# Report of Public Comments

## Title:
SSAC Report on Dotless Domains

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### Important Information Links
- Announcement
- Public Comment Box
- View Comments Submitted

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## Section I: General Overview and Next Steps

As requested by the ICANN Board (2012.06.23.09), staff will provide a briefing paper for the Board that details the technical, policy and legal issues, if any, which may arise as a result of implementing SAC053 recommendations.

## Section II: Contributors

At the time this report was prepared, a total of [number] (n) community submissions had been posted to the Forum. The contributors, both individuals and organizations/groups, are listed below in chronological order by posting date with initials noted. To the extent that quotations are used in the foregoing narrative (Section III), such citations will reference the contributor’s initials.

### ORGANIZATION AND GROUPS:

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<th>Name</th>
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<td>DotGreen Community Inc. (DotGreen)</td>
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<td>Donuts Inc. (Donuts)</td>
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### INDIVIDUALS:

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<td>Joe Alagna</td>
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<td>Franck Martin</td>
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Section III: Summary of Comments

General Disclaimer: This section is intended to broadly and comprehensively summarize the comments submitted to this Forum, but not to address every specific position stated by each contributor. Staff recommends that readers interested in specific aspects of any of the summarized comments, or the full context of others, refer directly to the specific contributions at the link referenced above (View Comments Submitted).

SSAC REPORT--AGREEMENT

Impracticality
Let us not fix things that are not broken. The SSAC Report focuses on technical aspects of dotless domains, but there is another, more important reason not to eliminate the dot: it would be impractical. The dot efficiently and effectively plays a key role in everyday communications. It provides a clear and easy way to distinguish between “real” and “virtual” locations. Eliminating the dot would add further explanation to millions of discussions both written and spoken. J. Alagna (25 Aug. 2012)

The SSAC report suggestion to discourage A, AAAA, and MX records at the TLD level should be supported, and contractual prohibition sounds like a good idea. Apart from SOA, NS and DNSSEC-
supporting records (RRSIG, DNSKEY, NSEC or NSEC3), use of other records (e.g. LOC) does not seem to be practical either for those TLDs which are public resources. There may be use case for NAPTR records though. D. Kohmanjuk (28 Aug. 2012)

Confusion and complexity
Dotless domains should not be allowed. The SSAC Report is well done and comprehensive, covers several of the key issues and makes the right conclusions. There is no advantage to Internet users in introducing “dotless domains”--it would be confusing, cause problems and benefit nobody. Dotless domains would not work with SMTP, etc., at present, and form validation would be further complicated with the removal of such a clear “label.” M. Neylon (27 Aug. 2012); M. Jaeger (29 Aug. 2012); K. Strobach (20 Sept. 2012)

Most users “know” that dotless domain names are internal names. In addition to all the compatibility problems of dotless domains, you may also phish internal reachable servers if DNS servers get confused. K. Strobach (20 Sept. 2012)

Allowing dotless domains is a terrible idea and would cause numerous technical problems. The status quo should be maintained because it works very well and will not cause problems that will be felt for many years to come. If dotless domains become a fact of life, MTAs and anti-spam software will become much less effective, or the more likely scenario is that legitimate dotless domain messages will be blocked, through fault of the MTA server, the anti-spam measures, or the “if it ain’t broke don’t fix it” attitude many email administrators and businesses alike have. Also, there are many ancient unsupported mail transport agents out there that, as unsupported, will never be modified to allow dotless domains. Another detrimental fact is with internal sites. The only benefit seen with dotless domain is for a domain to “grandstand.” N. Butler (20 Sept. 2012); Mike (23 Sept. 2012)

Dotless domains should not be allowed. The dot is the single most basic assumption about domain names. Especially with the recent proliferation of arbitrary domains, allowing dotless domains would make harder for both humans and machines the process of determining what is an address and what is not an address. R. Hartmann (21 Sept. 2012)

Do not allow dotless domains. The DNS is an inherently hierarchical system and this proposal would destroy that. It will introduce ambiguities that will make troubleshooting difficult. Many enterprise IT groups depend on the current implementation of the DNS as a hierarchy to help their users reliably locate resources via search lists, appending strings to incomplete names, and similar techniques. This only works if the DNS maintains its current structure. C. Boyd (21 Sept. 2012); B. Harold (21 Sept. 2012)

ALAC fully supports the SSAC Report. Dotless domains may not work as expected for some Internet users depending on the application they are using; this is detrimental to Internet user experience. ALAC recommends that ICANN explicitly prohibit dotless domains in contracts with organizations that obtain the delegation of a new gTLD. ALAC understands that ICANN has the necessary mechanism to monitor observance of this rule and penalize instances of breach through the tools contained in its contracts, on the basis of the contractual review conducted by ICANN’s Contractual Compliance Team. ALAC (22 Sept. 2012).
Security and Stability Risks.

