



# United States Copyright Office **Modernization Efforts**

| *2018 Year in Review*

# The Copyright Office has a critical mission

to assist the public with understanding and navigating copyright issues. To conduct this work effectively and efficiently, the Copyright Office needs to modernize public services and build the foundation of a modern information technology system in support of those services. Delivering modernized technology systems that provide a positive experience for the public while facilitating the Office's work is among the Office's highest priorities.

Modernization at the U.S. Copyright Office is a multi-year process that requires extensive collaboration across all Copyright Office divisions and the Library of Congress (Library). The modernization effort involves public outreach to gather comments and reactions to help inform user-interface designs and ensure that the resulting system is user-friendly and intuitive. Regulatory work is also underway in anticipation of changes needed for new services and functionality.



[copyright.gov/copyright-modernization](https://copyright.gov/copyright-modernization)

## Our modernization effort has two key components:

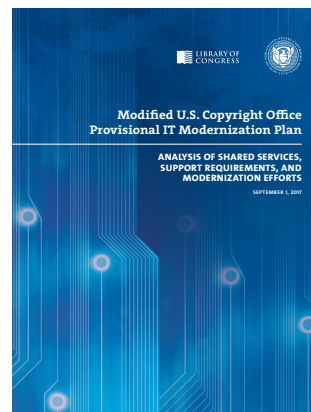
- Replacing legacy information technology (IT) systems with a high-performing and integrated IT enterprise system that supports registration, recordation, access to public records (including historical records), information services, and other public services; and
- Conducting Copyright business process review and organizational analysis to ensure continuing alignment with the Office's strategic goals; including updating regulations to streamline Office practices, revising Copyright Office procedures, enhancing communications and collaboration, and training staff.

Fiscal 2019 (October 1, 2018–September 30, 2019) is the first fiscal year in which Congress appropriated funds specifically targeting IT modernization. Modernization efforts were well underway even before additional funding was obtained. In January 2018, the Copyright Modernization Office (CMO) was established within the Copyright Office to lead the modernization effort and serve as the liaison between the Library and Copyright Office subject-matter experts across many divisions.



## Establishing the Copyright Modernization Office

One of the Copyright Office's key priorities in 2018 was planning for comprehensive modernization of technology and related operations. The Office has spent several years conducting in-depth studies and analyzing modernization efforts, including in the following reports:



- *Priorities and Special Projects of the United States Copyright Office: October 2011-2013*,
- *Transforming Document Recordation at the United States Copyright Office* (2015),
- *Report and Recommendations of the Technical Upgrades Special Project Team* (2015),
- *Provisional Information Technology Modernization Plan and Cost Analysis* (2016), and
- *Modified U.S. Copyright Office Provisional IT Modernization Plan* (2017).

The Copyright Office and the Library's Office of the Chief Information Officer (OCIO) jointly submitted the *Modified IT Plan*, which governs modernization efforts, to the House and Senate Committees on Appropriations in September 2017. The plan focuses on leveraging Library resources to take full advantage of in-house expertise and possible economies of scale. The plan also drew on the collaborative work of the Office and OCIO to identify synergies that might exist now or in the future, as both the Office and the Library modernize.

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## Organization of CMO

As required by the *Modified IT Plan*, the Copyright Office established the Copyright Modernization Office (CMO) on January 21, 2018. CMO complements OCIO's technical support by providing the business direction necessary to ensure that modernization projects are continuously aligned with the Office's mission and strategic goals. During 2018, the Acting Register of Copyrights named a CMO director and appointed skilled experts as deputy director and section heads of the three CMO sections, described below.

