REPORT ON THE TRANSITION OF THE STEWARDSHIP OF THE INTERNET ASSIGNED NUMBERS AUTHORITY (IANA) FUNCTIONS

The Consolidated and Further Continuing Appropriations Act, 2015, Public Law 113-235, directs the National Telecommunications and Information Administration (NTIA) to report on various aspects of the proposed transition of the government role in the Internet Assigned Numbers Authority (IANA) functions. The following report provides background on the Internet domain name system (DNS) and NTIA’s role, the IANA functions, NTIA’s call for a transition proposal, status of the multi-stakeholder community’s efforts in response, and next steps. The report covers activities through January 31, 2015. As required by Public Law 113-235, NTIA will update this report on a quarterly basis. NTIA appreciates the interest in this topic and will continue to keep Congress and the public apprised of significant developments.

I. Background

The Domain Name System (DNS) is a critical component of the Internet infrastructure. It allows users to identify websites, mail servers, and other Internet destinations using easy-to-understand names (e.g., www.ntia.doc.gov) rather than the numeric network addresses (e.g., 170.110.225.163) necessary to retrieve information on the Internet. In this way, it functions similar to an “address book” for the Internet.

On July 1, 1997, President Clinton issued an Executive Memorandum directing the Secretary of Commerce to privatize the Internet DNS in a manner that increases competition and facilitates international participation in its management.1 In June 1998, NTIA issued a statement of policy on the privatization of the Internet DNS, known as the DNS White Paper.2 The White Paper concluded that the core functions relevant to the DNS should be primarily performed through private sector management. To this end, NTIA stated that it was prepared to enter into an agreement with a new not-for-profit corporation formed by private sector Internet stakeholders to coordinate and manage policy for the Internet DNS. Private sector interests formed NewCo for this purpose, which was subsequently re-named the Internet Corporation for Assigned Names and Numbers (ICANN). In the fall of 1998, NTIA entered into a Memorandum of Understanding (MOU) with ICANN to transition technical DNS coordination and management functions to the private sector.

The MOU did not simply turn over management of the DNS to ICANN. Rather, the MOU outlined a process to design, develop, and test mechanisms, methods, and procedures to ensure that the private sector had the capability and resources to assume important responsibilities related to the technical coordination and management of the DNS. The MOU


evolved through several iterations and revisions as ICANN tested these principles, learned valuable lessons, and matured as an organization.

In 2009, NTIA and ICANN entered into the Affirmation of Commitments (Affirmation). The Affirmation signified a critical step in the successful transition to a multi-stakeholder, private sector-led model for DNS technical coordination, while also establishing an accountability framework of ongoing multi-stakeholder reviews of ICANN’s performance. Key elements of the Affirmation include: an endorsement of the multi-stakeholder, private sector led model; a new commitment by ICANN to act in the interests of global Internet users (or public interest) and not just in the interests of those active stakeholder participants that directly benefit from ICANN’s decisions; and the establishment of mechanisms and timelines for continuing reviews by the ICANN community of ICANN’s execution of core tasks. The four subjects of the ongoing Commitment Reviews are: ensuring accountability, transparency, and the interests of global Internet users; preserving the security, stability, and resiliency of the Internet DNS; promoting competition, consumer trust, and consumer choice in connection with any implementation of generic Top Level Domains (gTLDs); and meeting the needs of law enforcement and consumer protection in connection with WHOIS implementation and recognizing national laws. The success of the framework established by the Affirmation depends upon the fulsome participation of the various ICANN stakeholders in reviewing ICANN’s performance.

ICANN has made significant progress in fulfilling the commitments established by the Affirmation. To date, two iterations of the Accountability and Transparency Review Team (ATRT) have occurred. These teams, on which NTIA has participated actively with a broad array of international stakeholders from industry, civil society, the Internet technical community, and other governments, have served as a key accountability tool for ICANN – evaluating progress and recommending improvements. Over time, ICANN has improved its performance by implementing key recommendations from the ATRT, and NTIA is confident that this maturation will continue.

Throughout the various iterations of NTIA’s relationship with ICANN, NTIA has played no role in the internal governance or day-to-day operations of ICANN. NTIA has never had the contractual authority to exercise traditional regulatory oversight over ICANN.

