— 2019 —

TECHNOLOGY
TIMELINE

2019

Updates to Congress.gov: The Library of Congress (LOC) continued to release new features on Congress.gov, including a unified Committee Schedule that present searchable House and Senate meeting announcements, access to the modern, user-friendly Constitution Annotated website, and supporting event-based alerts for legislative activity.

ClerkPreview.house.gov: The Office of the Clerk continued to improve the beta replacement for its website by deploying updates to clerkpreview.house.gov that included district maps on Member profiles, find my Member by address, demographics, Consensus Calendars Motions, and social media sharing from select pages.

Govinfo Is Certified as an ISO 16363 Trustworthy Digital Repository: On January 19, the Government Publishing Office (GPO) made history by becoming the first organization in the United States and second in the world to receive certification as an ISO 16363 Trustworthy Digital Repository for government information by implementing practices to ensure long-term preservation and access to digital information.

GPO Produces the U.S. Code with New Digital Publishing Technology: On September 24, GPO began to publish the 2018 main edition of the U.S. Code through XPub, the agency's new digital technology for XML-based publishing.

2018

Legislative Branch Innovation Hub: The Legislative Bulk Data Task Force continued to coordinate technology projects across the Legislative branch. The projects seek to improve how legislative data and documents are prepared, managed, distributed, and archived. In July, with support from GPO, the Bulk Data Task Force launched the Legislative Branch Innovation Hub at usgpo.github.io/innovation to highlight Legislative branch activities that use technology to cultivate collaboration, foster data standardization, and increase transparency.

Updates to Congress.gov: The LOC continued to make improvements to Congress.gov, including public release of Congressional Research Service (CRS) Reports (crsreports.congress.gov), a Committee name history project tracing historical names of the House and Senate, and increasing download capacity to 1,000 search result items from any single collection.

Congressional Data Challenge Winners: On October 17, 2017, the LOC announced the Congressional Data Challenge: a public competition to leverage legislative data sets on Congress.gov and other platforms to develop digital projects that analyze, interpret, or share congressional data in user-friendly ways. Using the Challenge.gov platform, entrants submitted projects that were evaluated by an external team of experts for their usefulness, creativity, and design. On June 20, 2018, the LOC announced that high school students won the top two

prizes for competition. The first place winners, awarded $5,000 by the LOC, developed a project titled "U.S. Treaties Explorer" that enables researchers, students, and the general public to explore treaties in an interactive and visual way instead of blocks of text.

Documents in USLM: In December, in support of the Bulk Data Task Force, GPO and its data partners released Beta United States Legislative Markup (USLM) XML for a subset of enrolled bills, public and private laws, and the Statutes at Large on govinfo.

Govinfo Website Replaces FDsys Website: In December, GPO retired the FDsys website and replaced it with the govinfo website. GPO's govinfo offers a metadata-powered search experience and includes a content management system and a standards-compliant preservation repository.

2017

Updates to Congress.gov: The LOC continued to make improvements to Congress.gov, including the ability to download up to 500 search result items from any single collection, such as Legislation, Committee Reports, and the *Congressional Record*. The House's executive communication data was released on Congress.gov this year too.

Phone Calls Increase: In early 2017, the 115th Congress experienced record numbers of phone calls. By February, the Senate received 1.5 million calls a day, the busiest in the Capitol switchboard's history— nearly double the previous record.

Updated Clerk Website: On June 27, the Office of the Clerk unveiled the alpha version of the homepage of its new website, clerkpreview. house.gov, and HouseLive 2.0. The homepage highlighted House Floor activity and provided easy access to vital legislative information, including live House Floor video, in a user-friendly, responsive, and modern design. HouseLive 2.0 featured video rewind, closed captioning search, and Floor summaries integrated into the live broadcast.

Meeting with the Public: Continuing its commitment to holding public meetings to discuss the availability of legislative documents and data, the House held the fourth annual Legislative Data Transparency Conference hosted by the Committee on House Administration in June, the third Congressional Hackathon, hosted by Representatives Kevin McCarthy and Steny Hoyer in November, and two public meetings of the Legislative Bulk Data Task Force in April and December, respectively.

Comparatives Prints Available Online: As of December 31, the House Rules for the 115th Congress required that comparative prints under certain circumstances be made available prior to legislative consideration by the House. The Office of the Clerk worked closely with the Office of Legislative Counsel to meet the new requirements,

building tools to create these documents and later post them on docs.house.gov/floor.