- CMO's **Program Management Section** provides oversight to support program and project management throughout the Office. After its establishment in June 2018, the section created guidance for all aspects of program management, including establishing goals and implementation plans, budget planning, work planning, and reporting. Additionally, the section works in concert with the Library's Contracts and Grants Directorate to support modernization related acquisitions and provides contract administration functions.
- CMO's **Data Management Section** facilitates the holistic view of the Office's architectural data and the information layers that exist between its business divisions and its enabling IT systems. During 2018, the Data Management Section worked with Office divisions, OCIO, and Library Services to create documents that address data as a strategic asset, including the first-ever Copyright Office data management plan, data model, and data dictionary.
- CMO's **Business Analysis Section** performs business analysis and quality management for modernization activities; working closely with users throughout the Office and with OCIO. In 2018, the section collected, analyzed, and prioritized business requirements; conducted feasibility studies and analyses of alternatives for proposed modernization activities; recommended solutions for business problems; and streamlined processes for user testing.







*CMO has three sections:  
Program Management Section (opposite page),  
Data Management Section (below), and  
Business Analysis Section (left).*

CMO and OCIO developed detailed cost projections and timelines that align with the revised provisional IT modernization plan. The Office's modernization funding request reflected these projections and timelines. In addition to working on modernization planning, OCIO has full responsibility for the management of technical IT responsibilities for the Office, as the Library consolidated all Office information technology positions within OCIO in December 2017.

With all technical IT support now residing within OCIO, both the Copyright Office and OCIO participate in a new approach to maintaining the Office's oversight of its mission critical systems development. In keeping with the plan's dual-governance approach, the Acting Register of Copyrights and the Library's Chief Information Officer jointly chair the Copyright Office Modernization Governance Board, which provides the executive-level direction critical to meeting the Offices' long-term modernization goals.



The Copyright Office's annual funding request is formulated each year as part of the Library's Congressional Budget Justification process, but it has been a separate appropriation within the Library budget since the Office was created in 1897. Funding sources for the COP Basic appropriation, which funds all Office operations except the Licensing Division and the Copyright Royalty Board, include both appropriated (taxpayer) funding and authority to expend user fees collected for copyright registration and related public services (offsetting collections). Historically, roughly 60 percent of the COP Basic appropriation comes from offsetting collections.

- \$12.1 million (including 8 FTEs) for Office modernization activities, which in fiscal 2019 primarily encompass development work for the next-generation registration system and development and deployment of the recordation system. In addition to technical development efforts, this initiative included eight positions needed to ensure effective project oversight through CMO; and

- \$5 million for the Office's Historical Public Records project. This request focuses on completion of the digitization of the public records and development of the Office's virtual reading room. The Office is using a recently completed industry analysis and its data collected to drive its digitization project planning, which includes priorities for digital scanning and data capture, federated search capabilities, more public access to records, and integration of historical records across Office systems.

Using the development and deployment timeline developed by OCIO, Copyright Office IT modernization activities planned for fiscal 2019 through fiscal 2024 include development and unification of public interfaces and all Office workflows through an enterprise solution. As a result, the fiscal 2019 request, including funding for the Historical Records Project, was proposed as recurring over a period of five years for the Office modernization activities and seven years for the Historical Records project, at a combined total of \$95.5 million. The request was approved by Congress in the fiscal 2019 budget. In fiscal 2024, the Office would request that all but \$5.4 million of the funding for Office modernization activities non-recur, with the remaining ongoing annual funding providing for ongoing maintenance and operations costs of the deployed enterprise solution.

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## Modernization Accomplishments in 2018

Modernization is a comprehensive undertaking that spans the entire Copyright Office. Within this overarching endeavor, the Office executed several major efforts, described below.

### Enterprise Copyright System (ECS)

As noted above, Copyright Office IT modernization activities planned for fiscal 2019 through fiscal 2024 include development and unification of public interfaces and all Office workflows through an enterprise solution. This enterprise solution will consist of modular applications including the registration system, the recordation system, public interfaces, and future incorporation of statutory license processing.

During 2018, the Copyright Office worked with OCIO to begin development of the first ECS module—an online recordation application—and the continued digitization of historical copyright records. The Office also worked with OCIO and a contractor to begin to design the user interface for many aspects of the ECS relating to recordation and registration functions for a select few types of works, described below.

