

「科技藝術典藏基礎計畫」專題講座

作品保鮮術

Keeping
Collection Fresh

蒐藏機構與外部時基媒體修復師的雙向交流

Two-way Communication Between Collection Institution and External Time-based Media Conservator

2024
01.06 (Sat.)

3-6 pm
8-11 am (CET)

地點：關渡美術館 三樓視聽室

Venue: Audio-visual Room, 3F, KdMoFA

*講座全程以英文進行，現場另備有中文譯稿。Q&A及終場論壇觀眾提問，將由主持人進行口譯。

*This event will be conducted in English, the slides and transcripts of presentation notes will be printed out in Chinese and English.

Translation support is available while at the Q&A session and roundtable discussion.

國家圖書館

數位典藏與數位博物館發展中心

國家圖書館

時間 Time	內容 Content
15:00 - 15:05	關渡美術館 黃建宏館長致詞 Opening Remarks Prof. Huang chein-hung (Director, KdMoFA)
15:05 - 15:10	《科藝典藏》計畫簡介、議程簡介 Introduction to the Programme and Agenda <hr/> 陳禹先 (科技藝術典藏基礎計畫主持人／獨立研究者) Yuhsien Chen (Project Director of Save Media Art/ Independent Researcher)
15:10 - 15:35	【與談一 Seminar 1】 「科技藝術典藏基礎計畫」四年回顧 - 在地的機會與限制 4 Years of the Save Media Art Project - Opportunity and Restriction from the field of Taiwan <hr/> 陳禹先 (科技藝術典藏基礎計畫主持人／獨立研究者) Yuhsien Chen (Project Director of Save Media Art/ Independent Researcher) 林子荃 (科技藝術典藏基礎計畫國際交流主任／時基媒體助理修護師) Tzuchuan Lin (International Affairs Manager of Save Media Art/ Assistant Conservator for Time-Based Media)
15:35 - 16:00	【與談二 Seminar 2】 留下SOP: 關渡美術館媒體作品典藏初學之路 Please Keep the SOP: A Beginner's Trajectory to Collecting Media Art Works in the KdMoFA <hr/> 謝宜樺 (關渡美術館典藏展覽組專員) Yi-hua Hsieh (Exhibition and Collection Executive, KdMoFA)
16:00 - 16:15	中場休息15分鐘 15 minutes break
15:35 - 16:00	【與談三 Seminar 3】 保存時基媒體藝術: 透過與外部專家合作橋接空缺 Preserving Time-Based Media: Bridging Gaps through Collaboration with External Specialists <hr/> 安德烈亞斯·韋瑟 (時基媒體藝術作品保存顧問) Andreas Weisser (Time-Based Media Art Consultant)
16:40 - 17:05	【與談四 Seminar 4】 法國博物館中有關媒體藝術的保存與典藏品管理的挑戰 The Challenges of Media Art Conservation and Collection Management in French Museums <hr/> 亞歷山大·米尚 (媒體藝術修護師) Alexandre Michaan (Media Art Conservator)
17:05 - 18:00	觀眾Q&A時間 Q&A Time

”科技藝術典藏基礎計畫”四年回顧 - 在地的機會與限制

4 Years of the Save Media Art Project - Opportunity and Restriction from the field of Taiwan

陳禹先

(科技藝術典藏基礎計畫主持人／獨立研究者)

Yu-hsien Chen

(Project Director of Save Media Art / Independent Researcher)

科技藝術典藏基礎計畫主持人，現為居住於台灣的獨立時基媒體藝術及原生數位文化資產保存倡議者。曾任香港Mplus當代視覺文化博物館副數位與媒體藝術修護師，及國立臺灣美術館典藏管理組專案人員；2022年獲傅爾布萊特學人獎助，駐館於美國紐約MoMA及Rhizome進行媒體藝術保存研究。接觸媒體藝術保存的契機，來自於2014年在荷蘭Mediamatic擔任CD-Rom藝術作品檔案人員 (Cd-Rom Art Archivist) 的經驗。

Yu-hsien Chen is the director of the Save Media Art, Time-based Media Art conservator and born-digital heritage advocate. Formerly served as associate digital and media art conservator at Mplus Museum, Hong Kong; project assistant of the collection management department, National Museum of Fine Art, Taiwan. In 2022, Chen received the Fulbright Scholarship and spend her research visit at the Museum of Modern Art(MoMA) and Rhizome, New York City, USA. Her first involvement of preserving media art was the experience in 2014 as CD-Rom Art archivist at Mediamatic in the Netherlands.

林子荃 (科技藝術典藏基礎計畫國際交流主任／

時基媒體助理修護師)

Tzu-chuan Lin

(International Affairs Manager of Save Media Art Project / Assistant Time-based Media Art Conservator)

現任科技藝術典藏基礎計畫國際交流主任，及時基媒體助理修護師於德國北萊茵西發利亞藝術蒐藏館(Kunstsammlung Nordrhein-Westfalen)。2022年畢業於德國斯圖加特國立造型藝術學院「新媒體與數位資訊保存維護」碩士學程，學習期間分別於德國北萊茵西發利亞藝術蒐藏館(Kunstsammlung NRW)、卡爾斯魯厄媒體藝術中心(ZKM)、及荷蘭媒體藝術研究機構 LIMA 擔任媒體藝術與數位藝術保存維護實習生。2013年於臺灣藝術大學新媒體藝術碩士班畢業後，曾任國立臺灣美術館典藏管理組專案助理、臺北數位藝術中心技術組組員。目前關注於數位與類比媒體藝術作品的保存維護與修復實作。

Tzu-chuan Lin is the International Affairs Manager of the “Save Media Art” project by Taiwan Digital Art Foundation. Meanwhile, he is currently working as an Assistant Conservator for Time-Based Media at the Kunstsammlung Nordrhein-Westfalen in Germany. He holds an MA in Conservation of New Media and Digital Information from the State Academy of Art and Design Stuttgart. During his studies, he completed internships in media art and digital art conservation at the Kunstsammlung Nordrhein-Westfalen, the Center for Art and Media Karlsruhe (ZKM) in Germany, and LI-MA in the Netherlands. His most recent research focus is on the conservation of software-based artworks.

01

科技藝術典藏基礎計畫已經運作了四年，這個計畫是由兩位成員在各自的工作領域中發現的問題和想法所凝聚而成的，是一個知識交流和研究平台，起初並不特別關注特定館所與作品案例，跟一般傳統的保存維護專案和國外由蒐藏機構發起的計畫有所不同。

As introduced, the Save Media Art project has for four years, differing from most of the preservation projects by other museum institutions abroad. This Save Media Art Project does fit into a particular artwork, and nor particular institution in the beginning. It is rather emerged from the observations and questions raised of the two members(us) while having our own professional development. It is a platform for knowledge exchange and exploring the possibility of the development of time-based media art conservation in the field of Taiwan.

02

自2006年起，台灣媒體藝術逐漸蓬勃發展，美術館也開始積極回應這股藝術生態的發展，透過穩定增加媒體藝術作品的收藏數量。同時，一些新興美術館陸續籌辦並開幕，例如台南市美術館、新北市美術館、桃園美術館等，這些美術館都提出了媒體藝術與科技藝術將成為他們收藏的重要部分。

保存的議題也於2006年引入台灣，北美館舉辦的“龐畢度中心新媒體藝術展1965-2005”展覽中有來自國外的策展人分享。之後，北美館也邀請前任古根漢媒體藝術保存維護師 Joanna Phillip 來帶領當代藝術保存工作坊，藝術博覽會也曾邀請時任ZKM的營運總監 Christiane Riedel 克莉絲蒂娜·理德爾，提到有關媒體藝術收藏的永續保存議題。

然而，雖然有著這樣的單一活動或論壇呼籲，但大約持續了10年左右，卻缺乏持續性的專案研究。SMA計畫至今是我們所知唯一持續關注該領域發展的計畫。

近年來，隨著台北市立美術館新館與庫房擴建的籌備進行，他們開始與在國外工作的台灣籍媒體藝術修護師合作。這種合作從基礎建設著手，或許未來能夠期待啟動更多相關專案並注入更多資金。

To begin with, since 2006, Taiwan has seen a flourishing development in media art. Art museums in Taiwan also respond by steadily increasing their collections of such artworks, as you could see on the slide. Recently, we also have a booming trend of building new "City-based Museum of Art" such as the Tainan Art Museum, New Taipei City Art Museum, and Taoyuan Museum of Art... they all stating that media art is an integral part of their acquisition plan.

The issue of preservation was also first introduced in 2006, through the "Pompidou Center New Media Art Exhibition (1965-2005)" at the Taipei Fine Arts Museum(TFAM), where their curators shared the challenge of preservation issue of their collection. Later, in 2013, TFAM invited Joanna Phillip, a former Guggenheim media art preservationist, to lead a workshop on contemporary art conservation. Also, art expos in Taipei had Executive Director at ZKM, to discuss sustainable preservation of ZKM's media collection.

However, despite such occasional events or forums, there was a lack of long-term research over the last decade. The SMA Project, to our knowledge, remains the only ongoing project that lasts more than a year.

Good news is that, in recent year, the Taipei Fine Arts Museum, with its plans for a new gallery and storage expansion, has initiated collaborations with other Taiwanese media art conservators working abroad, and could potentially influence other museum to launch more related projects and increased funding in the future.

03

儘管媒體藝術創作環境看似蓬勃發展，然而在過去四年裡，本計畫在資金結構上並無太多變化。科技藝術典藏基礎計畫的運作架構是由基金會和計畫成員輪流向國家文化藝術基金會提出關於藝術環境與發展的研究發展計畫。

同時數位藝術基金會提供基礎建設（場地、錄影、直播、翻譯、文章出版、活動影音後製與發布等）。

在計畫關注的面向上，從過去四年的發展來看，最初因仰賴數位藝術基金會的場域，主要著重於「虛擬實境」這一媒材，重建空間裝置作品並舉辦相應的虛擬實境展覽。透過講座、論壇等方式，將國際相關知識和經驗案例引入台灣。直至第三期，才開始與關渡美術館合作，正式進入傳統認知下的美術館收藏領域。

On the other hand, the time based media art in Taiwan appears to be thriving, there hasn't been much change in the funding structure of this project over the past four years. Our financial support are 90% from the National Cultural and Arts Foundation annual grant, which support cultural projects that can be completed annually.

At the same time, the Foundation provides general infrastructure for running the project, such as event venues, recording, live streaming, translation, article publication, distribution...etc.

In terms of the project's focus, initially heavily reliant on the Foundation, the emphasis was on "virtual reality" technology, curating corresponding virtual reality exhibitions of artwork emulation. Through this first project, we held lectures, forums, and similar means, in order to express what we had learned about time-based media art preservation from our experience at NTMoFA and accessible resources from foreign museums. It wasn't until the third phase that collaboration with the Kuandu Museum of Fine Arts began, officially entering the traditional domain of art museum collections.

04

回到計畫的起源，2015至2018年，大致上是我們同時在國立台灣美術館任職的時期。我們共同參與了「2015集新求變-新媒體藝術作品典藏保存與維護國際研討會」，這次活動也成為了台灣藝術品保存史上的另一重要里程碑。對美術館而言，這是向大眾展示我們對這個議題的關注。

此外，我們也領導了兩項典藏品為了展示而進行的修復專案，並與外部工程師合作完成。我們開始自主整理館內錄像和媒體藝術作品的母檔案及相關文件，並向當時的入藏程序提出建議，積極參與作品的收藏過程，進行初步的藝術家訪談並記錄重要資訊。

在上述列出的工作中，除了研討會以及將兩件作品修復至可展示程度的工作是受到監督的，其他工作被認為是無人監督的。這些工作雖被視為基礎庶務，但並沒有正式的行政程序或強制性。當時，我們尚未深入了解媒體藝術保存的專業知識，對於在台灣美術館中誰負責監督和保存媒體藝術作品的情況還不清楚。

研討會結束後，透過一場與數位藝術基金會總監與董事長的會談，SMA計畫應運而生，也促使我們因職涯發展的需要，離開了國立台灣美術館。

在計畫進行至今的過程中，我在香港M+、台北市立美術館、MoMA、Rhizome等不同環境下進行了媒體藝術保存相關的工作和研究，並參與了MoMA和VOCA舉辦的工作坊。而子荃則前往德國斯圖加特國立造型藝術學院進修，在學期間於德國北萊茵-西伐利亞邦藝術收藏館、ZKM媒體藝術中心、荷蘭媒體藝術機構LIMA實習。畢業後又回到藝術收藏館工作。

Returning to the origin of the project, from 2015 to 2018 was when we were all employed at the National Taiwan Museum of Fine Arts. Together, we organized the "International Symposium: Collecting and Exhibiting Media Arts." This event marked another significant milestone in Taiwan's art preservation history, demonstrating the museum's public commitment to this issue.

Additionally, we oversaw two conservation projects for the exhibition of two collections and collaborated with external engineers. We took the initiative to organize the master files and related documents of the videos and media art collection, providing suggestions for the acquisition procedures at that time. Actively participating in the collection process, we conducted initial interviews with artists and recorded essential information.

