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RE: Request for Comments on the Internet Assigned Numbers Authority Functions

The Internet Corporation for Assigned Names and Numbers (ICANN) welcomes the National Telecommunications and Information Administration (NTIA) request for public comment on potential enhancements to the performance of the Internet Assigned Numbers Authority (IANA) functions. ICANN agrees with NTIA that now is an appropriate time to undertake the first “comprehensive review of the IANA functions contract since the award of the first contract in 2000.”<sup>1</sup>

The current IANA functions contract, the fourth between NTIA and ICANN and the fifth<sup>2</sup> since ICANN began performing these functions, expires on September 30, 2011. It has remained essentially unchanged since the 2000 agreement. NTIA seeks a reassessment of the performance of

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<sup>1</sup> National Telecommunications and Information Administration, U.S. Department of Commerce, “Request for Comments on the Internet Assigned Numbers Authority (IANA) Functions,” [Notice of Inquiry](#), February 25,

<sup>2</sup> In 1998, ICANN entered into an agreement with the University of Southern California Information Sciences Institute (USC/ISI) to transition certain functions, responsibilities, assets, and personnel to ICANN.

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the IANA functions to consider appropriate enhancements at this pivotal point in the evolution of the Internet and ICANN.

ICANN's mission is to coordinate, at the overall level, the global Internet's systems of unique identifiers, and in particular to ensure the stable and secure operation of its unique identifier systems.<sup>3</sup> These are global resources, relied upon by more than two billion people around the world who use the Internet as a vital tool for information, communications, education, research, commerce, entertainment and economic development. In its stewardship of these global resources, ICANN's mandate is to operate in the global public interest, consistent with the principles of accountability and transparency.

In 1998, the U.S. Department of Commerce (DOC) called for the establishment of an independent, private sector body to coordinate the Domain Name System and other unique identifiers.<sup>4</sup> In its Statement of Policy (the "White Paper"), the U.S. Government committed to transitioning the management of these functions to a private sector entity that would operate in a bottom-up, consensus-based manner.<sup>5</sup> A primary objective behind the U.S. Government's policy to privatize the domain name system was to facilitate "global participation in the management of Internet names and addresses."<sup>6</sup> The U.S. Government stated its belief that "*neither national*

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<sup>3</sup> ICANN Bylaws, [Article 1](#).

<sup>4</sup> Management of Internet Names and Addresses, [Statement of Policy](#) ("White Paper"), U.S. Department of Commerce, June 10, 1998.

<sup>5</sup> *Id.*, "The U.S. Government is committed to a transition that will allow the private sector to take leadership for DNS management."

<sup>6</sup> *Id.*



*governments acting as sovereigns nor intergovernmental organizations acting as representatives of governments should participate in management of Internet names and addresses."*<sup>7</sup>

The DOC recognized ICANN as the private sector entity charged with the management of these functions and executed the first IANA functions contract with ICANN. It was anticipated that ICANN would perform the IANA functions pursuant to a contract with the DOC on a transitional basis only to ensure the security and stability of the Internet.<sup>8</sup> Once ICANN was firmly established, the DOC would fully transfer the management of these functions to the private sector. The U.S. Government set out a relatively short transition period by stating that it "would prefer that this transition be complete before the year 2000. To the extent that the new corporation is established and operationally stable, September 30, 2000 is intended to be, and remains, an 'outside' date."<sup>9</sup> Almost 11 years later, the White Paper's stated goal of transitioning the IANA functions to the private sector remains unfulfilled.

In all other respects, ICANN's relationship with the Department of Commerce has evolved in parallel to the internationalization of the Internet. On September 30, 2009, ICANN and the DOC executed the Affirmation of Commitments,<sup>10</sup> ending NTIA's exclusive oversight of ICANN and further institutionalizing ICANN's accountability to the global Internet community. In paragraph 4

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<sup>7</sup> *Id.*, emphasis added.

