



20 October 2006

VIA EMAIL ONLY

Lyman Chapin
Chair, Registry Services Technical Evaluation Panel
Email: lyman@interisle.net

RE: Referral of Request for New Registry Service

Dear Lyman,

ICANN has received a proposal from Global Name Registry, Ltd (GNR) for the limited release of two-character names based on Appendix K of the .NAME Registry Agreement and the Registry Services Evaluation Policy.

On 17 October 2006, ICANN informed GNR of its preliminary determination to submit the Proposal to the Registry Services Technical Evaluation Panel (RSTEP) for further evaluation. GNR has confirmed that it intends to proceed with the evaluation of the Proposal by the RSTEP. A copy of their response is attached.

Under Section 2.6 of the Policy, "in the event that ICANN reasonably determines during the 15 calendar day 'preliminary determination' period that the proposed Registry Service might raise significant Security and Stability issues, ICANN will refer the proposal to the Registry Services Technical Evaluation Panel." This preliminary review has concluded that ICANN does not have sufficient information to determine whether the issues raised in RFC 1535 (see <http://www.rfc-editor.org/rfc/rfc1535.txt>), as well as similar issues not directly described in RFC 1535, are significant enough to prevent the limited release of two-character names in .NAME. ICANN has made a preliminary determination that the Proposal requires further consideration by the RSTEP to resolve the questions surrounding these security and stability issues.

In order to assist the RSTEP in its evaluation, this letter provides background information on the release of two-character names during its preliminary determination process.

Historical Examples of Two-Character Names in Other gTLDs and ccTLDs

Most, if not all, two-character names in .COM, .NET and .ORG were registered in the 1990s. A large number of two-character names have also been registered in .EDU, .GOV and some ccTLDs. In all gTLD registry agreements executed since 2001, two-character names were placed on reserve. Existing two-character names in renewal agreements have been "grandfathered".

Between 16-18 October 2006, ICANN conducted a survey of two-character name registrations across all gTLDs (except for .CAT). The survey checked the registry WHOIS database for all



possible combinations containing 26 letter characters, 10 digits, or one dash, so there are 37^2 combinations (for a total of 1369). The results appear below:

gTLD	Not Registered	Registered	Undetermined*
.AERO	1329	40	0
.BIZ	1368	1	0
.CAT	NA	NA	NA
.COM	73	1296	0
.COOP	1330	2 (a2, uk)	37
.EDU	1235	134	0
.GOV	1306	63	0
.INFO	1369	0	0
.INT	1367	2 (eu, un)	0
.JOBS	1361	8 (97, ge, gm, hr, hp, it, pr, vn in pending create)	0
.MOBI	1369	0	0
.MUSEUM	1369	0	0
.NET	73	1296	0
.ORG	85	1249	0
.PRO	60	0	1309
.TRAVEL	1369	0	0
TOTAL	15105	4091	1346

* Undetermined in .COOP means names that begin with "-". These names generate an error message and are most likely not registered. The .PRO Whois server did not permit a complete search on 1309 names.

There are 246 ccTLD delegations in the root zone.¹ Of that number, ICANN analysis has determined that 185 (75.2%) have at least one two-character delegation in their zone. Many of these names are "ac.ccTLD" as it is the most common second level domain for educational institutions outside of the United States. In addition, many ccTLDs have released two-character names for registration.

Two-character domain names have attracted significant interest among the domain name registration community. A search conducted on prominent domain name auction website Sedo.com on 18 October 2006 revealed 3,105 two-character domain names available for auction (including gTLDs and ccTLDs).

Under the terms of registry agreements, gTLD registries may gain approval for the release of two-character names in three ways that are described below.

1. The Registry Operator reaches agreement with the government and country code manager, or
2. the ISO 3166 Maintenance Agency, whichever appropriate.

¹ See <http://data.iana.org/TLD/tlds-alpha-by-domain.txt>.



3. The Registry Operator may also propose [to ICANN] release of these reservations based on its implementation of measures to avoid confusion with the corresponding country codes.