Among the mentioned tasks, while the symposium and preparation of two works for exhibition were supervised, other activities were considered unsupervised. Although these tasks were seen as basic duties, there were no formal administrative procedures or enforceability. At that time, our knowledge of media art preservation was not in-depth, and it wasn't clear who was responsible for overseeing and preserving media art works within the National Taiwan Museum of Fine Arts.

After the symposium, a conversation with the Director and Chairman of the Digital Art Foundation, became the birth of the SMA project. And soon after the establishment of SMA, myself and Tzuchuan both left the NTMoFA, and run the SMA as our side project.

Throughout the ongoing course, I have engaged in media art preservation-related work and research in various settings such as Hong Kong M+, Taipei Fine Arts Museum, MoMA, Rhizome, and participated in workshops organized by MoMA and VOCA. Meanwhile, Tzuchuan pursued further studies at the State Academy of Fine Arts Stuttgart in Germany and interned at the Kunstsammlung NRW, ZKM - Center for Art and Media Karlsruhe, and LIMA, a media art institution in the Netherlands during the study. Following graduation, Tzuchuan returned to work at the Kunstsammlung.

05

接下來，我們要介紹我們與關渡美術館的合作模式。

首先，我們要特別感謝數位藝術基金會。基金會長期在台灣數位藝術領域的努力和建立的人際關係，讓我們在2021年順利地與黃建宏館長取得了聯繫，找到了一個實際合作的機會。我們仍然是自主向國家文化藝術基金會申請資助，在這段期間，關渡美術館並沒有支付任何參與計畫延伸的費用。

關渡美術館提供了藏品和美術館場域，而數位藝術基金會則作為中介單位，作為雙方信任的橋樑。同時，他們也支持我們在計畫過程中製作的文件、影像等內容的編輯、平台發布、出版工作。而SMA則負責具體的執行工作。

Now, let's delve into the collaboration with the Kuandu Museum of Fine Arts.

Firstly, we'd like to thank the Digital Art Foundation. Their long-standing efforts in Taiwan's digital art field and established connections allowed us to receive full support from museum director Huang Jian-Hong, providing us with a practical platform for research. Al-

so, We continued to independently seek funding from the National Culture and Arts Foundation so that that the Kuandu Museum of Fine Arts did not incur any expenses for their participation.

In short, The Kuandu Museum of Fine Arts offered its collections and museum space, while the Digital Art Foundation served as the bridge of trust between both parties. Meanwhile, our project took charge of the work, as an outside professional to the museum.

06

關渡美術館是一座大學博物館，主要收藏來自捐贈、學校教職員、學生、校友以及曾在該館展出的作品。然而，該館的人力資源十分有限，且呈逐年減少的趨勢。作為學校的一個部門，關渡美術館目前無法申請國內許多支持民間組織的補助項目。鑑於關渡美術館本身的現況，我們僅就此點簡單提及，稍後將由館員宜樺向大家進一步分享詳情。

瞭解到這些現實情況後，我們必須考慮到關渡美術館可行的解決方案，因此設定了以下主要方針。即使國外的方法再完整，如果無法在關渡美術館實行，那也不是個好方法。我們的目標是以館內現有人力資源能夠負擔的範圍內完成工作，盡可能將新的工作項目與現有館員工作融為一體，並減少增添新工作項目的負擔。同時，我們也會開始思考因為身為「台北藝術大學關渡美術館」的特殊性，我們可以採取的更為適合的保存模式。

The Kuandu Museum of Fine Arts is a university museum that primarily collects donations from faculty, students, alumni, and artworks previously exhibited in the museum. However, the museum faces a significant constraint in terms of manpower resources, which show a decreasing trend annually. As a department within the university, Kuandu Museum of Fine Arts is currently unable to apply for many domestic grants designed to support private organizations. I'll briefly touch upon these points, and later, Yi-Hua, from the museum, will provide more details.

As a result, we need to consider practical solutions for the Kuandu Museum of Fine Arts. We set up principles such as: To complete tasks within the existing human resources, integrating new tasks as much as possible with the existing workload. Discover a more suitable preservation strategy considering the advantages of the tight connection between "Kuandu Museum of Fine Arts and Taipei University of the Arts."

07

目前總共執行了兩期計畫，也就是前述時間軸中的第三期和第四期。這兩期分別和兩位不同的館員合作。

在2021年的第三期，我們主要制定了媒體藝術作品的媒材撰寫原則，根據藏品管理系統所擁有的欄位，並與館員根據需求制定系統使用方針。另一個重點，在於調查了2015年「啟示錄：臺灣錄像藝術創世紀」展覽之後捐贈給美術館的43件錄像與錄像裝置作品。這些作品最初是以特殊的H.C. 樣本版次捐贈，並未提供母磁帶及檔案資料。因此，我們進行了廣泛的狀況檢視和資料整理，提出了18件建議進一步調查的作品。

此外，我們選擇了三件檔案格式與作品形式不同的收藏品，進行更深入的影音狀況檢視報告。為了讓館員更實際了解藝術家訪談，我們也選擇了一件館員本人特別感興趣但未被列為收藏的作品進行藝術家訪談。

到了2023年，我們進一步優化了館內基礎建設，從訪談中建立了收藏品入藏與藏品管理方針、流程，建立文件夾架構，並根據藏品的規模制定了適宜的文件與檔案存放方式。在執行期間，適逢於大學任教的藝術家袁廣鳴早期作品，至同樣位於台北藝術大學的藝術與科學中心借展，隨即以該作品為案例和館員一起進行了藝術家訪談、完成該作品的Iteration Report。

由於我們都有其他正職的工作，因此執行方式是在台灣的禹先每週入館半日至一日，總共約4個月。禹先會進行觀察並和子荃線上溝通，至於作品影音檔案的部分，我們也能隔著兩地一起檢視同一個影音檔案的元資料和頻譜狀況。

We have completed two phases of the project, namely the third and fourth phases, each in collaboration with different museum staff.

During the third phase in 2021, our primary focus was on formulating "media line" guidelines, utilizing the use of the current collection management system according to the museum's requirements for sustainable documentation of time-based media work. Our main task involved investigating 43 video and video installations donated to the museum after the early Taiwanese video art exhibition in 2015. These works have a special H.C. edition, which the museum does not have access to master tapes or archival files. We conducted condition assessments and managed information for these sets of works, and

identified 18 pieces recommended for further investigation. We also selected three collections in terms of different file formats and artistic forms for a full audiovisual condition assessment.

In 2023, we further optimized the museum's foundational infrastructure. From interviewing museum staff, we established guidelines for the acquisition process and management of collections, such as how to structure a folder, and where to store digital files and documents based on the scale of the collections. During this period, there was an opportunity to interview an artist, Yuan Guangming, whose early works were displayed at the Art and Technology Center also situated in the University. Together with museum staff, we completed the Iteration Report for the work.

Due to our other commitments, Yuhsien was only able to spend half to a full day per week at the museum, totaling around four months. Yuhsien conducted observations on-site and communicated online with Tzuchuan every 2 weeks with her field observation. As for audiovisual files, we were able to review metadata and waveform together, despite being in different locations.

08

如同禹先前面說到，我們彙整目前歐美各館分享的線上資源，設計出一份錄像作品檢視報告範例，提供給中文使用者來在工作場域上應用。這份範例也實際應用於檢視關美館的三件錄像作品，進而確認範例的可用性與調整。

工作坊規劃部分，我們將自己的經驗與知識帶入工作坊之中，我彙整自己在德國課程所學的相關知識，梳理成錄像科技的發展史、類比載體的保存方式等授課內容。禹先以個人工作經驗與關美館的合作解釋作品入藏登錄，以及數位檔案保存與應對方式。

藉此讓參與民眾可以先對錄像技術與載體媒材有個基本認識，再進一步了解載體如何存放與應對數位檔案的方法。最後工作坊以小組方式，讓參與者模擬當錄像作品進入典藏的情境，從登錄作品資料到檢視作品影音檔案的流程，組織完整的作品文件，對作品有更深入的了解，進而能夠準備藝術家訪談的問題。

As Yuhsien mentioned earlier, we have compiled online resources from various European and American museums and created a template for a video condition assessment report to be used by the Chinese-speaking community. This template was also used to inspect three video artworks at KdMoFA, confirming its usability and adjusting accordingly.

In the workshop planning section, we incorporated our own experiences and knowledge into the workshop. I adapted the knowledge I gained in Germany into teaching materials on the history of video technology and preservation methods for analog media. Yuhsien introduced the process of registering works for collection and the methods for digital file preservation based on personal work experience and collaboration with the KdMoFA.

This program allows participants to understand video technology and carrier media and further explore how carriers store and respond to digital files. Eventually, a group workshop was held for participants to simulate the situation when a video work enters the collection, from the process of registering the work's data, evaluating the audio-visual files of the work, organizing the complete documentation, and then being able to conduct compelling interviews with the artist based on an in-depth understanding of the premise.

09

捐贈的收藏，絕大多數與美術館關係密切，增加藝術家訪談的機會，若所入藏的作品當時正在館內展覽，展覽期間就是最佳進行檔案紀錄與藝術家訪談機會。

館員背景部分，雖然多是本校畢業的藝術相關科系學生，但也因此對於有機會深入分析作品保持高度的興趣、對於當代藝術作品和展覽的製作多少都有經驗，反而比起傳統的博物館從業人員，更易於了解與認同媒體藝術保存的重要性。

人力侷限，在另一方面，可能也是優點，像宜樺同時是展覽專員也是藏品管理專員，同時掌握兩邊的工作，省去了許多溝通的成本，也更能理解需求。甚至反過來對於典藏品的策展可能性和保存維護工作的整體面向，有更多個可能性的想像。

The donated collections, for the most part, have close ties to the museum, providing increased opportunities for artist interviews. If the collected works were being exhibited at

the museum during the donation period, it presented the optimal opportunity for archival documentation and artist interviews.

Regarding the background of the museum staff, while many are trained as curator or artist at the departments within the university, their background has led to a profound interest in delving deeper into the analysis of artworks. They mostly already have experience in contemporary art creation and exhibition production. Compared to traditional museum staff, it seems to be easier for them to appreciate the complexity of the need for time-based media art preservation.

The limitation in manpower, on the other hand, could be seen as an advantage. For example, Yihua serves simultaneously as an exhibition officer and a collections manager. Being adept at handling responsibilities on both ends eliminates a lot of communication overhead and fosters a better understanding of needs. Moreover, this dual role allows for a broader perspective in envisioning possibilities, not just in curating collections but also in the comprehensive aspects of preservation and maintenance of works. This versatility opens up more possibilities for imaginative approaches in both curating the collections and managing their collection.

10

感謝媒體藝術本身和科技強烈連結的特性，以及網路的發達，讓我們可以在不同國家遠距執行這個計畫，隨計畫安排現場的實體講座、混合式的線上講座，並邀請我們在歐美所認識的修復師、學者分享其經驗與研究成果。另一方面，我們將國外媒體藝術保存相關資源引介與翻譯提供給台灣的大眾，其中最具有代表性的就是疫情期間與媒體藝術事務聯盟(MMA)提案翻譯其知識網站。台灣相對歐美在媒體藝術、錄像藝術的發展較晚起步，也使得在保存維護的關注上遲了些，並且相關的議題討論也是斷斷續續。所以我們希望藉以引介國外資源與在地化的計畫發展，增進國內對保存維護的知識管用，並進一步調整成國內可以應用的方式。

SMA計畫作為一個民間運營的第三方團體，經過我們自身的背景與經驗，觀察到國內大型美術館多數認知到媒體藝術作品的保存議題，卻沒有能夠實際處理此一議題的專職人員；同時，大型美術館機構資源雖說豐富、有明確的專業劃分，但若媒體藝術保存維護並非館方著重的發展方向之一，此類型作品的保存維護就容易被擱置，直到下一次的展出機會才再次被檢視；這樣的情境其實普遍出現在多數的國內外美術館，因此也能夠理解。中小型美術館—例如關美館—這樣規模的機構，其組織結構較為扁平，雖然可能同樣沒有專職人員，不過若有主動合作的提案，機構方會比較有溝通彈性、館方人員的機動性也較高，並在執行過程中容易建立起緊密的合作關係。

Thanks to the strong connection between media art and technology, and the development of the Internet, we can carry out this project from different countries, arranging on-site and online hybrid lectures, and inviting conservators and scholars in Europe and the U.S. to share their experiences and research. Simultaneously, we introduced and translated international media art preservation-related resources to the public in Taiwan, the most notable of which was the translation of the Matters in Media Art knowledge website.

Taiwan is comparatively late to Europe and the U.S. in developing media art and video art, which has led to a delay in the concern for preservation, and intermittent discussion of related issues. Therefore, by introducing resources and localization programs, we can enhance the knowledge of media art preservation in Taiwan and further adjust it in a way that can be applied locally.

The SMA Project, as a privately-run third-party group, has observed from our own background and experience that most major art museums domestically have recognized the issue of media art preservation, yet lack a dedicated staff capable of dealing with this issue practically. Although these museums are relatively resourceful and have a clear division of expertise, if preservation of media art is not considered to be a priority of the museums, it is easy for the preservation of such artworks to be postponed, and they are often not examined again until the next exhibit opportunity. Such a situation is actually common in most domestic and overseas art museums.