Govinfo Launches as a Beta: On February 3, GPO launched a beta version of govinfo to eventually replace the FDsys website.

Bulk Data Repository: In February, GPO's Bulk Data Repository made House and Senate bill status information available in XML format. Sample files were released for comment on GitHub prior to release through FDsys, govinfo, and the Bulk Data repository.

House Rules in XML: In April, the House Rules and the House Manual for the 113th and 114th Congresses were made available in XML format using the USLM schema through FDsys, govinfo, and the Bulk Data Repository. The files were released for comment on GitHub prior to that release.

Quick Links to Statutes at Large: The Office of Law Revision Counsel (assisted by GPO and the LOC) made quick links available from the online version of the U.S. Code (uscode.house.gov) to the complete Statutes at Large. The Law Library of Congress explained in their blog that users "can now jump to pinpoint page citations in the Statutes at Large."

House Rules Call for Greater Transparency: The House Rules for the 114th Congress continued to call for greater transparency and accessibility to legislative information. Among other things, the Rules instructed the Clerk of the House to make available electronically each memorial pertaining to Article V of the Constitution of the United States and added a requirement that parallel citations for amendatory instructions to Public Laws and Statutes at Large that are not classified in the U.S. Code be included in proposed legislation.

Online Lobbying Disclosure Forms: In January (114th Congress), the House transitioned to an online Lobbying Disclosure Act filing system, discontinuing use of the paper forms.

GitHub: In March, GPO joined GitHub to share information and receive requests from third-party data users.

Bill Text in XML: In March, the LOC's Congress.gov began using XML files as the default view for bill text. While the style sheet was first used on the LOC's THOMAS website in 2004, it was not until 2015 that it was used as the primary display for bill text.

Member Data in XML: In April, the House Clerk began publishing basic Member data in XML format.

2014 **House Bill Summaries Available in XML**: House bill summaries were made available as XML bulk data on the FDsys Bulk Data Repository. Senate bill summaries were added to this collection in January 2015.

Congress.gov Transition: In September, the LOC completed the transition from beta.congress.gov to Congress.gov.

GPO Name Change: In December, GPO's official name changed from the Government Printing Office to the Government Publishing Office, reflecting the increasingly prominent role that GPO plays in providing access to government information in digital formats.

2013 **House Bills Available in XML**: Beginning in the 113th Congress, House bills were made available as XML bulk data on the FDsys Bulk Data Repository. Senate bills were added to this collection in January 2015.

Docs.house.gov Expansion: In January, the House expanded docs.house.gov to include Committee meetings and text of legislation that will be considered by House Committees.

U.S. Code Available in XML: In July, the Law Revision Counsel made the U.S. Code available in XML. This was the first release of the "generation two" USLM schema.

2012 **Docs.house.gov**: The House created the online repository docs.house.gov, which makes text of legislation being considered on the House Floor available by week.

Committee Video: The House implemented a strategy to centralize the webcasting of Committee proceedings, providing for consistent public access and archiving at House Committee Hearings and Meetings Video on Congress.gov (congress.gov/committees/video).

***Congressional Record* for iPad**: The LOC, with support from GPO, released an iPad application for the *Congressional Record*. House Leadership initiated the project, and the Committee on House Administration guided the project's development.

FDsys API Link Service: The FDsys API Link Service was first made available.

Legislative Bulk Data Task Force: On June 1, House Report 112-511 that accompanied H.R. 5882, the Legislative Branch Appropriations Act of 2013, directed the establishment of the Legislative Bulk Data Task Force to examine increased dissemination of congressional information via bulk data download from non-governmental groups supporting openness and transparency in the legislative process.

Congress.gov in Beta: On September 19, the LOC launched the beta version of a second-generation system delivering federal legislative information freely available to the public—Congress.gov.

House Rules Change: The House Rules for the 112th Congress called for greater transparency and accessibility to legislative documents. The intention of the change was to ensure that Members and the public had easy access to bills, resolutions, and amendments considered in Committee and by the House, and to place electronic distribution on par with traditional printing.

House Floor Proceedings Available in XML: The Office of the Clerk began posting the summary of House Floor proceedings on its website.

Letter from House Speaker to House Clerk: Speaker John Boehner directed the Clerk to continue efforts to release the House's legislative data in machine-readable formats.

Mobile Member Guide App: GPO launched a mobile version of the Member Guide at **m.gpo.gov/memberguide**. The Member Guide serves as a single point of access for Member information from several different official sources, including the Pictorial Directory, the Congressional Directory, the Biographical Directory, and other Member listings.