Limited Release of Two-Character Names in .AERO

On 17 July 2001, SITA, the sponsoring organization for the .AERO sTLD, wrote to the ISO 3166 Maintenance Agency to request release of two-character airline codes in .AERO under the terms of Appendix 11 of the proposed AERO Registry Agreement.² The terms in this appendix on two-character names are identical to the terms in the .NAME Registry Agreement.

On 30 August 2001, the ISO 3166 Maintenance Agency Secretariat wrote to IANA and the ICANN Government Advisory Committee that it had no objection to SITA's request.³ "The ISO 3166/MAS does not object to the request of SITA. We do not expect any serious problems if SITA reserves the IATA two-character airline designator codes in the restricted .aero domain. However, we request that SITA states clearly and publicly that two-letter combinations preceding .aero have nothing to do with the ISO 3166-1 two-letter codes (i.e. ccTLDs) in the .aero TLD."

In the 9 September 2001 GAC Communique (see <http://www.icann.org/committees/gac/communique-09sep01.htm>), the GAC agreed to the following statement on SITA's two-character proposal:

...2. Two letter codes and .aero

The GAC confirmed the importance of minimising confusion for the user.

Regarding the possible use of alpha-2 letter codes as second level domains, the GAC noted that the WIPO (II) Report addresses this question and recommends that:

...293. If ISO 3166 alpha-2 country code elements are to be registered as domain names in the gTLDs, it is recommended that this be done in a manner that minimises the potential for confusion with the ccTLDs."

The GAC received a presentation from SITA regarding the eventual use of two letter codes representing airlines in the .aero gTLD. The GAC concluded that in view of the clearly specific context identified by the .aero TLD, the potential for confusion could be appropriately minimised provided that SITA made public a disclaimer confirming that there was no relationship between the two letter airline codes and the ISO 3166 codes.

The GAC appreciates the spirit of consultation shown by SITA and the ISO Maintenance Service Agency.

² .AERO Registry Agreement, Appendix 11, see <http://www.icann.org/tlds/agreements/sponsored/sponsorship-agmt-att11-20aug01.htm>.

³ 30 August 2001 letter from Cord Wischhoefer to Louis Touton and Dr. Paul Twomey, see <http://www.icann.org/tlds/wischhoefer-to-touton-30aug01.htm>.



From 2001 to 2004, SITA focused on the launch of the .AERO sTLD. On 17 March 2004, SITA proposed to ICANN to activate two-character names in .AERO corresponding to airline codes. On 25 May 2004, the ICANN Board approved an amendment to SITA's registry agreement to permit the release of two-character names in .AERO (see <http://www.icann.org/minutes/resolutions-25may04.htm>).⁴ A copy of the Board resolution is below:

Whereas, SITA is the registry operator for the .aero top-level domain;

Whereas, SITA requested and received authorization from ICANN in October 2003, to register up to 1000 names to perform testing of a new product intended to add services to the aviation community when using the .aero domain names;

Whereas, currently more than 200 airports have registered their three-letter location-code.aero.

Whereas, on 17 March 2004 SITA requested that ICANN amend SITA's Registry Agreement to permit SITA to populate the second level according to a proposed plan. In the first step, it is necessary to activate .aero domain names corresponding to all aviation community agreed two and three character airline and airport location code identifiers. (e.g. <lh.aero> and <lax.aero>). Endorsement to this request has been given by the DOT AERO Council

Resolved [04.44], that the ICANN President and General Counsel are authorized to negotiate and implement modifications to SITA's Registry Agreement with ICANN for operation of the .aero top-level domain as deemed necessary to provide for the offering of such proposed population of the second level with airline and/or airport location code identifiers by SITA, provided that the offering of such second level allocation by SITA would be in accordance with and consistent with all other applicable contractual limitations in the Registry Agreement.

SITA has activated all two-character names in .AERO, although only 40 .AERO domain names have actually been registered. The following .AERO domain names are examples of activated two-character names www.ba.aero, www.cx.aero, and www.nw.aero.

