Puerto Rico Metropolitan Area Public Libraries and Municipalities Archives Digital Preservation Peer and Needs Assessment

Project Justification

The Consortium of Metropolitan Libraries (COBIMET) will perform a digital preservation needs assessment in public libraries and municipalities located in the metropolitan area of Puerto Rico, using the Digital Preservation Coalition Rapid Assessment Model. Also, an online free-to-use bilingual (Spanish and English) database system will be developed and implemented to make data publicly available. By doing this, US states and territories could benefit by using this database designed by archivists to perform archival needs assessments.

This planning project meets Goal 3 and Objective 3.2 of the National Leadership Grants for Libraries, which are intended to improve the ability of libraries and archives to provide broad access to and use information and collections and support innovative approaches to digital collection management. In today's digital era, librarians must embrace digital collection management to provide adequate and relevant historical research content. In an era where information and cultural heritage are increasingly being stored in digital formats, ensuring the long-term preservation of these digital assets is paramount. Puerto Rico's metropolitan area public libraries and municipal archives play a critical role in preserving their respective regions' cultural heritage and historical records. These institutions are repositories of knowledge and information about local communities' history, culture, and identities. They collect and safeguard various valuable materials, including documents, photographs, newspapers, maps, and other archival materials that record past events, traditions, and achievements of their regions. In recent years, researchers in the continental US have shown great interest in Puerto Rican historical digital collections. Examples include the Center for Puerto Rican Studies at Hunter College in New York and courses on the subject at Lehman College.

With the rapid shift towards digital records, many public libraries and municipal archives in Puerto Rico face challenges preserving digital materials, including limited resources, outdated technology, natural disasters, and insufficient knowledge and expertise. The Caribbean region is prone to extreme weather events such as hurricanes, floods, and storm surges, which can directly impact physical archival collections. There has been an increased frequency and intensity of tropical storms and hurricanes in the region in the last decade due to climate and atmospheric fluctuations ("The Puerto Rico Disaster Archive: Preserving the Cultural Legacy of Puerto Rico," 2020). In 2017, Puerto Rico was impacted by two category-five hurricanes, Hurricane Irma and María. According to the federal government agency that monitors atmospheric events, the National Oceanic and Atmospheric Administration (NOAA), twenty hurricanes have impacted Puerto Rico in the previous five years (Chenoweth & Howard, 2023). Floodwater can damage paper-based records, causing ink to run, pages to stick together, and documents to degrade rapidly.

Strong winds associated with hurricanes can also cause structural damage to archival buildings, leading to the loss of historical documents and artifacts. Additionally, high humidity levels and saltwater intrusion resulting from rising sea levels can accelerate the deterioration of paper, parchment, and photographic materials, further compromising the integrity of archival holdings.

Since 2017, Puerto Rico has also experienced additional disasters like earthquakes in 2020 and the COVID-19 Pandemic. With COVID-19, there was an increased urgency worldwide for digital transformation in archives and libraries to ensure the preservation in digital form of cultural, historical, and scientific heritage. Digital transformation requires an assessment of organizational and service capabilities towards viability, policy and strategy, legal basis, information technology, and continuous improvement. A comprehensive assessment helps archivists and librarians understand gaps and future states of service delivery, service use, library management, patronage of library services, and material format. Incorporating assessment into managing digital repositories and archives is often a critical factor in strategic decision-making and resource allocation (Nauli et al., 2023).

Utilizing maturity models and metrics, library assessment can gauge capability and compile feedback to enhance archivists' and librarians' comprehension of emerging technological potentials for ensuring the long-term accessibility of dependable information. The assessment outcomes can additionally serve as supportive documentation to enhance archivist, librarian, and IT skills through training and workshops, fostering engagement with the latest digital preservation knowledge to deliver updated digital collections and services. This enables patrons and librarians to strategize effectively, prioritizing future investments in infrastructure, staff, and other vital support components (Nauli et al., 2023).

The DPC RAM or Digital Preservation Coalition Rapid Assessment Model is a tool that helps organizations quickly assess their digital preservation capability. It evaluates the organizational and service level skills using a uniform set of maturity levels. The model aims to be adaptable to businesses of any size and industry, compatible with any long-term value content, preservation strategy and solution agnostic, based on existing good practice, and easy to understand and implement. The assessment should be truthful and reasonable, and the score given should reflect the level that is most similar to the organization's current condition. If an organization only partially satisfies a level, the score should reflect the level below, considering additional work necessary to meet that level. Researchers find the DPC RAM questions to be a simple and comprehensive model and tool that libraries or archives can use for initial assessment and annual evaluation in the future.

