you
3. Organize the content
4. Keep copies in different places.

In this case, the process that has been carried out is halfway between an institutional digitization and a PDA digitization, not strictly following the guidelines (it wouldn't call them *rules*), but with a result of good conditions that would have never been possible in other circumstances, or simply waiting for better times, better means, enough money, or enough resources.

Personally, I strongly recommend considering all historical, functional, and interpretative aspects related to preservation from a critical perspective in order to avoid supporting this part of the intangible cultural heritage in the way it deserves. Researchers and professionals should not only collaborate closely to identify the need for urgent safeguarding of heritage; they should also be included in the peripheral decisions on regional developments of rural culture that are taken from the competent institutions, which would make them part of the process to stop being mere advisors.

## 7. Conclusions

The rapid evolution of video capabilities, usage, and formats over the past two decades means that digital video technology will continue to change and develop for the foreseeable future. The only certainty is that changes are inevitable, however, by developing an understanding of the underlying principles and practical considerations of video compression coding, it is possible to specify and implement audiovisual media capture, storage and distribution systems that can deliver good image quality and adapt to the constant changes in digital video technology.

As previously cited research articles and other references have shown, the digital conversion process of audiovisual media is developed in international guidelines that are not mandatory, but that standardize the entire process in a consistent manner, although sometimes the minimum criteria they stipulate become too demanding resources, like expensive hardware or many people to manage the collection.

Thanks to the individualized adaptation of international regulations on digital preservation and from the adoption of a heuristic working perspective with adapted and slightly more lax criteria, the preserved but unknown repertoire, stored in the audiovisual media that were part of Mariemma's legacy, has been rescued from uncertainty, a digital collection has been implemented under standardized criteria and a part of the recent historical heritage of local character but with international immaterial repercussion has been preserved.

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3 As is explained in its web: <https://digitalpreservation.gov/personalarchiving/>

4 The university has its own specific and public web: <https://bit.ly/3clgzoX>

5 The Purdue university has many published guides: <https://guides.lib.purdue.edu/PDA>

6 The Australian university is one of the first institutions that edited preserving guidelines: <https://www.nsla.org.au/publication/digital-archive-toolkit>

7 Houston 2018 or Pittsburgh 2021 have been the latest venues for international congresses on the subject. <https://sites.lib.uh.edu/pda18/>

Mariemma's collection is of great importance for the knowledge of the heritage of Spanish dance and a part of her legacy (as happens more and more frequently due to the digital footprint<sup>8</sup> that we leave throughout life) adopts the category of an audiovisual collection that must be preserved, since its importance lies in the fact that it is one of the few that has been lucky enough to be rescued and preserved in the long term, not only in a controlled environment, but in a museum that bequeaths all the documentation, items and costumes that belonged to the artist.

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8 Echeverría y Almendros (2020), Gutiérrez Puebla (2018), Cushing (2010) or the Library of Congress itself, are common references when dealing with the preservation of personal archives, through initiatives based on the "Personal Digital Archive" (PDI) movement.

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