The .NAME Registry Request

As stated previously, GNR has proposed a limited release of two-character names under Appendix K of the .NAME Registry Agreement (see <http://www.icann.org/tlds/agreements/name/registry-agmt-appk-8aug03.htm>). Since the inception of .NAME in 2002, GNR has, per Appendix K, initially reserved all two-character strings at the second level, such as xi.name, li.name, or ng.name.

⁴ Amendment 1 to Sponsorship Agreement, <http://www.icann.org/tlds/agreements/aero/sponsorship-amendment1-13jan05.htm>.



The proposal would release two-character names for third level registrations (e.g., lyman.ch.name) and email (e.g., lyman@ch.name) only. Two-character names on the second level would be shared, just like other common surnames are currently shared on the second level in .NAME (such as smith.name and jones.name).

Under the terms of Appendix K, in the .NAME Registry Agreement, GNR may gain approval of the release of two-character names based in three ways:

All two-character labels shall be initially reserved. The reservation of a two-character label string shall be released to the extent that the Registry Operator reaches agreement with the government and country-code manager, or the ISO 3166 maintenance agency, whichever appropriate. The Registry Operator may also propose [to ICANN] release of these reservations based on its implementation of measures to avoid confusion with the corresponding country codes.⁵

GNR is seeking release of these names to allow “millions of people” with two-character surnames to have the same ability as other individuals to register their surname in the .NAME gTLD.⁶ This service would be targeted at the large population of individuals in Asia with two-character surnames. Examples include joe.li.name, sun.xu.name, phan.ng.name, among others. Additional information on common Asian surnames can be found at http://en.wikipedia.org/wiki/List_of_common_Chinese_surnames, http://en.wikipedia.org/wiki/List_of_Korean_family_names, http://en.wikipedia.org/wiki/Vietnamese_names.⁷

According to GNR, “as .NAME has grown in size and outreach, it is apparent that the discrimination of two-character last names is blocking people from getting their own personal name as a .NAME address.”⁸

GNR has proposed three measures to reduce confusion with any corresponding country-codes:

1. No release on the second level.

According to GNR, “the name Xi will only become available as a third level address when combined with a first name, e.g. Yin@xi.name and/or Yin.Xi.name. In this model, the

⁵ .NAME Registry Agreement, Appendix K (B), see <http://www.icann.org/tlds/agreements/name/registry-agmt-appk-8aug03.htm>.

⁶ GNR Proposal, Page 9.

⁷ Examples of two-character surnames: Ai, Al, Am, An, Ao, Au, Aw, Ay, Az, Ba, Be, Bi, Bo, Bu, By, Ca, Ce, Ci, Co, Cu, Cy, Da, Di, Do, Du, Dy, Dz, Fa, Fe, Fi, Fo, Fu, Ga, Ge, Gi, Go, Gu, Ha, He, Hi, Ho, Hu, Ib, Id, Ig, Ik, Il, Im, In, Ip, Iq, Ir, Is, It, Iv, Iw, Iz, Ja, Je, Ji, Jo, Ju, Ka, Ke, Kh, Ki, Ko, Ku, Ky, La, Le, Li, Lo, Lu, Ly, Ma, Me, Mg, Mi, Mo, Mu, My, Na, Ne, Nh, Ni, No, Nu, Ny, Ob, Oc, Od, Of, Og, Oh, Oi, Oj, Ok, Ol, Om, On, Op, Oq, Or, Os, Ot, Ou, Ov, Ow, Ox, Oy, Oz, Pa, Pe, Pi, Po, Pu, Py, Qa, Qe, Qi, Qo, Ou, Ra, Re, Ri, Ro, Ru, Ry, Sa, Se, Si, Sk, So, Su, St, Sy, Ta, Te, Ti, To, Tu, Ty, Ua, Ub, Uc, Ud, Ue, Uf, Ug, Uh, Ui, Uj, Uk, Ul, Um, Un, Uo, Up, Uw, Uy, Uz, Va, Ve, Vi, Vo, Vu, Vy, Wa, We, Wi, Wo, Wu, Wy, Xa, Xe, Xi, Xo, Xu, Xy, Ya, Ye, Yi, Yo, Yu, Za, Ze, Zi, Zo, Zu.