The dimensions of DPC RAM consist of measuring the digital collection, policy, librarian skills, authenticity, community, and continuous improvement. By performing an assessment through a worksheet, management can gain a better understanding of the

library's condition and prioritize areas that require urgent attention to keep the business process of the library running smoothly. This approach can help build a strategy for long-term management with adequate resources, business processes, and IT infrastructure to support worldwide accessibility of digital preservation.

This project will apply the DPC RAM questions to Puerto Rico's public libraries and archives in the metropolitan area, considering that no data was found on the topic after doing an extensive literature review and interviewing experts of local archiving and librarian associations like ARCHIVED and Puerto Rico's Librarians Society. The DPC RAM questions are available in an Excel Format for use. However, the research did not identify an automated online database that could be used for data analysis and reports. The planning project will develop an online free-to-use database system to enter data from Puerto Rico Metropolitan Area Public Libraries and Municipalities Archives that will reside in the cloud and be administrated and maintained by COBIMET after the project ends. Implementing an online free-to-use DPC RAM database system will allow other US states and territories to create similar digital preservation and assessments of their archival collections. The database will build upon existing practice by developing and programming data to generate reports based on the needs of the target users or beneficiaries. Then, data extraction, transformation, and loading processes will be employed to gather and evaluate the necessary data from various sources. Finally, visualization tools and techniques will be utilized to design user-friendly dashboards and reports that effectively communicate insights and trends derived from the data.

Puerto Rico's metropolitan área is comprised by eight municipalities: San Juan, Carolina, Guaynabo, Bayamón, Dorado, Cataño, Trujillo Alto, and Toa Baja. According to ARCHIVED, Puerto Rico has approximately thirty-five to forty-five public libraries and municipal archives in the metropolitan area, which will be the project's target group. In the long term the online free-to-use database system will benefit nationally other archives that need to assess their digital preservation capability.

In 2017, COBIMET developed the Puerto Rico Cloud Repository (PRCR) for its 14 consortium members to allow for the archiving, preservation, and accessibility of retrospective and born-digital content. Since its creation, the PRCR initiative has published 1,686 openly accessible items that range from historical archives to San Juan municipal laws. The consortium was approached from 2022 to 2023 by the Cayey and Trujillo Alto municipalities, who were interested in collaborating with the PRCR initiative. Still, the lack of archive knowledge, structure, funds to expand infrastructure, and content evaluation made the project unfeasible. A comprehensive needs assessment using the DPC RAM can provide essential data to seek funding for an implementation grant, digital preservation initiatives for municipalities' archives, and public libraries like the ones at Cayey and Trujillo Alto.

In summary, COBIMET seeks from IMLS $118,333.19 for this 1-year planning project funds to:

- Perform DPC RAM to Puerto Rico's Metropolitan Public Libraries and Municipalities Archives using the DPC RAM database system questions. COBIMET will use Puerto Rico's metropolitan archives directory provided by ArchiRed and establish communication with municipalities and public libraries. Also, COBIMET will request project support and collaboration from other local libraries and archive organizations like Sociedad de Bibliotecarios de Puerto Rico (Puerto Rico's Librarians Association) and The Centro de Conservación y Restauración de Puerto Rico (CENCOR), which will provide consulting services on the project. CENCOR is a unique institution seeking to develop the capacity of communities in Puerto Rico and the Caribbean to protect and preserve their cultural heritage.
- Develop and implement an online free-to-use DPC RAM database system in the cloud. This database will potentially help expand qualitative research in digital preservation.
- Provide a participation stipend to Participants.
- Develop and report on the DPC RAM results in Puerto Rico's Metropolitan Public Libraries and Municipalities Archives.
- Develop a webinar on the DPC RAM database system's use, functionalities, and dashboards and reports that effectively communicate insights and trends derived from the data.
- Write and distribute a white paper outlining the best practices for applying DPC RAM questions based on project experiences.
- Develop and implement a digital marketing and publicity plan to promote the online DPC RAM database system and participation in the project.

Project Work Plan

The one-year work plan for the IMLS grant period will be implemented through the participation of a group of qualified professionals, including consultants. Constant feedback provided by project participants will also be considered during the project's duration. We propose the following work plan activities as part of the project:

August – September 2024

- Create an updated directory of metropolitan area municipal archives and public libraries. Data will be gathered and verified by contacting municipal archives and public libraries from existing directories of public and private organizations, associations, and government documents.
- Identify key stakeholders within the libraries and municipal archives in the Puerto Rico Metropolitan Area to complete the DPC RAM questions.

