



Museums for America

Sample Application MA-259966-OMS-26
Project Category: Collections Stewardship and Access

Computer History Museum

Amount awarded by IMLS:	\$300,000
Amount of cost share:	\$404,338

The Computer History Museum will improve the physical and intellectual control of its collections by completing a full inventory of over 40,000 artifacts located in its climate-controlled off-site storage facility. The museum will hire a project registrar to work full-time on the three-year project, with the assistance of volunteers and other staff. Project activities will include creating descriptive and administrative metadata and digitally capturing each artifact for upload to the museum's recently enhanced online collections system. The inventory will lay the groundwork for future critical collections projects, and it will also facilitate digital access to these historical objects for broad audiences including students, academics, journalists, engineers, and other museum professionals.

Attached are the following components excerpted from the original application.

- Narrative
- Schedule of Completion
- Digital Products Plan

When preparing an application for the next deadline, be sure to follow the instructions in the most recent Notice of Funding Opportunity for the grant program to which you are applying.

NARRATIVE

Inventory Project to Enhance Computer History Museum's Digital Access

PROJECT JUSTIFICATION

Project Summary: For decades, America has led the world in the invention of new technology. There is no better place to celebrate this technology leadership than the Computer History Museum and no better time than our country's proud 250th anniversary of independence. The Computer History Museum (CHM), located in the center of entrepreneurship in Silicon Valley, has been collecting and documenting our country's technology success story for almost 50 years. As the latest innovation builds on what came before – from microchips to personal computers to the Internet to social media and cloud computing to today's boom in AI – one thing remains constant: Silicon Valley's entrepreneurial and innovation ecosystem. Documenting that is CHM's passion.

With this submission, CHM is applying to the Museums for America (MFA) grant opportunity under Agency-Level Goal 3 – Advance Collections Stewardship and Access. CHM is requesting \$300K for a three-year project to complete a much-needed 100% inventory of the approximately 41K artifacts in CHM's off-site storage facility. This will include digitally capturing each artifact for upload to the Museum's recently enhanced online collections system, enabling digital access to the Museum's historical rare artifacts for scholars, students and the U.S. public at large.

This project will simultaneously advance MFA Objective 3.1 (Support collections care and management) and MFA Objective 3.2 (Promote access to museum and library collections). If funded, the inventory will both improve current Museum operations and lay the groundwork for future critical collections projects (e.g., records reconciliation and deaccessioning). It will also provide digital access to the 41K artifacts housed in the offsite storage facility to share this unique story of America's technology leadership.

Collection Description and Current Conditions: From magnetic tape and rare film to lab notebooks and business plans to early mainframes and source code, CHM's collection is as diverse as the history of computing. It is a rich resource for the American public, comprising historical objects, documents, software titles, ephemera, photographs, and moving images. This unique, hybrid collection is housed in two separate facilities, one dedicated to archival materials and one to CHM's 3D artifacts. This project's focus is CHM's 3D artifact collection.

CHM's 24,000-square-foot off-site storage facility, named Yosemite, is the home of about 41,000 cataloged 3D artifacts out of the Museum's more than 155,000 total collection items. Everything from a 48-foot-long computer that revolutionized the banking industry in the 1960s to early transistors invented at Bell Laboratories in 1947 (first used in hearing aids and radios) can be found in Yosemite. (Please see Supporting Document 1 for descriptions and images of just a few of the artifacts housed there.) Yosemite is equipped with 1,607 shelves comprised of pallet racking for large artifacts and traditional shelving to support boxes; there are also 50 artifacts that can be stored only on the floor given their weight and size. In accordance with industry standards, Yosemite is a secure and climate-controlled location. (Please see Supporting Document 2 for images of Yosemite and its storage areas.)

While the physical objects themselves are stored with best practices for preventative conservation (i.e., archival storage containers, well-spaced on shelves, climate-controlled building, and an active, integrated pest management program), CHM needs to complete an inventory for the reasons described further below. Also, while CHM has always strived to include digital images in its online catalog, its team estimates that approximately 25% of the objects do not have available digital images due to past difficulties with Internet connectivity at Yosemite. Relatedly,

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since the currently available images were taken over decades, and with equipment of varying sophistication and by people with varying degrees of training, many of those images in the online catalog are dim, blurry, and poor quality.

