OCIO Office of the
Chief Information Officer
LIBRARY OF CONGRESS

January 7, 2020

The Honorable Thom Tillis
Chairman, Senate Judiciary
   Subcommittee on Intellectual Property
113 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Chris Coons
Ranking Member, Senate Judiciary
   Subcommittee on Intellectual Property
218 Russell Senate Office Building
Washington, DC 20510

Dear Chairman Tillis and Ranking Member Coons:

Thank you for the opportunity to respond to additional questions from the Senate Judiciary
Subcommittee on Intellectual Property, following the December 10, 2019 hearing on
modernizing the U.S. Copyright Office.

The enclosed responses provide additional information regarding a number of topics of interest
to the Subcommittee, including insight into my office's role working with the Copyright Office
in implementing Copyright IT modernization.

I look forward to future opportunities to communicate our progress and to remaining a resource
to you and your staff as your oversight efforts continue.

Sincerely,

Bernard A. Barton, Jr.
Chief Information Officer
Library of Congress

Enclosure

Mr. Bud Barton
Chief Information Officer, Library of Congress
Responses to Questions for the Record
"Oversight of Modernization at the United States Copyright Office"
United States Senate Committee on the Judiciary
Subcommittee on Intellectual Property
December 10, 2019

Chairman Tillis

1. **Thank you for coming to the roundtable hosted by this Subcommittee last month to speak directly with stakeholders about modernization. In follow up to that hearing, I sent a letter to the Library suggesting one way to improve transparency is to make public a sort of "action item" list of projects in the order of completion. Is this something you'd be willing to implement going forward?**

    Thank you Chairman Tillis for facilitating the opportunity for the Register and me to speak with the roundtable participants. As I testified, that kind of dialogue goes a long way to increase transparency and clarify OCIO's role in the copyright modernization process. Your efforts are very much appreciated.

    As we have noted before, the Library and the Copyright Office are committed to transparency with the entire copyright community, including individual artists and creators, major corporations, and general users of the system, and are already deeply involved in broad, transparent consultation and outreach to facilitate public understanding and engagement.

    The Copyright Office has had a significant online presence to explain modernization and seek feedback from the public, including a dedicated section on Copyright.gov about copyright modernization efforts. OCIO is working with the Copyright Office to enhance and expand the information that is available there, including a more detailed overview of the work that is being done.

2. **Functionally how the relationship between the Copyright Office and OCIO works? Could you explain to me the difference between a business need and implementation of that business need? If there is a disagreement between your office and the Copyright Office, who would settle that disagreement?**

    Functionally, IT centralization and modernization requires a very collaborative relationship between the Copyright Office and OCIO. Under the Library's Agile development methodology, the business owner, in this case the Copyright Office, identifies and prioritizes the high-level functions an IT solution needs to accomplish, such as accept a payment, or allow a search. It is then up to OCIO technology experts to implement a reliable technology that will meet that business need. This collaboration

allows the subject matter experts to focus on what they know best – the business functions they need to be able to complete – while providing the Library's technology experts the freedom to explore and offer the best possible solution, leveraging the entire Library network instead of siloed solutions.

We have taken a number of steps to minimize disagreements and ensure effective collaboration between the Copyright Office and OCIO. Copyright Office subject-matter-experts and OCIO technical staff work together on a day-to-day basis as an integrated team to ensure that work is coordinated closely at the development level. At the planning and management level, the Copyright Office has hired a former OCIO division chief to serve as a senior advisor to the Register. In addition, OCIO has dedicated experienced technical staff to serve as the liaison between Copyright Office leadership and OCIO and as the program manager to coordinate the many projects under IT modernization. We also have a Copyright Modernization Governance Board that meets monthly to monitor progress and address issues that arise. As the head of the agency, the Librarian is the ultimate arbiter of any disagreements that should arise, but we strive to maintain a cooperative approach to resolving issues.