Congressional Email Use Soars: Since 2000, congressional offices saw constituent communications increase from 200 to 1,000 percent, thanks in large part to the growth of email and online messaging. Congressional offices often use that same technology to respond to constituents, effectively replacing a paper response with a digital one. By 2011, 86 percent of congressional offices answered all or most of their incoming constituent email with email, compared to 37 percent in 2005.

Electronic Voting System: Technicians upgraded the main display boards for the Electronic Voting System (EVS) on the House Floor from a series of light bulbs behind Plexiglas® to high definition LED boards. In 2009, the summary displays were converted to high definition LED boards.

Live House Proceedings: On April 13, HouseLive was launched—providing live and on-demand video access to House Floor proceedings.

First Electronic Device on House Floor: On June 30, Representative Charles Djou of Hawaii became the first individual to use an electronic device during a House Floor speech. The 112th Congress amended the House Rules to permit the use of mobile electronic devices so long as it did not impair decorum.

2009 **Discharge Petitions**: Petitions to discharge legislation from a House Committee were posted online and made available in XML.

GPO's Federal Digital System (FDsys): FDsys went live on January 15 with information from all three branches of the federal government, including content and XML metadata files for Congressional Bills, Calendars, Committee Prints, Hearings, Reports, Documents, Congressional Directory, *Congressional Record*, Public Laws, and United States Code. In December 2010, FDsys became GPO's system of record, replacing GPO Access. In addition to being available on the LOC's THOMAS and LIS sites, XML bill files were made available on FDsys.

Senate Votes Available in XML: In May (111th Congress), the Senate made roll call votes available in XML on the Senate's website.

2008 **Registrations and Reports Available in Public Databases**: Effective January 1 (110th Congress), the Lobbying Disclosure Act required the Secretary of the Senate and the Clerk of the House of Representatives to make all registrations and reports available online for public inspection in databases that were searchable, sortable, and downloadable.

2007 **Public Disclosure Forms**: The House made gift and travel forms publicly available with downloadable data.

2005 **LIMS**: The House's Legislative Information Management System (LIMS) was successfully ported from an IBM mainframe to an HP UNIX server. LIMS originated from the Bill Status System.

Phone Calls Decrease: In 2005, the Capitol telephone switchboard received more than 30,000 calls per week. This was a marked decrease from the 1983 statistic of U.S. Capitol operators receiving more than 22,000 calls a day. The decrease in calls was due to the rising popularity of emails during this period. Based on 2002 statistics, on average the House received 234,245 emails a day, amounting to more than 88 million emails a year.

2004 **House and Senate Bills Available in XML**: The LOC began publicly posting House and Senate bills in XML format. The LOC, GPO, the Clerk of the House, and the Secretary of the Senate agreed that the same style sheet used for the web display should be used by all legislative branch websites displaying XML bill format.

2003 **House Votes Available in XML**: During the 108th Congress, House roll call votes were made available in XML on the Clerk's website. Votes had been available online, but in HTML format, since 1997.

2001   **House Legislation in XML**: During the 107th Congress, the Office of Legislative Counsel began using an XML editor to draft legislation. This marked the official use of the "generation one" schemas for bills, resolutions, and amendments using document type definitions (DTDs). It is commonly referred to as the Bill DTD.

2000   **SGML/XML Study**: The Clerk of the House presented the SGML/XML Feasibility Study Final Report to the House Committee on Administration.

House Emails: The House of Representatives received emails at the rate of more than 48 million a year.

1998   **BioGuide Available Online**: The House Legislative Resource Center and the Senate Historical Office made the printed Congressional Biographical Directory available online at bioguide.congress.gov during the week of November 9 (105th Congress). The project was the first SGML/XML project for the House and Senate and paved the way for the drafting of legislation in XML in both chambers. With 15 previous print editions spanning back to 1854, the online directory provides up-to-date information on Members of Congress to researchers around the world.

1997   **Establishment of Exchange Standards**: During the 105th Congress, the Clerk's Office began establishing document exchange standards, as well as standards for the transformation, creation, and exchange of House documents using XML. This included an effort to customize an XML editor for the creation of bills and resolutions. The initiative is rooted in a 1996 directive from the Committee on House Oversight (now known as the Committee on House Administration) and the Senate Committee on Rules and Administration to the Clerk of the House and Secretary of Senate, respectively, to work together toward establishing common data standards for the exchange of legislative information (2 U.S.C. 181).[1]

1996   **House Member Websites**: By the summer (104th Congress), 223 lawmakers had websites. Technicians laid more than 3,500 miles of copper cable and 312 miles of fiber-optic wire in Capitol Hill offices to connect Members to the internet. In the fall of 1995, the House appropriated funds to buy each Member and Committee a new computer that had the capabilities to connect to the internet.[2]

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[1] See also Public Law 104-197.
[2] "Capitol Hill Takes to Cyberspace, Though in Fits, Starts and Stumbles," *New York Times*, July 10, 1996.