Project Need and Background: CHM is the leading institution chronicling the history and impact of computing technology in the world. CHM was founded as The Computer Museum in 1979 in Boston. Over the years, the Museum and its collection grew and then relocated to Silicon Valley in California, to on-site storage at the CHM building in Mountain View, Calif., and, finally, to the Yosemite facility in Milpitas, Calif., purchased in 2007.

While CHM has reached many important milestones related to the care and management of its physical objects collection, including eliminating its cataloging backlog with the help of an IMLS grant in 2013, there is still work to be done to ensure that the 3D object collection can fully support CHM's mission and growth initiatives.

Between the multiple collections moves, an aging Collections Management System (CMS), and unreliable Internet connection at Yosemite that sporadically (and unknown to the user) lost connection while bulk uploading batches of new locations and images, CHM has experienced challenges managing its physical objects collection and making it more accessible to the public. The challenges include uncertainty about artifact locations; an undetermined number of loaned items converted to gifts that are uncatalogued and therefore not discoverable by the public; and poor or missing physical object images.

These difficulties have resulted in undesirable outcomes ranging from discovering that artifact records contain locations that no longer physically exist, to realizing that some artifacts that appear to have a valid physical location are not actually there, to poor public access to artifacts online, to being unable to fulfill internal and external research requests, to, on one occasion, verbally committing to loan an artifact only to be unable to locate it.

Project Preparation: Recognizing the potential for the Yosemite collection to better serve the Museum's goals and audience, the CHM team has been laying the groundwork for this project for several years. The Computer History Museum just launched OpenCHM, a new digital portal providing access to its unparalleled collection. OpenCHM was funded by the Gordon and Betty Moore Foundation and other generous donors and represents a major milestone in CHM's multi-year digitization initiative. Designed in collaboration with KeepThinking, the portal is powered by its innovative Qi collection management system. The new capabilities provide even broader digital access of CHM's unique collection to scholars, teachers, students and the American public. The platform is made even more compelling by the engaging, curated narratives of CHM's historians and field experts. Along with the collection, the portal introduces new digital storytelling and discovery tools designed to bring the history of the technology revolution to life for both experts and general audiences. Features include advanced search tools, curator picks and stories, a highlights and discovery wall for rare and iconic artifacts, My Albums for users to save custom folders, and a developer portal offering access to APIs and sample code.

OpenCHM advances CHM's mission to preserve and interpret the history of technology while making it broadly accessible as a public resource. It was designed to inspire discovery, spark curiosity, and make the stories of the digital age more accessible to everyone, everywhere. This inventory project feeds directly into OpenCHM.

Project preparation also included an Internet infrastructure upgrade that is now delivering fast, secure, and reliable Internet to Yosemite, made possible by an equipment donation from Cisco. With the Internet upgrade (completed in 2024), uploads of images and records to the online system and CMS can be completed without interruption.

Outside of infrastructure upgrades, CHM's Director of Collections and Senior Registrar Aurora Tucker (the Project Director) and several Collections volunteers conducted a pilot inventory in 2019 to inform this project's staffing needs,

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workflow, and timeline. Tucker has also tested several digital editing software packages and apps to select one (Photoroom) that will allow CHM to efficiently create high-quality digital images of Yosemite's 41,000+ artifacts for upload to the online catalog. (Please see Supporting Document 3 for images of artifacts edited with Photoroom.)

Strategic Plan Alignment: This project is also timely because it contributes significantly to CHM's multiyear strategic plan, "Strategy to 2030." The broad goal outlined in the strategy is that "by 2030, CHM will be a strong, sustainable 21st-century Museum reaching millions of people online and in person, inspiring them to help build a better future."

The strategic plan explicitly recognizes the Museum's collection as a key pillar of the strategy and calls on the Museum to "expand, diversify, digitize, and steward our collection with a focus on ... access"; use its online platform to "allow our community greater access to our world-class collection while broadening and deepening our digital reach to people worldwide"; "build the capacity to drive and support major expansions of our reach..."; and "improve CHM's operating systems, processes, and procedures in alignment with non-profit and museum best practices."

