

# Recommendations for Managing IDN Variant Top-Level Domains

**Publication Date:** 15 October 2018

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## Public Comment Proceeding

Open Date: 25 July 2018

Close Date: 3 September 2018  
Extended to 17 September

Staff Report Due Date: 17 September 2018  
Extended to 15 October 2018

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## Section I: General Overview and Next Steps

The community has identified a need for Internationalized Domain Names (IDN) variant Top-Level Domains (TLDs); however, the ICANN Board resolved on 25 September 2010 that "no variants of gTLDs will be delegated ... until appropriate variant management solutions are developed." Subsequent work by ICANN organization and the community led to the identification of two issues: (i) there is no accepted definition for variant TLDs, and (ii) there is no 'variant management' mechanism for TLDs.

For the first issue, the Root Zone Label Generation Rules (RZ-LGR) Procedure was developed with the support of the community and adopted by the ICANN Board on 11 April 2013 for implementation. The Procedure has been implemented and RZ-LGR has been developed for six scripts, and other scripts are being added as their proposals are finalized by the relevant script communities. For the second issue, ICANN organization has undertaken a detailed examination to propose a set of recommendations for variant management mechanisms for TLDs, which will be finalized based on the community input. The finalized recommendations will be presented to the ICANN Board, anticipated in March 2019. At that time, the ICANN Board will be requested to consider these recommendations to allow for implementing IDN variant TLDs.

These recommendations for managing Internationalized Domain Name (IDN) variant labels for top level domains (TLDs) have been developed by ICANN organization. The relevant materials along with these proposed recommendations were published to seek community feedback. Specific feedback was sought on the following questions:

1. *The rationale for the RZ-LGR requires strictly adhering to the IDN variant label sets defined by the community through the RZ-LGR. Is this a reasonable pre-requisite for implementing IDN variant TLDs?*
2. *Do the proposed recommendations appropriately address the management and implementation of the IDN variant TLDs?*
  - a. *Do any suggested recommendations need to be changed? Why?*
  - b. *Are any additional recommendations needed?*

3. *Does the analysis suitably cover the impact of the recommendations on existing procedures for IDN ccTLDs and IDN gTLDs? Is there alternate analysis for certain cases? Are there any additional impacts on the procedures not identified?*
4. *Which (if any) of the recommendations require policy consideration by GNSO and ccNSO, whereas the remaining would only have an impact on procedures?*
5. *To prevent the permutation issue which can be introduced by using variant labels, as identified by SSAC, how may the allocated IDN variant TLD labels be limited? Are the mechanisms suggested in Appendix C appropriate? What other factors may also be relevant?*
6. *Are the risks and their mitigation measures sufficiently comprehensive? Are there any additional risks? Should there be different or additional mitigation measures?*

## Section II: Contributors

*At the time this report was prepared, a total of seven (7) 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.*

### Organizations and Groups:

<b>Name</b>	<b>Submitted by</b>	<b>Initials</b>
Dot Trademark Holding Company	Jerry Sen	DTHC
KNET Co.	Lisa Liang	KNET
The gTLD Registries Stakeholder Group	Paul Diaz	RySG
ICANN Business Constituency	Steve DelBianco	BC
At-Large Advisory Committee	ICANN At-Large Staff	ALAC
SaudiNIC	Raed Al-Fayez	SANIC

### Individuals:

<b>Name</b>	<b>Affiliation (if provided)</b>	<b>Initials</b>
Wei Wang		WW

## Section III: Summary of Comments

*General Disclaimer: This section intends to summarize broadly and comprehensively the comments submitted to this public comment proceeding but does not address every specific position stated by each contributor. The preparer 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).*

The analysis of the comments is included in [blue](#), inline in this section.

DTHC provides the following answers to the questions asked from the community.

DTHC1. In response to Question 1, DTHC says that the ICANN Board did not support delegation of variant gTLDs in 2010 due to lack of definition of variant TLDs. This is resolved by the RZ-LGR Procedure. If RZ-LGR is not used, there may be disputes on IDN variant string sets and approval of variant TLDs may be delayed. Therefore, RZ-LGR is “the premise and foundation of IDN variant TLD program and should be strictly followed.”