<sup>8</sup> Regarding the need for a transitional period prior to the full transfer of the IANA functions, the U.S. Government stated its belief that, "it would be irresponsible to withdraw from its existing management role without taking steps to ensure the stability of the Internet during its transition to private sector management."  
*Id.*

<sup>9</sup> *Id.*

<sup>10</sup> [Affirmation Of Commitments by the United States Department Of Commerce and the Internet Corporation For Assigned Names And Numbers](#), September 30, 2009.



of the Affirmation, the DOC affirmed “its commitment to a multi-stakeholder, private sector led, bottom-up policy development model for DNS technical coordination that acts for the benefit of global Internet users.” It relinquished its oversight role on the basis that “a private coordinating process, the outcomes of which reflect the public interest, is best able to flexibly meet the changing needs of the Internet and of Internet users.”<sup>11</sup>

ICANN urges the DOC to evolve the IANA functions framework following the model set forth in the Affirmation of Commitments. By incorporating the principles of transparency and global accountability, and providing a clear path toward transitioning the IANA functions to the private sector, the DOC can finally complete the objective it set forth in the White Paper over a decade ago: to allow for global participation in the management of Internet names and addresses.

To accomplish this goal while ensuring a stable transition, the DOC could modify the IANA functions framework as follows:

1. **The security and stability of the Internet could be enhanced by moving to a cooperative agreement.** The current agreement is a procurement contract, consisting of a one-year base term and four one-year options to renew, exercisable by the DOC.

The one-year terms undermine global confidence in the security and stability of the Internet’s systems of unique identifiers. The next framework should be of a sufficiently long term to provide assurance to the global community that these functions will be performed in a secure and stable environment.

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<sup>11</sup> *Id.*



In addition, the form of the agreement should be modified in acknowledgment of the true beneficiaries of the IANA services. Procurement contracts are for acquiring property or services *for the direct benefit or use of the Federal Government* whereas cooperative agreements are used to accomplish a public purpose of support.<sup>12</sup>

The IANA functions are provided for the benefit of the global Internet: country code and generic top-level domain operators; Regional Internet Registries; the IETF; and ultimately, Internet users around the world. Applying U.S. federal procurement law and regulations, the IANA functions should be performed pursuant to a cooperative agreement.

**2. Incorporating the principles of transparency and accountability into the next framework would enhance global confidence in the performance of the IANA functions.** The current agreement does not impose transparency and accountability requirements on either party. Without these requirements, the multi-stakeholder community would be justified in doubting that the functions are being performed according to the global public interest.

The next framework should impose transparency obligations on all parties to the agreement. The default expectation should be that ICANN and NTIA can and should be transparent about the performance of the IANA functions except in those limited circumstance in which confidentiality is required. For example, ICANN should be permitted to communicate with requesting parties regarding the status of their requests and publish more informative monthly performance reports and dashboards. In addition, ICANN should have the affirmative obligation to publicly report each

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<sup>12</sup> Federal Grant and Cooperative Agreement Act of 1977 (Pub. L. 95-224), [codified at 31 USC 6301-6305](#) and Final OMB Guidance, 43 FR 36860-36865.



step in its process of root zone update requests in real time. Similarly, NTIA should disclose in real time the status of requests under its review.

**3. Narrowing the scope of the IANA functions framework would promote the global public interest.** Narrowing the scope of the framework subject only to NTIA oversight would increase global confidence in the performance of these functions.

Under the current agreement, ICANN: (a) coordinates management of root zone; (b) allocates Internet Numbering Resources; (c) coordinates assignment of technical protocol parameters; and (d) coordinates management of the .ARPA and .INT top-level domains.

Going forward, ICANN should continue to perform all of these functions but the scope of the framework with the DOC should be reduced as follows: (a) port and protocol parameter registry functions should be performed under separate agreement between ICANN and the Internet Architecture Board (IAB) / Internet Engineering Task Force (IETF); (b) management of .ARPA should be performed under a separate agreement between ICANN and IAB/IETF; and (c) no new technical functions (e.g., RPKI/signing of numbering resources) should be added to the scope of the agreement. ICANN would continue to perform these functions under separate agreements with the relevant international technical bodies such as the IAB/IETF and Number Resources Organization (NRO).

There is no compelling reason for these functions to be performed exclusively pursuant to a U.S. Government procurement contract. ICANN has the requisite expertise and capacity to perform these functions under agreements with the relevant organizations, including technical communities,



standards organizations and Regional Internet Registries (RIRs). Since the U.S. Government is not a party to these activities, there is no logical reason for these functions to be performed under a U.S. Government procurement contract. Reducing the current scope of the framework so that fewer functions are provided subject to the exclusive oversight of the Department of Commerce would increase global confidence in the performance of these functions. These are purely technical coordination functions that are currently managed by ICANN with the support and cooperation of all relevant international technical and standards bodies. The efficiency and transparency of these functions could be significantly improved for the benefit of global stakeholders if DOC's administrative oversight and contract management review processes for these separate functions were removed.