Small and medium-sized museums like the KdMoFA have a relatively flat organizational structure and may need a full-time staff dedicated to media artworks. However, we have seen their strengths in executing our collaborative projects: the organization's high flexibility in communication, coupled with the increased mobility of the museum's staff, makes it easier to establish a closer partnership in the process.

11

我們將這四年所累積的各種成果，透過筆記軟體Notion來彙整建立一個計畫的成果網站資料庫，收錄幾項重要的成果，如文章線上出版、所有講座與訪談的影音紀錄、第三期計畫所發展的詞彙列

表等。經由資料庫形式，讓使用者能夠自行依據分類來找尋內容。同時為了能將成果展現給外國機構、研究者等，我們也製作了英文的版本。這次講座結束後，我們會再更新這期計畫的內容成果。

台灣其實媒體藝術相關展演、講座相當蓬勃，但很少有直接觸及保存維護相關議題。不過對媒體藝術保存維護的需求還是一直存在的，像是在台灣有一家動力機械技術廠商開始為合作的藝術家提供保固維護的服務；同時，個人觀察歐美具有規模的藝術家或其工作室，也已有針對作品的保存維護相當程度的關注與處理方式；乃至周遭有藝術家朋友開始注重對自己作品—尤其過往作品—的文件紀錄建立。這讓我們在經過四年的計畫發展，感受到其淺在受眾逐步增加，也常會思考除了與美術館進行合作之外，是否還有其他發展的可能性。

加上禹先觀察到台灣目前對於機構策展人的定位與典藏工作脫離的窘境，導致在典藏現場並沒有一個職員真的對作品永續的保存狀況負責，因此更難在科層化的美術館中推動跨領域的媒體保存事務。

基於上述的反思，我們不該單單只是關注在美術館的範疇內，而是嘗試將保存維護的範疇拉大，跳出既有的框架從不同的角度帶入，促使更為廣泛的交流。加上也許在未來我們能有機會找到連結方式，將策展人、藝術家、技術人員、甚至藝術評論、獨立研究者這些不同專業範疇的人集結一起進行合作。舉例來說，修復師在為入藏作品收集作品資料與完善作品的文件建檔時，常會進行藝術家訪談來獲取媒材和創作的知識。這樣的方法是否能應用於藝術史研究、藝術家創作研究等。

禹先和我前陣子稍微針對接下來的發展做了討論，目前有的共識會朝向發展一個3至5年的中長期計畫，先有一個大方向的規劃，在細分至每一年預計達成的目標。我們也考量在這樣的規劃內與更多不同專業範疇的從業人員與研究者、藝術相關學校等合作，來增進媒體藝術保存在台灣多面向的發展。

We have arranged a website showcasing all our project's achievements over the last four years. This website uses Notion's database function and contains several significant achievements, such as online publication, video recordings of all lectures and interviews, and a glossary of video terminologies. Users can easily find content by category, and we have also created an English version for presenting the outcomes to international organizations and researchers. After this lecture, we will continue to update the contents of this project.

In Taiwan, while media art exhibitions and lectures are thriving, only a few directly address preservation issues. However, there has always been a growing demand for media art preservation. For example, a Taiwanese studio specializing in mechanical and technical innovation has begun to provide maintenance services to collaborating artists and other clients; similarly, I have personally observed that well-established artists and their studios in Europe and the U.S. have raised considerable concerns about the preservation of their works and have provided ways to deal with them.

Even in my surroundings, some artist friends are beginning to pay attention to the documentation of their works, particularly their past ones. After four years of developing the project, we have seen a gradual increase in its potential audience and have frequently wondered whether there are other possibilities for development besides collaboration with museums.

Yuhsien also observed the current dilemma in Taiwan, where the role of institutional curators is detached from the traditional curatorial work outside Taiwan, leading to a lack of dedicated personnel responsible for the sustainable preservation of artworks on the collection premises. Consequently, it becomes more challenging to promote cross-disciplinary media preservation initiatives within the hierarchical structure of art museums.

Based on the above reflections, we should not only focus on the relationship with museums but also expand the scope of preservation, go beyond the established framework, and bring in different perspectives to promote a broader range of communication possibilities. In the foreseeable future, curators, artists, technicians, even art critics, and other professionals can be linked more optimally so that these different professional fields can be brought together for cooperation.

Yuhsien and I recently had a discussion about future developments. We have come to an agreement to work on developing a mid to long-term plan that will span over 3 to 5 years. The plan will begin with a general outline and will be further divided into yearly goals. Our aim is to collaborate with professionals from various fields, researchers, and universities related to art to enhance the multidimensional development of media art preservation in

Taiwan within this framework.

12

謝謝各位的聆聽。

Thank you for your listening.

留下SOP: 關渡美術館媒體作品典藏初學之路

Please Keep the SOP: A Beginner's Trajectory to Collecting Media Art Works in the KdMoFA

謝宜樺 (關渡美術館典藏展覽組專員)

Yi-hua Hsieh

(Exhibition and Collection Executive, KdMoFA)

謝宜樺畢業於國立臺北藝術大學藝術跨域研究所創作組，從事木刻版畫及散文創作。現為關渡美術館展覽組及典藏組專員。與科技藝術典藏基礎計畫合作期間，經歷館內典藏品《離位》之提借，並完成《離位》於北藝大科藝館的展示版本紀錄及藝術家袁廣鳴訪談。

Yi-hua Hsieh is a graduate of the Graduate Institute of Trans-disciplinary Arts at the TNUA. She specializes in woodblock printmaking and prose creation. Currently, she works in the exhibition department and collection department of the Kuandu Museum of Fine Arts. During her collaboration with the "Save Media Art" project, she gained hands-on experience with the borrowing of KdMoFA's collection titled "Out of Position" and completed the iteration report of the work along with an interview featuring the artist Yuan, Goang-Ming.

大家好，我是關美館展覽組組員宜樺，今天要向各位分享我在北藝大關美館與科技藝術典藏基礎計畫合作時所學到的事。作為一個非典藏專業的展覽專員，我學到的知識非常入門，同時也非常新鮮。我的發表主要分為兩部份，第一部份是關渡美術館的典藏環境介紹，第二部份則是今年度出借典藏品《離位》的經驗分享。

Hello everyone, I am Yi-Hua, a member of the exhibition team at the Kuandu Museum of Fine Arts, Taipei National University of the Arts. Today, I would like to share with you what I have learnt from working with the SMA project at the museum. As a non-specialist collections professional, my experience has been both fundamental and refreshing. My talk will be in two parts. The first part will provide an introduction to the collection environment at the KdMoFA, while the second part will focus on my experiences with the loaned collection item "Out of Position" for the past year.

關美館典藏環境及概況

The Collections and the Acquisition Environment of the KdMoFA

如前所述，我並沒有上過與典藏有關的課程，大學時就讀本校美術系，接著進入藝術跨域研究所。在學期間做過表演、版畫，而後以個人的散文創作為論文主題畢業。進入關美館後，我負責展務，工作包含設備管理、佈展人力分配、與藝術家針對器材進行溝通；另一方面還有典藏，包含年度盤點、典藏品的出借管理。

由於關美館是一間編制較小的美術館，館員間經常互相協助，機動性地輔助他人。以典藏工作為例，例行性的盤點由我負責，另一名教育推廣組的同事則會在出借典藏品、定期巡檢庫房時協助我。

As mentioned earlier, I didn't take any courses related to collections. I studied Fine Arts at the university and later entered the Graduate Institute of Trans-disciplinary Arts. During my academic journey I was involved in performance and printmaking. My graduation thesis focused on personal prose writing.

Since joining the KdMoFA, I have been primarily responsible for exhibition matters, including equipment management, allocation of staff for exhibition preparation, and communication with artists regarding technical aspects. On the other hand, I also deal with collection-related tasks, such as the annual inventory and the management of loans.

As the KdMoFA is a small art institution, team members often assist each other in a flexible and collaborative way. For example, when it comes to collection-related tasks, I am responsible for the routine inventory, while a colleague from the education department assists me with activities such as loaning out collection items and conducting regular inspections of the storage rooms.

回到我的典藏工作。科技藝術典藏基礎計畫與關美館的合作，讓我學到許多與媒體藝術典藏有關的知識。去年禹先每兩週會來館內一次，確認我在典藏工作上遇過什麼問題、教了我怎麼檢查作品檔案的數據，並視關美館的規模，為我們建立一套可行的建檔架構。

Getting back to my work with the collection, the collaboration between the SMA and the KdMoFA has given me the opportunity to acquire a wealth of knowledge about media art collections. Last year, Yuhhsien visited the museum every two weeks to check on any problems I was having with the collection. She taught me how to check the data in the artwork files and helped us set up a practical archival framework.

關渡美術館收藏了1,208件典藏品，這些典藏品分別被收藏在三間庫房中。錄像裝置作品的錄像檔案光碟被收在一號庫房，部分裝置則被收在三號庫房。關美館收藏的錄像作品有44件來自2015年舉辦的《啟視錄：臺灣錄像藝術創世紀》，由參展藝術家捐贈。這檔展覽由孫松榮策展，旨在重建1980-90臺灣錄像藝術的系譜，邀請17名藝術家如陳界仁、盧明德、崔廣宇等人，重現原作或復刻舊作，以繪製歷史、美學或技術的變化及趨勢。

去年4月，本校的科技藝術館（科藝館）在開幕前向我們提借了《啟視錄》的其中一件藏品：本校教授袁廣鳴的作品《離位》，這也是本館收藏的《離位》睽違8年的展示。以下是《離位》的簡介、提借與安裝作品的概況，以及本次展示的紀錄。

The KdMoFA houses a collection of 1208 artworks, distributed across three storage rooms. The video installation pieces and the video file CDs are stored in Storage Room 1, while some installations are housed in Storage Room 3. Among the video artworks in the KdMoFA's collection, 44 pieces are from the 2015 exhibition "REWIND_Video Art in Taiwan." These were generously donated by the participating artists. Curated by Song-Yong SING, the exhibition aimed to reconstruct the lineage of Taiwanese video art from the 1980s to the 1990s. Seventeen artists, including Chen Chieh-Jen, Lu Ming-Te, and Tsui Kuang-Yu, were invited to recreate original works or reproduce old ones, contributing to the mapping of historical, aesthetic, and technological changes and trends.

Last April, the Center for Arts and Technology (CAT) Building in the TNUA opened, and during the planning of its permanent exhibition, they borrowed one of the pieces from "REWIND" from us: Yuan Goang-Ming's "Out of Position." Below is an overview of "Out of Position," the details of the loan and installation of the artwork, and documentation of its presentation.

《離位》借展經驗及展示版本紀錄

The Experience in Loaning the Collection "Out of Position" and the Finishing of Iteration Report

《離位》的組件包含了一台包覆著金屬外框的CRT顯示器、能固定在CRT外框上的半身人體雕塑、一組播放器，及提供CRT放映的影像檔案。這件作品的第一個版本製作於1987年，在2015年時重製。除了關渡美術館外，國立臺灣美術館與香港M+也收藏了這件作品。

從科藝館向我們申請提借，到運輸至科藝館，花費了兩週的時間。5月時，關美館的3名人員前往科藝館協助佈展約半天，而後藝術家至現場微調約一個小時。

The components of "Out of Position" include a CRT monitor encased in a metal frame, a half-body human sculpture that can be mounted on the CRT frame, a playback device, and a video file for playing on the CRT. The initial version of this artwork was created in 1987, with a remake in 2015. Apart from the KdMoFA, both the National Taiwan Museum of Fine Arts and Hong Kong's M+ have also added this piece to their collections.

The process from submission of the loan to transport to the CAT took about two weeks. In May, three KdMoFA staff visited the CAT to assist with the installation, which took about half a day. The artist then arrived on site to fine-tune the work, which took about an hour.

禹先與我針對本次展示訪問了袁廣鳴，從中得知藝術家對於作品未來修繕的考量。可能需視作品狀況調整、更換的部分有：(一)、雕塑的重製，(二)、CRT的汰換，(三)、影像的調整或轉檔。

1. 針對雕塑，由於翻模時的石膏模具並未被保留，因此需利用現存作品的雕塑再翻模。
2. CRT顯示器的替換方式有兩種，其一是保存CRT的外殼，於其中安裝液晶顯示器，另一種則是直接替換成別台尺寸相同或相近的CRT。
3. 影像則需視替換的CRT尺寸，進行長寬比的調整，調整的重要依據則是使人體雕塑的腰部，能與影像中游泳者的上半身吻合。電視調色的原則也是一樣的，盡可能使人體雕塑的顏色和影像中游泳者的膚色吻合。

Yuhsien and I conducted an interview with Yuan Goang-Ming about considerations for the future maintenance of the artwork for this exhibition. We learned that the artist may need to make adjustments or replacements depending on the condition of the work, including (1) the reproduction of the sculpture, (2) the replacement of the CRT, and (3) file conversion for the video.

1. For the sculpture, since the plaster mould used in the replica has not been preserved, it will be necessary to make a new mould from the existing sculpture.
2. There are two methods of replacing the CRT monitor. One is to preserve the outer casing of the CRT and install an LCD display inside, while the other method is to replace it directly with another CRT of the same or similar size.
3. For the video, the aspect ratio needs to be adjusted according to the size of the new CRT, and the important basis for the adjustment is to make the waist of the sculpture match the torso of the swimmer in the video. The same principle applies to the colouring of the TV, so that the colour of the sculpture matches the skin colour of the swimmer in the video as closely as possible.

