



September 17, 2013

Mr. Cyrus Namazi
Vice President, DNS Industry Engagements
Internet Corporation for Assigned Names and Numbers
12025 Waterfront Drive, Suite 300
Los Angeles, CA 90094

RE: Request for Public Comment on the Proposal to Mitigate Name Collision Risks

Dear Mr. Namazi:

The United States Telecom Association (USTelecom)¹ appreciates the solicitation by the Internet Corporation for Assigned Names and Numbers (ICANN) of public comments on Proposal to Mitigate Name Collision Risks, issued on August 5,² and we appreciate ICANN's willingness to consider the comments, and recommendations submitted by various stakeholders during the entire 43 days of comment-and-reply period on this important issue.

Background on Name Collision Risks

As explained in the Interisle Consulting Group, LLC study of August 2, 2013 (Interisle Study),³ names that belong to privately-defined or "local" name spaces often look like Domain Name System (DNS) names and are used in their local environments in ways that are either identical to or very similar to the way in which globally delegated DNS names are used. Although the semantics of these names are properly defined only within their local domains, they sometimes appear in query names (QNAMEs) at name resolvers outside their scope, in the global Internet DNS. As a result of ICANN's rollout of new generic top level domains (gTLDs), there is "substantial" potential for the collision of labels that are used in private or local name spaces with labels that are candidates to be delegated as new gTLDs.

¹ USTelecom is the premier trade association representing service providers and suppliers for the telecommunications industry. USTelecom members provide a full array of services, including broadband, voice, data and video over wireline and wireless networks.

² See, ICANN Notice, *Proposal to Mitigate Name Collision Risks*, August 5, 2013 (available at: <http://www.icann.org/en/news/public-comment/name-collision-05aug13-en.htm>) (visited September 17, 2013).

³ Interisle Consulting Group Study, *Name Collision in the DNS*, August 2, 2013 (available at: <http://www.icann.org/en/about/staff/security/ssr/new-gtld-collision-mitigation-05aug13-en.pdf>) (visited September 17, 2013) (*Interisle Study*).

Following on the Interisle Study, on August 5, 2013, ICANN released its ‘New gTLD Collision Risk Mitigation Proposal’ (ICANN Proposal).⁴ The ICANN Proposal separates the new gTLDs into three distinct categories of risk: 1) Low Risk (80% of gTLD strings); 2) High Risk (the .HOME and .CORP gTLDs); and 3) Uncalculated Risk (20% of gTLD strings). The ICANN Study concludes that ICANN will proceed to delegate a new gTLD when the risk profile of such string had been mitigated to “an acceptable level.”⁵

The Interisle Study is Not a Complete Assessment of Possible Risk Factors

Based on the Interisle Study, ICANN deemed the .HOME and .CORP gTLDs High Risk, based on their “high frequency of appearance in queries to the root.”⁶ Conversely, 80% of the new gTLD strings were deemed Low Risk based on their infrequent appearance in similar queries to the root. Specifically, strings with frequency ranks between 282 and 1395 were deemed low risk, while strings with frequency ranks between 3 and 281 were deemed uncalculated risk.⁷

The Interisle Study provides valuable substantive information to assess the possible risks of name collision. Due to its sole reliance on sampling requests received at the root servers, the Interisle Study’s assessment of risk factors for the potential for domain name collision risks – and ICANN’s reliance on it – is incomplete.

First, the Interisle Study notes that its assessment of the domain name collision risk could be impacted by temporal limitations. It acknowledges that it is not an “unreasonable argument” to say that its limited data set could “cover a too narrow time window of root server traffic – just 2 - 3 days – and that a longer sampling interval would provide better data.”⁸ As an example, it states that DNS traffic patterns could be different on different days, since “certain batch jobs only run once a month,” or that end-user behavior “changes from ‘work mode’ to ‘leisure mode’ on weekends. It concludes that unless the data gathering exercise covered such events, “the resulting non-customary traffic patterns they might generate would not have been found.”⁹

Moreover, the potential exists that many of the strings deemed either low risk or uncalculated risk by ICANN could, in fact, be of significant risk based on the name of the gTLD, the source of the underlying query request and its underlying systems or services. In fact, while the Interisle Study discussed at length this so-called “severity of consequences” aspect of the

⁴ ICANN Proposal, *New gTLD Collision Risk Mitigation*, August 5, 2013 (available at: <http://www.icann.org/en/about/staff/security/ssr/new-gtld-collision-mitigation-05aug13-en.pdf>) (visited September 13, 2013) (*ICANN Study*).

⁵ *ICANN Study*, pp. 5 – 6.

⁶ *Id.*, p. 2.

⁷ *Interisle Study*, Appendix B.

⁸ *Id.*, p. 43.

⁹ *Id.*

domain name collision issue,¹⁰ it acknowledged that the factor was not included in its study.¹¹ USTelecom is therefore concerned that many gTLDs that ICANN has categorized as either low or uncalculated risk based on the Interisle Study could still pose significant risks if they support critical business services and communications, while others may expose highly sensitive personal information.