DTHC1>> The support for the premise and corresponding recommendation 1 is noted.

DTHC2. In response to Question 2, DTHC agrees that “In order to maintain the stability of the root zone, reduce end-user confusion, address end-user security, and help manage the variant labels in a stable manner, we totally agree to the 3 core recommendations and consider the 4 to 10 recommendations are reasonable and acceptable.”

DTHC2>> The agreement with the ten recommendations is noted.

DTHC3. In response to Question 3, DTHC agrees with the analysis provided in Part 3 of Document C.

- (a) However, DTHC does not agree that an IDN variant TLD should be applied for as a completely new gTLD and follow the full application procedure, as given in section 3.2.1 of Document C. DTHC considers IDN variant TLDs to be supplements of existing IDN TLDs and notes that a large number of variant labels are meaningless, for example, a combination of traditional and simplified Chinese.
- (b) Also, as these variant TLDs will be allocated to the same entity, and more strings would mean more cost, it is enough to restrict “irrational and massive applications.”
- (c) Following a full application process will only cost applicants and ICANN more, but the process will be “meaningless”.

DTHC3 >> The general agreement with the analysis of the recommendations is noted.

- (a) The suggested process is for all scripts which have allocatable IDN variant TLDs. As an applied-for IDN variant TLD string would be unique and different from the primary TLD string, the community may still need to review it and make sure there are no objections, e.g., based on trademarks. A string similarity check for the IDN variant TLD string may also be needed. Moreover, the additional requirements for IDN variant TLDs may have additional technical, operational and financial implications on the applicant. The processes for applications and their evaluation will be built based on the policy inputs from the GNSO (for gTLDs) and ccNSO (for ccTLDs), considering the requirements of the applicant and the stakeholder communities.
- (b) With regard to minimizing the number of delegated variant labels, some considerations have been proposed beyond the cost of application (and operation). Further guidance from the GNSO (for gTLDs) and ccNSO (for ccTLDs) will be needed on how these measures may be applied in the application and evaluation process.
- (c) The cost of application and evaluation of a TLD string will be determined by the process finalized based on the input from the community.

DTHC4. In response to Question 4, DTHC does not think there is need of policy consideration by the GNSO or ccNSO. Beyond the proposed recommendations for second level, ICANN should leave the remaining registration rules and pricing to the registries.

However, the IDN variant TLD is considered an independent TLD and the registry shall pay management fees to ICANN accordingly.

DTHC4>> Thank you for your input related to policy requirement, which will be considered by the GNSO and ccNSO while suggesting next steps in the process. The current recommendations do leave the second level registration rules and pricing to the registries, except those cases identified in the recommendations or those governed by contractual arrangements. However, in some cases, there is further need for consistency of solutions for implementation (e.g., on how to determine the registrant of a label to ensure s1.t1 is registered to the same registrant as s1.t1v1) for which additional specification may be needed. GNSO and ccNSO are called out to address such matters for IDN variant labels of gTLDs and ccTLDs respectively.

The recommendations do consider IDN variant TLDs as TLDs. Support of this point and its implication on registry fees by DTHC is noted.

DTHC5. In response to Question 5, DTHC agrees that the number of IDN variant TLDs should be strictly managed for the stability of the root zone. These TLDs should be applied for based on demand and go through Pre-Delegation Testing and managed like independent TLDs. However, as “ICANN has reviewed all applicants' technical, operational and financial ability during the first new gTLD round, all existing gTLD registries have passed the evaluation and own several years' operation experience, ... a reduplicate application procedure is a waste of resource and will reduce the efficiency of the whole process.” DTHC recommends a fast track application process for IDN variant TLDs, similar to the ccTLD process. Applications complying with the RZ-LGR should get approval and delegation. Also, it is not necessary to wait till the next round of gTLDs; the process should be limited based on actual need of the IDN registry and may be conducted on a rolling basis.