⁸ GNR Proposal, Page 1.



actual second level xi.name cannot be registered...This sharing paradigm also ensures that the maximum amount of people can get an optimal email address on Xi.name, by fairly sharing it between different first names.”

“Because of this third level restriction policy for the two-character names, there can be no confusion between a country code like .xi, and the personal address jin@xi.name, which clearly is a personal name used as an email address.”⁹

2. Communication and process to achieve consent from ISO and as many ccTLD managers as possible.

GNR contacted ISO and asked for consent to release the two-character strings for third level registrations. ISO replied that Appendix K of the .NAME Registry Agreement was not made in consultation with the ISO 3166 MA and it cannot make any comment or decision concerning the requirements set out in Appendix K. ISO has no opinion on the use of two-letter codes under .NAME. (This is a change from the ISO response to the SITA request described above).

GNR notes that it also attempted to contact all ccTLD managers and that the outreach process is continuing and GNR “aims to inform, get feedback and where possible, get the explicit consent from each ccTLD authority.”¹⁰

3. Current and reinforced awareness that .name is a gTLD exclusively for personal names.

GNR states that “it is already unlikely, and will be increasingly so in the future, that Internet users in general have difficulty seeing the difference between jin@xi.name (a personal email address on .name) and www.something.xi (a website on the ‘.xi’ country code (‘xi’ is currently a user-assigned code in the ISO 3166)).”¹¹

GNR proposes to publish, on the shared second level of each two-character name, for a transition period of at least 12 months, a notice that the shared second level in question is unrelated to the corresponding country code and is being used as a shared last name for personal names on the third level.

The measures proposed by GNR are similar to the measures implemented by SITA in its limited release of two-character names in .AERO in 2004.

A number of country-code TLD managers have expressed concerns (within the ccTLD community and directly to ICANN) about the potential for user and registrant confusion in the proposed limited release of two-character names in the .NAME gTLD. Some ccTLD managers have already provided GNR with their freely given, charitable consent to release the corresponding country-code from reservation in .NAME.

⁹ GNR Proposal, Page 2.

¹⁰ GNR Proposal, Page 2.

¹¹ GNR Proposal, Page 3.



GNR has stated in its proposal that the intellectual property mechanisms currently available in .NAME would also apply to two-character .NAME addresses on the third level. The Eligibility Requirements Dispute Resolution Policy (ERDRP) and Uniform Domain Name Dispute Resolution Policy (UDRP) are available for trademark owners to challenge domain name registrations in the .NAME gTLD.¹² According to the National Arbitration Forum, 15 UDRP and ERDRP cases have been filed against .NAME addresses.¹³

GNR asserts that these measures remove any concerns over confusion with ccTLDs.

RFC 1535 and Potential Resolution Issue

GNR stated in their application that “there are no relevant technical concerns about the limited release of two-character names. However, for completeness, we would mention that RFC 1535 has been raised as a concern by the ccTLD manager DENIC.”¹⁴

In October 1993, the IETF published RFC 1535, “A Security Problem and Proposed Correction With Widely Deployed DNS Software.”¹⁵ RFC 1535 discusses a flaw in some distributed resolver clients and exposes a security weakness in these resolvers when users provide a partial domain name. This RFC was published for information only and did not specify an Internet standard.

RFC 1535 considers the impact of DNS resolvers which will attempt to resolve domain names that are not “rooted”, that is – not fully qualified by the presence of a trailing period. Such resolvers will attempt to append possible parent domains to the attempted domain.

GNR observes that this is not a problem confined to two-character names, “it applies to any string length or any top level domain, including .DE or .COM.”