訪問的最後，我們詢問袁廣鳴老師，這次的展呈有什麼可改進的地方？老師認為展場的光線偏暗，較為理想的展示方式以1987年及2015年為主。2023年版本與前兩次的差異是，由於電視的影子正巧遮住了金屬底座，故底座上並沒有鋪設鏡子碎片（老師當時鋪設鏡子的其中一個原因是為了遮擋底座）。

At the conclusion of the interview, we inquired with Yuan about any areas for improvement in this exhibition. Yuan noted that the lighting in the exhibition space was somewhat dim, and the ideal presentation would follow the style of the 1987 and 2015 versions. The notable difference in the 2023 version is the absence of mirror shards on the base, as the shadow from the TV covered the metal base. (One of the reasons the artist initially placed mirror shards on the base was to obscure it.)

結論：典藏倫理的示範

Conclusion: A Demonstration of Collection and Conservation Ethic

以上便是去年與SMA計畫合作的收穫。最初在典藏工作上遇到問題時，我經常有點茫然，只能依靠想像來判斷某些事該不該做。與禹先的合作使我認識「典藏」，當我得知「展示版本報告」也包含藝術家訪談，不免有點訝異，沒想過這份建檔用的報告，還包含了對藝術家充滿彈性的提問。此外禹先強調需視館舍現有的資源，建立一套可行的典藏架構，以確保這套系統在未來仍能被運用，這點對關美館來說相當重要。在我們的對話中，我逐漸認識了典藏的倫理，感謝SMA計畫及禹先所提供的專業。

These are some of the benefits of working with the SMA project over the past year. In the beginning, when I encountered problems with the collection, I often felt unsure and had to rely on my imagination to figure out what to do. In the course of working with Yuhsien, I was a little surprised to learn that the “iteration report” also included interviews with artists, highlighting the flexibility of research within this archival document. In addition, Yuhsien emphasised the importance of the KdMoFA establishing a viable collection structure, taking into account the museum’s existing resources, to ensure that the system could be used in the future. In the course of our dialogue, I have come to understand the ethics of collecting, and I am grateful to the SMA project and to Yuhsien for her expertise.

關渡美術館簡介

Introduction of the Kuandu Museum Fine Arts

關渡美術館位於國立臺北藝術大學校園內，是臺灣第一所藝術大學專業美術館，期待透過策展專業、駐館創作／研究計畫、藝術教育、學術研究、專業教學與鼓勵創作的相互激盪，成為充滿開放性與年輕能量的跨界藝術領域，提供與眾不同的展覽詮釋。同時扮演著美術專業教育和社會教育的重要角色，進而透過展覽與國際藝術社群接軌，成為以藝術與國際對話的交流平台。

Kuandu Museum of Fine Arts (KdMoFA), situated within the campus of Taipei National University of the Arts. It is the very first professional museum operated by a university of arts in Taiwan. Through curating expertise, Kuandu Residency Program, academic research, professional pedagogy, and mutual inspiration of creativity, KdMoFA is expected to be an inter-disciplinary realm of art, full of space and young energy, providing extraordinary interpretation of exhibition. At the same time it plays a vital role in art education and social education, connects international art community with exhibitions, and ultimately positions itself as a platform for the intercourse with the world via art.

保存時基媒體藝術：透過與外部專家合作橋接空缺

Preserving Time-Based Media: Bridging Gaps through Collaboration with External Specialists

Andreas Weisser

(Time-based media art consultant)

安德烈亞斯·韋瑟 (時基媒體藝術作品保存顧問)

Andreas Weisser studied conservation and restoration at the University of Applied Sciences Cologne. Since 2003 he works as a conservator for time-based media and as a preservation manager for audiovisual collections. His consultancy focuses on the support of public and private collections for analogue and digital long-term preservation and storage of contemporary art, light-art and time-based media art. In 2015, he joined Doerner Institute, Munich in a part time position. There he is responsible for the preservation of the time-based media art collection of the Pinakothek der Moderne and the Museum Brandhorst. In 2019 he co-founded »Preservation as a Service« with Dr. Anna Schäffler. With their shared expertise they develop holistic and sustainable preservation strategies for art and cultural assets at the intersection of art history and conservation. He held lectures in conservation at the Universities of Applied Sciences in Cologne and Berlin, and is together with Anna guest lecturer at the Amsterdam University. From 2012 to 2014 he worked as Consultant for Deutsche Welle Akademie in North Africa and Middle East and 2020 for Goethe Institute in India.

韋瑟畢業於德國科隆應用科技大學保存與修復學程。自2003年起擔任時基媒體修護師和音像典藏品的保存經理，側重於支持公共和私人收藏，對當代藝術、光藝術、和時基媒體藝術的類比與數位的長期保存和儲藏。2015年，他以兼職身份加入慕尼黑多納研究機構，負責保存維護現代繪畫館和布蘭德霍斯特博物館的時基媒體藝術典藏。2019年，韋瑟與安娜·謝夫勒博士共同創辦了“保存即服務”。憑藉其共同專業知識，在藝術史和保存維護的交叉領域為藝術與文化產業制定整體及可持續的保存策略。韋瑟曾在科隆和柏林的應用科記大學講授保存維護課程，以及與謝夫勒博士一起擔任阿姆斯特丹大學客座講師。從2012年到2014年，擔任德國之聲學院在北非和中東的顧問，及2020年擔任印度歌德學院的顧問。

01

Before we start I wanted to address my deep thanks to Tzu-Chuan Lin and his colleagues for the invitation to this workshop. It is great to support emerging professionals in the field of TBM conservation. And I am looking forward to your experience in establishing TBM conservation at the Kuandu Museum of Fine Arts (Kdmofa).

Before we start, you probably want to know what the typical work of a TBM conservator might look like. And what kind of clients TBM conservators usually serve.

在我們開始之前，我想要向林子荃及他的同事表達我深深的感謝，感謝他們邀請我參加這個講座。能夠支持新興的時基媒體藝術 (TBM) 保存維護專業人士是一件很棒的事情。我期待著你們在建立臺北藝術大學關渡美術館 (Kdmofa) 時基媒體藝術保存維護方面的經驗。

在我們開始之前，你可能想知道一位時基媒體藝術保存維護專家的典型工作是什麼樣子，以及此類專家通常為什麼樣的客戶提供服務。

02

I can't say exactly how it is with my fellow colleagues. But in my case it looks like this. My clients are divided into 3 main categories: Archives, Public and Private Collections.

You might think: Isn't this the same? No, its not. The main difference is their focus. All clients have to deal with media, but they are dealing with it in a different way. Archives for example are concentrating on the preservation of the content. They deal with media – whether it is film or tape. Both carriers are seen mainly as the „transporter“ or current storage-location of the content. The medium itself is not the focus of their needs. They want to preserve the content. So, the content gets the most attention, the content is the object of preservation. The data carrier itself is not that important. Its not seen as the object of preservation.

我不能說我的同事們的情況到底如何，但我的情況是這樣的，我的客戶主要分為三類：檔案館、公共收藏館、私人收藏館。

你可能會想：這不都一樣嗎？不，不一樣。主要區別在於他們的重點不同。所有客戶都必須與媒體打交道，但他們處理媒體的方式各不相同。例如，檔案館專注於內容的保存。他們處理的是媒體——無論是膠卷還是錄音帶。這兩種載體主要被視為內容的「傳送者」或目前的儲存位置，媒介本身並不是他們需求的重點，他們希望保存內容。因此，內容最受關注，內容才是保存的對象。資料載體本身並不重要，它不被視為保存的物件。

03 Museums and private collections however take a different look at their holdings. A tape is not just a tape – it is also an object with artistic value. That's why they have a more holistic approach when it comes to the preservation of the artwork. The object of preservation is formed by the carrier and the content. So, both parts get the same attention.

然而，博物館和私人收藏館對其藏品卻有不同的看法。一卷錄音帶不只是一捲錄音帶，它還是一件具有藝術價值的物品。這就是為什麼博物館和私人收藏機構在保存藝術品時會採取更全面的方法，保存物件由載體和內容構成。因此，這兩部分都會得到同樣的關注。

04 A lot of museums don't have dedicated staff to take care for TBM artworks, so they need to outsource the work to external professionals. So, what are typical areas of work, that are TBM conservators hired for? What are the main tasks associated with the role of a time-based media conservator? Its not uniform – it depends very much on what kind of clients you are working for and how their collection is organized.

許多博物館都沒有專門保存時基媒體作品的人員，因此需要將這項工作外包給外部專業人員。那麼，時基媒體保存師的工作範圍是什麼？時基媒體保存人員的主要任務是什麼？答案並不統一，很大程度上取決於你為什麼樣的客戶工作及他們的藏品組成。

05 The role of a time-based media conservator is dynamic and requires a combination of technical expertise, art historical knowledge, and a commitment to preserving the unique qualities of these artworks. Please don't take my list as comprehensive and complete! It's just a personal short list and wrap-up what I think are the main areas of work: Assessment & Documentation, Conservation & Storage, Preservation Planning & Digitalisation/Migration, Pre-acquisition Risk Assessment, Condition reporting & Exhibition care, Public Outreach

時基媒體保存人員的角色是動態的，需要將專業技術、藝術史知識和保護這些藝術品獨特品質的決心結合在一起。請別將我的清單當成唯一的標準答案，這只是一份個人的簡短清單，總結了我認為主要的工作領域：評估與記錄、保存與儲藏、保存規劃與數位化／轉檔、收購前風險評估、狀況報告與展覽管理、公眾宣傳。

06 When you start chronological, the Assessment or evaluation of an art collections or archive is the first task, when you get in contact with a new client.

按時間順序排列，與新客戶接觸時，評估或評估藝術收藏或檔案是第一個任務。

07 The goal is to Evaluate the condition of time-based media artworks and assess potential risks for deterioration. And to Document the technical details of the artworks, including hardware, software, and playback equipment. But this can look very different....

目標是評估時基媒體藝術品的狀況，評估潛在的老化風險，並記錄藝術品的技術細節，包括硬體、軟體和播放設備。但這看起來可能非常不同.....

08in the last years I was travelling with my equipment to numerous collections in Europe. I am working with different kinds of tape check machines which check the physical state and the playability of tapes. The key task was normally to check what type of tapes, they have in the archive and more important....

.....在過去的幾年裡，我帶著我的設備在歐洲的許多收藏館旅行。我使用不同種類的磁帶檢查機來檢查磁帶的物理狀態和可播放性。主要任務通常是檢查檔案中的磁帶類型，更重要的是.....

09 Checking the condition of the tapes. Since the content is most important, this information is crucial for all following steps. Damaged tapes are at high risk of not getting properly digitized. That's why it is so important to get a clear picture on the physical status of the tapes in a collection. After the check of the tapes the tender for digitalization is tailored to the condition of the tapes.

檢查磁帶的狀況。由於內容最為重要，因此這項資訊對接下來的所有步驟都至關重要。損壞的磁帶

極有可能無法正確數位化。因此，清楚了解收藏磁帶的實際狀況非常重要。在對磁帶進行檢查後，將根據磁帶的狀況調整以進行數位化。

- 10** Since collections are different and their holdings nowadays are mainly digital, my equipment has changed dramatically. When I am traveling now, most of my equipment fits into a small rugged container and consists of different computers, cables and technical equipment. It is still about assessment and evaluation, but the media has changed completely.

基於藏品的不同，且如今數位的藏品佔多數，我的設備也發生了巨大變化。現在出差時，大部分的設備都裝在一個堅固小箱子裡，包括不同的電腦、電線和科技設備。我的工作仍然是檢視和屏凸，但媒體已經完全改變了。

- 11** I use Computers with write blockers much more often than tape cleaners or video decks when I check artworks these days. Except for film, analog media is really an exception when acquisitions are made today. Analogue media truly seems to be obsolete when it comes to new acquisitions in collections. One could think, this would make it easier in handling and storage since digital technologies are everywhere today. And you might think, that it is also much easier for collections to deal with digital data and content than with tapes and physical carriers. But from my experience this is hardly the case. Most collections don't have dedicated staff to check files and data. So, this task is often left out and files are ingested without proper testing and quality checks.

如今，我在檢查藝術品時，使用配備了防寫盒的電腦，比使用磁帶清洗機或錄影機要頻繁得多。除了底片，類比媒體在今天的收藏中確實是個例外。對於新的收藏，類比媒體相較之下似乎真的過時了。人們可能會想，既然如今數位科技無所不在，這是否會讓處理和儲存變得更容易？你可能會認為，對於藏品來說，處理數位資料和內容要比處理磁帶和實體載體容易得多。但根據我的經驗，情況並非如此。大多數館藏沒有專門的人員來檢查檔案和資料。因此，這項工作經常被遺漏，檔案未經適當測試和品質檢查就被輸入。

- 12** Same is with Conservation Planning & Storage.

保存規劃和儲存也是如此。

- 13** The goals are, to develop conservation strategies and plans to address the unique challenges posed by time-based media, considering both the physical and digital components. A key role here plays the physical storage. But on the same page, it is important to implement preventive conservation measures to minimize deterioration, such as controlling temperature, humidity, and pest control. This all can be achieved when you Design and implement proper storage and handling protocols to ensure the physical safety of time-based media artworks, considering the fragility of equipment and media.