DTHC5>> Support of DTHC for minimizing the number of IDN variant TLDs is noted, where each such variant TLD application should undergo pre-delegation testing and managed like other TLDs. However, as also discussed in the analysis of DTHC3, each variant TLD poses additional requirements, beyond what may have been reviewed for a single TLD application, possibly having additional technical, operational and financial implications. Therefore, additional review may be needed. In addition, an application and evaluation process is also needed, for reasons discussed in DTHC3. The process will be built based on the policy guidance provided by the GNSO (for gTLDs) and ccNSO (for ccTLDs). Based on the policy guidance received and the resulting application and evaluation steps developed, the community should weigh the practicality of conducting the application process on a rolling basis vs. incorporating it as part of an application round.

DTHC6. In response to Question 6, DTHC agrees the risk and mitigation analysis is comprehensive and there are no additional risks.

DTHC6>> The support for the risks and mitigation documented by DTHC is noted.

KNET makes the following comments.

KNET1. KNET agrees with the recommendations that IDN variant TLDs are allocated to the same entity, same second-level labels under IDN variant TLDs are allocated to the same registrant, and second-level variant labels are also registered to the same registrant.

KNET1>> The support for the recommendations on allocating IDN variant TLDs to the same entity and second level labels and their variant labels under IDN variant TLDs to the same registrant is noted.

KNET2. KNET agrees with the recommendation to strictly manage the number of IDN variant TLDs to keep it to a minimum.

KNET2>> The support for minimizing the number of IDN variant TLDs is noted. However, it should also be noted that to manage the permutations of domain names, the second level variant labels and the combinations of top and second level labels should also be managed, as identified by the SSAC's [SAC060](#) advisory. Community is requested to investigate this further for a holistic solution.

KNET3. KNET adds that the registry should be allowed to determine its own registration and pricing policy for second-level domains, as long as these are allocated to the same registrant. Further, the registry should only pay the fee to ICANN for the primary domain name registration and not for all the variant labels registered. For example, in the case of Chinese IDN variant TLDs, without considering the simplified and traditional form of second-level domains, registrants need to register "s1.t1" and "s1.t1v1", and the registry should pay only the fee for TLD t1 and not for same domains under t1v1. If the registrant has to pay two registration fees, "it is likely that the registrant will only select one of the domain names to register. After all, another domain name will be reserved for the same registrant." This registration policy is not conducive to the common development of Simplified Chinese domain names and Traditional Chinese domain names.

KNET3>> It is up to the registry to determine its costing model for registrants. The proposed recommendations do not add any further obligations beyond requiring the registrant to be the same. However, there are no suggestions to reduce costs for domain names under management due to a variant relationship between registered labels under IDN variant TLDs, and applicable arrangements will continue to apply.

KNET4. KNET agrees that IDN variant TLDs should be allocated to the same entity, but does not agree that each variant label should be considered a separate TLD application. For example, simplified and traditional Chinese TLD labels are distributed across different regions.

KNET4>> See response to DTHC3 (a) above. It should also be noted that geographical distribution in the use of a script is applicable to other scripts, such as Arabic, in addition to the Chinese script, and therefore an underlying motivation for IDN variant TLDs in multiple cases.

KNET5. KNET recommends that an IDN variant TLD application should go through a fast track process, as long as the IDN variant TLDs are determined by the RZ-LGR. If the existing IDN TLD registry agrees to comply with ICANN's operating standards for registries, and promises to comply with the basic principles of "Recommendations for managing IDN variant TLDs," the IDN variant TLD application should get the approval and delegation.

KNET5>> See response to DTHC5 above.

WW says that the recommendations provide clear guidance on how to handle IDN variant TLDs and prevent domain name confusion.

WW1. WW notes that users have limited knowledge of variant rules and there are no effective tools to help the users to determine variant labels and identify potential risks caused by domain name similarity abuse. ICANN and the community are asked to develop a tool/service to monitor if registries and registrars operate strictly under the IDN variant TLD recommendations and to help third parties and end users to improve their practice and skill.

WW1>> This is an important consideration. In this arena, ICANN is developing the LGR Tool to help manage IDN tables, valid labels and their variant labels. The tool processes IDN tables in the LGR format (in RFC 7940) and is available online and as an open source release; details at <https://www.icann.org/resources/pages/lgr-toolset-2015-06-21-en>. Based on the policy and procedures finalized by the community for managing IDN variant TLDs, ICANN will develop additional appropriate mechanisms for monitoring compliance, as for other requirements. IDN variant TLDs have been raised with the Universal Acceptance Steering Group (UASG), and UASG is also reviewing what issues may arise for end users from IDN variant TLD implementation and how to best address them. Community would need to develop additional tools, as needed. Also see the related risk identified in BC5 below.