At a request of Congress to investigate possible no-cost contracting solutions for modernization, CMO coordinated with OCIO to issue a Request for Information (RFI) in May 2018. The RFI asked industry for comments on creative solutions, including possible no-cost options, for the development of a next-generation ECS. The RFI format is a structured way of engaging in market research and discovering new ideas to address pressing IT and other operational challenges. As part of the RFI process, CMO conducted an Industry Day that provided tours and presentations on Office operations and modernization goals directly to potential submitters. The RFI process resulted in fourteen responses from interested vendors. To further reduce risk associated with IT contracts for a project of this scope, the Office consulted with the General Services Administration's 18F division, which offers expertise to federal agencies in planning successful IT projects. 18F gave the Office input on the RFI, offered best practices in contracting for agile projects, and advised the Office on agile teaming. As a follow-on to the RFI and the 18F engagement, the Office and OCIO are working with GSA to leverage their IT contracting experts for future modernization contracting activities and plan to have GSA coordinate new Requests for Proposals (RFPs) for the development of the ECS.



Specific work on the ECS included:

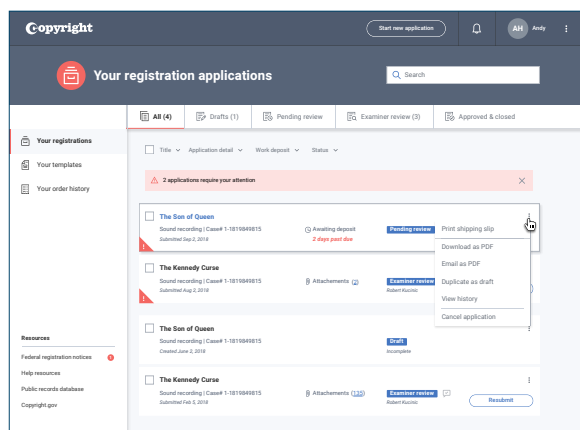
### Modernizing Registration

The Copyright Office and OCIO began early-stage work prior to fiscal 2019 on the Office's next-generation registration system (a module of the ECS) through a contract that provides for design of user interfaces for the Office's applications. The *Modified IT Plan* recognized that the current system, eCO, has a non-intuitive interface and creates a difficult user experience. The first phase focuses on the public-facing registration portal, using data collected from a public outreach project already underway, with future development work incorporating back-end office processing requirements. Development will be complex, as the final system must integrate processes for complicated copyright examination procedures, copyright deposit management, fee payments, and other workflows.

The Copyright Office has begun the process of completely overhauling the user interface for registration. The Office has contracted with a vendor to conduct research on user needs and to develop an entirely new user interface. The initial outreach and research included sixty-eight interviews with a cross-section of stakeholders in four different cities (Washington, DC; New York; Los Angeles; and Nashville) and a review of more than 10,000 survey responses.

Based on this initial research, the vendor developed a user interface mockup for four types of works (motion pictures, photography, books, and music). Recognizing that more work is needed in this area, the Office is continuing this process and taking all feedback to build a user interface that is efficient, easy to use, and results in more reliable data.

Thinking ahead in the regulatory space, the Office received public comments in mid-January 2019 responding to a notice of inquiry asking how to improve the regulations and practices related to the registration of copyright claims in the digital age. This inquiry is crucial to the Office's analysis while it considers how to replace the current electronic system. To develop modern registration policies, the Office sought public input on three areas of reform: (1) the administration and substance of the application for registration, (2) the utility of the public record, and (3) the deposit requirements for registration.