3. **It is my understanding that there was a disagreement between your office and the Copyright Office over the use of Login.gov. Could you tell me why there was a disagreement? Is the method of access not a business need given how the copyright community accesses the registration system?**

With any IT system there is a natural tension between ease of access and security. Under NIST and Library IT security guidelines, the Copyright system must include multi-factor authentication, which is part of what Login.gov provides. The Copyright Office raised concerns about the ability of certain communities – specifically international users and prison inmates – to meet the Login.gov multi-factor authentication requirements. Through our discussions about the possibility of using Login.gov, the Copyright Office and OCIO were both able to better understand the concerns that were driving the disagreement and reach an agreement to proceed with a trial to allow a more informed decision.

While defining who needs to be able to access the Copyright system is a Copyright Office business decision, the Library must maintain a minimum level of IT security to protect the agency and ultimately the entire legislative branch community. Those minimums are defined by NIST security standards.

4. **In response to a letter I sent earlier this year the Library indicated that instead of awarding contracts to implement Copyright Office modernization, it instead planned to hire internal staff to complete this work? Is this correct? Can you provide an update on this process?**

We are using a hybrid staffing approach for copyright IT modernization – leveraging permanent and temporary federal staff, as well as contractors – to provide the greatest flexibility possible while ensuring that we manage the modernization effort efficiently for the long run.

Federal staff are used in senior positions on all Library IT projects to provide program continuity and ensure proper project management and compliance with Library IT policies and standards. We use contract staff for limited term efforts with clear deliverables, including specific modernization projects. Given the many modernization efforts underway over the next few years, we are also expanding our capacity in OCIO for in-house development with teams of limited term "Not to Exceed (NTE) coders and other subject-matter experts. While this approach requires time to ramp-up staffing, it will provide more flexibility across multiple projects and ensure more consistent institutional memory of development decisions.

The first full NTE development team will be in place and ready to take over continuous development of the Recordation component once it begins its limited pilot in the second quarter of fiscal 2020. In the meantime, contract staff are supporting ongoing work for Registration and Public Records, as well as the ECS wide user experience design effort.

5. **In response to a letter from my office earlier this year, the Library indicated it was willing to look at the option on no-cost contracting. Can you update us on any progress regarding no contract options?**

   The Library and Copyright Office are collaborating with the General Services Administration (GSA) to explore possible no-cost contracting solutions for Copyright IT modernization. GSA was unable to support this work in fiscal 2019. A formal Interagency Agreement (IAA) has been drafted between GSA and the Library in November 2019 and is currently at GSA for review and signature. Work will begin upon finalization of the IAA.

6. **It is my understanding that NIST states that verifiers should not impose composition rules for memorized secrets but passwords to access the DMCA registered agent database must be at least 12 characters, with at least one lower case letter, upper case letter, number and special character and no repeated characters. Doesn't this seem to be in conflict with NIST requirements?**

   NIST IT security guidelines have moved away from password requirements on length and complexity when multifactor authentication is implemented in a system, however, they do not prohibit those additional security requirements. Library IT security policies follow NIST guidance.

If multifactor authentication has not been implemented on a system, Library policy requires authenticators to be 16 characters. Unfortunately, as initially established, the DMCA designated agent directory was unable to incorporate multifactor authentication or the password length requirement, so it was set to require an element of complexity as well. Since the DMCA designated agent directory was developed, OCIO has matured its IT security practices, and such a system would not be developed in that way today.

As a part of ongoing IT modernization, OCIO is updating Library applications to incorporate multifactor authentication, including Copyright's DMCA designated agent directory. The Library recently updated the DMCA designated agent directory to temporarily align with the Library's policy requiring a longer password length (16 characters) and is working to implement multifactor authentication by the end of fiscal 2020.

1. How do you plan to address the September 2019 OIG Report's findings and recommendations?

The agency's Inspector General (IG) recently identified the modernization program as a top management challenge because of its complexity, magnitude, and importance to fulfilling the Office's mission. I welcome the IG's guidance, as I believe it will greatly benefit the project as it continues. In fact, we are currently acting upon two valuable suggestions from the IG. We are developing a "critical path" for Copyright modernization that will outline detailed milestones and outcome measures over the span of the modernization effort. This is the first task which will be completed under an agency-wide critical path contract for all Library IT. The critical path will be updated on a rolling basis as milestones are met. The Copyright Office is soliciting assistance from an outside consulting firm to develop an "integrated master schedule" to monitor scope, progress, and accountability across related projects. According to the IG, an integrated master schedule is expected to show the various interdependencies that exist along the modernization program's critical path to ensure that the entire effort operates efficiently.