This project serves the strategic plan in several ways:

- It will ensure that the new Collection Management System (CMS) and online collection system are well-populated with high-quality images of CHM's 3D objects collection. In recent years, CHM has received donations to digitize its collection in preparation for the launch of the new systems, but donations to archival digitization have outpaced those for physical object digitization. This grant's focus on 3D object inventory and digitization would result in a more holistic collection resource to drive CHM's present and future growth and collection management strategies.
- It will greatly increase CHM's intellectual control of the collection and the Museum's ability to use the collection for both internal and external-facing initiatives by providing or confirming: accurate artifact locations; details on artifacts that will be utilized in future projects such as records reconciliation and deaccessioning; details on artifacts that may be expired loans; and identification of uncatalogued artifacts.
- The project's digital images will provide unprecedented public access to CHM's physical object collection. They will also make it easier for Programming and Collections to utilize the collection in activities, including exhibitions, digital content, education, and live events that will reach new and existing audiences.

Primary Audience and Beneficiaries: Since the new collection's image and location information will begin to be available from project onset (see Work Plan below), external individuals who utilize CHM's online collection (about 320,000 views annually) or submit research requests (about 400 annually) for personal or professional purposes (academics, journalists, other museum professionals, hobbyists, etc.) can be categorized as both primary audiences and beneficiaries. CHM's social media followers (about 399K), viewers of its online videos (about 6.2M views annually), attendees of its live events (about 7K annually), and on-site exhibit visitors (about 94K annually) will also benefit from improved use of the collection in Museum exhibits, programs, and digital content.

The primary audience also includes the Collections professionals and volunteers who will be carrying out the work and gaining new skills and knowledge of the collection; they are also beneficiaries since they will be able to take the acquired skills and knowledge with them to future projects. Museum staff from Collections and other departments who will be able to use the expanded collections' access and information in their day-to-day work are also both a primary audience and beneficiaries. There are about 65 museum staff, and it is estimated that about 10 volunteers will work on the project.

PROJECT WORK PLAN

Project Activities: The four phases of this three-year project are as follows:

Phase 1: Hire a Project Registrar: Sept. 1, 2026 - Oct. 31, 2026

A job description for the Project Registrar, to be hired with grant funds, has been prepared as part of this application (see Resumes). At the start of the project, the Project Director will work with the Museum's Human Resources staff to post the job description on appropriate listserves, CHM's website, and on recruiting platforms such as LinkedIn. The posting will be active for approximately one month. Interviews, selection, and hiring will occur over the second month of Phase 1. The Project Registrar will work full time on the inventory and image collection of the artifacts stored in Yosemite. The Project Registrar will be supported by the Project Director and the Acquisitions Registrar and will be assisted by veteran Collections volunteers.

Phase 2: Training: Nov. 2, 2026 - Nov. 13, 2026

The Project Director will train the Project Registrar on the CMS and train the Project Registrar, Acquisitions Registrar, and Collections volunteers on the project workflows, timeline, benchmarks, and how to use the new image collection method and equipment. Training will take place on-site at Yosemite and reference materials will be provided.

Phase 3: Inventory: Nov. 16, 2026 - June 2029

The bulk of this project will be spent on inventory and digital image collection. The Project Director will work on-site with the Project Registrar two out of five days per week (one day of which the Collection volunteers will also be on-site). The Project Director will initially map out the entire collection to be digitally captured, with an appropriate timeline with an inventory and weekly and monthly benchmarks by shelf completion. Then he/she will focus on the inventory and image collection of the box shelving units; the volunteers will focus on the artifacts housed in the pallet shelving units. Palletted artifacts will be unstrapped to allow for quality image collection, then re-strapped, as needed, using Cordlash. Smaller items may be digitally captured at an established station. Larger items will be shot in situ. Progress, quality control, and benchmarks will be tracked concurrent to the inventory. New artifact images will be taken and renamed, then uploaded to the CMS by the Acquisitions Registrar on a weekly basis. If uncatalogued artifacts are identified, they will be set aside for further review and investigation by the Project Director and Senior Curator.

