

Variant Management Recommendations

Version 04

25 May 2021

The Variant Management sub-group is expected to address the following gaps with respect to (cc)TLDs and their Variants:

- **How are Variants defined?**
- **How are they managed?**

With respect to the first question, the definition of TLD Variants, on 11 Apr. 2013, the ICANN Board [resolved](#) to implement the [LGR Procedure](#). The definition is included in Table 1 as item # 1.

With respect to the second question, IDN variant TLD management mechanism, the ICANN Board of Directors:

- [approved](#) on 14 March 2019 [IDN Variant TLD Recommendations](#) and requested ccNSO and GNSO take into account the recommendations while developing their respective policies to define and manage the IDN variant TLDs for the current TLDs as well as for future TLD applications, and communicate for a consistent solution.
- [approved](#) on 26 January 2020 [Recommendations for the Technical Utilization of the Root Zone Label Generation Rules](#) and requested the ccNSO and GNSO Councils take into account the Recommendations while developing their respective policies to define and manage the IDN variant TLDs for current TLDs as well as for future TLD applications.

To provide an overview to the working group and ensure the coordinated and consistent approach as requested the following tables were developed:

- Table 1 - Overview IDN Variant TLD Recommendations. This table includes the recommendations as adopted by the Board, an overview of the GNSO view on these recommendations, and will include in time the recommendations of the sub-group and their findings.

- Table 2 - Overview of Recommendations on the Technical Utilization of RZ-LGR. This table includes the recommendations as adopted by the Board, an overview of the GNSO view on these recommendations, and will include in time the recommendations of the sub-group and their findings.

The sub-group is expected by taking into account and based on the existing recommendations develop and propose its own recommendations to the full WG and hence to broader community as part of the ccPDP4 effort.

In time and to test and prepare the sub-group's views the group is also expected to address specific questions in a ICANN Org staff paper.

Table 1 - Overview IDN Variant TLD Recommendations

Item #	Recommendation	GNSO SubPro Recommendation	ccPDP4 VM Subgroup Recommendation	Comment/Observation of the subgroup
1	Defining IDN Variant TLDs RZ-LGR MUST be the only source for valid TLDs and their variant labels. (same as first IDN Variant TLD recommendation – see below)	<p>Recommendation 25.2: Compliance with Root Zone Label Generation Rules (RZ-LGR, RZ-LGR-2, and any future RZ-LGR rules sets) must be required for the generation of TLDs and variants labels, including the determination of whether the label is blocked or allocatable. IDN TLDs must comply with IDNA2008 (RFCs 5890-5895) or its successor(s). To the extent possible, and consistent with Implementation Guidance 26.10, algorithmic checking of TLDs should be utilized.</p>	<p>Recommendation 1 Definition of Variants. Compliance with Root Zone Label Generation Rules (RZ-LGR, RZ-LGR-2, and any future RZ-LGR rules sets) MUST be required for the generation of (IDNccTLDs and variants labels, including the determination of whether the label is blocked or allocatable. IDN TLDs must comply with IDNA2008 (RFCs 5890-5895) or its successor(s).</p> <p>To the extent possible, and consistent with Implementation Guidance 26.10, algorithmic checking of TLDs should be utilized.</p>	<p>Staff Question: what if, if relevant script (the script in which the Designated Language is expressed) is not (yet) integrated in RZ-LGR? (see also item 5 table 2).</p> <p>Looking at the SUBPro recommendation, distinction between blocked and allocatable Clarify the difference? Discussed</p> <p>Question check if understood correctly. If a IDNccTLD is requested i.e. meets criteria of meaningfulness and IDNA 2008, sufficient or also required that. Blocked and allocatable. Applied Difference allocatable applied potential strings</p> <p>RZ-LGR Designed tool string / label. Output set contain all variants. Blocked maximized, variants</p>