- Validate any changes or additional questions made to the DPC RAM questions, if required.
- Develop an online data entry form for the DPC RAM questions. The participants will be provided the option to complete questions on the online data entry form or by interview if desired.
- Write a consent form for interview and survey participants to publish data results from the DPC RAM questions.
- Develop an interview protocol for effectively administrating the DPC RAM questions.
- Develop and implement a digital marketing and publicity plan for the project. The plan could include promotion on social media, online newspapers, and publicity in archivist association's publications or websites.
- Develop the System requirements and design for the DPC RAM database system.
- Determine the qualitative data reports and queries in the online DPC RAM database system.
- Develop training materials and guides to use the database and generate reports effectively.

October 2024 – April 2025

- Conduct the DPC RAM with participating Puerto Rico Metropolitan Area Public Libraries and Municipalities Archives staff to assess their digital preservation needs, challenges, and priorities. When possible, both the archivist and manager.
- Develop, test, and implement the DPC RAM database system.
- Develop and provide data dashboards and reports by identifying the key metrics and indicators relevant to the DPC RAM questions.
- Data entry of conducted DPC RAM questions in the implemented DPC RAM database system.
- Participate in local and national Conferences to present, promote participation, and disseminate results of the project, such as the Sociedad de Bibliotecarios de Puerto Rico, Society of American Archivists, ARCHIRed, and the HETS local and national conferences.
- Continued activities related to the marketing and publicity plan for the project.

May - July 2025

- Analyze survey and interview data to compile a comprehensive needs assessment report experiences that will be available in Puerto Rico Cloud Repository (PRCR).
- Publish a white paper outlining the best practices for applying DPC RAM questions based on project experiences that will be available in Puerto Rico Cloud Repository (PRCR).

- Develop and provide a webinar and report on the results of the DPC RAM questions. Social media, online newspapers, and publicity in archivist association's publications or websites will be promoted.
- Continued activities related to the marketing and publicity plan for the project.
- License a Creative Commons Creative Commons Attribution-Non-Commercial license to allow others to remix, adapt, and build upon these instructional materials.
- Maintenance and operational modifications to fit new requirements after implementing the DPC RAM database system.
- Archive all project deliverables and documentation in the Puerto Rico Cloud Repository (PRCR).

To plan, implement, and manage the project, we propose the following key personnel:

Project Director: The proposed PD, Carlos Crespo, is a librarian. He is COBIMET's Executive Director and has ample experience in project management, archives, academic libraries, and professional development activities directed by archive and library professionals. He has a master's in library and information science and an AS in Computer Sciences and has been a librarian for more than 20 years. Prof. Crespo will have overall responsibilities for the project and oversee the execution of the one-year plan. He will also oversee the control and monitoring of financial matters, supervise the staff, coordinate, prepare reports, manage day-to-day activities, and create a licensing database and other deliverables for the project. For project support, the PM will contact relevant regional and national organizations specializing in digital preservation, like ArchiRed, Sociedad de Bibliotecarios, and REFORMA.

Database Designer: The proposed database designer, Jonathan Gonzalez, will be responsible for developing, testing, implementing, and maintaining the online Free-to-use Digital Preservation and Needs Assessment database system with the collaboration and input of all team members. Drawing from experiences as certified in Database Fundamentals by MTA (Microsoft) and hands-on experience implementing databases from the ground up, utilizing normalization techniques. Additionally, his current role as a systems administrator and webmaster provides a comprehensive understanding of system operations and web-based applications, directly contributing to his ability to collaborate closely with the development team, which includes Data Analyst, Digital, and advisers Archivist—tasked with implementing stringent security measures and access controls, ensuring the confidentiality of sensitive information, highlighting my crucial role in data management.

Digital Archivist: The proposed Digital Archivist, José Ortiz, will oversee the curation, preservation, and accessibility of digital assets created during the project. José has more than 20 years' experience in preservation and conservation and is currently ARCHIRed's

President. The DA will ensure the Digital Preservation Peer and Needs Assessment instrument adheres to best practices and standards for digital preservation, metadata management, and access protocols, facilitating the long-term stewardship of digital collections. As DA, he will develop and provide a webinar and report on the Digital Preservation Peer and Needs Assessment results. Will be responsible for training the Data Technician on archiving assessment techniques.

Data Analyst: The proposed Data Analyst, Julio Vega, will collect, analyze, and interpret to compile a comprehensive needs assessment report. Julio has experience as a Mechanical Engineer, Communication, and Information Technology. DA will utilize statistical methods and data visualization techniques to extract insights from large datasets and present findings to the Project Team. The Data Analyst will collaborate with teams to identify trends, patterns, and opportunities for optimization of queries and reports for the online Free-to-use Digital Preservation Peer and Needs Assessment database system.

Data Technician: The Data Technician will support data management activities, including assessment and instrument application, data entry, cleaning, and validation. DT will assist in maintaining the database and ensuring data integrity. The Data Technician will collaborate with data analysts and other team members to provide accurate and timely data-related tasks and project delivery.