Phase 4: Review and Reconciliation: July 2029- Aug. 2029

Any outstanding issues discovered, which were not addressed during Phase 3, will be well-documented and plans developed to reconcile those issues in a timely manner (i.e. cataloging of loans converted to gifts, cataloging of items found in the collection, and reconciliation of truly lost artifacts). Reports will be run in the CMS that confirm new images have been taken and attached to all the records, and that the catalog records for all found artifacts contain a Standardized note that they were inventoried during this project. Artifacts that were not found physically, but that have a catalog record, will have a standardized note added that they were not found during the inventory; they will also be added to a "package" in the CMS, identifying them as a group in need of additional investigation and reconciliation.

Team: The key team members are: Project Director Aurora Tucker; the Project Registrar (to be hired with grant funds); Acquisitions Registrar Joanne Grant; and CHM's Vice President and Chief Curatorial and Exhibitions Officer Kirsten Tashev. Tucker has been with CHM for more than 12 years and has provided leadership and strategic planning on multiple Collections projects, including the successful IMLS-supported effort in 2013 to eliminate CHM's physical artifacts cataloging backlog. She has consulted the multi-disciplinary project team on project design and logistics. Grant brings diverse experience from other museums to the project. Tashev has been with CHM for more than 20 years and will provide executive oversight and institutional knowledge.

Aside from the key participants above, the team includes a Senior Curator to assist with any identification or other artifact knowledge needs, along with members of the IT and Facilities teams to provide technical and logistical support. This project is a perfect opportunity for CHM's digital content team to share "behind the scenes" views of the Museum's work with its audience and to alert the public to the newly available online collection resources. To that end, the team also includes a member of the digital team to share interesting artifact finds and glimpses of Collections operations with CHM's social media followers.

Finally, this project's success also hinges on CHM's dedicated team of Collections volunteers. These volunteers are typically retirees from the technology industry, and most have more than 10 years of weekly volunteer experience with CHM's collection. The volunteers have already received training on basic Collections practices and protocols, and all volunteers will receive additional training specific to this project before beginning any work. There will be approximately 10 volunteers involved in this project. The Project Director plans for each volunteer to work one 5-hour shift per week; volunteers have been consulted about this project and are extremely enthusiastic about participating. (Please see Supporting Document 4 for pictures of Collections volunteers at work.)

Risks: The primary risk of this project is a reduction of availability within the veteran Collections volunteer group. Collections volunteer retention has remained high over the past decade, and all 12 of CHM's Collections volunteer slots remain full. The Collections Department consistently has a waiting list of people wishing to become volunteers. Training materials from the beginning of the project will be retained in case new volunteers are onboarded.

There is also a risk that the project will fall behind schedule due to variables such as shelf density. If this happens, the project tracking system (see below) will proactively alert the Project Director, who will either request additional volunteer assistance or assign the Acquisitions Registrar to assist with the inventory until the timeline is back on track. An additional risk might be managing intake of new objects into the collection, which is always time-consuming. To mitigate this, half of the volunteers will continue their regular work of cataloging newly donated artifacts to the collection; the others will be working on the inventory grant project. Another risk might be discovering artifacts in poor condition or needing better housing. If that happens, the project director will make a note in Airtable and address it immediately if it's an emergency, or at a later date as appropriate.

Resources: In addition to the time and participation of the individuals described above, this project will require several supplies and materials. The project will utilize Cordlash to re-strap palletted artifacts after they are inventoried. CHM will also purchase a refurbished iPhone (iPhone 14 or above) and equip it with the Photoroom app (annual subscription required). The Project Director has determined that iPhones and the Photoroom app are the best choice for this project because the file quality and color balance of the iPhone camera is excellent and the ease of use of both the iPhone camera and the Photoroom app allows for high-quality results with minimal training or expense.

Tracking: Project progress will be tracked primarily with Airtable, which has been in use at CHM for several years. Airtable is a cloud-based platform that combines the features of a spreadsheet and a database. With Airtable, users can create custom project databases to share with their team; users can also track individually assigned tasks, set up automated reminders and workflows, and link records across databases. Before beginning the project, the Project Director will use shelves and number of shelves that need to be inventoried and digitally captured to meet quarterly benchmarks. Based on the tasks recorded by the project team, the Airtable database will track the percentage of completion for each quarterly benchmark and the project overall.

At the end of each day, the Project Registrar and/or volunteers will select the status of the shelves scheduled to be inventoried as either "not started," "partially completed," or "completed" in Airtable. This will trigger an automatic update of the progress made toward quarterly and final goals. The Project Director will receive notice that the updates have been made and will be informed if a note made by the team is flagged as an action item requiring further follow-up. In addition, Airtable will also be used to track artifacts that are believed to be either uncatalogued or that have been separated from their cataloging tag and number.