While in 2004 ICANN approved the limited release of two-character names for the .AERO sTLD, a thorough evaluation of the technical concerns raised by domain suffix appending has not been conducted.

DENIC, the ccTLD manager for .DE, has specifically referred to RFC 1535 and its own statistical analysis in recommending referral of this Proposal to the RSTEP. DENIC does not allow the use of the two-character domain names in .DE. In support of its stance to disallow two-character names under .DE, DENIC has cited its own internal research that shows that today it still receives approximately 14,000 queries per minute for misdirected queries to its authoritative nameservers (for example, for “example.fr.de” as opposed to “example.fr”).

Nominet, the ccTLD manager for .UK, has stated that the Proposal “might have an adverse effect on the stability of the DNS.”

¹² <http://www.icann.org/udrp/erdrp-policy.html> and <http://www.icann.org/dndr/udrp/policy.htm>.

¹³ See <http://www.arb-forum.com>. See also <http://domains.adrforum.com/domains/decisions/132438.htm> and <http://domains.adrforum.com/domains/decisions/399562.htm>.

¹⁴ GNR Proposal, Page 12.

¹⁵ Ehud Gavron, RFC 1535, see <http://www.ietf.org/rfc/rfc1535.txt>.



RFC 1536, "Common DNS Implementation Errors and Suggested Fixes," also describes the resolver problems addressed in RFC 1535.¹⁶

To mitigate concern of this issue, GNR refers to <http://dns.measurement-factory.com/surveys/200608-full-version-table.html>, stating that less than .02% of all resolvers use BIND version 4.8 or lower. "It illustrates that this problem is very old, has been resolved (as further evidenced by the stable existence of otherwise affected domains on .com/.net and any other TLD on the Internet today and does not impact our proposed release of two-character names."

In consultation with authoritative name server operators, ICANN relays concerns that there may be similar issues to those raised by RFC 1535 that exist in modern software. Internet web browsers, for example, might try to guess domain suffixes in an attempt to resolve a domain name entered into the address bar. Duane Wessels of The Measurement Factory discussed this variant of the RFC 1535 issue at the RIPE 53 Meeting in Amsterdam on 3 October 2006 (<http://dns.measurement-factory.com/writings/whats-wrong-with-dns.pdf>, page 20), in which "stub resolvers can be configured to retry failed queries by appending a list of domain names." While this is performed after domain resolution has initially failed, simple transient DNS errors or timeouts may undesirably and consistently direct a portion of traffic to domains nested within other TLDs on a regular basis.

ICANN has not been able to perform or locate additional comprehensive analysis in the 15-day preliminary determination period that either supports or negates the possibility for technical anomalies relating to domain suffix appending.

In light of this material, which suggests there may be a problem but that its magnitude is unclear, ICANN staff understands the need to obtain more detailed and comprehensive statistics subsequent to the 15-day review period. Initial discussions with select ccTLD authoritative name server operators were supportive of collaboration to measure the extent of the problem, however substantial analysis could not be undertaken in the limited time available.

RSTEP Review

Upon referral of this Proposal to the RSTEP, GNR may submit to the RSTEP additional information or analyses regarding the likely effect of the Proposal on security and stability.

A copy of this referral and the relevant documents related to the GNR proposal will be posted for public comment on the ICANN website. Under the terms of the Policy, the RSTEP shall have 45 calendar days from the date of this letter, until Monday, 4 December 2006, to prepare a written report regarding the Proposal's effect on security and stability, which report (and a summary of any public comments) will be provided to the ICANN Board. The report shall set forward the opinions of the RSTEP including, but not limited to, a detailed statement of the analysis, reasons and information upon which the panel has relied in reaching their conclusions.

¹⁶ Kumar, Postel, Neuman, Danzig and Miller, RFC 1536, see <http://www.ietf.org/rfc/rfc1536.txt>.



Please let me know if I may be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick Jones". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Patrick Jones
ICANN

Enclosures

cc: Daniel Halloran
Kurt Pritz
Craig Schwartz