When I visited archives or museums in the analogue days, it was always a question about the correct storage. The main questions are: How is the current situation, how should it look like ideally and does the storage space need some improvements.

其目標是製定保存策略和計劃，以應對基於時間的媒體所帶來的獨特挑戰，同時考慮實體和數位部分，其中，實體儲存扮演了重要角色。但同樣重要的是，要實施預防性保護措施，如控制溫度、濕度和蟲害防治，以盡量減少損壞。考慮到設備和媒體的脆弱性，設計並實施適當的保存和處理程序，確保基於時間的媒體藝術品的實體安全，就能實現這一切。

當我在類比時代造訪檔案館或博物館時，總是被問到正確儲存的問題，像是：目前的情況如何，理想的情況應該是怎樣的，庫房空間是否需要改進。

- 14** From my experience a lot has improved in the past years and that's not, how it looks like everywhere. But it is still sometimes a challenging process to dive into the far corners of an archive. At the beginning most of the questions concentrated on climate conditions and packing of the media. You will find a lot of advice in the literature about perfect conditions, so I won't talk about perfect solutions.

根據我的經驗，在過去幾年中已經有了很大的改進，但並不是所有地方都是這樣。但是，有時深入檔案館的角落仍然是一個具有挑戰性的過程。一開始，大多數問題都集中在氣候條件和媒體的包裝上。你可以在文獻中找到很多關於完美條件的建議，因此我不會談論完美的解決方案。

- 15** My advice always is, to spend the money for Digitalisation and the digital storage instead for new housings or air conditioning.
But besides that, there might be solutions which are very close to perfect when it comes to storage spaces for media.

我的建議始終是，把錢花在數位化和數位儲存上，而不是花在新的櫃架或空調上。除此之外，在媒體的庫房儲存方面，可能還有一些接近完美的解決方案。

- 16** In 2007 I was supporting a private art collection to build a storage space dedicated for data carriers. This storage space is climate controlled at 15°C and 35% relative humidity 24/7. It's a small room with a suspended rolling rack system that contains all data carriers from film to video. But to be honest, that's one of only a few I know so far that are designed like this.

2007 年，我為一家私人藝術收藏機構工作，建造了一個專門用於放置儲存媒介的存放空間。這個空間全天候保持在 15°C 和 35% 相對濕度，並且配置了懸掛式滾動櫃架系統，裡面存放著從膠卷到錄影帶等的所有儲存媒介。老實說，這是我目前所知，少數如此設計的空間之一。

- 17** When budgets are thight it might be easier to concentrate on relative humidity – like in this case. So, consultancy on physical storage was and still is a key area of work for TBM conservators. If you don't have the expertise in-house, you should look for external experts to check and evaluate your situation.

在預算緊縮的情況下，集中精力解決相對濕度問題可能會更容易一些——就像這次的情況。因此，實體儲存方面的諮詢始終是時基媒體藝術保存人員的主要工作領域。如果公司內部不具備這方面的專業知識，則應尋找外部專家來檢查和評估您的情況。

- 18** Same is for digital storage or preservation planning. Because nowadays we are talking about virtual storage, and this seems to be even more complicated than designing the perfect physical storage. The bigger the institution, the easier it might be to rely on a working IT-environment. But this would mean to understand what IT people talk about and to offer them well structured data and – more important – the needed metadata to deal with the delivered files. This is not always an easy task! So, ideally TBM conservators assist in this process and develop a strategy which fits in the local storage architecture.

數位儲存或保存規劃也是如此。因為如今我們談論的是虛擬庫房，這似乎比設計完美的實體儲存更複雜。規模愈大的機構，對工作中的 IT 環境更加依賴，但這意味著要了解 IT 人員在談論什麼，並向他們提供結構良好的數據，更重要的是提供處理交付檔案所需的元數據。這並不容易！因此，理想情況下，時基媒體藝術保存人員會在此過程中提供協助，並制定適用於館方儲存架構的策略。

- 19** But smaller archives or collections often must focus on local solutions due to budget and staffing constraints. The gathering of basic metadata is even harder for these institutions. So, often these institutions rely on external experts for the set-up of local robust storage systems which then can be run without internal IT staff by themselves.

但規模較小的檔案館或收藏館往往由於預算和人員編制的限制，必須把重點放在本地解決方案上。收集基本元資料對這些機構來說更是難上加難。因此，這些機構往往依賴外部專家來建立本地強大的儲存系統，無需內部 IT 人員即可自行運作。

- 20** Ok, but what is about Preservation and Digitalisation? In my experience, the lack of affordable, redundant and safe storage is a dangerous bottleneck for preservation and digitalisation – and as well for potential new acquisitions. In all cases a whole bunch of new questions arises.

好吧，那麼保存和數位化又是怎麼回事呢？根據我的經驗，缺乏可負擔的、保留空間彈性的和安全的儲存設備是保存和數位化的危險瓶頸，對於潛在的新進收藏品也是如此。在任何情況下，都會出現一大堆新問題。

21 The goals for preservation are, to set up a strategy for long-term preservation and to implement this strategy into the workflows of the collection. On a regular basis you should perform quality controls to address any existing damage/corruption or degradation. And for Digitalisation the goals are to manage the migration of digital and analog formats to newer, more stable formats to prevent obsolescence and ensure continued accessibility. Of course, this needs a deep dive into file-formats, codecs, wrappers and digital infrastructure to navigate through all potential risks associated.

保存的目標是製定長期保存策略，並將此策略落實到藏品的工作流程中。應定期進行品質控制，以解決任何現有的損壞／破壞或退化問題。數位化的目標是將數位和類比格式轉檔成更新、更穩定的格式，以防止過時並確保它總是易於使用。當然，這需要深入研究檔案格式、編解碼器、封包格式和數位基礎設施，以了解所有相關的潛在風險。

22 A comprehensive preservation strategy for time-based media artworks involves a combination of preventive measures, documentation, and active conservation practices. Depending on what kind of media you are dealing with, this can look very different. So, an individual strategy tailored to your collection might include very different tasks and topics compare to this example here. In this case the key components that should be part of such a strategy are divided by physical media and digital. As you can see, a lot of tasks are addressed on both sides. They include: Obsolescence, Ingest, Migration, Quality control, Handling, File Formats, Storage and Risk assessment. Just to name a few.

時基媒體藝術品的全面保存策略包括預防措施、記錄和積極保存實踐的結合。根據您所處理的媒體類型，這看起來可能會非常不同。因此，為您的收藏量身定制的策略可能會包括與本範例截然不同的任務和主題。在本案例中，該策略應包含的主要內容按物質媒材和數位媒材進行了劃分。正如您所看到的，很多任務在兩個方面都有涉及，包括「過時」、「汲取」、「轉置」、「品質控制」、「處理」、「檔案格式」、「儲存」和「風險評估」。

23 When it comes to the regular checks and daily work, you might involve software like Media Conch or Forensic tools for evaluation. These are often open source and help conservators to judge about the quality of the content and the status of the file.

在定期檢查和日常工作中，您可能需要使用 Media Conch 或 Forensic 工具等軟體進行評估。這些軟體通常都是開源的，可以幫助保存人員判斷內容的品質和檔案的狀態。

24 When it comes to Digitalisation, we are still today faced with one core question: how can we make sure, that the “full richness of authenticity” of an audiovisual object won't be changed dramatically during digitalisation. Especially for archives it was not an easy task, to find a compromise between ethical aspects and the needs of an archive. This might be easier for a museum since ethical aspects have more weight. I remember endless discussions regarding perfect file-formats, containers, workflows and capture cards.

說到數位化，我們今天仍然面臨一個核心問題：如何確保音像與影像的「豐富真實性」在數位化的過程中不會發生巨大變化。特別是對檔案館來說，要在倫理方面和檔案館的需求之間找到一個折中點並不容易。對博物館來說，這可能更容易，因為倫理方面的問題更重要。我還記得關於完美檔案格式、媒介、工作流程和影音採集卡的無休止討論。

25 When finally these questions are answered the even more critical task needs to be addressed: writing a comprehensive tender and define the exact specifications for the digitisation process. A detailed tender should include information about the condition of the media, cleaning, handling, minimum requirements for the equipment used for playback and analog-digital transfer as well as specifications regarding file formats, naming conventions, quality checks and staff. This all aims to find the perfect service provider. One of the problems we are seeing now is, that many providers have significantly cut down their services or are out of business. We are facing a dying business and not only the data carriers get old – also do the machines and the experts. So, it could get harder to find companies, labs and businesses which provide core competencies for the artworks in our custody.

當這些問題最終得到解答後，還需要處理更重要的任務：撰寫一份全面的委託報告，並確定數位化過程的確切規格。一份詳細的委託報告應包括有關媒材狀況、清潔、處理、回放和類比數位轉換所

用設備的最低要求以及檔案格式、命名規則、品質檢查和工作人員的規範等資訊。所有這些都是為了找到完美的數位化服務提供者。如今我們面臨的一個問題是，許多服務提供者已大幅削減相關服務或關閉。我們面臨的是一個瀕臨消亡的行業，不僅資料載體會老化，機器和專家也會老化。因此，要找到能為我們保管的藝術品提供核心競爭力的公司、實驗室和企業可能會越來越難。

26 Another important task, time-based media conservators are dealing with is the pre-acquisition risk and Cost assessment. A lot of institutions learned from previous acquisitions, that some artworks are more complicated to maintain and keep them alive than others.

時基媒體保護人員要處理的另一個重要任務是收購前的風險和成本評估。許多機構從以往的收購中了解到，有些藝術品的維護和保存比其他藝術品更複雜。

27 There is a strong need for professional assistance through the whole “lifecycle” of an artwork. The long-term preservation starts ideally before the acquisition.

藝術品的整個「生命週期」都非常需要專業人員的幫助。理想情況下，藝術品的長期保護工作在收購之前就已開始。

28 A tailored questionnaire where all relevant questions regarding the artwork are covered should be the base for its preservation in the future. In my experience, this important step has not yet been implemented in the acquisition processes of many institutions. Subjectively, private collections seem to be much more open to this pre-screening than public institutions. I can only speculate, but there seems to be a barrier between the curators and conservators. Behind closed doors, I have been told that conservators are often perceived as holding things back. This may be one reason why conservators are often rather not involved in the process before acquisition. The other reason why pre-acquisition checks are not implemented in the workflow is very simple: it is the lack of specialized conservators or other professionals in the collections.

一份量身訂製的問卷應涵蓋藝術品的所有相關問題，這也是今後藝術品保存的基礎。根據我的經驗，許多機構在收購過程中尚未實施這項重要步驟。從主觀來看，私人收藏似乎比公共機構更願意接受這種預檢。我只能猜測，策展人和保存人員之間似乎有障礙。有人告訴我，保存人員往往被認為是在「拖後腿」，可能的原因是保存人員往往不願意參加收購之前的過程。在工作流程中沒有實施收購前檢查的另一個原因非常簡單，那就是缺乏專門的保存人員或其他專業典藏人員。

29 But when it comes to complex artworks it might be very useful to ask at least some questions regarding the technical equipment. This also includes information about the power consumption. Hint: CRTs need a lot of power to fire the cathode ray gun up initially. Some institutions could need to draw additional power lines when exhibiting artworks like this work from Kutlug Ataman, containing 40 used CRTs.

但當涉及複雜的藝術品時，詢問有關技術設備的問題可能會非常有用，包括耗電量的資訊（註：映像管需要大量電力才能啟動陰極射線槍）。有些機構在展出像 Kutlug Ataman 的這件作品（其中包含 40 個使用過的映像管）這樣的藝術品時，可能需要額外鋪設電源線。

30 But also internally there should be a risk assessment about the costs for keeping this particular equipment alive for the next decades. How much internal expertise do you have to take care about 40 CRT monitors. How many hours do you spend for spare part hunting, testing, calibration and regular maintenance?

但是，內部也應該對未來幾十年維護這些特定設備所需的成本進行風險評估。你有多少內部專業人員來維護 40 台 CRT 螢幕？您需要花費多少時間來尋找備用零件、進行測試、校準和定期維護？

31 With the lack of communication and the lack of professional trained people, a lot of tasks remain unaddressed. Or just not monitored. Sometimes it is even not clear after signing the purchase contract, what exactly will be part of the artwork – and which components need to be sourced afterwards.

由於缺乏溝通，也缺乏經過專業訓練的人員，許多任務仍然沒有解決，或者缺乏監督。有時，甚至在簽訂採購合約後也不清楚藝術品的具體組成部分是什麼，以及之後需要採購哪些組件。

32 Same is for a risk assessment. Some artworks include components which are potentially harmful to people or are very fragile. This must be clarified prior to acquisition to determine if the artwork can be part of a regular exhibition or if precautions are required. Asta Gröttings work “A spark of passion” where a spark ignites at regular intervals between two wires mounted in a hole in the wall is only one example for such artworks.