At the end of each week, the Acquisitions Registrar will confirm in the Airtable that that week's artifact digital images were uploaded. They will also make a random selection of 20 records that were uploaded the previous week and review them for accurate location and completed image upload to spot any potential problems with process or technology. The Airtable will be reviewed weekly by the Project Director and a quarterly report of progress toward project completion will be pulled from the Airtable data and shared with Vice President Kirsten Tashev.

There will also be a series of regular check-in meetings to discuss specific aspects of the project. During Phase 3, the Project Director and Project Registrar will use Airtable to make a weekly assessment of progress made; at monthly meetings, the key project team members will utilize the Airtable database to track quarterly goals, issues, tasks, and project successes; and at quarterly meetings, the key project team will review the Airtable to develop a project report to determine the extent to which the project is meeting the proposed milestones. Quarterly meetings will also include a review of the budget and any expenditures.

At the conclusion of the project, in Phase 4, the Project Director will review the Airtable to confirm that all phases, benchmarks, and weekly tasks have been achieved, and address any needed reconciliation of data or image assets. The Project Director will review the project's actual results and report them alongside the initial expected outcome.

PROJECT RESULTS

Intended Results and Collection Improvements: There are two intended results for this project that also represent improvements to the access, management, intellectual control, and use of the collection at Yosemite.

First, all 41,000+ physical objects in Yosemite will have been inventoried, resolving the above-identified problems of inaccurate artifact locations, missing artifacts, etc. The project team will have identified each object's accurate location, documented artifact details that will be utilized in future projects such as records reconciliation and deaccessioning, documented artifacts that may be expired loans, and identified uncatalogued artifacts. Artifacts that are identified as not having a catalog record or that do not bear a catalog number will have been tracked in the Airtable. Artifacts that are tagged as expired loans, double cataloged, etc. will also have been tracked in the Airtable by project staff, and additionally grouped in the CMS by the Project Director for future reconciliation.

Second, high-quality digital images of every object in Yosemite will have been uploaded to the CMS and online collection system, resolving the identified problem of missing or poor-quality artifact images. These improved digital images will make every physical object in the storage facility discoverable to anyone who uses CHM's online collection; users include internal stakeholders such as curators and members of various Museum departments, as well as external stakeholders such as students, academics, journalists, engineers, technologists, and professionals from other museums. The clear, decipherable images of all physical objects, in conjunction with their confirmed location, will also streamline the planning and completion of future collections care and management projects.

The Collections team currently spends time photographing and confirming the locations of physical objects on-site in response to internal and external requests. Upon completion of this project – and even during its completion – the

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collection will become more "self-serve," reducing wait times for collection users and freeing up the valuable time of CHM's Collections team to focus on other important tasks.

Primary Audience Impact: Internal and external collections users will enjoy increased access to the collection through both easier location of requested artifacts on the part of the Collections team, and the availability of high-quality images of all the physical objects in Yosemite. This increased access will provide new knowledge about the collection and about computing history to all users, which will in turn be seen and felt through the innumerable papers, articles, documentaries, social media posts, exhibits, reports, YouTube videos, and other products inspired and informed by CHM's unparalleled collection.

The professionals and volunteers on CHM's Collections team who will be carrying out the work of this project will gain new knowledge and skills related to general collections management that will follow them to their next projects. They will also gain knowledge and skills that relate more specifically to CHM's collection that will enhance their ability to serve internal and external collection users.

Products: The key products of this project are: the descriptive and administrative metadata, including the location information related to the objects in Yosemite; the new images of the 3D objects; and the project Airtable. Exact artifact locations in Yosemite will be viewable only by Collections staff while using the CMS, but in the new online collections catalog, artifacts on display at the Museum will be tagged as being on display and will note in which exhibit and exhibit area they are located. This will benefit visitors to CHM, as well as other institutions who are browsing CHM's collection for potential loan requests. All the physical object images will be stored in the CMS, in the cloud, and in the Museum's digital repository. In addition to the public having access through the online catalog, other Museum departments, including Curatorial, Exhibits, Digital and Collections will also have access to the images for download, so they can safely edit and save copies of the images for their own use without altering or deleting the original image. The project Airtable is also a key product of the project and will be saved upon its completion to inform future collection management projects. It will also be saved as a template, a copy of which could be easily adjusted to fit the needs of a future reconciliation, deaccession, or collection move project.