The rest of these comments address the NOI's specific questions.

*Q1. The IANA functions have been viewed historically as a set of interdependent technical functions and accordingly performed together by a single entity. In light of technology changes and market developments, should the IANA functions continue to be treated as interdependent? For example, does the coordination of the assignment of technical protocol parameters need to be done by the same entity that administers certain responsibilities associated with root zone management? Please provide specific information to support why or why not, taking into account security and stability issues.*



Response: While at first glance it might appear that there is not much interaction among the three core IANA functions (name, number and protocol parameters management), this is not the case. The many examples of cross-functional work include:

- Root zone management impacting both top-level domain and IETF stakeholders;
- .ARPA management impacts both IETF and RIR stakeholders;
- Overall address space management and registration includes RIR and IETF stakeholders;  
and
- Autonomous System number management and registration includes RIR and IETF stakeholders;
- DNSSEC adds cryptographic signatures to domain names and their corresponding addresses
- Various DNS operations that ICANN performs to link domain names and IP addresses.

Maintaining these functions as part of a cohesive unit encourages the sharing of best practices and confers economies of scale that would not be possible if these functions were split between separate organizations. The IANA functions are currently funded by the industry at no cost to governments, with significant contributions from the commercial domain name industry and much smaller voluntary contributions from the RIRs and country code TLD operators. Spreading the functions across separate organizations would decrease the efficiency and resiliency available to a single team while increasing the cost to the industry organizations that choose to fund the IANA functions.





In addition, having all three functions coordinated by a single multi-stakeholder organization brings the stakeholders from each of these three groups together at numerous global meetings each year, facilitating coherent policy development and allowing the parties to develop relationships and processes for better coordination of operations.

*Q2. The performance of the IANA functions often relies upon the policies and procedures developed by a variety of entities within the Internet technical community such as the IETF, the RIRs and ccTLD operators. Should the IANA functions contract include references to these entities, the policies they develop and instructions that the contractor follow the policies? Please provide specific information as to why or why not. If yes, please provide language you believe accurately captures these relationships.*

Response: The relationships between the Internet technical community and the operators of the IANA functions are complex and varied. ICANN staff are both participants in a variety of technical communities and responsible for the implementation of the policies and procedures relating to the IANA functions that are developed and promulgated by the entities referenced above.

As a means of best reflecting these relationships and the specific needs of each technical community, ICANN has engaged each community through various mechanisms, including MOUs with service level agreements (SLAs), or active participation in forums designed to air concerns and commitments. This strategy has allowed for extraordinary flexibility and responsiveness when new work areas have opened up or the needs of a specific community have changed. Having these



commitments included in the agreement will not improve these relationships and may make it harder to adapt to technical community needs as they arise.

*Q3. Cognizant of concerns previously raised by some governments and ccTLD operators and the need to ensure the stability of and security of the DNS, are there changes that could be made to how root zone management requests for ccTLDs are processed? Please provide specific information as to why or why not. If yes, please provide specific suggestions.*

Response: The partners engaged in processing and implementing root zone change requests (ICANN, NTIA, and VERISIGN) have been collectively engaged in improving both the processing of requests and their secure and reliable transmission between all the parties. An element of the soon-to-be-deployed automated change request processing system will be greater transparency for the requester on the status of requests, which we believe would alleviate many of the concerns expressed in the past.

ICANN has also taken steps over the years to make the review of delegation and re-delegation requests more consistent and aligned fully with the requirements of RFC 1591 and ICP-1. This rigor in the review of requests has enabled public reporting of delegation and re-delegation and delegation requests that are more easily understood and more consistent in their evaluation and outcomes.