風險評估也是如此。有些藝術品包含可能對人體有害或非常脆弱的成分。這一點必須在收購前加以釐清，以確定該藝術品是否可以作為常規展覽的一部分，或者是否需要採取預防措施。Asta Gröttings 的作品《激情的火花》就是此類藝術品的一個例子。

33 But even the communication with the seller is sometimes problematic or complicated. Sometimes the important questions are not asked out of caution or concern for the seller. This also counts for the transport or transfer, where a lot of institutions just trust the seller, that there will be everything ok. After the delivery there is sometimes no check for completeness, condition and functionality. Especially at complex artworks or with files.

但即使是與賣方的溝通，有時也會出現問題或變得複雜。有時，出於謹慎或對賣方的擔心，有些重要問題並未被釐清。在運輸或轉運過程中也是如此，許多機構只抱持對賣方的信任，認為一切都不會有問題。交貨後，有時不會檢查完整性、狀況和功能。尤其是複雜的藝術品或文件。

34 This leads to the conclusion that Multidisciplinary art needs a multidisciplinary approach for conservation and long-term preservation. It needs a collaborative approach between different professions, different professionals and specialists. For museums this means that external experts are part of their tailored preservation strategy for dedicated artworks.

由此得出的結論是，跨領域的藝術作品需要採用跨領域的方法進行保存和長期維護。它需要不同行業、不同專業人士和專家之間的合作。對博物館來說，這意味著外部專家是為專門藝術品量身訂製的保存策略的一部分。

35 Especially when you start to identify the work defining properties. The definition from the technical viewpoint may differ from the curatorial viewpoint. But this is needed not only on the personal level when working as a conservator in the field of TBM. In my experience, these discussions are still too rare in private and public collections. But again: when you include external experts to your team, it will be much more easier to find solutions and answers to your questions.

特別是當你開始確立作品的身份屬性時。技術角度的定義可能不同於策展角度的定義。但是，作為一名文物保存人員，在時基媒體藝術領域工作時，不僅在個人層面上需要這樣做。根據我的經驗，這種討論在私人 and 公共收藏中仍然太少。但還是那句話：當您的團隊中有外部專家時，您會更容易找到問題的解決方案和答案。

36 Besides these questions, a lot of collections are in the need for Condition reporting and supervision of exhibitions.

除了這些問題，許多收藏品還需要狀況報告和展覽的監督。

37 It starts with multi-channel video-artworks but is very often tied to complex installations. I made the experience that single-channel artworks hardly are on the list, when I am asked for support. Most of the requests come for artworks that are complex because of physical items or from the equipment.

While the understanding of a single-channel video artwork is easy in most cases it gets difficult when more technical components are involved. Condition reports can get quite comprehensive when every aspect of an artwork is tested and described in detail. From my experience some collections did underestimate the complexity of some artworks in the past. In some cases, I must admit: What a lucky coincidence, because that's why they acquired these artworks.

需要被檢查的作品通常是多頻道錄像作品，且往往搭配複雜的裝置。我的經驗是，當有人向我尋求支援，通常不是單頻道錄像作品，多數都針對有著複雜物件的藝術作品。

雖然在大多數情況下理解單頻道作品很容易，但當涉及更多技術成分時就會變得困難。如果針對藝術品的各個方面進行檢測和詳細描述，狀況報告就會相當全面。根據我的經驗，過去有些收藏機構確實低估了某些藝術品的複雜性。在某些情況下我必須說：這真是個幸運的巧合，因為這正是他們收購這些藝術品的原因。

- 38** But a lot of institutions learned from obsolescence and breakdown of components in the past, how time consuming it can be to keep these artworks running. And how complex it is to get broken artworks back to life so they are running in the intended way. Luckily in this case it was just one transformer that broke. But what, if one of the fluorescent tubes breaks? Its a nightmare.

但是，許多機構都從過去的陳舊和零件故障中了解到，讓這些藝術品繼續運作是多麼耗時。要讓壞掉的藝術品重新煥發生機，使它們以預期的方式運行，又是多麼複雜的一件事。幸運的是，這次損壞的只是一個變壓器。但如果其中一個螢光燈管壞了呢？這簡直就是一場惡夢。

- 39** Even more expensive and even more complex on the long run are installations which consist of several components and technical devices. In the case of WangShui s “Weak Pearl” there are computers, audio equipment, LEDs and a lot of transformers involved. The artwork was made insitu by the artist and needed a full documentation after this installation. I noticed that a lot of collections nowadays are very cautious when it comes to such complex installations. They learned from previous acquisitions how painful it can be to preserve these artworks, send them on loan or re-install them just 5 years later.

從長遠來看，由多個組件和技術設備組成的裝置更加昂貴，也更加複雜。例如王水的作品《脆弱珍珠》，涉及電腦、音頻設備、發光二極管和大量變壓器。這件藝術品是藝術家在現場製作的，安裝完成後需要全面性的文獻資料。我注意到，現在很多收藏機構在涉及如此複雜的裝置時都非常謹慎。他們從先前的收購中了解到，保存這些藝術品、將其外借或在 5 年後重新安裝是多麼痛苦的一件事。

- 40** While it seems easy to preserve the outer walls of an Kusama Infinity room, because it is a simple construction made of wood. This is definitely not the case for the glowing bubbles. They are fragile and hard to maintain. Their surface is very delicate and susceptible for dents and scratches.

草間彌生的無窮鏡房牆面看似容易保存，因為它是由木頭製成的簡單建築，但發光氣泡絕對不是這樣。它們很脆弱、難以保養，其表面相當脆弱，容易出現凹痕和刮痕。

- 41** Even more attention needs the software which controls the glowing and color-changing effects of the artwork. It is running on a not specified board located in a so called “black-box”. Not to speak from the LED panels inside the bubbles which are wired through the stainless-steel poles.

更需要注意的是控制藝術品發光和變色效果的軟體。它在所謂的「黑盒子」中的一塊不屬於特定規格的電路板上運行，更不用說氣泡內透過不鏽鋼桿接連接的 LED 面板了。

- 42** Not only for the collection itself but also for conservators as professional workers in the field, it is important to explain the complexity and work associated with time-based media artworks. It helps to raise awareness when you engage with the public through exhibitions, talks, and other outreach activities to tell about the conservation challenges associated with time-based media.

不僅對於藏品本身，對於該領域專業的保存人員來說，解釋時基媒體藝術品的複雜性及相關工作都是非常重要的。透過展覽、講座和其他活動與公眾接觸時，介紹保存時基媒體時所遇到的挑戰，有助於提高公眾的意識。

- 43** Teaching young professionals and people who are taking care for collections is an important task to raise awareness that time-based media artworks differ from classical artworks and need dedicated care. They won't survive resting on a shelf for many years unseen. They need constant assistance and care.

向年輕的專業人士和負責保管藏品的人傳授知識是一項重要任務，以提高他們對時基媒體藝術品不同於傳統藝術品、需要悉心照料的認識。它們不可能在書架上靜置多年而無人問津，需要不斷的幫助和照護。

- 44** Even for collectors it's a way to demonstrate how they take care for the artworks they have in their collection. So, one of my clients produced 10 short clips where we showed the preservation strategy of the Julia Stoschek Foundation. This not only is interesting for the public but also for artists. They know that their artworks is in good and professional hands.

甚至對於收藏者來說，這也是一種展示他們如何照顧自己收藏的藝術品的方式。我的一位客戶製作了 10 個短片，展示茱莉亞-斯托舍克基金會的保存策略。這對公眾來說很有趣，對藝術家也是如此，使他們知道他們的藝術品正由專業人員妥善保管。

- 45** Because artists and other collectors know: Time-based media artworks are often very complex; they are sometimes very expensive, failure rate might be higher than with traditional artworks; it is overall time consuming to work with these artworks: it takes time to install, to discover, to understand, to check. Whatever. They need constantly a lot of care, and they are hard to maintain and to preserve. So, we all can conclude, there is the need for a different approach.

因為藝術家和其他收藏家都知道：基於時間的媒體藝術品通常非常複雜；它們有時非常昂貴，失敗率可能比傳統藝術品更高；與這些藝術品打交道非常耗時：安裝、發現、理解、檢查……都需要時間。無論如何，它們都需要不斷地精心呵護，而且很難維護和保存。因此，我們可以得出結論，有必要採取不同的方法。

- 46** The only approach is collaboration. Since Time-based media artworks are so complex, they need multidisciplinary teams to take care for them. And since the experts for these artworks often are highly specialized, they are hardly part of the internal staff. So, a very common option is, to take care for your artworks by building a strong relationship to a network of external experts. And this collaborative network will care for your Time-based media art.

唯一的辦法就是合作。由於時基媒體藝術作品非常複雜，因此需要一個跨學科領域團隊來處理，而這些藝術品的專家往往專業性很強，很難成為內部員工的一部分。因此，一個非常普遍的選擇是，透過與外部專家網絡建立牢固的關係來照顧藝術品。這個合作網絡將為您的時基媒體藝術品提供服務。

法國博物館中有關媒體藝術的保存與典藏品管理的挑戰

The Challenges of Media Art Conservation and Collection Management in French Museums

Alexandre Michaan (Media art conservator)

亞歷山大·米尚 (媒體藝術修護師)

Alexandre Michaan is a media art conservator based in Paris. After graduating at the National Institute for cultural heritage in France, and a stay at the conservation laboratory of LIMA in Amsterdam, where he worked on obsolete software-based artworks for CD-ROM, he has been since 2013 specializing in the preservation of audiovisual artworks threatened by obsolescence. He is currently working as a researcher, on a PhD focused on documentation procedures for the preservation of media artworks at Université de Saint-Etienne, and worked in the past years at Centre Pompidou on the digitization of video collections, and the conservation study of Chris Marker's video and computer-based installation Zapping Zone.

米尚是一位在巴黎工作的媒體藝術修護師。於法國文化遺產國家學院畢業後，米尚曾在阿姆斯特丹LIMA的修護實驗室進行短期停留，主要從事對於基於CD-ROM的過時軟體藝術品的修護工作。自2013年以來，米尚一直專注於維護因技術過時而受到威脅的影像及音響藝術品。目前，米尚作為一名研究人員，正在聖艾蒂安大學攻讀關於媒體藝術品保存檔案化的博士學位。在過去的幾年裡，他曾在龐畢度藝術中心工作，負責錄像藏品的數位化工作，以及對克里斯·馬可的錄像和電腦裝置作品《Zapping Zone》的保存研究。

In this presentation, I will try to give a quick overview of the situation in France in the field of media art conservation, focusing primarily on public collections. We will see how the situation is evolving in this field, as well as what are the changes that we can hope to witness in the years to come.

在這個簡報中，我將試著快速概述法國媒體藝術保存領域的情況，主要聚焦於公共收藏。我們將看到這個領域的發展情況，以及未來幾年可以期待見證到的變化。

Despite the fact that I will mention the institutional field, I am not a full-time internal conservator working in a public museum, since such a position does not exist yet in France for media art conservation. I am initially a freelance conservator, trained as a photograph conservator at the National Heritage Institute, and a researcher at the University of Saint-Etienne where I am preparing a PhD on documentation and conservation of technological artworks. I have worked, since 2014, periodically on projects for various public institutions, ranging from specific case studies on media art installations, for the main national collections such as Centre Pompidou or Musée d' Art Moderne de la Ville de Paris, to broader conservation plans for entire collections of video art in local museums where the primary need is still to manage digitization and collection management. Also, I will not mention the field of archives and libraries here, since their approach and management procedures are slightly different from the museums, but it is worth noting that many things are going on about electronic media conservation at the National library of France already since the 1990s, for instance.

儘管我將提及機構領域，但我並非法國公共博物館內全職從事媒體藝術保存工作的內部保存人員，因為在法國目前尚無此類職位。我最初是一名自由職業的保存專家，在國家遺產學院接受了攝影保存專業的培訓，同時是聖艾蒂安大學的研究人員，我正在準備有關科技藝術作品的文獻和保存博士論文。自2014年以來，我定期為各種公共機構專案工作，範圍從媒體藝術特定裝置的案例研究，如龐畢度中心或巴黎現代藝術博物館等主要的國家收藏，到在地方博物館為整個錄像藝術收藏制定更廣泛的保存計劃，其中主要需求仍然是數位化和收藏品的管理。此外，我在此不會提及檔案館和圖書館領域，因為它們的方法和管理程序與博物館略有不同，但值得注意的是，自1990年代以來，法國國家圖書館已經在電子媒體保存方面做了許多工作。

Overall, I will try to give the perspective on the French field that grants the fact to be involved with several museums as a freelance conservator, at the same time than doing research on conservation.

總的來說，我將試著從多個博物館自由職業保存專家的角度，同時進行保存研究，來呈現對法國領域的觀點。

The French public collections of media art are mostly comprised of the Centre Pompidou - MNAM collection, the Centre National des Arts Plastiques (CNAP), the city contemporary art museums such as the Musée d' art moderne de la ville de Paris, the CAPC in Bordeaux, or the MAMCS in Strasbourg, and the numerous FRAC, which are regional contemporary art collections, as well as some departmental institutions such as Espace Multimédia Gantner.