Sustaining Project Benefits: Project images and metadata will be retained in perpetuity (until and unless upgraded to new standards), sustaining the main benefits of this project long-term. To prevent re-creating pre-inventory conditions with newly acquired artifacts, they will be handled in accordance with CHM collection standards, which focus on the importance of timely and accurate location updates. Newly cataloged artifacts are transported bi-annually between the building where they are received/cataloged and Yosemite; they are now inventoried both before and after transit. Vigilance, a better Internet connection at Yosemite, and the updated CMS will all be utilized to consistently maintain accurate locations moving forward. Finally, all new artifacts brought into the collection will be digitally captured using the new standards, and their images will be made available in the CMS and online collection catalog. This project's benefits will also be greatly expanded with new technology being explored in OpenCHM, including AI and 3D rendering.

By sharing documentation of our country's ongoing tech revolution, CHM can provide critical context about what it takes to turn ideas into products and businesses that have the potential to serve humanity. CHM can inspire and empower current and future generations of changemakers to ensure America's continued leadership in technology.

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Computer History Museum	Q1: Sept-Nov 2026	Q2: Dec 2026-Feb 2027	Q3: March-May 2027	Q4: June-August 2027	Q5: Sept-Nov 2027	Q6: Dec 2027 - Feb 2028
SCHEDULE OF COMPLETION						
Monthly Meeting						
Quarterly Reports						
PHASES & KEY RESULTS						
Phase 1: Hire a Project Registrar						
Phase 2: Training						
2.1: Train Registrar						
2.2 Train Volunteers						
Phase 3: Inventory & Digital Capture						
3.1.1: Inventory Shelving Area 3.1.2: Digitally Capture Shelving Area Artifacts 3.1.3: Process Shelving Area Images 3.1.4: Upload Shelving Area Images	Q1: 42 shelves	Q2: 126 shelves	Q3: 126 shelves	Q4: 126 shelves	Q5: 126 shelves	Q6: 126 shelves
3.2.1: Inventory Palleted Artifacts 3.2.2: Photograph Palleted Artifacts 3.2.3: Process Pallet Artifact Images 3.2.4: Upload Pallet Artifact Images	Q1: 20 shelves	Q2: 60 shelves	Q3: 60 shelves	Q4: 60 shelves	Q5: 60 shelves	Q6: 60 shelves
3.3.1: Inventory Rolling Racks 3.3.2: Digitally Capture Rolling Rack Artifacts 3.3.3: Process Rolling Rack Images 3.3.4: Upload Rolling Rack Images						
3.4.1: Inventory Floor Area 3.4.2: Digitally Capture Floor Area Artifacts 3.4.3: Process Floor Area Images 3.4.4: Upload Floor Area Images						
Phase 4: Review & Reconciliation						

Computer History Museum	Q7: March-May 2028	Q8: June-Aug 2028	Q9: Sept-Nov 2028	Q10: Dec 2028 - Feb 2029	Q11: March-May 2029	Q12: June-Aug 2029
SCHEDULE OF COMPLETION						
Monthly Meeting						
Quarterly Reports						
PHASES & KEY RESULTS						
Phase 1: Hire a Project Registrar						
Phase 2: Training						
2.1: Train Registrar						
2.2 Train Volunteers						
Phase 3: Inventory & Image Capture						
3.1.1: Inventory Shelving Area	Q7: 126 shelves	Q8: 126 shelves	Q9: 84 shelves			
3.1.2: Digitally Capture Shelving Area Artifacts						
3.1.3: Process Shelving Area Images						
3.1.4: Upload Shelving Area Images						
3.2.1: Inventory Palletted Artifacts	Q7: 60 shelves	Q8: 60 shelves	Q9: 30 shelves			
3.2.2: Digitally Capture Palletted Artifacts						
3.2.3: Process Pallet Artifact Images						
3.2.4: Upload Pallet Artifact Images						
3.3.1: Inventory Rolling Racks			Q9: 15 shelves	Q10: 45 shelves	Q11: 45 shelves	Q12: 15 shelves
3.3.2: Digitally Capture Rolling Rack Artifacts						
3.3.3: Process Rolling Rack Images						
3.3.4: Upload Rolling Rack Images						
3.4.1: Inventory Floor Area Artifacts			Q9: 7 items	Q10: 21 items	Q11: 21 items	Q12: 7 items
3.4.2: Digitally Capture Floor Area Artifacts						
3.4.3: Process Floor Area Images						
3.4.4: Upload Floor Area Images						
Phase 4: Review & Reconciliation						Phase 4: Review & Reconciliation