1995   **THOMAS Launch**: Congress directed the LOC to make federal legislative information freely available to the public. The LOC unveiled THOMAS on January 4—the opening day of the 104th Congress.

Electronic Voting System: The House's EVS was updated.

1994   **GPO's Federal Bulletin Board**: GPO's Federal Bulletin Board contained more than 5,000 files representing more than 18 federal organizations including Congress, the White House, and the Supreme Court.

House.gov: The House of Representatives launched its first internet website (house.gov).The Senate followed suit with its first website (senate.gov) nearly a year later.

GPO Access: GPO Access launched on June 8 and included the *Congressional Record, Congressional Record Index,* Enrolled Bills, and the *Federal Register*.

1993   **First Member Website**: In May (103rd Congress), with assistance from MIT, Senator Edward Kennedy of Massachusetts becomes the first Member of Congress with a website.[3]

Members of Congress on the Internet: On June 2, the House launched a pilot program to connect seven Members to the internet.

Electronic Information Access: On June 8, Congress passed the GPO Electronic Information Access Enhancement Act (Public Law 103-40), which directed GPO to make legislative and other official documents available to the public in digital form, leading to the launch of GPO Access in 1994.

1987   **Electronic Voting System Wiring**: Aging wiring in the main display boards was replaced.

1983   **GPO Typesetting Ends**: During the 98th Congress, GPO ends all machine typesetting.

1981   **Electronic Voting System Updated**: The House's EVS was updated.

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[3] "Calling Sen. Kennedy via the Computer," *Boston Globe*, September 15, 1993. Chris Casey, *The Hill on the Net: Congress Enters the Information Age* (Boston: AP Professional, 1996).

1979 **First Live, Televised Proceedings**: On March 19 (96th Congress), the Public Broadcasting System (PBS) and C-SPAN picked up the House feed and broadcast the House proceedings to the public. The first Member to speak before the television cameras was Representative Albert Gore Jr. of Tennessee.

1978 **Electronic Legislation**: The Office of Legislative Counsel began producing legislation in electronic form.

First Live Radio Broadcast of the Regular Proceedings of the House: On June 12 (95th Congress), the House began a live broadcast of regular proceedings of the House. Only 16 Members were present. Freshman Representative Albert Gore Jr. of Tennessee gave the first one-minute speech using the opportunity to comment on the important event. Associated Press Radio was the only major radio broadcaster to carry the day's proceedings.

1973 **First House Electronic Vote**: The first electronic vote in the House took place on January 23 (93rd Congress). The vote was a 15-minute roll call vote of members, which before the electronic system took on average 30 to 45 minutes.

House Bill Status System: On February 26, the House Bill Status System began operation. In 1975, the Committee on House Administration printed the document "The Bill Status System for the United States House of Representatives." According to the Committee print, the Bill Status System "was implemented to fulfill a need for a centralized source of legislative status information."

1967 **Computer Typesetting**: Just as machine typesetting replaced handset type (in 1904), so too, beginning in 1967, did computer typesetting replace machine typesetting when GPO began using the Linotron—GPO's first venture into computer typesetting.

1952 **TV and Radio Ban**: On January 27 (82nd Congress), Speaker of the House Samuel Rayburn barred television and radio coverage of House Committee hearings, which the networks had covered intermittently. The House Rules still did not authorize telecasts of House Floor debate. Live television broadcasts from the House Chamber continued to be conducted during Joint Sessions when the President delivered the annual State of the Union Address.

1947 **First Live Television Broadcast**: The first live television broadcast coverage of a congressional proceeding occurred on January 3,

when cameras were allowed into the House Chamber to telecast the opening of the 80th Congress. It was the last such broadcast for more than three decades.