There should be rules that require all TLDs to be so-called “Delegation Only” where they only contain Resource Records related to the structure of the DNS (e.g. SOA, NS, and related DNSSEC records at the zone apex). All other record types such as A, AAAA, MX, SRV LOC etc. should not be allowed in TLDs as they would present a significant risk to the security and stability of the DNS. Security issues are an especially compelling reason to disallow dotless domains. The implementation of the trusted Intranet zone of Windows and the existing practice of issuing HTTPS certificates for “local use” Common Names that do not contain a dot are especially worrying, as their historical security assumptions would be subverted, leading to serious security and privacy breaches. *C. Anderson (22 Sept. 2012)*

Microsoft fully supports and endorses the SSAC Dotless Domains Report recommendations (i) against use of dotless domains; and (ii) that use of DNS resource records such as A, AAAA, and MX in the apex of a TLD should be contractually prohibited where appropriate and strongly discouraged in all cases. To be clear, Microsoft supports a prohibition, not merely discouragement.

- Operational difficulties are significant, but the security considerations are paramount. The report notes the considerable security risk to the privacy and integrity of HTTP communications if dotless domains are permitted. Microsoft wishes to underscore the magnitude and implications of this security risk.
- The contractual prohibition (and the essential measures and ICANN Compliance resources to enforce breaches of the prohibition) should be sufficient to accomplish the goal of non-use of dotless domains in new gTLDs.
- Even if all DNS resolvers were modified, the potential security risk would remain. Microsoft considered and rejected the possibility of a prohibition for a term shorter than the 10-year term of the new gTLD Registry Agreement. Microsoft expects that dotless host names will continue to be used as they are today, with assumptions around DNS search paths, e.g., for the foreseeable future. Microsoft does, however, support revisiting the need for a contractual prohibition one year before the first new gTLD Registry Agreements are due for renewal. *Microsoft (23 Sept. 2012)*

New gTLD operators should be contractually prohibited from hosting records at dotless domains. Also, the name server policy should be officially updated to never query global roots with dotless lookups.

- In no uncertain terms, dotless domains cannot be expected to function, as their “namespace” is already occupied. They are already unstable; this condition will increase, not diminish.
- The standard of care in DNS is one of “do no harm”--one must not conflict with widely deployed code when altering the namespace (RFC 2606 provides some guidance on “.localhost” TLD). Local namespaces in dotless forms are extremely widely deployed, with dependencies all the way into network architecture (via proxy configuration files) and web browser trust models. Furthermore, many systems, including many name servers and email systems, are literally incompatible with the concept of querying via the root for records that are not “domain style names.”
- Regarding security, traffic that should remain within organizational boundaries could leak globally, not merely to the gTLD holder but also to each intermediate network, possibly across
international lines. Such traffic is likely to be unencrypted to do the implication of locality baked into the name itself. DNSSEC struggles with this as well, since now a validating stack needs to ask--for this dotless name, should a local key be used, or should the key retrieved from the global root be used?

- This is a messy space with deep history going back and significant, difficult-to-debug engineering pain going forward. The marketing value of abandoning domain style names is recognized, but things need to keep working.

*D. Kaminsky (23 Sept. 2012)*

Migration to using the new TLDs in a “dotless” fashion may not be possible in a secure manner given that you are moving into what Mr. Kaminsky’s comments call an “occupied namespace.” The SSAC report incorrectly identifies as being in the “past” the practice of certificate authorities issuing SSL certificates without verification for domain names that appear internal. This is still allowed (example of `http://delta` and the new TLD “delta” which has been applied for). We have no way of knowing how many other certificates have already been issued that overlap this namespace which the new TLDs are moving into, given the past and current standards that certificate authorities are using to evaluate requests for what up to now have appeared to be “internal” hostnames. *I. Fette (3 Oct. 2012)*

Mozilla joins SSAC in opposing dotless domains and strongly recommends that new gTLD operators be contractually prohibited from attempting to create them. Mozilla does not rule out taking steps to ignore such records if their existence is leading to security or stability problems for users.