RySG welcomes the introduction of IDN variant TLDs.

RySG1. The root zone is a shared resource that must be managed in a secure and stable manner while balancing the needs and expectations of the end users and the Internet community. So, with respect to the IDN variant TLD framework, RySG agrees with the following:

- Delegation of IDN variant TLDs to promote accessibility of IDNs
- Development of a procedure to govern allocation of IDN variant TLDs in coordination with the GNSO and ccNSO
- Definition of “same” with respect of IDN variant labels is given by each script community; confusability should not be construed as the sole criterion for variant definition, as per the LGR Procedure
- Each IDN variant TLD is a TLD in its own right, once it is delegated.

RySG1>> The support of RySG on these points in the framework is noted. The work is intended to be carried out in coordination with the community, including GNSO and ccNSO.

RySG2. RySG strongly agrees that if the proposed draft recommendation are adopted, then:

1. There will be need to adjust gTLD registry agreements in relevant areas, such as sponsorship of an IDN variant TLD set, capturing IDN implementation requirements at the second level, and adjusting registry transition and EBERO processes.
2. This work is intended for the community to consider for developing a management mechanism for IDN variant TLDs. Until such a mechanism is finalized by the community and the ICANN Board, the restriction on the delegation of IDN variant TLDs will continue to remain applicable.
3. The IDN Implementation Guidelines are not a product of consensus policy, therefore a new bottom-up policy must be developed to govern the allocation and/or activation of IDNs at the second level going forward.

RySG2>> The recommendations are in line with what is proposed by RySG in point 1 above. The gTLD registry agreements will need to be updated. Such changes will be incorporated based on the IDN variant TLD implementation details provided by the community and approved by the ICANN Board.

These recommendations provide a mechanism for implementing IDN variant TLDs, which will need to be reviewed by the community, as per point 2 of RySG2, for consideration by the ICANN Board. Until such a mechanism is approved by the ICANN Board, the current restriction on IDN variant TLDs will continue to apply.

The IDN Guidelines focus on implementation details for IDNs to prevent end-user confusion. The current mechanism to maintain them is what has been in practice, by forming an IDN Guidelines Working Group on the request of the community and with nominations from the SOs and ACs. It is up to the community to decide if it would like to take this up as a policy matter and advise further on the IDN Guidelines.

In the context of the above remarks, the RySG makes the following comments on the recommendations.

RySG3. In the context of Recommendation 1, RySG supports the concept of a single source to validate TLDs and determine their variant labels and agrees with utilizing RZ-LGR for this purpose. RySG suggests using the RZ-LGR for all TLDs, not just IDN TLDs. For this purpose, RySG urges ICANN and the relevant panels to complete the RZ-LGR to ensure maximum coverage of most modern scripts.

RySG3>> The support of RySG for using RZ-LGR is noted. It is further noted that RySG recommends extending its use for the evaluation of all TLDs, not just IDN TLDs. ICANN org is working with the community to complete the proposals for the scripts not yet integrated in the RZ-LGR. At this stage 18 script proposals have been released for public comment from the 28 which have been identified in the Maximal Starting Repertoire. See <https://www.icann.org/resources/pages/lgr-proposals-2015-12-01-en> for details. More panels, including Chinese, Japanese, Latin and Myanmar, are in advanced stage of work.

RySG4. In the context of Recommendation 2, RySG agrees that IDN variant TLDs must be allocated (or withheld for possible allocation) to the same registry operator. RySG agrees that if the recommendations are adopted, ICANN, in coordination with the GNSO and ccNSO, would need to update procedures and policies to incorporate the same entity principle for IDN variant TLDs from delegation, through any business transaction till the termination of a registry agreement including an EBERO transition, as applicable. RySG also notes that the technical implementation of IDN variant TLDs may vary by registry.