I have also taken several steps to ensure there is appropriate leadership management of this project, including conducting weekly meetings with the Register of Copyrights and the Chief Information Officer, and supporting the appointment of a senior technical advisor to help plan and manage Copyright IT modernization. This senior advisor reports directly to the Register and will help enhance the existing collaboration between the Copyright Office and the agency's technical staff.

2. How can the Library and Copyright Office improve the management practices among top executives to ensure there is better programmatic implementation of modernization?

The Library, including the Copyright Office and the Office of the Chief Information Officer, are committed to providing all the necessary resources to ensure this modernization effort is a success. Pursuing the critical path and master schedules described in the previous response will provide top executives and managers additional information related to setting milestones, tracking outcomes, and monitoring project scope, progress, and accountability.

I have made sure that the Library is engaged on Copyright Office modernization at all levels, from ensuring that I directly receive regular updates on project statuses and progress to dedicating resources to the Copyright Modernization Governance Board to ensuring that Copyright Office and technology staff are imbedded and working closely together day-to-day on development and testing teams. Collaborative efforts will continue as modernization goes forward. To aid this, the Copyright Office has hired a

former Office of the Chief Information Officer development chief as a senior technical advisor reporting directly to the now Acting Register to help enhance the existing collaboration between the Copyright Office and the agency's technical office.

1. **We have a program in Hawaii called Creative Lab. It includes immersive programs in different creative industries such as writing, directing, producing, animation, music, fashion, and more. Through these programs, individuals are able to refine their creative skills while also learning the business side of being a creator. The ultimate goal of Creative Lab is to grow the burgeoning creative community in the state.**

   One of the requirements for people participating in the program is that they register their works with the Copyright Office. I have heard that these creators face difficulties in registering their works, largely because the Copyright Office's online registration process is difficult to navigate and not intuitive.

   a. **What is the Copyright Office doing to make its online registration process more user-friendly? What is the status of that effort?**

   b. **How are you soliciting feedback from users to make sure the next iteration of the online registration process doesn't suffer from the same problems as the current process?**

The following response is provided by the U.S. Copyright Office.

The Copyright Office is keenly aware of the various technological limitations of our current online registration system, eCO (Electronic Copyright Office). Given the outdated nature of the eCO system, both public users as well as Copyright Office staff have been challenged by its limitations. Our Public Information Office handles calls from the public, requesting assistance on using eCO to complete their applications online.

Efforts to modernize the registration have been underway for some time. Indeed, we have laid the groundwork for modernization by significantly improving our day-today operations. In the past year alone, the Copyright Office completely eliminated the backlog of pending registration claims, reduced registration processing times by more than 40%, and completely resolved all older claims pending since 2017. Additionally, the Office of General Counsel drafted a number of revised regulations to streamline registration practices and procedures. Modernization draws heavily upon the staff of various divisions of the Registration Policy and Practice unit is heavily involved in this work, in addition to their regular duties to examine registration claims.

In fiscal year 2019, the Copyright Office worked with a contractor on a robust user outreach and research initiative focused on capturing and integrating feedback from actual Copyright Office users to inform the design of a user-centric interface for the ECS. Work commenced on a global system design, which will allow for a consistent look and feel across all components of the ECS. With the help of this contractor, we conducted sixty-eight in-depth interviews that yielded more than 2,500 interview notes regarding the user experience from

applicants in four cities, and launched an extensive online survey. This process allowed us to, among other things, finalize a click-through presentation of the registration interface, which was tested through independent usability testing with existing participants.

Throughout this foundational work, we have prioritized the public's need to understand, and participate in, the modernization process. The Office is committed to engaging with the entire copyright community, whether individual artists and creators, major corporations, or general users of the system, to ensure that our modernization efforts accurately reflect the expectations of the public and the needs of the digital age. We launched a significant online presence to explain modernization and seek feedback from the public. This included creating a modernization website, a dedicated email account for the public to use to ask questions and provide suggestions, and a bimonthly webinar series focusing on modernization issues.