For example, it is feasible that public safety agencies may have internal local name spaces with the potential for collisions with new gTLDs.¹² Similarly, there are several new proposed gTLDs that could potentially collide with internal local name spaces containing highly sensitive personal information relating to medical conditions, including .HIV.¹³ Of course, this does not take into account the various gTLDs with seemingly innocuous names (*e.g.*, .FLS) that in a global environment that uses multiple languages, could very well resolve to internal local name spaces containing critical or sensitive information.

This is not to say that ICANN's attempt to identify certain gTLDs as either low risk or high risk is necessarily inappropriate. Rather, ICANN's sole reliance on the frequency of the appearance of these gTLDs in queries to the root does not fully address the actual risk to the operational stability, reliability, security, and global interoperability of the Internet. In the absence of further study to address the limitations that the Interisle Study itself acknowledges, it is premature for ICANN to categorize any gTLD string as low or high risk.

USTelecom Shares the Broader Communities' Consensus on the Need for Additional Study to More Accurately Assess Risk

Given the uncertainty surrounding the potential for domain name collisions, combined with the uncertainty over the potential *impact* of such collisions, it is imperative for ICANN to conduct additional study on this issue. USTelecom strongly urges ICANN to conduct a follow-up study to more fully understand the full spectrum of risks to private networks, equipment and devices posed by all new gTLDs and to develop appropriate mitigation measures as necessary. Any such study should be undertaken with extreme urgency, in order to minimize the potential impact on a broad range of stakeholders.

Several stakeholders within the ICANN community have already expressed their views on the need for additional study.¹⁴ For example, the Internet Service Providers and Connectivity

¹⁰ *Id.*, p. 78.

¹¹ *Id.*

¹² For example, it is within the realm of possibility that public safety entities could have internal name spaces such as .SUPPORT (rank 285), .FIRE (rank 296), .CASE (rank 518), .CAMERA (rank 539), .RICOH (rank 695), or .PROTECTION (rank 706).

¹³ For example, .HEART (rank 510), .DOCTOR (rank 520), .HEALTHCARE (rank 559), .INSURANCE (rank 589), .FITNESS (rank 601).

¹⁴ See *e.g.*, Comments of Verisign, September 15, 2013, p. 7 (“strongly advis[ing] that individual string risk analysis . . . should be performed and assessed prior to any string delegation.” (available at: <http://forum.icann.org/lists/comments-name-collision->

Providers constituency (ISPCP) states that ICANN should complete further study of name collision issues to understand their nature and impact, following the recommendations made in the Interisle report.¹⁵ The unknown size/scale of impacted customers/companies necessitates further study that should include members across the Internet ecosystem, including but not limited to application developers, non-ISP DNS providers (*e.g.*, Google, Ultra-DNS), device manufacturers, and companies with heightened and/or identified collision risk.

Moreover, the Interisle Study concluded that none of the five separate elements relating to the “severity of consequences” are directly measurable from Internet traffic, which formed the sole basis of the ICANN Report. The Interisle Study also concluded that further study might “shift a string from the ‘uncalculated risk’ to the ‘calculated risk’ category by providing additional information about the magnitude of the ‘severity of consequences’ factor. It might also reduce the uncertainty constant in the risk assessment formula, facilitating a policy decision with respect to delegation of the string as a new TLD.”¹⁶

In fact, Verisign recently submitted a study to ICANN highlighting its analysis of a single gTLD string (.CBA).¹⁷ The Commonwealth Bank of Australia is the applicant for the .CBA gTLD and it submitted comments to ICANN stating that the primary cause of domain name collisions listed in the Interisle Study was “primarily from CBA internal systems and associated certificate use.”¹⁸ The Verisign study, however, found that .CBA received approximately 10,000 root server queries per day, with less than 6% originating from the bank itself.¹⁹ Moreover, approximately 80% of the queries observed by Verisign appeared to originate from DNS Service Discovery technologies, which are used to simplify the home networking environment. A sufficient understanding of these issues is critically important to the stability of the DNS, and ICANN should therefore work with all members of the community who play a role in its successful resolution.

[05aug13/pdfbuQaZ9AeRr.pdf](#)) (visited September 17, 2013); Comments of the Online Trust Alliance, September 16, 2013, p. 3 (stating that “ICANN should undertake further study on this potentially serious and expensive remediation issue.”) (available at: <http://forum.icann.org/lists/comments-name-collision-05aug13/pdfRpy8E4hKff.pdf>) (visited September 17, 2013).

¹⁵ See, Comments of The Internet Service Providers and Connectivity Providers constituency (ISPCP), August 27, 2013 (available at: <http://forum.icann.org/lists/comments-name-collision-05aug13/msg00016.html>) (visited September 17, 2013).

¹⁶ *Interisle Study*, p. 85.

¹⁷ Comments of Verisign, September 15, 2013 (available at: <http://forum.icann.org/lists/comments-name-collision-05aug13/pdfbuQaZ9AeRr.pdf>) (visited September 17, 2013) (*Verisign Study*).