- The dotless part of the DNS namespace is de facto and should be de jure reserved for private use (e.g. by RFC 2606 or convention). Countless companies use dotless names for their internal servers and dotless names already have a meaning in a local context, and no one can tell from the outside what names have meaning where. This is similar to use of the private use IP address ranges. Just as creating a routable host on the Internet with IP address 192.168.0.1 would lead to all sorts of undesired effects, so would creating a host with the global DNS name “home” or “search.”

- Mozilla is particularly concerned about the security implications of dotless domains—e.g. 7 companies have applied for the new TLD “mail.” There must be many thousands of companies running an internal server called “mail.” A poorly-configured DNS server could lead to the sending of private company email to the servers of the winning applicant.

*Mozilla (29 Oct. 2012)*

**SSAC REPORT--DISAGREEMENT**

Fix Apps and Protocols.

While the SSAC Report accurately describes current issues regarding dotless domains, there are reasons to reach a conclusion different from the SSAC Report. The future prevalence of dotbrands is a factor. There will likely be more than 10,000 dotbrands down the road. Instead of trying to force dotbrand owners to not use their TLD like they would want to, why not recommend changes to the Internet protocols? Software developers will adapt over time and even if it takes 10 years for all applications to adapt, it is worth starting to make the changes sooner rather than later. *R. Larsen (7 Sept. 2012).*
Dotless domains are used and useful now in the apps and protocols where they work. The correct solution is to fix the apps and protocols. R. Bush (20 Sept. 2012)

Further Study and Consideration of Solutions
Greater effort should be made to identify and explore solutions to the concerns raised about dotless domains prior to prohibiting their use. The problems identified by the SSAC are application, and not protocol, related. They do not raise security concerns but may arguably raise stability concerns owing to the lack of awareness regarding utilization of dotless domains. Such problems may be addressed by educating applicants--a somewhat reasonable ask given that there are a defined number of applicants. ARI Registry (23 Sept. 2012); N. Haarbo (24 Sept. 2012)

The SSAC Report analysis is mostly correct but there is an outdated reference to the SMTP RFC (it is now RFC 5321). We cannot find in this RFC a prohibition on dotless domains. The SSAC 053 Report can be summed up as “Domains of only one label may not work as you expect in the present world, so, users, beware,” and we agree with this conclusion. But forbidding A, AAAA, and MX records at the apex of TLDs does not follow from this. A TLD with such records may experience difficulties but it will only affect the users of this TLD, not endanger the “security and stability of the DNS.” We do not see it as a threat to global security and stability and disagree with adding yet another mandatory rule to the new gTLD requirements. There are already a lot of regulations. We observe that five members of CENTR (the association of European ccTLDs) have an A, AAAA, or MX at the apex (ac/sh/io, dk, hr, va and gg/je) and it did not create problems. AFNIC (14 Sept. 2012)

ICANN should consider both the anti-competitive effect of disparate technical rules for zone content and the possibility that some proponents of contractual restrictions may have competitive reasons for their recommendations. A more complete policy process would allow a more robust discussion of the benefits and risks of dotless domains and the various commercial and technical interests at play. SSAC 053, as other SSAC advisories, is an advisory for certain community best practices. Virtually all TLD operators will follow its advice in the immediate and near-term future. Its advice should not become binding policy, however, written into some, but not all, registry contracts. Uniregistry (22 Sept. 2012)

A categorical prohibition of DNS resource records (e.g. A and AAA) in a TLD’s zone apex is unnecessary. No changes to the new gTLD Applicant Guidebook or Registry Agreement are warranted. SSAC’s advice is misdirected. There is a clear case against categorical prohibition and a better case for a TLD-by-TLD evaluation of the issue through a registry’s RSEP submission.

- There is little technical basis for SSAC 053’s conclusions, as Donuts explains in detail in its comments.
- The report might be viewed as addressing an arcane technical issue, but in fact the subject involves potential registry services that deserve and require other inputs.
- ICANN’s RSEP function is the appropriate mechanism for evaluation of registry service proposals such as dotless domains.
- The new gTLD Registry Agreement contains clear and mandatory provisions for stability and security reviews of any request for dotless TLD functionality.