II. Internet Assigned Numbers Authority Functions

In the 1998 DNS White Paper, NTIA announced its intent to assure the continued secure and stable performance of certain DNS functions, including the IANA functions, initially through contracts, until the transition was complete. The IANA functions are a set of interdependent technical functions that enable the continued efficient operation of the Internet. The IANA functions include: (1) the coordination of the assignment of technical Internet protocol parameters; (2) the administration of certain responsibilities associated with DNS root zone management; (3) the allocation of Internet numbering resources; and (4) other services related to the management of the .ARPA and .INT top-level domains (TLDs).
The IANA functions were initially performed under a series of contracts between the Department of Defense’s Advanced Research Projects Agency (DARPA) and the University of Southern California (USC), as part of a research project known as the Terranode Network Technology (TNT). As the TNT project neared completion and the DARPA/USC contract neared expiration, USC entered into a transition agreement with ICANN under which ICANN secured directly from USC all necessary resources, including key personnel, intellectual property, and computer facility access, critical to the continued performance of the IANA functions. In 2000, NTIA then entered into a sole-source, no-cost-to-the-government contract with ICANN for the performance of these functions.

NTIA and ICANN have subsequently entered into contracts for the performance of the IANA functions in 2001, 2003, and 2006. On July 2, 2012, NTIA awarded ICANN, via a full and open competitive procurement process, the current IANA functions contract. The base period of performance for this contract is October 1, 2012, to September 30, 2015. The contract also provides for two option periods of two years each. If both option periods are exercised, the contract would expire on September 30, 2019. All five contracts have been at no cost to the U.S. Government.

As the IANA functions operator, ICANN performs administrative responsibilities associated with the registries related to the three primary IANA functions. First, ICANN is the central repository for protocol name and number registries used in many Internet protocols. Based on established policies and guidelines developed by the Internet Engineering Task Force (IETF), ICANN maintains many of the codes and numbers contained in Internet protocols. Second, ICANN coordinates allocations of IP (Internet Protocol) and AS (Autonomous System) numbers to the Regional Internet Registries (RIRs), who then distribute those numbers to Internet Service Providers and others within their geographic regions. Third, ICANN processes root zone file change requests for TLDs and makes publicly available a Root Zone WHOIS database with current and verified contact information for all TLD registry operators. In all three cases, ICANN, as the IANA functions operator, applies the policies developed by the customers of the IANA functions.

NTIA’s role as the historic steward of the DNS via the administration of the IANA functions contract is limited and clerical in nature. Specifically, in the root zone management function, NTIA verifies that established policies and procedures are followed in processing change requests, and then authorizes the implementation of those changes. NTIA’s role does not involve the exercise of discretion or judgment with respect to such change requests.3

From the inception of ICANN, the U.S. Government and Internet stakeholders envisioned that the U.S. Government’s role in the IANA functions would be temporary. The DNS White Paper stated that “agreement must be reached between the U.S. Government and the new corporation (ICANN) relating to the transfer of the functions currently performed by IANA.”4

3 For further information on the NTIA role in root zone management and the IANA functions, see http://www.ntia.doc.gov/other-publication/2014/ntia-s-role-root-zone-management.
4 DNS White Paper, supra n. 2.
NTIA has fulfilled this temporary role not because of any statutory or legal responsibility, but as a temporary measure at the request of the President. Indeed, Congress never designated NTIA or any other specific agency responsibility for managing the Internet DNS. Thus, NTIA has no legal or statutory responsibility to manage the DNS. Just as Federal agencies can enter into contracts they need to fulfill their missions without specific legislative authority, Federal agencies can discontinue obtaining such services when they no longer need them. As NTIA made clear at the time of its Statement of Policy, it intended only to procure the IANA functions services until such time as the transition to private sector management of the Internet DNS was complete.