¹⁸ Comments of the Commonwealth Bank of Australia, August 23, 2013 (available at: <http://forum.icann.org/lists/comments-name-collision-05aug13/msg00004.html>) (visited September 17, 2013) (the Commonwealth Bank of Australia also stated that it was within the [Commonwealth Bank of Australia] realm of control to detect and remediate said systems and internal certificate use.”)

¹⁹ *Verisign Study*, Presentation, p. 17.

Finally, ICANN has proposed that only the 20% of gTLDs identified as an uncalculated risk should be subject to further study yet these new gTLDs are still on a relatively fast track to be introduced into the root. For the 80% of gTLDs identified as low risk, ICANN plans to move forward with its established processes and procedures to delegate strings subject to two mitigation measures to be implemented by registry operators. Such an approach is insufficient.

USTelecom believes that gTLD strings identified as both low and uncalculated risk should be subject to further study. Only after the completion of that study, should ICANN categorize the appropriate gTLDs into separate categories of low or high risk. Given the insufficiency of the Interisle Study, and the modest timeframe of three to six months for completion of a more thorough study, it is both appropriate and necessary for ICANN to thoroughly examine this issue.

ICANN Should Implement Proactive Mitigation Measures While Engaging Members of the ICANN Community on Outreach and Education

ICANN's proposed risk mitigation plan calls for further study of the 20% of strings it categorizes as "uncalculated" risk. For the 80% of strings it classifies as low risk, ICANN proposes to implement a waiting period of at least 120 days before any string can be activated. It also indicates that, for at least 30 days, the registry operator will notify the point of contacts for IP addresses that issue DNS requests for un-delegated TLDs.

USTelecom is concerned that the proposed approach is not designed to proactively address potential security and operational impacts of name collisions before they occur. Instead, it relies on reactive notifications once the string has been delegated and is on the verge of activation. In addition, the proposed mitigation plan relies exclusively on notification responsibilities being passed through the registry operator to the contact of the IP addresses. This approach fails to account for the reality that many end users program their internal DNS networks with no involvement from the IP address contact, and many types of equipment may be pre-programmed by the manufacturer.

USTelecom encourages ICANN to work with a broad range of stakeholders on a much more proactive approach that is designed to prevent problems for end users before they occur. This process should include: registry operators; enterprise users of the DNS, Internet Service Providers, who provide DNS services to both commercial and non-commercial users; non-ISP DNS providers; device manufacturers; and other impacted parties to implement any appropriate mitigation measures identified through further study. Prior to the conclusion of the necessary further study, there are already mitigation measures that can be implemented by both ICANN and others.

ICANN should use its role as a central coordinator to engage the broad range of stakeholders that will be necessary to the success of any subsequent mitigation measures. The ICANN Report's current placement of all mitigation measures on the registry operators is insufficient. While registry operators have a crucial role to play in the identification of instances of domain name collisions, they are only one of several key stakeholders. ICANN is best situated to engage these stakeholders in order to identify and implement appropriate mitigation

measures. In this regard, USTelecom stands ready to assist in both outreach and education efforts focused on this issue.

For example, USTelecom encourages ICANN to develop checklists that can be used by impacted parties to resolve any potential for domain name collisions. Given the broad range of users that could be impacted by domain name collisions, and the potential for varying degrees of technical understanding of the issue, the development of such a checklist would be a valuable resource. ICANN is also ideally situated to develop the checklist, since it has the substantial expertise, resources, and knowledge to implement such a comprehensive tool.

In addition, ICANN should establish a help desk, staffed with technical personnel that can assist impacted parties in implementing appropriate mitigation measures. Given the broad range of stakeholders that could be impacted by domain name collisions, ICANN should not institute such a help-desk as a ‘one-stop’ solution. Rather, given ICANN’s central role in the Internet domain name space, it should utilize such a help desk to direct parties to available tools and resources. Telecom provider and ISP helpdesks could face complex support calls with little immediate ability to resolve issues. As more consumers, devices, and applications leverage non-ISP DNS resolvers, this problem could be compounded.

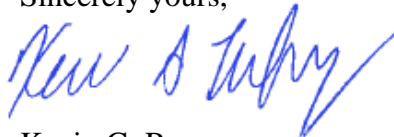
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Based upon the submitted comments and reply comments in this proceeding, ICANN should carry out a study that focuses on the identification of Domain Name collision risks for each the new gTLDs. It is imperative to the broader community that ICANN complete this study prior to the delegation of new gTLDs, so that it may develop a fuller understanding of the possible risks resulting from the planned rollout.

Based upon the results of this further study, ICANN should implement an appropriate mitigation plan that proactively addresses potential user impacts prior to delegating the string. The resultant mitigation plan should include processes and procedures to appropriately manage and resolve those risks. Such an approach will place ICANN – and the broader community – in a better *preventive* position on potential conflicts prior to string delegation, as opposed to a *reactive* position following string delegation.

USTelecom and its members look forward to working with ICANN to address this important issue.

Sincerely yours,



Kevin G. Rupy
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United States Telecom Association