RySG4>> The support for Recommendation 2 is noted, along with its implications on policies, procedures and the registry agreement (including EBERO). ICANN org also acknowledges that this be done in coordination with GNSO and ccNSO and that the technical implementation may vary for IDN variant TLDs.

RySG5. In the context of Recommendations 3 and 4, RySG agrees that each same second-level label and its variant labels under IDN variant TLDs should be registered to the same registrant. Further, RySG strongly agrees that ICANN shall take no position on variant handling policies, except requiring that these be allocated to the same registrant. Registry

operators and registrars should, at their discretion, agree on a common definition and implementation of the same entity principle such as ROID or any other workable solution.

RySG5>> The support for Recommendations 3 and 4 is noted. Though ROID is suggested as a possible mechanism, it is left to the community to discuss and decide how the same registrant requirement may be implemented. It is suggested that that the ccNSO and GNSO consider how this requirement may be consistently implemented, because if this aspect is not carefully managed, it can cause security risks for end users. Without a clear mechanism defined by the SOs, a significant risk will persist for the implementation of IDN variant TLDs.

RySG6. In the context of Recommendation 5, RySG agrees that IDN tables under IDN variant TLDs should be harmonized, that is, these should be mutually coherent but not necessarily identical, as covered by IDN Guidelines version 4.0.

RySG6>> The support for Recommendation 5 is noted. To reiterate, though the IDN Guidelines 4.0 require this under a TLD, this recommendation extends the harmonization to all IDN tables under all the IDN variant TLDs.

RySG7. In the context of Recommendation 6, RySG agrees that second-level variant labels allocated or activated under IDN variant TLDs may not necessarily be the same. RySG adds that this should be left to the registry policy, if the registry agreement allows for it. RySG considers this a clarification rather than a recommendation.

RySG7>> The support for Recommendation 6 is noted. The details of allocation and activation are left to the registry operators, governed by their respective agreements. Though it may be considered as a clarification, it is still useful to keep it explicit.

RySG8. In the context of Recommendation 7, RySG agrees that IDN variant TLDs must be operated by the same registry service provider to ensure that these are managed coherently.

RySG8>> The support for Recommendation 7 is noted.

RySG9. In the context of Recommendation 8, RySG says that though it may be a common practice to use same nameservers for bundled domain names, registry operators need the operational flexibility without the need for a change request. Therefore, RySG asks ICANN to reconsider this recommendation and remove the same nameserver requirement.

RySG9>> Recommendation 8 was proposed based on the current TLD bundling practice. ICANN org appreciates the feedback from RySG and will review the proposed recommendation to further consider the implications.

RySG10. In the context of Recommendation 9, RySG supports updating relevant existing policies to accommodate the recommendations finalized by using appropriate mechanisms in coordination with the GNSO and ccNSO, for developing appropriate management mechanisms for IDN variant TLDs.

RySG10>> The support for Recommendation 9 is noted. The implications on existing procedures are presented in the report issued for public comment, for eventual consideration of the GNSO and ccNSO.

RySG11. In the context of Recommendation 10, RySG agrees that this work is intended for the community to consider for developing appropriate management mechanisms for IDN variant TLDs.

RySG11>> The work is intended for the community to consider for finalizing the mechanisms for implementing IDN variant TLDs. Beyond the changes in such mechanism specifically for IDN variant TLDs, the recommendation suggests that the existing measures determined for TLDs in general continue to apply.

BC notes the response is from the perspective of the business users and registrants, as per its charter. BC notes that IDNs facilitate creation of relevant localized content for consumers globally, fueling economic development. BC also recognizes challenges in ensuring that IDNs are not used in a manner that diminishes the security, stability and resiliency of the DNS. In this context BC appreciates the comprehensive effort in developing the six-part proposal.

BC provides the following answers to the questions asked from the community, except Question 3, for which BC consider it does not have sufficient expertise to respond.

BC1. In response to Question 1, BC considers RZ-LGR absolutely essential, and sees no reason for a definition of IDN variant TLDs beyond what is defined by RZ-LGR. BC adds that without an LGR panel's work variant labels should not be defined, even at the second level.