III. Final Steps in the Privatization of the DNS – An Important Part of U.S. Support for the Multi-stakeholder Model of Internet Governance

NTIA believes the multi-stakeholder model of Internet governance is the best mechanism for maintaining an open, resilient, and secure Internet because, among other things, it is informed by a broader foundation of interested parties and it is more flexible and adaptable to innovation and changing conditions. This model includes all parties – including businesses, technical experts, civil society, and governments – arriving at consensus through a bottom-up process regarding policies affecting the underlying functioning of the Internet domain name system. ICANN and several other technical organizations embrace and exemplify this model. Specifically, within ICANN’s structure, governments work in partnership with businesses, organizations, and individuals to provide public policy input on deliberations related to ICANN’s mission of technical coordination, and provide advice directly to the ICANN Board. ICANN holds meetings approximately three times a year, at which global stakeholders meet to develop policies that ensure the Internet’s ongoing security and stability. ICANN policy development originates in the three Supporting Organizations (SOs), which work with Advisory Committees composed of governments, individual user organizations, and technical communities in the policy development process. Over one hundred governments, including the United States, and observers from more than 30 international organizations advise the ICANN Board of Directors via the Governmental Advisory Committee (GAC).

The 112th U.S. Congress affirmed its support for the multi-stakeholder model in unanimous resolutions to “preserve and advance the successful multi-stakeholder model that governs the Internet.” More recently, bipartisan Congressional leaders reiterated this position in stating that “[t]he multi-stakeholder model for Internet governance must prevail for more countries around the world to realize the transformative benefits of Internet connectivity.”

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7 Reps. Upton (R-MI), Waxman (D-CA), Royce (R-CA), Engel (D-NY), Re/code, “Protecting the Internet From Government Control” (Dec. 18, 2014), available at: http://recode.net/2014/12/18/protecting-the-internet-from-government-control/.
Demonstrating its commitment to the multi-stakeholder approach, on March 14, 2014, NTIA announced its intent to complete the privatization of the domain name system first outlined in 1998. NTIA called upon ICANN to convene a multi-stakeholder process to develop the transition plan.8 While looking to stakeholders and those most directly served by the IANA functions to work through the technical details, NTIA established a clear framework to guide the discussion. Specifically, NTIA communicated to ICANN that the transition proposal must have broad community support and address four principles.

First, the transition proposal must support and enhance the multi-stakeholder model. Specifically, the process used to develop the proposal should be open, transparent, bottom-up, and garner broad, international stakeholder support. In addition, the proposal should include measures to ensure that changes made to any of the three IANA administered databases are consistent with the publicly documented IANA functions customer and partner accepted procedures, which are developed through the multi-stakeholder model.

Second, the transition proposal must maintain the security, stability, and resiliency of the Internet DNS. For example, the decentralized distributed authority structure of the DNS needs to be preserved so as to avoid single points of failure, manipulation, or capture. In addition, integrity, transparency, and accountability in performing the functions must be preserved. The IANA services also need to be resistant to attacks and data corruption, be able to fully recover from degradation, if it occurs, and be performed in a stable legal environment.

Third, the transition proposal must meet the needs and expectations of the global customers and partners of the IANA services. For example, mechanisms for the adherence to and development of customer service levels, including timeliness and reliability, should be clear, as should processes for transparency, accountability, and auditability. Consistent with the current system, the separation of policy development and operational activities should continue.

Fourth, the transition proposal must maintain the openness of the Internet. The neutral and judgment-free administration of the technical DNS and IANA functions has created an environment in which the technical architecture has not been used to interfere with the exercise of free expression or the free flow of information. Any transition of the NTIA role must maintain this neutral and judgment free administration, thereby maintaining the global interoperability of the Internet.

In addition, NTIA explicitly stated that it would not accept a proposal that replaces the NTIA role with a government-led or an inter-governmental organization solution.

While the current IANA functions contract expires on September 30, 2015, the contract can be extended for up to four years. Accordingly, NTIA believes there is sufficient time for stakeholders to work through the ICANN-convened process to develop an acceptable transition proposal. Before any transition takes place, the businesses, civil society, and technical experts of

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the Internet must present a plan that has broad multi-stakeholder support and reflects the four key principles NTIA outlined in the announcement.