1939 **First Members on Live TV**: The first U.S. government officials to appear on a live television broadcast were four Members of the U.S. House of Representatives: Speaker William Bankhead of Alabama, Majority Leader Samuel Rayburn of Texas, Minority Leader Joseph Martin Jr. of Massachusetts, and Congresswoman Edith Nourse Rogers of Massachusetts. On January 27 (76th Congress), the group was interviewed in front of the Department of Agriculture along the National Mall. Images and sound were transmitted one-half mile away to the National Press Club where members of the press and Washingtonians gathered on the top floor in front of several television receiving sets.

Radio Galleries Open: On July 24, the House and Senate radio galleries formally opened to accommodate reporters disseminating news by radio, wireless, and other similar means of transmission.

1936 **First Bill Summaries**: During the 74th Congress, Congress directed the LOC to author the Digest of Public General Bills and Resolutions (known today as "bill summaries").

1926 **GPO Offset Presses**: GPO installed its first two offset presses, a development in printing technology that drastically reduced costs for long runs and paved the way for later developments in phototypesetting and the entry of computers into the printing process.

1922 **First Public Address System**: On February 8, President Warren G. Harding was the first person to use the system in the House of Representatives for a radio broadcast when he addressed a Joint Session of Congress in the House Chamber.

First Live Radio Broadcast: On December 19 (67th Congress), House debate about a constitutional amendment to abolish tax-exempt securities became the first ever congressional proceeding broadcast on the radio.

1920 **GPO Electric Trucks**: GPO replaced its horse-drawn wagons with electric trucks for deliveries to Capitol Hill.

1904 **Machine Typesetting**: The arrival of Linotype and Monotype at GPO revolutionized government printing. These machines shifted the formula for typesetting from minutes-per-line to lines-per-minute.

1898 **House Telephone Switchboard Purchased**: Congress purchased a hundred-line switchboard, placed it in the Capitol, and hired an operator to manage the 200 calls per day.

1895 **GPO Becomes Official Government Printer**: On January 12 (53rd Congress), the Printing Act of 1895 made GPO responsible for the printing of all three branches of the federal government and for the dissemination of government publications for deposit in congressionally designated libraries nationwide.

1880 **First House Telephone**: During the 46th Congress, the House Doorkeeper supervised the installation of a telephone in the House of Representatives lobby four years after Alexander Graham Bell received his patent and made his first long distance call.

1873 **First U.S. Capitol Elevator**: The Architect of the Capitol installed the first elevator in the Capitol, and electric lighting began to replace gas lights in the 1880s.

1866 **GPO Printing Press**: GPO purchased a Bullock press—cutting edge printing technology of its day. Installation of the Bullock was one in a continuing series of technological changes that vastly expanded the volume and quality of GPO's printing work.

1861 **U.S. Government Printing Office Created**: Now named the Government Publishing Office, Congress created the GPO on June 4, 1860 (36th Congress), and GPO began operation on March 4, 1861 (37th Congress), with 350 employees. Not only did the 37th Congress convene on March 4, 1861, it is also the day Abraham Lincoln was sworn as the 16th President of the United States.

1844 **First Official Telegraph**: On May 24 (28th Congress), inventor Samuel Morse sent a telegraph from the Capitol to his partner in Baltimore, Maryland.

1800 **LOC Established**: On April 24 (6th Congress), President John Adams signed a bill providing for the transfer of the seat of government from Philadelphia to the new capital city of Washington. Part of the legislation appropriated $5,000 "for the purchase of such books as may be necessary for the use of Congress..." On January 26, 1802, Thomas Jefferson signed the first law establishing the structure of the LOC. In

August 1814, fires from the War of 1812 destroyed the LOC. Within a month, former President Jefferson offered his personal library as a replacement.

1789 **House Opens to Public**: Although the Constitution does not mandate open sessions, the House opened its doors to the public starting in April, during its first meetings in Federal Hall in New York City. Since that time, the House has maintained galleries so chamber proceedings can be viewed by the public.[4]

ABOUT THE TIMELINE

This technology timeline was compiled from official Legislative Branch sources by staff in the Office of the Clerk's Legislative Computer Systems and Office of Communications divisions. Staff at the Library of Congress, the Government Publishing Office, the Senate Office of the Secretary, and other Legislative Branch organizations provided source material and assistance in making this timeline possible.

Additional information can be found at **gpo.gov/about/gpohistory/** and **history.house.gov/Exhibitions-and-Publications/Electronic-Technology/House-Technology/**

Updated October 2019

A digital version of this timeline (featuring hyperlinked text) is available online at

xml.house.gov/resources/TechTimeline.htm

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[4] *U.S. House Journal.* 1789. 1st Cong., 1st sess., 4 April.