BC1>> Support for RZ-LGR for IDN variant TLDs is noted. The definition of variant labels at the second level is considered beyond the scope of the current work. The only restriction on labels and their variant labels at the second level is that these be allocated to the same registrant once defined by the registry operator. Additional restrictions may apply based on the specific registry agreements for the gTLDs.

BC2. BC says that all the ten recommendations should be implemented. BC emphasizes that variant labels under IDN variant TLDs should be allocated to the same registrants to generate an acceptable user experience.

BC2>> The support for the ten recommendations by BC is noted.

BC3. In response to Question 4, BC notes that certain risks are greatly complicated by split policy and procedures between ccNSO and GNSO, including Risk 2 (same entity constraint not implemented by the community), Risk 6 (same entity requirement will not have consistent implementation) and Risk 8 (IDN tables and variant labels at second-level not managed by the community). BC suggests that lack of alignment between ccNSO and GNSO in addressing these factors will create unpredictable behavior for users for variants at both top and second levels.

BC3>> Implementing the recommendations finalized by the community will be essential for IDN variant TLDs. As ccTLDs and gTLDs are essentially TLDs, it is also important to have as much consistency across them as possible in the implementation of their variant labels, or else it will create unpredictable behavior for end users, as noted. This is an important factor for consideration of ccNSO and GNSO as they develop relevant policy and procedures. The current recommendations and associated documents, updated based on the feedback received by the community during this public comment period, will be submitted to the ccNSO and GNSO to assist them in developing a consistent solution for end users.

BC4. In response to Question 5, BC considers that the proposed solution for minimizing IDN variant TLDs is promising but notes that heuristics have their limitations. Therefore, BC suggests including a new risk that the number of variant labels allocated for TLDs may not be minimized. BC further suggests that on the principle that we should start with a conservative process of label approval, potentially liberalizing as risks are mitigated, it makes sense to initially disallow any variants in the second-level under a variant TLD, except where ceiling values are already in place.

BC4>> This is an important factor to address and is identified as the Risk 3 in the list of risks identified, with the report in Appendix C providing some measures to consider to prevent creating too many variant labels. Suggestions for top level labels, second level labels and their combinations are presented. The ccNSO and GNSO should consider in their further discussions whether further containing variant domain names by disallowing variant labels at the second level when a ceiling is not defined is a viable option.

BC5. In response to Question 6, BC proposes two additional risks.

#### Existence and Quality of LGR Panels will vary over time

Because the IDN variant management process cannot be entirely determined algorithmically, the stability and security of the namespace will be dependent on the diligence and expertise of each LGR panel. Panels are communities of people and their composition will wax and wane over time as experts come and go and as hard problems are declared to have been solved. It is possible that the efficacy of a panel will atrophy or even that a panel will dissolve and never reform. If either of these occur, other risks will be exacerbated.

BC5>> This is a pertinent risk for the RZ-LGR, discussed in the LGR Procedure. The procedure not only identifies the risk but also defines how to address the risk by including requirements for diversity in the generation panels. This is also addressed by requiring a two-panel process, where a generation panel provides the deep script-based knowledge to develop the proposals and an Integration Panel of experts independently reviews them to ensure that the proposals meet the design constraints set by the LGR procedure, including security and stability constraints. As this risk is already identified and addressed in the LGR procedure, during the development of the RZ-LGR, it is not included in the current list of risks for the implementation of IDN variant TLDs.

#### Lack of Infrastructure and Tooling

Aspects of this risk occur throughout the materials we reviewed, but the topic isn't explicitly called out as a separate issue. The risk is most apparent wherever "Same Entity" constraints are mentioned, but it is more fundamental than that. Variants are defined as "considered the same by [script] community" and are also assumed to be the same by end users. But to ensure they are the same, we need tooling to ensure that variants are:

- easily deployed as clones
- easily transferred to new owners and operators en bloc; and
- easily verifiable to be the same by a policy auditor

BC provides a more detailed list in the comment, including tools to create common DNS records for variant zones, configure web, mail and other application servers to provide consistent responses to variant domain names, to assist in configuration or prevent misconfiguration.