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				<p>Note discussion on requirements for IDN ccTLD string: Technical criteria in general/ IDN TLDs strings must comply with IDNA2008 (RFCs 5890-5895) or its successor(s).</p>
2	<p>IDN variant TLDs {t1, t1v1, ...} MUST be allocated to same entity.</p> <p>For IDN variant TLDs that arise from an application and the RZ-LGR, all allocatable IDN variant TLD labels in the set must be allocated to the same entity or withheld for possible allocation only to that entity. In other words, for a top-level label t1 allocated to Entity X, its allocatable variant label t1v1 must only be allocated to Entity X or else withheld for possible allocation only to Entity X.</p>	<p>Recommendation 25.5: IDN gTLDs identified as variant TLDs of already existing or applied for gTLDs will be allowed only if labels are allocated to the same entity and, when delegated, only if they have the same back-end registry service provider. This policy must be captured in relevant Registry Agreements.</p>		<p>Question: in description the word arise is used: Does this imply no need to request? The Variants are assigned automatically?</p> <p>What are characteristics of entity in context of IDNccTLDs? Once a selected strings has been verified, it will be delegated as a ccTLD to the ccTLD Manager. Is this the idea?</p> <p>Note that some ccTLD Managers have an arrangement with a back-end provider. Should a similar, mandatory arrangement be provided as a requirement for delegation of variants?</p> <p>ccNSO Institutional Issue. Assuming variants will be delegated to the same ccTLD Manager, should the ccTLD Manager for each and every variant of the selected IDNccTLD string be</p>

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				treated as an individual ccTLD Manager, and may therefore become member of the ccNSO for each and every variant IDNccTLD?
3	<p>Same label under IDN variant TLDs s1.{t1, t1v1, ...} MUST be registered to the same entity.</p> <p>For each allocated IDN variant TLD, a given second level label beneath the TLD must only be allocated to the same entity/registrant, or else withheld for possible allocation only to that entity. In other words, s1 under {t1, t1v1, ...}, e.g., s1.t1 and s1.t1v1, must be allocated to Entity Y or else withheld for possible allocation only to Entity Y.</p>	<p>Recommendation 25.7: For second-level variant labels that arise from a registration based on a second-level IDN table, all allocatable variant labels in the set must only be allocated to the same entity or withheld for possible allocation only to that entity (e.g., all allocatable second-level labels {s1, s1v1, ...} under all allocated variant TLD labels {t1, t1v1, ...}).</p>		Staff Note: scope of ccNSO PDPs may be a limiting factor (Annex C ICANN Bylaws)
4	<p>Second-level variant labels under IDN variant TLDs {s1, s1v1, ...}.{t1, t1v1, ...} MUST be registered to the same entity.</p> <p>According to the IDN Implementation Guidelines,</p>	<p>Recommendation 25.5: IDN gTLDs identified as variant TLDs of already existing or applied for gTLDs will be allowed only if labels are allocated to the same entity and, when delegated, only if they have the same back-end registry service provider. This</p>		Staff Note: scope of ccNSO PDPs may be a limiting factor (Annex C ICANN Bylaws)

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	<p>for second-level IDN variant labels that arise from a registration based on a second-level IDN table, all allocatable IDN variant labels in the set must only be allocated to the same entity or withheld for possible allocation only to that entity. This implies that all allocatable second-level labels {s1, s1v1, ...} under all allocated variant TLD labels {t1, t1v1, ...} must be allocated to Entity Z or else withheld for possible allocation only to Entity Z.</p>	<p>policy must be captured in relevant Registry Agreements.</p>		
5	<p>Second-level IDN tables offered under IDN variant TLDs MUST be harmonized.</p> <p>Second-level IDN tables applicable for an IDN variant TLD set must be mutually coherent but not necessarily identical. For two second-level variant labels s1 and s1v1 under any TLD t1 generated using the applicable IDN table for t1, these must also be variant labels under TLD</p>	<p>No corresponding recommendation under SubPro</p>		<p>Staff Note: Section 8 of the ccPDP4 WG document, which includes refers to IDN Tables and the related policies and procedures.</p> <p>Staff Note: scope of ccNSO PDPs may be a limiting factor (Annex C ICANN Bylaws)</p>