By transitioning its very limited current role in the IANA functions to the global multi-stakeholder community, the United States is fulfilling objectives outlined more than 16 years ago, demonstrating its commitment to the multi-stakeholder model, strengthening the engagement of all stakeholders, and decreasing the likelihood of and opportunity for repressive regimes to exercise control over the DNS at a global level. For years, repressive regimes such as Russia, Iran, China, and others have opposed the multi-stakeholder model and sought to increase governmental control over the Internet through bodies such as the International Telecommunication Union (ITU) and the United Nations. By firmly demonstrating support for the multi-stakeholder community, the United States is taking steps to increase world-wide acceptance of and participation in the multi-stakeholder model.

The world has witnessed significant progress in its collective efforts to expand support for multi-stakeholder Internet governance. In April 2014, Brazil hosted the successful NetMundial conference at which a wide range of participants supported a statement reaffirming that Internet governance should be built on democratic multi-stakeholder processes. Following NetMundial, a High-Level Panel headed by the president of Estonia released a report once again affirming the power of multi-stakeholder policy development. The panel said it “recognizes, fully supports, and adopts the IG [Internet governance] Principles produced in the NetMundial Statement. . . .” In the fall of 2014, nations assembled at the ITU Plenipotentiary Conference in Busan, South Korea rejected all efforts to expand the ITU’s role in DNS issues handled by ICANN.

IV. Stakeholder Response

Following the March 2014 announcement, a broad array of Internet stakeholders – including private companies, civil society, engineers, and governments – issued public statements that demonstrate the importance of the transition:

- AT&T: “This is an important step in the ongoing evolution of the global Internet. NTIA is to be commended for its historical stewardship, its current thoughtful and proactive approach, and its global leadership throughout. The U.S. is looking to the future, promoting leadership and ideas from the global multi-stakeholder community, and establishing clear criteria to ensure the stability and security of a remarkably well-

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functioning system. We expect that other governments and stakeholders will join with the U.S. in committing to this vision.” 12

- **Microsoft:** “The U.S. Department of Commerce National Telecommunications and Information Administration’s recent announcement of its intent to transition key Internet domain name functions to the global multi-stakeholder community is a significant and welcome development.” 13

- **Human Rights Organizations:** “[W]e write to express our support for the Department of Commerce’s National Telecommunications and Information Administration (NTIA) announcement of its intent to transition key Internet domain name functions to the global multi-stakeholder community…This move would alleviate international pressure on explicit terms, deter government overreach on the issue of Internet governance, and facilitate the exercise of human rights online.” 14

- **The Internet Association (representing Amazon, Facebook, Google, Netflix, Yahoo!, Twitter, Airbnb, and other Internet economy firms):** “. . . we support the recent announcement regarding the National Telecommunications and Information Administration’s (NTIA) oversight authority over important technical Internet functions …. For our companies to continue to innovate, to foster development and change, and ultimately to succeed as businesses globally, we need the continuation of the current bottom-up, multi-stakeholder model of Internet governance. However, as the Internet continues to evolve, so too must the models that govern it …. [I]t was always envisaged that this oversight role held by the United States would eventually transition to the private sector. The announcement by NTIA is simply the fulfillment of this vision. . . . For these reasons we encourage you to allow this process to continue toward a successful conclusion.” 15

- **U.S. Chamber of Commerce:** “NTIA has steadfastly opposed a transition to any mechanism that would deviate from the current multi-stakeholder model of Internet governance and should be allowed to take any needed steps to achieve the cautiousness and transparency that we agree is essential for a safe and smooth transition of the technical functions. Any hindering of NTIA’s ability to conduct the proper levels of due

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diligence through the use of currently available resources could result in harm to U.S. businesses and Internet users as a whole.”

- **Verizon:** “We applaud NTIA for recognizing the global relevance of the Internet Assigned Numbers Authority (IANA) functions and the current maturity of multi-stakeholder frameworks.”

- **Ambassador David Gross,** former United States Coordinator for International Communications and Information Policy (George W. Bush Administration): “We believe that NTIA’s decision to initiate a process leading to the possible transition of the IANA functions contract to a multi-stakeholder entity is a critical step…. By allowing for the careful transition of the IANA to a bottom-up multi-stakeholder entity, the United States has affirmed its commitment to the multi-stakeholder model.”