It has been longstanding practice to preserve the confidentiality of root zone change requests until they have entered the root. ICANN would not unilaterally alter this practice without first consulting with the relevant stakeholders. Within ICANN, the ccNSO recently released its final



report of the Delegation, Re-delegation and Retirement Working Group (DRDWG).<sup>13</sup> Among other things, the final report recommends the development of a “Framework of Interpretation” to examine the policies and procedures governing ICANN’s delegation and re-delegation of ccTLDs. If this evaluation finds a lack of logical and predictable outcomes in ICANN decision-making, the ccNSO will recommend the initiation of a Policy Development Process. This activity demonstrates that changes to ICANN’s root zone change request policies and procedures can be developed through the ICANN community, outside the strictures of the IANA contract.

*Q4. Broad performance metrics and reporting are currently required under the contract. Are the current metrics and reporting requirements sufficient? Please provide specific information as to why or why not. If not, what specific changes should be made?*

A4. The current contract requires ICANN to submit status reports and defined statistics to the NTIA in a monthly report but does not permit ICANN to publish these reports. Reporting on specific root zone change requests is provided to the requester at the conclusion of the request.

ICANN does publish general throughput statistics for the root zone change request process on its dashboard, as well as more specific statistics for protocol-parameter related requests.

Detailing the specific reporting that should arise from the IANA functions seems limiting, while establishing areas of public reporting, such as the number of requests of each type, the percentage that meet established timelines, and similar broadly defined reports would be appropriate. Any and all reporting should be responsive to the needs of the community

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<sup>13</sup> [Final Report of the Delegation, Re-delegation and Retirement Working Group of the ccNSO](#), rel. 17 February 2011.



*Q5. Can process improvements or performance enhancements be made to the IANA functions contract to better reflect the needs of users of the IANA functions to improve the overall customer experience? Should mechanisms be employed to provide formalized user input and/or feedback, outreach and coordination with the users of the IANA functions? Is additional information related to the performance and administration of the IANA functions needed in the interest of more transparency? Please provide specific information as to why or why not. If yes, please provide specific suggestions.*

A5. This question specifically asks if the “IANA functions contract” should be used to improve overall customer experience. From a high level, the subsequent framework should be flexible in permitting and expecting the “IANA functions operator” to transparently share the processes and procedures by which it administers the “IANA functions”. In that way, the operator, the stakeholders, and the community can mutually identify areas that can benefit from performance enhancements, process improvements and customer feedback. To assume that a static contract can anticipate the requirements of a future and evolving Internet is unrealistic and will impede rather than improve overall customer satisfaction.

Even within the transparency constraints of the current contract, ICANN is engaged in a Business Excellence initiative for the IANA functions and believes that continuous improvement in this area is part of our mission. Two years ago, ICANN adopted the Business Excellence program based on the European Foundation for Quality Management (EFQM) model to assess the strengths and areas for improvement across key areas for the IANA functions. A key focus in applying the



EFQM model has been reviewing and documenting current processes. Having well-documented processes reinforces the consistent handling of requests for everything from IP address allocations to TLD re-delegation requests.

Requiring that the IANA functions operator establish performance metrics and transparency in their reporting seems a useful addition to the agreement, while defining those metrics in the agreement would limit their usefulness as user feedback, technology and policy change. Rather than specify which performance metrics to include in the IANA reports, the subsequent framework should require the functions operator to provide sufficient transparency to develop and report on key performance indicators that meet the needs of the community.

In addition, the framework should be made more flexible, permitting the operator to respond to changing technologies within the intent of the framework without requiring explicit modification. Currently, the IANA functions operator is required to negotiate contract modifications in order to make changes supported by the entire community and within the scope of the high-level functions. For example, NTIA did not permit ICANN to cryptographically sign the .ARPA zone without first agreeing to a contract modification, even though the contract already required ICANN to manage the .ARPA zone in a secure and stable manner. The next framework should list high-level functions and not detail specific technologies or procedures. This approach may be easier to implement by moving from a procurement contract to a cooperative agreement.

*Q6. Should additional security considerations and/or enhancements be factored into requirements for the performance of the IANA functions? Please provide specific information as to*



*why or why not. If additional security considerations should be included, please provide specific suggestions.*

A6. The contract may include a general requirement for all parties to adopt best security practices but detailed specifications should be developed outside the contract and in consultation with the broader community. Again, this will allow the IANA functions operator to be flexible and timely in their adoption of new security technology and strategies moving forward.

Best regards,

A handwritten signature in black ink, appearing to read "Rod Beckstrom", followed by a long horizontal line extending to the right.

Rod Beckstrom  
President and CEO