*The Office has contracted with a vendor to conduct research on user needs and to develop an entirely new user interface. Shown is a mockup prototype of the new user interface.*



*Registration examiners look at the comments users submitted about the current copyright registration process and what they would like to see in the next copyright registration system.*



*Development is underway for a new online recordation system to completely overhaul the current outdated system that requires time-consuming, manual recordation of documents.*

### Reengineering Document Recordation

Even before fiscal 2019, Copyright Office staff began to reengineer its antiquated, paper-based document recordation system. Development is underway for a new online recordation system to completely overhaul the current outdated system that requires time-consuming, manual recordation of documents. A production pilot of the new system is scheduled for fiscal 2020.

As noted above, throughout fiscal 2018, the Office worked with OCIO and a vendor to begin to design the user interface for many aspects of the ECS, including recordation functions. This design includes work with users regarding the public-facing side of recordation. A Recordation Section representative accompanied the vendor on a four-city tour to gather feedback from interviewees on improving the recordation process. In addition, the team conducted twelve usability sessions with users of varying experience levels and collected 207 survey responses from frequent users. This feedback will help the Office design an intuitive and easy-to-use interface for the future recordation system. In addition, the Office started to design dashboards for both Recordation Section staff examiners and supervisors.

Contractors have created preliminary layouts of the new systems and are conducting more user testing to further refine both the public and staff interfaces. In collaboration with OCIO, the Office provided business-based objectives for an OCIO development contract to deliver a “minimally viable product” (MVP) of the recordation application in fiscal 2020. This MVP is intended to provide early delivery of functionality with minimal features—an agile development technique to allow for continuous user acceptance testing and feedback.

On the regulatory front, the Office issued an interim rule on modernizing document recordation practices, including the acceptance of electronically signed documents and requiring the use of a new document cover sheet to aid remitters in submitting a complete application and making the examination process more efficient.

### Comprehensive Access to Public Copyright Records

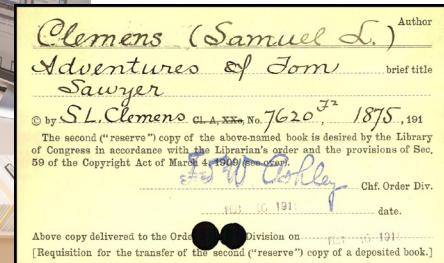
The Office is reviewing all of its public records, both those housed within outdated legacy electronic systems and the historical non-digital public records that are not easily accessible to the public. The Office is converting its extensive, paper-based pre-1978 historical public records into digital format to improve public access, enhance online search capabilities, and continue the effort to preserve these records. This endeavor, called the Historical Public Records Program, has been underway for several years and includes specific accomplishments achieved in years prior to fiscal 2019.

The Copyright Office has made major progress toward its long-term goal of creating a virtual reading room with advanced search capabilities and analytical features that make public research and viewing of all the Office public records easier and more accessible. This progress includes all public records that are not available online (1870–1977 records) and the public records that are already available online (post-1977 records) but need a more robust search and retrieval interface. In fiscal 2018, the Office achieved the digitization goal of creating more than 30 million service copy images by collaborating with OCIO and the Library Services unit.



*The Office launched the Virtual Card Catalog (VCC) proof of concept, offering online public access and browse capability for card catalog images from 1955 through 1977, approximately 17 million historical records previously only available in the Madison Building in Washington, DC.*

*Expected in early 2019, the Office will develop VCC Release 3, which will add more than 24 million additional card catalog images from the time periods of 1870 through 1954.*



On January 24, 2018, the Office launched the Virtual Card Catalog (VCC) proof of concept, offering online public access and browse capability for card catalog images from 1955 through 1977, approximately 17 million historical records previously only available in the Madison Building in Washington, DC. On July 17, 2018, the Office issued VCC Release 2 with additional filtered browse features. Expected in early 2019, the Office will develop VCC Release 3, which will add more than 24 million additional card catalog images from the time periods of 1870 through 1954, containing registrations, assignments, notice of use, commercial prints and labels, title indices, and pseudonym files. VCC Release 3 will have a new look and feel and will offer browse or filtered search capability to more than 41 million card catalog images. After this third release, the project is expected to move into O&M (operations and maintenance) phase.