BC5>> BC raises a valid risk related to the tools available to configure, manage and use variant domain names. The list needs to be addressed by a variety of stakeholders, including the domain name industry as well as application providers. Specifying a consistent policy on how to manage the variant labels will contribute to the development of such tools, but there may still be variation in implementation. Therefore, the tools will need to evolve based on the need and the method employed. ICANN has already been developing LGR Tool, to help create, use, manage and test IDN tables in RFC 7940 format and labels using these IDN tables. It is available online and through an open source release. See details of the tool at: <https://www.icann.org/resources/pages/lgr-toolset-2015-06-21-en>. However, it should also be noted that the list of tools goes beyond the mandate of ICANN org. This may be considered by UASG and they may also need to reach out to the domain name industry and application providers to suggest them to support the variant domain names in domain name operations as well as web, mail and application servers.

BC concludes by appreciating the work, but notes that there are still significant risks which remain, as identified. BC agrees that ICANN Board should not lift the ban on IDN variant TLDs until these risks are mitigated. BC encourages work on addressing the risks in collaboration with the ccNSO and GNSO.

BC5>> ICANN org acknowledges that there are risks which still need to be addressed before the delegation of IDN variant TLDs and that the ccNSO and GNSO should work to address these in a consistent way.

ALAC notes that IDNs in general, and IDN Top Level gTLDs and ccTLDs specifically, form an important consideration for Internet end users in several regions of the world, providing an enhanced user experience, thus enhancing their trust in the Internet. ALAC says that improper handling of equivalence of variant TLDs may cause significant security issues, including phishing or other malicious attacks. Further, variants bring in additional manageability issues, arising out of the (possibly) large number of variants and the diverse options for managing them. The challenge is to balance the positive user experience provided by variant TLDs on the one hand, with ensuring the security, stability and manageability of the domain name system, and the reduction of user confusion, on the other.

ALAC provides the following answers to the questions asked from the community.

ALAC1. In response to Question 1, ALAC considers that RZ-LGR is the most appropriate way to determine IDN variant TLD labels and strict adherence is reasonable. ALAC asks if abandoning the legacy IDN technology will cause any issues.

ALAC1>> The support for RZ-LGR by ALAC is noted. For the root zone, the current RZ-LGR supports the delegated IDN TLDs, so there are no negative impacts for the scripts which are integrated. The support of existing TLDs is evaluated while developing the RZ-LGR proposals so such impacts are monitored for scripts which are to be added in the future, and addressed as needed.

ALAC2. In response to Question 2, ALAC responds as follows:

- R1 – agree
- R2 – agree, as this restricts potential abuse of IDN variant TLDs
- R3 – agree, for the same reason as R2
- R4 – agree, for the same reason as R2 and because otherwise many top and second level combinations will be difficult to manage
- R5 – agree, as it will enable integration of legacy labels with the current policy
- R6 – fine, though it can cause some user confusion
- R7 – agree, as it is desirable for consistent handling of variant labels
- R8 – agree, as a desirable solution
- R9 – agree, as essential for strategic and operational reasons
- R10 – it may be desirable to consider if IDN variant TLDs require special treatment or promotion, particularly for developing economies

ALAC2>> Agreement by ALAC to the ten recommendations is noted. With regards to R6, this may cause some user confusion in case the user anticipates all second level variant labels to be the same under all the IDN variant TLDs. However, the current solution does not prevent that and is left to the registry operator to best design the solution based on the expectations of the registrants. Additional domain names also add management overhead and complexity. So having the flexibility could provide better solutions in cases where registrants or end users may not need all the variant domain names to be activated. The current recommendation can address both possibilities.

ALAC3. In response to Question 3, ALAC considers an adequate analysis is presented on the impact of recommendations on the existing procedures for IDN ccTLDs and gTLDs.

ALAC3>> Support of the analysis of recommendations by ALAC is noted.

ALAC4. In response to Question 4, ALAC considers the following recommendations may require policy considerations:

- R2. Variants allocated to same entity or withheld (GNSO, CCNSO)
- R3. Second-level labels allocated to same entity (GNSO)
- R4, R5, R6, R7, R8 (GNSO and ccNSO)
- R9, R10 (GNSO and ccNSO)

ALAC4>> Input from ALAC is noted and will be transmitted to the ccNSO and GNSO, for their further consideration.