- **Cisco:** “This is a significant milestone in the transition of Internet governance to a global multi-stakeholder model, and Cisco welcomes this development. We applaud the NTIA for seeking to complete the final phase of the privatization of DNS management, as outlined by the U.S. Government in 1997. Cisco has long supported an open and innovative multi-stakeholder Internet governance process and this next step in its evolution.”

- **USTelecom:** “We applaud NTIA for its responsible stewardship of the Internet’s Domain Name System (DNS) over the years and are supportive of its proposal to transition the Internet Assigned Numbers Authority (IANA) functions to the global multi-stakeholder community.”

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Center for Democracy and Technology: “CDT believes that this transition is an important part of the evolution and strengthening of multi-stakeholder governance of the Internet.”

Former FCC Commissioner (Republican) Robert McDowell: “...NTIA is taking its last steps down a path that was paved over two decades ago: a path intended to get the government out of the Internet governance business.”

Internet Technical Organizations: “The leaders of the Internet technical organizations responsible for coordination of the Internet infrastructure (IETF, IAB, RIRs, ccTLD ROs, ICANN, ISOC, and W3C), welcome the US Government’s announcement of the suggested changes related to the IANA functions contract.”

Computer and Communications Industry Association: “The technology industry welcomes the news that the U.S. Commerce Department intends to complete the transition of relinquishing its control over key Internet addressing functions to the global multi-stakeholder community. This was a necessary next step in the evolution of the Internet and supports the current multi-stakeholder model of global Internet governance where all stakeholders concerned with the well being and functioning of the Internet help to shape the policies that make a bright online future for everyone possible.”

V. Status of Multi-stakeholder Process to Develop Transition Proposal

Since NTIA’s March 2014 announcement, interested stakeholders have responded with great energy and participation to develop a transition plan that will ensure the stability, security, and openness of the Internet. An IANA Stewardship Transition Coordination Group (ICG), representing more than a dozen Internet stakeholder communities, was established as a convener of the process to develop a transition proposal. As set forth in its charter, the IANA Stewardship Transition Coordination Group is “conduct[ing] itself transparently, consult[ing] with a broad range of stakeholders, and ensur[ing] that its proposals support the security and stability of the IANA functions.” On September 8, 2014, the ICG issued a Request for Transition Proposals to...


the multi-stakeholder community, with a proposal submission deadline of January 15, 2015.\textsuperscript{26} The ICG requested one proposal for each of the three primary functions, \textit{i.e.,} the protocol parameters, numbering, and domain name-related functions, to be developed by the communities and parties most directly affected by each of the primary functions. Upon receipt of the proposals, the ICG will then work to develop a single consolidated proposal.

As of January 2015, the community was in various states of proposal development. The IETF, which is shepherding the protocol parameter proposal, finalized and submitted its proposal to the ICG on January 6, 2015.\textsuperscript{27} The five Regional Internet Registries (RIRs), which are shepherding the development of the numbering proposal, announced their final proposal on January 15, 2015.\textsuperscript{28} A Cross Community Working Group (CWG) on the domain name-related functions released a draft proposal that went through a community review in late December 2014.\textsuperscript{29} The CWG is currently in the process of taking community comments received into consideration. Proposal development has to date been open and multi-stakeholder in nature. In addition, the ICG will publicly post the consolidated proposal for review and comments.\textsuperscript{30}

The ICG hopes to submit, through ICANN, a final consolidated transition proposal to NTIA by the end of July 2015, to give NTIA time to review before the current contract expires at the end of September 2015.\textsuperscript{31} NTIA has made it clear that it has not set a deadline for the transition, and should the community need more time, NTIA can extend the current contract for up to four years.\textsuperscript{32}

ICANN has also launched a parallel process to enhance its accountability to the global Internet community and to strengthen its accountability mechanisms in the absence of a contractual relationship with NTIA.\textsuperscript{33} NTIA believes that this accountability process needs to


\textsuperscript{28} See Final Proposal of the Internet Number Community for the IANA Stewardship Coordination Group (Jan. 15, 2015), available at: https://www.nro.net/news/final-proposal-crisp.