The Office also is working toward publishing the other historical records that are still in formats not accessible online as soon as possible, including record books and microfilm, which currently are available to the public only in the Copyright Public Records Reading Room. In September 2018, the Office, collaborating with Library Services, awarded a contract to begin the digitization of the Copyright Office Record Books.

This project will, in addition to digitizing the records books, include the capture of information about the digitized record books to allow online searching. The record book project will begin with a pilot phase and ramp up into full production over the next six years.

## Business Process Reengineering

The Office's modernization initiative is about more than just technology—it also encompasses Office organization, processes, and people. It is important to ensure that non-IT activities are efficient and aligned with the Office's strategic goals, updating regulations to streamline Office practices, revising Copyright Office procedures, enhancing communications and collaboration, and training staff.

In late fiscal 2019, the Office will engage with a consultant to conduct a full business process reengineering (BPR) to adjust processes and workflows as needed as operational impacts of newly developed IT systems becomes apparent. As with any BPR initiative, the goals of the Copyright Office BPR include increased productivity and improved customer service. When modernization has run its full course at the Copyright Office, BPR will transition to Continuous Process Improvement (CPI) to ensure that our





*Work began in 2018 to analyze all the data held by the Copyright Office.*

processes and workflows are adjusted through time as needed to achieve optimal efficiency.

On a related initiative, the Office has entered into an Interagency Agreement with the Office of Personnel Management's Human Resources Solutions (OPM) to conduct an organization analysis and redesign, a strategic alignment analysis, and a workload analysis. Upon completion of its data collection, review and analysis, the OPM team will make recommendations regarding the Office's organizational structure, career ladders and staffing levels designed to facilitate the efficient and effective achievement of the Office's strategic goals.

### **Data Management Initiative**

Work began in 2018 to analyze all the data held by the Copyright Office. The goal of this work is to serve the copyright community—from creators to users and the public at large—by allowing them to reap additional benefits from Office data and information that will be authoritative, easily accessed, well described, high quality, secured, and managed across the entire enterprise. Ultimately this initiative will provide the foundation for an online search capability allowing users to search across registration, recordation, and licensing databases, establishing chain-of-title sequencing that can link registrations to records of assignments and transfers or other documents and provide robust reporting through business intelligence.

In 2018, CMO began building an enterprise data model. Components included creating a source-to-target data map, a data dictionary, and a data management plan. The data management plan to be finalized in early 2019, addresses key services such as data governance, data quality, digital asset management, data management strategies, and data warehousing and business intelligence. The team also worked with a contractor and OCIO to identify the requirements for digital preservation and long-term storage of copyright data.

### **Public Outreach**

The Copyright Office recognizes the interest and investment that the copyright community has in the success of the Office's IT modernization and is committed to a robust program of communication, outreach, and transparent reporting for the Office's modernization activities.

In 2018 the Office established a dedicated public webpage for modernization efforts, [copyright.gov/copyright-modernization](https://copyright.gov/copyright-modernization). Updates on modernization activities have been posted on the *Copyright: Creativity at Work* blog. A public email address for questions to CMO ([askcmo@copyright.gov](mailto:askcmo@copyright.gov)) is up and running. Senior Office staff also gave numerous presentations highlighting modernization efforts at annual meetings of the American Intellectual Property Law Association (AIPLA), Copyright Society of the USA (CSUSA), and at other speaking engagements. In 2019 the Office will expand its outreach efforts to inform and engage the public.

Communicating modernization developments among the Copyright Office staff is a critical part of outreach. Staff members throughout the Office and the Library already work closely with CMO on various projects. To reach staff members who are not daily involved in modernization activities, CMO and the Office of Public Information and Education (PIE) provided a variety of event programming (such as Copyright Office Teas), inter-departmental meetings, and monthly CMO newsletters. An office intranet webpage is regularly updated on CMO activities.



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**[copyright.gov/copyright-modernization](https://copyright.gov/copyright-modernization)**

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