The SSAC report does not provide an analysis of the stated costs and potential benefits of dotless
domains. An RSEP procedure -- the consensus policy developed by the community on how matters like this should be handled-- would allow both to occur. Implementation of a contractual prohibition on dotless domains via this SSAC report (and comments on it) is not following that consensus policy, and such an approach would undermine the ICANN model of policy development.  
*Donuts (20 Sept. 2012)*

Radix Registry does not support the SSAC recommendations on dotless domains. Further exploration of and identification of problems and consideration of creative solutions offered by Donuts and others should take place before prohibiting dotless domains altogether. There are certain benefits from dotless domains which should be considered before banning them altogether, such as an enhanced user experience in terms of faster and more intuitive addressing.  
*Radix Registry (5 Oct. 2012)*

I am not convinced that based on the report’s reasoning an outright prohibition of certain RR types is necessary or sufficient to alleviate the problem of unmet user expectations. It appears more important to have applicants sign a waiver of any cure or “fix” for certain application scenarios that already have proven not to universally work. Especially, there is no (IETF) standard to reasonably change to “make dotless domains work.” Changing Internet standards does not fall into ICANN’s remit.

- The report could be more elaborate and precise in delivering background. Contrary to the text in section 2, the “trailing dot” may be used to explicitly mark a domain name as “fully qualified” but is not part of the name.
- The report does not mention RFC 1535, “A Security Problem and Proposed Correction With Widely Deployed DNS Software,” an important specification of and recommendation for the handling of DNS search paths.
- When looking at applications, which are at the core of handling the names and deciding whether they are to be subjected to search path expansion, the report focuses on “the web.” In looking at email, references go to predecessors of the most recent applicable standards, RFC 5321 and RFC 5322.
- The report correctly identifies the handling of names as only partly a DNS issue and more of an applications issue, where applications traditionally elude standardization.
- The report’s recommendation is unclear in using “such as” and not giving an exhaustive list of RR types that should be “prohibited” or “allowed.” Also, RRs like SRV, while logically applying to the TLD zone apex, are physically placed further down the tree. On the other hand, future applications that might be unambiguous about the FQDN nature of their input would be unnecessarily constrained.

*P. Koch (23 Sept. 2012)*

As a matter of principle, Uniregistry does not believe that ICANN can or should place contractual restrictions on new gTLD registry operators that are materially different than those in the Module 5 Registry Agreement published at the time applicants applied. Also, technical policy for the operation of TLD registries should be consistently applied across all classes of registry operators (i.e. issues identified by the SSAC do not apply to any specific class of registry operator; changing the Registry Agreement only for new gTLD registries would violate Article II, Section 3 of the ICANN Bylaws on non-discriminatory treatment). ICANN Bylaws do not allow ICANN to bind registry operators to contractual
terms based solely on the report of an Advisory Committee. As an Advisory Committee, SSAC may “raise an issue for policy development” by requesting an issue report from the GNSO Council (ICANN Bylaws, Annex A, Section 3) which is at most what should happen as the next step, if the Board feels that additional measures might be warranted. Uniregistry (22 Sept. 2012)

Availability of RSEP.
It is premature to invoke an “across the board” ban on dotless TLDs. The new gTLD Guidebook, via the RSEP in the Registry Agreement, allows individual registries to submit a specific request for a dotless TLD and in this established process the request would be thoroughly vetted for security and stability issues by a panel of technical experts. It would not be prudent to make a change at this time to the Guidebook and Registry Agreement given the advanced stage of the new gTLD process. DotGreen (19 Sept. 2012); R. Schreier (20 Sept. 2012); Donuts (20 Sept. 2012)

The current Applicant Guidebook in Section 2.2.3.3 already prohibits dotless domains. If a registry wanted to add additional records they would be funneled into the RSEP which would then follow the existing process for introducing new Registry Services. Why is ICANN subverting this process and rushing to ban a potential service across all TLDs that is currently not permitted, before the first new gTLD is even delegated? The RSEP process has been used extensively and is trusted and it should be used if and when a registry decides it would like to offer dotless domains or any other service outside of what is allowed in the current Applicant Guidebook. Resources should be focused on evaluation and delegation of new TLDs rather than spending unnecessary time on banning something that is already prohibited. Demand Media (24 Sept. 2012)