ALAC5. In response to Question 5, ALAC agrees that reduction in the number of allocatable labels may be required for some scripts. ALAC suggests additional work may be required to identify contextual redundancies within a script in order to restrict variants (for example, based on regional variations, community preferences, meaningfulness, LGR/IDN rule compliance, contemporary vs historic use, or usability/ keyboard input constraints) in order to limit numerosity. Similar work is also needed for variants at the second level. For domain names, where top and second-level variant labels are combined, a combinatorial explosion may still occur. In such cases, automatic activation of variants should be avoided.

ALAC5>> These are good additional considerations suggested by ALAC and will be integrated along with other measures suggested in the analysis in Appendix C. These will be presented to the ccNSO and GNSO for further consideration.

ALAC6. In response to Question 6, ALAC considers that the recommendations are well researched and analyzed. However, ALAC notes that in certain cases the procedures are left to the registries to decide. For example, registries are encouraged to manage the numerosity of variant labels. Any optional procedures will not have incentive for registries to operationalize. It is also not clear how transition will be managed. To manage such risks, ICANN org is encouraged to bring together the relevant stakeholders to share experiences on a periodic basis.

ALAC6>> The risk is noted and will be added to the list of risks, to further analyze appropriate mitigation measures.

SANIC1. SANIC agrees with the fundamental premise to find a solution to maximize the blocked variant labels, noting that its system also aims to achieve this solution.

SANIC1>> The support for maximizing blocked labels is noted. It is also noted that the SANIC implements a variant management solution which makes this possible.

SANIC2. SANIC also agrees with the SSAC statement that phishing and other social engineering attacks based on domain name confusion are a security problem for the end users, where misconnection is a worse problem than denial of service. In this context, SANIC suggests defining “activated” variant labels for different languages for international reachability in Arabic script. If such variant labels are not supported, they would cause denial of service for users from the different languages using Arabic script.

SANIC2>> For the TLDs, the dispositions for labels are calculated to be either “blocked” or “allocatable”. For the second level domains, additional dispositions values may be possible, such as “activated” for international reachability. For the second level, the IDN Guidelines 4.0 suggest that such a decision should be made cautiously by the relevant script community to limit automatically activating too many domain name labels, as they may carry a burden for the registrant which the registrant may not want. With IDN variant TLDs, this becomes multiplicative. A balance may be needed between enabling reachability for end users and creating manageability challenges for registrants.

SANIC3. Finally, SANIC would like to make sure that its IDN ccTLD variant labels identified are not blocked by unnecessary rules without considering community needs for stability and reachability.

SANIC3>> The variant label disposition of an IDN variant TLD is determined by RZ-LGR, as developed by the community. The Arabic script RZ-LGR has already been integrated and creates the following allocatable variant labels from the primary label listed by SANIC in the comment: “السعودية” (xn--mgberp4a5d4ar). These include the variant labels needed, as identified by SANIC. The primary label also creates an additional 634 blocked variant labels. Actual labels which can be delegated would depend on the eventual policies and procedures as finalized by the community and approved by the ICANN Board.

السعودية	xn--mgbqly7cvafr	Allocatable	U+0627 U+0644 U+0633 U+0639 U+0648 U+062F U+064A U+0647
السعودية	xn--mgbqly7c0ap28g	Allocatable	U+0627 U+0644 U+0633 U+0639 U+0648 U+062F U+064A U+06C3
السعودية	xn-- mgberp4a5d4a87g	Allocatable	U+0627 U+0644 U+0633 U+0639 U+0648 U+062F U+06CC U+0629
السعودية	xn--mgbqly7cvaf17h	Allocatable	U+0627 U+0644 U+0633 U+0639 U+0648 U+062F U+06CC U+0647
السعودية	xn--mgbqly7c0a67fbc	Allocatable	U+0627 U+0644 U+0633 U+0639 U+0648 U+062F U+06CC U+06C3

#### Section IV: Analysis of Comments

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

ICANN thanks DTHC, KNET, RySG, BC, ALAC, SANIC and WW for their valuable comments.

The analysis of the comments is in [blue](#) inline in the section above.