法國公共媒體藝術藏品主要由龐比度中心-國家現代藝術博物館 (MNAM)、Centre National des Arts Plastiques (CNAP)、城市現代藝術博物館 (如巴黎市現代藝術博物館、波爾多的CAPC或斯特拉斯堡的MAMCS) 以及眾多的FRAC所以組成, FRAC是地區性的當代藝術收藏, 還有一些像是 Espace Multimédia Gantner這樣的部門機構。

Of course, the Centre Pompidou being one of the earliest media art collections internationally and one of the largest, with its 3000 artworks, it exceeds by far the number of artworks from all the other museums on the territory, and has many specificities such as the presence of very old formats and carriers due to its start in the 1970s (1976). Most of the other media art collections in France started in the mid-1980s or late-1980s, and are comprised of a majority of artworks from the 1990s and 2000s.

當然, 龐比度中心是國際上最早的媒體藝術收藏之一, 也是最大的之一, 擁有3000件藝術品, 它遠遠超出了法國領土上所有其他博物館的藝術品數量, 並且具有許多特點, 例如: 由於其始於1970年代 (1976年), 所以具有非常古老的格式和載體。法國其他多數的媒體藝術收藏始於1980年代中期或1980年代末, 主要由1990年代和2000年代的藝術品所組成。

The FRAC collections generally include approximately between 50 and 100 video or media artworks, but since there are 23 across the territory, the totality of the FRAC network represents around 1500 media artworks.

FRAC (地區性的當代藝術收藏) 的收藏通常包含大約50到100件錄像或媒體藝術作品, 但由於全國有23個FRAC, 整個FRAC網絡共約擁有約1500件媒體藝術作品。

The main initial observation when looking at the conservation status of these media art collections is certainly its disparity. It is a multiple-speed situation where many of the museums are still on the process of installing basic collection management procedures adapted for time-based media artworks, or some are barely starting the digitization of their collection of video tapes, while other larger museums are already painstakingly fine-tuning their procedures and have an already well-established system of documentation and equipment monitoring.

觀察這些媒體藝術收藏的保存狀況, 最初的主要觀察是它們的不均衡性。這是一種因不同的發展速度所造成的情況, 許多博物館仍在進行建立基本適用於時基媒體藝術品的收藏管理程序, 或者有些博物館僅剛開始數位化錄像磁帶的收藏, 而其他較大的博物館已經非常煞費苦心地微調其工作程序, 並擁有建設良好的檔案化和設備監控系統。

Except for Centre Pompidou, where digitization of the video collection started already fifteen years ago, most of the museums have started this process very recently or are starting it now, and it frequently serves as a first step to begin reflecting on the sustainability and preservation of the media art collection. In most of the regional institutions like the FRAC, there is no curator specially in charge of video or media artworks, and the staff is unprepared to deal with technological artworks, even if some assistant curators are starting to train in order to gain better knowledge on these topics. This results in a great disparity between the existing preservation procedures in large museums like Centre Pompidou, where the curators and collection managers at the New Media department are highly qualified, and the procedures in smaller museums for smaller collections, where there is frequently no specialized curator dedicated to the media art section.

除了龐比度中心的錄像收藏的數位化已經開始了十五年之外, 大多數博物館最近才開始進行這個過程, 或者現在才開始, 這往往是開始思考媒體藝術收藏的永續性和保存的第一步。即使一些助理策展人也開始接受培訓以便更好地了解這些主題, 在大多數地區機構 (如FRAC) 中, 沒有專門負責錄像或媒體藝術品的策展人, 並且工作人員尚未做好應對科技藝術品的準備。這行程了大型博物館 (如龐比度中心) 與新媒體部門的策展人和收藏管理人員具有深厚的保存經驗資歷, 與較小博物館和較小收藏品的流程之間存在很大差異, 在這些地方通常沒有專門負責媒體藝術部門的策展人。

However, one element is consistent : budgets officially labelled as « conservation » such as the ones for paintings or sculptures generally do not exist for media art collections in France, for which the budgets are most of the time only regarded as digitization costs, as

they would be for a library. And, as a consequence: in-depth case studies of media artworks are still very scarce, since they require rather important budgets for studying and conserving a single artwork, which is not easily granted in comparison with other more traditional types of collections.

然而，有一個共同的因素是：在法國，正式標記為「保存」的預算，比如用於繪畫或雕塑的預算，通常並不存在於媒體藝術收藏中，這些預算大多時候僅被視為數位化成本，就像圖書館一樣。因此，媒體藝術品的深入案例研究仍然非常稀缺，因為這些研究需要相當重要的預算來研究和保存單個藝術品，這與其他傳統的收藏類型相比，並不容易獲得。

In her 2013 article « Emerging institutional models and notions of expertise for the conservation of time-based media », Pip Laurenson describes the French model as its own category. Amongst the different historical models in conservation, the New Media department of Centre Pompidou is described as « A specialist curatorial department where the curators retain responsibility for the conservation of the time-based media artworks ».

在2013年的文章《新興機構模式和對時基媒體保存專業的理解》中，皮普·洛倫森 (Pip Laurenson) 將法國模式描述為獨特的類別。在保存領域的不同歷史模式中，龐比度中心的新媒體部門被描述為「策展人維持對時基媒體藝術保存負責的專業策展部門」。

This remains mostly true today, as opposed to institutions where a conservation department specialized in time-based media exists in-house, with dedicated researchers, conservators or technicians. But as we will see, this situation has evolved in recent years. It is frequent in France that conservation tasks – at least the « preventive conservation » – are carried out or supervised by collection managers such as the assistant curators, or sometimes by registrars and video technicians in smaller institutions.

The word « conservateur » itself in France is mostly used to qualify curators or « head of collections » ; thus reinforcing the importance of their role in supervising conservation policies and actions, while the word « restaurateur » is used for conservators.

與其他內部擁有專門從事時基媒體保存的保存部門、專門研究人員、保存專家或技術人員存在的機構不同，這一描述在很大程度上仍然屬實。但正如我們將看到的，這種情況在近年來已經有所發展。在法國，保存工作 - 至少是「預防性保存」 - 經常由藏品管理人員 (例如助理策展人) 負責執行或監督，有時在規模較小的機構中則由登錄人員和錄像技術人員負責。

在法國，「保存者 (conservateur)」這個詞大多用來形容策展人或「藏品管理主管」；這樣強化了他們在監督保存政策和行動中的重要角色，而「修復師 (restaurateur)」則用於指稱保存維護師。

Traditionally, in France, conservators or conservation departments did not exist for the field of video and media art, largely due to the fact that the tasks belonging to « preventive conservation » such as condition assessment, documentation, and equipment management, were taken care of by collection managers, and the « curative conservation » tasks such as equipment maintenance and repair, as well as digitization for instance, were handled by engineers, specialized technicians or production labs, externally, and only occasionally.

傳統上，在法國，錄像和媒體藝術領域沒有保存專家或保存部門，主要是因為屬於「預防性保存」的任務，如狀態評估、文獻記錄和設備管理，由藏品管理人員負責，而「治療性保存 (curative conservation)」的任務，比如設備維護和維修，以及數位化等，則由外部的工程師、專業技術人員或生產實驗室負責，並且只是偶爾性地處理這些任務。

With the absence of a specific course or degree for media art in the art conservation schools, and with the scarcity of in-depth conservation case studies on media artworks, the need for a conservator figure who would play a role of expertise, coordinator and interface between museum professionals and engineers or technicians did not become obvious until quite recently, in the past ten years.

由於藝術保存學校缺乏專門針對媒體藝術的課程或學位，加上對媒體藝術作品進行深入保存案例研究的稀缺，直到最近的十年內，對於一位保存專家扮演專業知識、協調者和博物館專業人員與工程師或技術人員之間的橋樑角色的需求才變得顯而易見。

So there are no museums in France with in-house conservators specialized in time-based media, but conservation tasks in the broad sense, for media art collections, are handled internally in most institutions with the help of freelance specialists on certain occasions - mostly when it involves technical tasks or engineering, whether it is in the analog or digital technologies field.

因此，在法國沒有內部擁有專門從事時基媒體保存的保存專家，但在大多數機構中，媒體藝術收藏

的保存工作，從廣義上來說，有時會在內部進行，並在某些場合由自由職業的專家協助 - 尤其是涉及技術任務或工程方面，不論是在類比或數位技術的領域。

In recent years, many ongoing changes have made this situation evolve :

Part of it is a direct consequence of technological obsolescence in the industry. With obsolescence progressing, the amount of technicians qualified on obsolete technologies decreased extremely inside the production teams and laboratories that once were a corner stone of conservation procedures in our museums - such as the audiovisual production department of Centre Pompidou. Since their primary mission has become production on current digital media, these technicians have stopped being involved in obsolete equipment maintenance, or even digitization, which threatens the access to a precious technical expertise for collection managers. The same goes for external digitization labs, primarily working for the industry of production, even when they collaborate periodically with archives and museums.

近年來，許多正在進行的變化也逐漸影響了領域的變化：

其中一部分是科技汰換在這個行業中直接造成的後果。隨著技術汰換的進行，對於被淘汰的技術的合格技術人員需求，在曾經是我們博物館保存工作基石的製作團隊和實驗室內大幅減少了 - 例如龐比度中心的視聽製作部門。由於他們的主要任務已轉變為在當前數位的媒體上進行製作，這些技術人員已經停止參與過時設備的維護、甚至數位化，這威脅到收藏管理人員獲取寶貴專業的技術知識。對於外部的數位化實驗室也是如此，即使他們偶爾與檔案館和博物館合作，他們主要還是為數位的影像製作產業工作。

Another part is due to the increasing need of case-specific conservation actions for complex media artworks in order to be able to keep on exhibiting them, with time passing and obsolescence of equipment becoming more and more a direct threat. This might sound obvious, but, in a context in which even the broadest-scale conservation procedures such as digitization of video tapes, or sustainable archival on servers, are still ongoing and far from being achieved in certain museums, because of shortages of staff and budget, the priority was not given to the case-by-case conservation actions. Most of the time, the main required tasks in order to get the artwork functioning in the exhibition room were done by technicians from the production team, without the time for research on sustainability or in-depth documentation to anticipate future actions. This is also what I think is starting to change in recent years.

另一部分原因是複雜媒體藝術品需要進行特定案例的保存措施以便能夠繼續展出。隨著時間流逝和設備淘汰越來越成為一種直接的威脅，這聽起來可能很容易理解，但在某些博物館中，即使是最基礎的保存工作，例如錄像磁帶的數位化或在伺服器上進行永續性的存檔都仍在進行中，並且尚未實現，這是因為人手和預算不足，因此並未將優先順序給予特定案例的保存措施。大多數時候，為了讓藝術品在展覽室中運作，主要所需的任務是由製作團隊的技術人員完成的，並沒有時間進行對藝術品未來相關行動的永續性研究或深入文獻記錄。這也是我認為近年來開始發生變化的地方。

As an example of this, I will take a few moments to show several examples of conservation projects in various museums that has been going on in the past years :

To start with specific case studies: in 2019, the Centre Pompidou initiated a one-year long research project for the conservation of one of the major artworks in the history of their media art collection. This piece is a multimedia installation titled Zapping Zone, by the filmmaker, photographer, writer and computer artist Chris Marker. It was produced by the Centre Pompidou in 1990 for their first exhibition entirely dedicated video, computer images and photography,

延續前述幾個觀點，我將花一些時間展示過去幾年在各個博物館進行的一些保存案例：

首先是一個特定的研究案例：在2019年，龐比度中心展開了為期一年的研究項目，旨在保存他們媒體藝術收藏歷史上一件重要的藝術品。這件作品是由電影製片人、攝影師、作家和電腦藝術家克里斯·馬克爾創作的多媒體裝置，名為《Zapping Zone》。這件作品是1990年由龐比度中心為他們的第一個完全致力於錄像、電腦圖像和攝影的展覽所製作的。

Passages de l' image.

The installation is comprised of 19 CRT monitors including video monitors as well as computer monitors, 6 Apple IIGS computers, 20 photographic prints and 4 light boxes with

35mm color slides in them. It was frequently modified between 1990 and 1994, in terms of content as much as spatial arrangement, thus blurring what was its reference condition - or even, if a reference condition existed at all. In addition, its equipment as well as its carriers - CRT monitors, and mostly, the Apple II computers and their floppy discs - had become increasingly obsolete and failing, even if the work had been exhibited many times until in the years 2010s.

這個裝置由19個CRT顯示器組成，包括錄像的顯示器和電腦顯示器，6台Apple II GS電腦，20張攝影作品以及4個裝有35mm彩色幻燈片的燈箱。它在1990年至1994年間經常進行修改，無論是在內容還是空間佈局方面都使他的參考狀態顯得模糊且不確定 - 或者甚至，是否存在參考狀態。此外，即使該作品在2010年代之前已多次展出，它的設備以及其載體 - CRT顯示器，以及主要的Apple II電腦和它們的軟碟 - 已經逐漸過時和失效。

Thanks to Marcella Lista, chief curator of the new media department of the museum, funding was found to undertake a one-year conservation study involving two external researchers, Agnès de Cayeux - who is a digital artist and had previously worked on the conservation of computer artworks - and myself. It involved a partnership with the Center for Research and Restoration of Museums of France (C2RMF) thanks to Cécile Dazord, who is perhaps the first curator who started to tackle the issue of researching technological obsolescence in contemporary art conservation in France in the 2000s. Actually most of what I am presenting today would not have occurred without the work she did at C2RMF from 2006 onwards.