\textsuperscript{33} See Enhancing ICANN Accountability, “Opportunity for public dialogue and community feedback” (May 6, 2014), available at: https://www.icann.org/resources/pages/enhancing-accountability-2014-05-06-en; see also,
include the “stress testing” of solutions to safeguard against future contingencies such as attempts to influence or take over ICANN functions that are not currently possible with the IANA functions contract in place.

A Cross Community Working Group (CCWG) on Accountability, composed of appointed representatives from ICANN’s Supporting Organizations (SOs) and Advisory Committees (ACs) and open to all interested parties as participants, is examining accountability mechanisms regarding the entirety of ICANN operations. The CCWG charter identifies two workstreams: the first is to identify accountability measures that need to be in place before the IANA transition; and the second to address accountability measures that should be adopted and implemented by ICANN in the longer term. The CCWG has identified four distinct work areas: (1) overview of existing accountability mechanisms; (2) review of public comments filed in response to ICANN’s proposed accountability process to categorize them as either Work Stream 1 or Work Stream 2 items; (3) review of accountability issues identified by the CWG; and (4) identification of contingencies or threat scenarios. The CCWG adopted an intensive work plan to address the near-term, IANA-specific measures involving weekly meetings in order to progress its work.

These two multi-stakeholder processes – the IANA functions and enhanced accountability – are directly linked, and NTIA has repeatedly said that both issues must be addressed before any transition takes place. NTIA is confident that engaging the global Internet community to work out these important issues will strengthen the multi-stakeholder process and will result in ICANN’s becoming even more directly accountable to the customers of the IANA functions and to the broader Internet community.

VI. Next Steps

NTIA is committed to continuing to work closely with the stakeholder community to ensure that it develops a proposal that fully achieves the goals NTIA established, as well as continue our overarching commitment to strengthening the current multi-stakeholder model. In the year ahead, it will be absolutely critical to the interests of the United States that NTIA continue to monitor the discussions within the multi-stakeholder community as it develops a transition plan and provide feedback where appropriate. Specifically, NTIA will:


36 See CCWG on Enhancing ICANN Accountability, “Meetings,” (last modified Jan. 6, 2015), available at: https://community.icann.org/display/acctcrosscomm/Meetings.
• participate in meetings and discussions with other governments, the global stakeholder community, ICANN, and VeriSign with respect to the transition or planning the transition;
• if appropriate, amend the IANA functions contract to modify the length of contract renewal option periods; and
• continue to represent the United States at the GAC meetings held at ICANN meetings and intersessionally throughout the year.

Once the community develops and ICANN submits the consolidated proposal, NTIA, with input from an interagency process, will ensure that the March 2014 criteria are fully addressed and that the proposal has been adequately “stress tested” to ensure the continued stability and security of the DNS. NTIA is also cognizant of and appreciates the directive from Congress to inform the relevant Committees in advance of any decision related to the transition. Given the final proposal has yet to take shape, it is premature at this time to outline the specific steps of NTIA’s assessment. The community processes used to develop their proposal may also influence the work NTIA will need to undertake. For example, if the community conducts “stress tests” prior to submission, well-documented results may facilitate NTIA’s review. In addition, NTIA will review and assess the changes made or proposed to enhance ICANN’s accountability in the related workstream prior to initiating the transition. As the proposal continues to take shape, NTIA will update its plans accordingly.

The Joint Explanatory Statement accompanying the Consolidated and Further Continuing Appropriations Act, 2015 requires NTIA to report to the Committees on Appropriations “regarding any recourse that would be available to the United States if the decision is made to transition to a new contract and any subsequent decisions made following such transfer of Internet governance are deleterious to the United States.” Our preliminary answer is that the criteria for the plan that NTIA established in its March 2014 announcement will ensure an outcome that is not “deleterious” to the United States. Nonetheless, NTIA understands the concerns of Congress in this regard and will regularly revisit this question during the planning process and when evaluating the ultimate ICANN-submitted proposal to ensure that the final plan is not deleterious to the interests of the United States and its Internet stakeholders.

Through these reports, NTIA will continue to keep Congress and the community apprised of NTIA’s efforts. The report will be updated on a quarterly basis and the contents supplemented with additional information as appropriate. NTIA appreciates interest in this important topic and thanks Congress for its continued support for the multi-stakeholder model of Internet governance.

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