Future Innovation.
A free and open Internet will sort this problem out, and technology and public knowledge/use will catch up to dotless domains or will not, in which case the use of dotless domains will not be prevalent. It is not appropriate for ICANN to decide these types of policies and take away any freedoms of choice and innovation. Doing so based on an inconclusive, flawed report is irresponsible and a dangerous step away from a free and open Internet. The SSAC Report has three fundamental flaws regarding new gTLD policy:
(1) Fails to consider the impact that current and future new gTLDs will have on the current online landscape, and stifles innovation which is contrary to ICANN’s goals. The report relies on the status quo and ignores that the Internet is constantly changing, adapting and moving forward. If the status quo changes and dotless domains become prevalent, it is probable that web browsers and other online application will adapt.
(2) Lacks definitive statements and a definitive conclusion. The report is based on predictions masquerading as definitive technical analysis. The word “may” is used 11 times in the paper and it or its equivalent can be found in every section, including the conclusion. When the recommendation is to stifle innovation, there is no room for maybe.
(3) Does not justify the need for the proposed recommendation to ban dotless domains. While noting that there are current TLDs that attempt to resolve dotless domains, the report includes no incidents where this practice resulted in a security breach or anything more than inconvenience for the address operator or Internet user looking for the address.
N. Steinbach (20 Sept. 2012); Uniregistry (22 Sept. 2012)
Two reasons for objection:
(1) Using the address bar as a search bar has become an interesting browser input standard (which also could lead to interesting new ways to actually browse)
(2) These potential super TLDs would be better served as localized domains, definable by the local ISP (think of http://911 or http://emergency-- providing a list to local help services, etc.). Spatial (20 Sept. 2012)

I agree with dotless domains and want to see them anywhere very soon. M. Mustafa (20 Sept. 2012)

TECHNICAL AND OTHER COMMENTS

Dot WS has had an MX record for many years, and it did not seem to be a problem to them. F. Martin (26 Aug. 2012)

DNS resource records enabling dotless domain functionality exist in some 16 ccTLDs and do not appear to have caused stability and security problems. Donuts (20 Sept. 2012)

UA ccTLD has MX records, thus allowing addresses like Postmaster@UA to function. Experience has shown that support for those is inadequate (mail user agents reject them, web mail clients do not allow them, and some corporate mail systems do not support them). UZ ccTLD has their main web site at http://UZ (also reachable as cctld.UZ). Many browsers auto-complete short names, thus forcing users to type http://protocol prefix and trailing slash or trailing dot to use “dot less” TLD name in URL. D. Kohmanjuk (28 Aug. 2012)

While the proposed contractual restrictions on use of MX, A and AAAA records are good, they are likely to be worked around in many protocols by the use of SRV and similar records in the future. E.g., if SRV support is standardized for HTTP, then the use of “_http._tcp.example” would introduce the same problems that the restriction on the use of MX, A and AAAA is trying to prevent. While one could ban use of SRV record with a dotless base name, there are non-ambiguous uses such as finding whois servers for a TLD, so a careful balance must be struck. M. Andrews (20 Sept. 2012)

I do not share the perspective that “there are too many rules,” nor do I share the view that scale is the only relevant engineering issue posed by label allocation regimes. E. Brunner-Williams (21 Sept. 2012)

Security issues are the reasons ICANN should consider whether to block dotless domains. Lack of functionality, even if widespread, is part of the due diligence a TLD proponent or administrator should do. R. Kuhl (22 Sept. 2012)

The study only addresses half the story. The core problem with the study is that a definition is made and the valid usage of “brand.” as an FQDN is mostly ignored. What problems would the assembled experts have seen with this usage? F. Morris (23 Sept. 2012)

The example of possible security issues related to a windows environment allowing code execution
when using a dotbrand with content must be explained. This does not seem to be a true statement, and looks like guesswork to add arguments against such use. *R. Larsen (7 Sept. 2012).*

**Section IV: Analysis of Comments**

*General Disclaimer:* This section is intended to provide an analysis and evaluation of the comments received along with explanations regarding the basis for any recommendations provided within the analysis.

We thank the community’s input on this important issue. As requested by the ICANN Board (2012.06.23.09), staff will provide a briefing paper for the Board that details the technical, policy and legal issues, if any, which may arise as a result of implementing SAC053 recommendations.