Digital Marketing and Publicity Communications Expert: Melmarie Candelario holds a master's in communications in Digital Marketing and has more than 5 years' experience in online marketing and publicity. She will develop and implement a digital marketing and publicity plan to promote the online Free-to-use database system Digital Preservation Peer and Needs Assessment and participation of Puerto Rico's Metropolitan Public Libraries and Municipalities Archives in the project**.**

Advisers: The Centro de Conservación y Restauración de Puerto Rico (CENCOR) is a unique institution that seeks to develop the capacity of our communities in Puerto Rico and the Caribbean to protect and preserve their cultural heritage. Its initiatives, programs, and projects provide educational and professional development opportunities to public and private cultural institutions, professionals, and the public. Through preservation and conservation projects, study and research, education and training, dissemination, and promotion of cultural heritage, CENCOR helps our people explore their culture, history, and heritage to protect and preserve it. CENCOR will advise the project team on digital preservation, conservation, and assessment strategies and liaise with municipal archives and public libraries.

To properly carry out the one-year planning project and achieve the expected results, COBIMET requests financial support from IMLS for $118333.19. The budget categories for the one-year prior are itemized as follows: Salaries and Wages-$24,000.00; (2) Fringe Benefits-$6,000.00; (3) Travel-$8,000.00; (4) Supplies, Materials, and Equipment-

$2,883.19; (5) Subawards and Contracts-$72,450 .00; (6) Student Support-$0; (7) Other Costs-$5,000.00; and (8) Indirect Costs-$5,000.00. The Total Direct Costs will be $118,333.19.

Project Results

With the National Leadership Grant (NLG) funds, COBIMET benefits the discipline of librarianship and library services nationally. Funds will allow COBIMET to provide the following:

- Data from the DPC RAM questions applied to Puerto Rico's Metropolitan Public Libraries and Municipalities that researchers could use for qualitative research purposes. A compilation of a comprehensive needs assessment report experiences will be available in the Puerto Rico Cloud Repository (PRCR).
- A Free-to-use DPC RAM database system based on the DPC RAM questions. The database will help potentially expand qualitative digital preservation assessment research in other jurisdictions because it provides data dashboards and generates reports based on users' needs.
- A publicly available recorded webinar and report on the results of the DPC RAM questions.
- A white paper outlining the best practices for applying DPC RAM questions based on project experiences.
- Developed project materials with a Creative Commons Creative Commons Attribution-Non-Commercial license, allowing others to remix, adapt, and build upon them.

COBIMET will maintain the DPC RAM database system for other organizations to use after project completion. Also, data from the archives' DPC RAM questions applied to Puerto Rico's Metropolitan Public Libraries and Municipalities will be available in COBIMET's PRCR Repository.

2024-2025 Activity	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Create an updated directory of metropolitan area municipal archives and public libraries. key stakeholders will be identified.	▓	▓										
Perform DPC RAM to Puerto Rico's Metropolitan Public Libraries and Municipalities Archives using the DPC RAM database system questions.			▓	▓	▓	▓	▓	▓	▓			
Develop, implement and test the online free-to-use DPC RAM cloud-based database system.	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	
Data entry of conducted DPC RAM questions in the implemented DPC RAM database system.			▓	▓	▓	▓	▓	▓				
Analyze survey and interview data to compile a comprehensive needs assessment report									▓	▓	▓	▓
Present a comprehensive project results report and webinar detailing the needs assessment, recommendations, and action plans									▓	▓	▓	▓
Develop a webinar on the DPC RAM database system's use, functionalities, and dashboards and reports that effectively communicate insights and trends derived from the data.									▓	▓	▓	▓
Write and distribute a white paper outlining the best practices for applying DPC RAM questions based on project experiences.									▓	▓	▓	▓
A digital marketing and publicity plan will be implemented to promote the project and deliverables.	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓

Digital Products Plan

Type:

- An online Free-to-use DPC RAM database system that could be used nationally.
- A new digital preservation peer needs an assessment instrument using questions from the DPC RAM and integrating other assessment questions developed by the project team.
- Data from the Archives DPC RAM database system instrument applied to Puerto Rico's Metropolitan Public Libraries and Municipalities that researchers could use for qualitative research.

Availability

- A free-to-use DPC RAM Cloud-based database system will be accessed online.

Access

- Creative Commons Attribution-Non-Commercial license will allow others to remix, adapt, and build upon the project's deliverables.

Sustainability:

- To sustain this benefit beyond the conclusion of the period performance, the database system, all the instructional materials, and data gathered and developed will be maintained on COBIMET servers. Internal funds will be identified to support the project.