DIGITAL PRODUCTS PLAN

Type

This project will create born-digital still images of the majority of the 41,000+ inventoried artifacts in Computer History Museum's (CHM's) off-site storage facility, except for the scant few that have been recently digitally captured employing the new quality standards. One to five new images will be taken of each artifact as needed to capture the artifact's physical attributes and key details. All images will be taken at an appropriate and aesthetic angle to minimize negative space and the distortion of the true proportions of the artifact. Image exposures will be adjusted as needed, and the background of each image will be a consistent value of bright white, grey, or black. The images will be processed through the Photoroom application and exported as JPEG files. Each file will be renamed in accordance with the Museum's guidelines and will include the artifact's catalog number. The technical metadata of each file will be automatically captured once uploaded into CHM's collections management system (CMS).

Availability

The new images taken as a part of this grant will be made openly available in the Museum's online collections catalog as part of the artifact's online catalog record. The website is widely accessible using any browser. Each online catalog record is indexed and easily findable using any search engine such as Google, Bing, or DuckDuckGo.

Artifacts that are currently cataloged as part of the Museum's permanent collection but are identified as a loaned artifact during the inventory, or artifacts that are included in a future deaccessioning project, will have their catalog record unpublished from the online catalog, and the images will no longer be readily available to the public. The images will remain in the museum's Collection Management System (CMS) and will be offered to the lender or new owner upon return or deaccession.

Access

Because the copyright and other proprietary rights of some of the images, texts, software, documents, audio and videos that are part of the Museum's collection subsist in individuals and entities other than, and in addition to, CHM, the Museum allows a royalty-free right to reproduce the material accessible online only for the purpose of fair use as defined in the copyright laws. The images created during this grant will follow the same policy. The Museum will allow users to reuse the images accessible via our online catalog for the purposes of fair use. Researchers or other entities interested in using the images for commercial use might be asked to pay a processing fee aimed to cover the cost *only* if they are requiring images at a higher resolution than the ones available on the Museum's online catalog.

If an artifact contains sensitive information, such as a Social Security number on an identification badge, that information will be obscured in the online image.

Sustainability

During the project, the images will be stored in a project folder in the Museum's Microsoft Cloud Storage One Drive account, until the files are re-named, processed in Potoroom, and then uploaded to the Museum's CMS. Once uploaded in the CMS, the images will be stored in a Wasabi Hot Cloud Storage container. Both Microsoft and Wasabi guarantee the redundancy of all the data stored in their Cloud Storage containers by deploying copies in multiple top-tier data centers located in different regions across the United States.

The Museum will also ingest all the images created during the grant into its digital repository, which provides long-term preservation storage for the Museum's digital collections. The CHM digital repository is administered jointly by CHM staff in the Collections and IT departments and uses the digital preservation software Archivematica for ingest, storage management, and retrieval. The repository was launched in April 2015 and provides redundant storage distributed across two different buildings owned by the Museum located in Mountain View and Fremont, Calif. Therefore, copies of all data are stored on servers in two separate locations, and an additional copy is stored in Azure, the cloud computing platform developed by Microsoft.

The Museum continues to check data integrity of the digital repository on an ongoing basis. This takes place on two levels. First, the repository uses the ZFS file system, which provides built-in integrity checking at the file system level. The Museum's IT department actively monitors the health of the repository file system, as well as the health of the underlying hard drives and server hardware. Second, the digital archivist, who is responsible for managing the digital repository and the ingest workflow, checks data integrity of every file by means of Archivematica's built-in fixity checking capabilities. This full check takes place once a year. To date, no full repository check has reported the existence of a corrupted file.