These online efforts supplemented our other communication vehicles, including issuing a Notice of Inquiry in October 2018 requesting input on how to improve practices regarding registration of copyright claims in the digital age. There we sought input on a variety of issues, including the administrative and substance of the registration application, the utility of the public record, deposit requirements for registration, and possible user interfaces, among other topics.

2. **Piracy of copyrighted content is a massive problem in this country. As part of the copyright registration process, we ask creators to submit copies of their works. They are asked to submit another, higher-quality copy with the Library of Congress.**

   Through the modernization effort, do the Copyright Office and Library of Congress plan to transition these submissions from hard copies to electronic copies? If so, what security measures does the Copyright Office and Library of Congress plan to take to ensure they do not become sources of illicit content and contribute to the piracy problem? And, how are the Copyright Office and Library of Congress balancing security with ease of use?

   The following response is a joint answer provided by the U.S. Copyright Office and the Library Office of the Chief Information Officer:

   Ensuring the security of the digital content it is entrusted with is a top priority for the Library and the Copyright Office. The Library is responsible for IT security for all its service units, including the Copyright Office. The Library has significantly increased its IT security posture over the last few years. OCIO has implemented NIST security standards, with role based security, to ensure that users only have access to the data they are supposed to see. All Library IT systems have had complete security reviews and are continuously monitored. Regular penetration testing is also conducted against the Library's high value assets. To ensure that data is protected, the Library has built a wide range of IT security processes, tools and dedicated devices into the network, server, and applications used across the agency, and is

implementing encryption – at-rest and in-motion – for all sensitive Library data, including e-deposits.

It is important to note that most of these IT security measures are designed to work in the background, with minimal noticeable impact on the ease of use of Library or copyright systems. Where noticeable, like with multifactor authentication, the Library has strived to implement government standard solutions that are easy to use and provide a range of options for use while still ensuring effective security for the network and data.

As the question notes, physical deposit copies are frequently submitted through the registration system. But for certain categories of works,[1] the Copyright Office's registration system already securely accepts electronic deposit copies. In the case of newspapers, those copies are also used to satisfy the separate requirement to provide a copy for the Library in its preferred format. In all instances, security concerns are paramount to the Library and Copyright Office. Any future expansion of electronic deposits to additional categories of works will require careful consideration of several factors, including the Library's collection needs, technological capabilities, and security and access issues.[2] In general, however, the Library and the Copyright Office believe that increased use of electronic copies will be necessary to ensure that a fuller range of creative output is available for registration and Library deposit. The Library and Copyright Office will work collaboratively to appropriately balance security with ease of use. These kinds of important issues will be addressed using transparent processes that invite public comment and participation.

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[1] Categories include groups of photographs, serials, newsletters, and contributions to periodicals, digitally created architectural works, unpublished works, or secure tests.

[2] Section 407 of the Copyright Act states in part that "the owner of copyright or of the exclusive right of publication in a work published in the United States shall deposit [with the U.S. Copyright Office], within three months after the date of such publication—two complete copies of the best edition" "for the use or disposition of the Library of Congress." 17 U.S.C. § 407. The "best edition" is defined as "the edition, published in the United States at any time before the date of deposit, that the Library of Congress determines to be most suitable for its purposes." 17 U.S.C. § 101. In most cases, a copyright owner can satisfy the section 407 mandatory deposit requirement by applying to register the copyright under section 408. *See* 17 U.S.C. § 408(b). Section 408 provides that as a general rule, for a published work, a copyright owner applying to register a copyright claim must deposit two complete copies or phonorecords of the best edition with the Copyright Office. Section 408(c) authorizes the Register to issue regulations permitting copyright owners to meet the registration deposit requirement by submitting identifying materials instead of best edition copies, or by submitting only one copy where two would normally be required. Under this authority, the Copyright Office has issued regulations (which require the Library's approval) allowing these alternative forms of deposit for certain categories of works. The Copyright Office has issued circulars providing general information to the public about mandatory deposit and its relationship to registration deposit. These are available on the Copyright Office website. *See* https://www.copyright.gov/circs/circ07d.pdf (mandatory deposit); https://www.copyright.gov/circs/circ07c.pdf (responding to a mandatory deposit notice).