感謝該博物館新媒體部門的首席策展人Marcella Lista，找到了資金進行為期一年的保存研究，邀請了兩位外部研究人員，其中一位是數位藝術家Agnès de Cayeux，她之前曾參與過電腦藝術品的保存工作，另一位是我自己。這個專案也與法國博物館研究和修復中心（C2RMF）合作，感謝Cécile Dazord，她或許是法國在2000年代開始研究當代藝術保存中科技汰換問題的首位策展人。事實上，我今天所呈現的大部分內容，如果不是她從2006年開始在C2RMF進行的工作，很可能不會發生。

The possible depth that granted such an unusual duration for a conservation study was - to my knowledge - a novelty for the French media art field. To quickly summarize the main tasks that were undertaken : research was lead into all the existing archive documents about the production of the work in 1990 and each of its exhibitions ; discussions and interviews were conducted with many of the people involved in the production at the time or close to Chris Marker ; many exchanges took place with specialists of Apple II computers, communities of people still working on maintaining this equipment today, engineers and technicians ; extensive documentation was made for all the images displayed on their original technologies ; X-ray and photo documentation were undertaken at the C2RMF lab for an Apple II GS unit ; and mostly - the installation was reconstructed and exhibited a year later thanks to the help of the museum team and the maintenance and repair of all the equipment by two engineers. The choice was made, for this exhibition, to focus on the 1990 first iteration of the installation, as it was seen in the exhibition originally.

就我所知，讓這樣一項保存研究持續了如此長時間的深度，在法國媒體藝術領域是一種新奇。以下，我快速概括所進行的主要任務：首先進行有關1990年作品製作及每次展覽的所有現有檔案文件的研究；與當時或與克里斯·馬克爾有密切關係的許多參與製作的人進行了討論和訪談；與Apple II電腦的專家、至今仍在維護這種設備的社群、工程師和技術人員進行了多次交流；對展示在其原始技術上的所有圖像進行了廣泛的文獻記錄；在C2RMF實驗室進行了Apple II GS的X光和照片文獻記錄；而且最重要的是 - 在博物館團隊的幫助下，由兩名工程師維護和修復了所有設備，這個裝置在一年後得以重建並展出。為了這次展覽，選擇專注於裝置在1990年首次展出版本，就像它最初在展覽中展出時的樣子。

Of course, such a conservation study is an exception in terms of time and means, and obviously not any artwork from the media art collections in French museums can benefit from such a treatment, but that doesn't mean the generalization of such a case-specific approach is impossible, to a certain extent at least.

當然，這樣一項保存研究在時間和資源方面都是個例外，顯然法國博物館的媒體藝術收藏中不是每件藝術品都能得到這樣的待遇，但這並不意味著在某種程度上普遍採用這種特定案例的方法是可能的。

This case study actually was in some way the follow-up of other case studies conducted in the previous years, with other institutions, including the Frac Franche Comté for instance, with a case study on the installation *Becoming Visible* by Marina Abramovic, from 1993,

initiated by Cécile Dazord, or the Musée d'art moderne de Paris, where we worked on the conservation of a large Nam June Paik video sculpture from 1989, *Olympe de Gouge*. Both of these studies were strongly focusing on CRT monitors and were conducted together with the engineer Pierre-Alain Fardel, who also worked on the Zapping Zone equipment. You see him here adjusting the last failing monitor on the piece before its exhibition in 2018.

實際上，這個案例研究在某種程度上是對之前幾年在其他機構進行的其他案例研究的追蹤，其中包括弗朗什孔泰大區當代藝術基金 (Frac Franche Comté) 的案例研究，比如塞西爾·達茲 (Cécile Dazord) 發起的1993年瑪麗娜·阿布拉莫維奇 (Marina Abramovic) 作品《Becoming Visible》的作品安裝案例研究，或者是在巴黎現代藝術博物館，我們進行了對1989年白南準 (Nam June Paik) 的大型錄像雕塑《Olympe de Gouge》的保存工作。這兩個研究都特別關注CRT顯示器，並與工程師皮埃爾-阿蘭·法德爾 (Pierre-Alain Fardel) 共同進行，他也參與了《Zapping Zone》的設備工作。您在這裡看到他在2018年展出前，調整了該裝置上最後一台失效的顯示器。

But case studies are far from being the main way that media art conservation progresses currently in French museums : for local museums, such as city one outside from Paris and regional ones like the FRAC, most of the needs are focused on setting up procedures for collection management, acquisition, digitization, and storage.

但目前在法國博物館中，案例研究遠非是媒體藝術保存進展的主要方式：對於地方博物館，比如巴黎以外的城市博物館和FRAC等區域性博物館，大部分需求集中在建立收藏管理、收購、數位化和儲存流程上。

In museums such as CAPC in Bordeaux, or MAMCS in Strasbourg for instance, usually a single curator or assistant curator is in charge of several types of collections including media artworks amongst many others, and cannot dedicate entirely their time to managing and conserving the media art collection.

例如，在波爾多的CAPC或斯特拉斯堡的MAMCS等博物館，通常一位策展人或助理策展人負責管理多種類型的收藏品，包括媒體藝術作品在內，但無法全職投入到管理和保存媒體藝術收藏上。

Most the often, the situation is as follows when these museums start working with a freelance media art conservator : the artworks in the collection that originally existed on magnetic tapes are not yet digitized following high quality conservation standards, but were transferred to DVD in the early 2000s (so, in compressed MPEG2 format) in order to be exhibited this way, and are still displayed on DVDs when they have to be exhibited today ; the production of exhibition files has been handled so far by local technicians who mostly deal with practical tasks on display equipment, sometimes leading to satisfying exhibition copies but no high quality master files ; the acquisition process is usually still quite light and does not come yet with specific requests to the artists in terms of which types of master files to provide, which documentation, instructions etc. ; and the management of the media art collection on a daily basis is still unpractical and very much based on the emergencies depending on the day-to-day needs for each exhibition.

當這些博物館開始與自由的職業媒體藝術保存專家合作時，情況通常是這樣的：收藏中最初存放在磁帶上的藝術品尚未按照高品質保存標準進行數位化，而是在2000年代初轉移到DVD上 (因此以壓縮的MPEG2格式存在) 的形式展出，至今展出時仍然需透過DVD；展覽文件的製作到目前為止大多由當地的技術人員處理，他們主要處理展示設備上的實際任務，有時可以產生令人滿意的展覽檔案副本，但沒有高品質的母檔案；收購過程通常仍然比較輕量，尚未對藝術家提出具體的要求，例如提供哪種類型的母檔案、哪些文件、指引等；而且每天對媒體藝術收藏的日常管理仍然不太實際，非常依賴每次展覽的日常需求所面臨的緊急情況。

As a consequence these « broad conservation plans » usually involve the following steps in accompanying the museum's staff for standardized procedures :

因此，這些“廣泛的保存計劃”通常包括以下步驟，以協助博物館工作人員制定標準化程序：

- We first assess the condition of the entire collection, both physically (condition assessment of the tapes and other carriers), and in terms of content, with the main goal to clarify which artworks miss a proper master file and a proper exhibition file, or documentation and equipment.

我們首先對整個收藏品進行評估，包括物理條件 (對錄像磁帶和其他載體的狀況評估) 以及內容方面，主要目標是澄清哪些藝術品缺少適當的母檔案和適當的展覽文件，或者文獻和設備的情況。

— Together with the curators, we write to each artist/gallery for every artwork that misses a master conservation file, to ask if they can provide a digital high quality master file. This ensures that no magnetic tape is going to be digitized without reason afterwards during the digitization step, which would result in money loss and higher risks to get a lower quality file if the tapes stored by the museum have degraded for instance. Sometimes, artists or galleries answer by asking for the payment of production costs in order to provide the file, but in many situations, it is worth it in order to get high quality master files for each artwork.

針對缺少母檔案的作品，我們與策展人一同透過信件聯繫藝術家/畫廊，詢問他們是否能提供數位高品質的母檔案。這確保在數位化步驟中，後續不用再無故對磁帶進行數位化，不僅防止金錢損失，還會增加因為博物館存儲的磁帶可能退化而獲得較低品質檔案的風險。有時，藝術家或畫廊會要求支付製作成本以提供檔案，但在許多情況下，為了獲得每件藝術品的高品質母檔案是值得的。

— We then launch a digitization plan for the remaining artworks for which no master file was found at all, and only the magnetic tape exists as a single source. This step usually consists of collaborating with a digitization lab and supervising the whole process.

然後，對於那些根本沒有找到母檔案，只有磁帶作為單一來源的剩餘藝術作品，我們啟動了一個數位化計劃。這個步驟通常涉及與數位化實驗室合作並監督整個過程。

— Once all the artworks have both their digital conservation master file(s), and an exhibition file(s), we discuss with the curators, and computer technicians working in the museum's staff, what is the best storage system and folders structure fitting their uses and needs. Very often, this involves discussing if the scale of their collection justifies dividing the whole digital storage into two split parts, one for the exhibition files, and one for the conservation master files, or if it makes more sense keeping all the files related to an artwork inside a single folder, together with its documentation for instance.

當所有藝術品都有了數位保存母檔案以及展覽檔案後，我們與策展人和博物館內的電腦技術人員討論，找出最適合他們使用需求的存儲系統和文件資料夾結構。很多時候，這涉及討論收藏品的規模是否足夠大，需要將整個數位存儲劃分為兩個部分，一部分用於展覽文件，另一部分用於保存母檔案，或者，是否將與一件藝術品相關的所有文件放在一個文件夾中，例如與其相關的文件和文獻放在同一個文件夾內是否更合理。

— We usually guide the task of filling the database for collection management as well, in order to mention the proper metadata and file specifications in the right fields in the museum database system. In France, most public collections of contemporary art use the same system, called Gcoll (developed by Videomuseum), which facilitates the standardization of documenting media artworks, even if Gcoll is far from being an ideal system for this type of artworks.

通常我們也指導填寫藏品管理資料庫的任務，以在博物館藏品資料庫系統中的正確欄位中提及適當的元數據和文件規格。在法國，大多數當代藝術的公共收藏使用相同的系統，稱為Gcoll（由Videomuseum開發），這有助於對媒體藝術作品進行標準化記錄，即使Gcoll對於這類作品來說仍遠非理想的系統。

— Next to these steps, we also discuss every time the ways of improving the acquisition process. This involves mostly improving the forms to fill for the artists, the type of technical information to request when each artwork is acquired, and mostly, defining the types of files and/or equipment that the artists have to provide.

除了這些步驟之外，我們每次還討論如何改進收購流程。這主要包括改進藝術家填寫的表格、在收購每件藝術品時要求的技術資訊類型，並且更重要的是，確定藝術家需要提供的文件類型和/或設備。

In the end, both specific case studies and broader conservation plans are a key to how media art conservation is progressing in French collections. Case studies can be difficult to set up time-wise and budget-wise, but they don't only benefit the artwork, they also benefit the field by improving research methods; for instance, many elements that were researched during the Zapping Zone study were benefiting from previous actions led in other institutions, and later on have benefited the conservation process of other artworks in the collection as well, such as the CD-Rom artwork by Chris Marker produced later in 1997, titled *Inmemory*, which has been since then migrated for the web to HTML5 at Centre Pompidou.

最終，具體的案例研究和更廣泛的保存計劃都是法國收藏中媒體藝術保存進展的關鍵。案例研究在時間和預算上可能難以建立，但它們不僅有益於藝術品，也通過改進研究方法來造福整個領域；例如，在《Zapping Zone》的研究中所研究的許多元素都得益於先前在其他機構進行的行動，後來還造福了收藏品中其他藝術品的保存過程，比如克里斯·馬克爾於1997年後期製作的CD-ROM藝術品《Inmemory》，後來已在龐比度中心轉置到HTML5以供網路瀏覽。

But to adapt to the disparity of museum needs, setting up and accompanying conservation plans focused on entire collections is also important, and mostly, training the people in charge of these collections in order for them to have a strong enough comprehension of their artworks and their technicality. Only then, the ground can be set for future case studies zooming-in on specific artworks, and the needs for each specific work can be identified and clarified, sparing the risk to figure it out too late once an artwork already has been planned for exhibition.

為了適應博物館需求的差異，建立並協助針對整體收藏的保存計劃同樣至關重要，更重要的是要培訓負責這些收藏的人員，讓他們對收藏品及其技術有足夠的理解。只有這樣，才能為未來對特定藝術品進行深入研究打下基礎，並且可以確定和澄清每件特定作品的需求，避免在藝術品已經計劃展出時才發現問題，導致為時已晚的風險。

With this progression, the French field might be evolving slightly away from what Pip Laurenson had described in 2013, and towards what she mentions in that same article as the model of the San Francisco MOMA, « A cross-disciplinary model where an internal team is developed to respond collaboratively to the needs of time-based media artworks including conservators, registrars, technicians, curators, plus any additional freelance specialists ».

隨著這樣的進展，法國領域可能略微偏離了 Pip Laurenson 在2013年所描述的情況，朝著她在同一篇文章中提到的舊金山現代藝術博物館 (San Francisco MOMA) 模式邁進，即「跨學科模式，在內部團隊中發展出協同應對時基媒體藝術需求的方式，包括保存專家、登錄人員、技術人員、策展人，以及其他獨立專家」。