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	<p>t1v1 if generated by the applicable IDN table for t1v1. This also implies that the complete set of second-level variant labels may not all be valid under all variant TLDs. For example, for the second level label s1v2, the domain name s1v2.t1 may be valid, but due to difference in IDN tables for variant TLDs, s1v2.t1v1 may not be valid.</p>			
6	<p>IDN variant label allocatable or activated under IDN variant TLDs may not necessarily be the same.</p> <p>The set of allocatable or activated second-level variant labels may not be identical across the activated IDN variant TLDs. For two variant labels s1 and s1v1 which are allocatable under the active IDN variant TLDs t1 and t1v1, the label s1.t1 may be allocated or activated but s1.t1v1 may not be allocated or activated. Similarly, if s1v1.t1 is allocated or activated,</p>	<p>Recommendation 25.8: Second-level labels derived from Recommendation 25.6 or Recommendation 25.7 are not required to act, behave, or be perceived as identical.</p>		<p>Staff Note: scope of ccNSO PDPs may be a limiting factor (Annex C ICANN Bylaws)</p>

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	s1v1.t1v1 may not be allocated or activated.			
7	<p>The registry service providers MUST be the same for IDN variant TLDs.</p> <p>For feasible and consistent implementation of these requirements, the same back-end registry service provider, if applicable, must be employed for operating all the activated IDN variant TLDs by the registry operator.</p>	<p>Recommendation 25.5: IDN gTLDs identified as variant TLDs of already existing or applied for gTLDs will be allowed only if labels are allocated to the same entity and, when delegated, only if they have the same back-end registry service provider. This policy must be captured in relevant Registry Agreements.</p>		
8	<p>Existing policies and associated procedures for TLDs MUST be updated to accommodate the recommendations for IDN variant TLDs.</p> <p>Existing policies and associated procedures must be adjusted to ensure that the recommendations above remain true under the functioning of gTLD and ccTLD policy and procedures.</p>	<p>No corresponding SubPro recommendation</p>		<p>Staff Note: scope of ccNSO PDPs may be a limiting factor (Annex C ICANN Bylaws)</p>

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9	<p>All remaining existing TLD policies must apply to IDN variant TLDs, unless otherwise identified.</p> <p>Unless adjusted due to recommendation 9 above or other reasons identified and agreed by the community, because each IDN variant TLD is also another TLD, all existing TLD policies and procedures for allocation and delegation remain applicable for IDN variant TLDs as well.</p>	No corresponding SubPro recommendation		Staff Note: scope of ccNSO PDPs may be a limiting factor (Annex C ICANN Bylaws)

Table 2 - Overview of Recommendations on the Technical Utilization of RZ-LGR

Item #	TSG Recommendation	GNSO SubPro Recommendation	ccPDP4 VM Subgroup Recommendation	Comment/Observation of the sub-group
1	<p>All TLD labels, IDN and ASCII labels, MUST be processed using the RZ-LGR.</p> <p>Lowercase alphabetic ASCII labels are, as a practical matter, a subset of the Latin script labels defined by RZ-LGR; therefore, these ASCII Labels must be subject to RZ-LGR processing to determine their cross-script variant labels, e.g. with Armenian, Cyrillic, Greek, and other applicable scripts. Consequently, GNSO and ccNSO should incorporate the use of RZ-LGR into their TLD application processes accordingly and in a consistent manner.</p>	<p>Recommendation 25.2: Compliance with Root Zone Label Generation Rules (RZ-LGR, RZ-LGR-2, and any future RZ-LGR rules sets) must be required for the generation of TLDs and variants labels, including the determination of whether the label is blocked or allocatable. IDN TLDs must comply with IDNA2008 (RFCs 5890-5895) or its successor(s). To the extent possible, and consistent with Implementation Guidance 26.10, algorithmic checking of TLDs should be utilized.</p>		See item 1 Table 1
2	<p>For the scripts and writing systems which have been integrated into the RZ-LGR, the RZ-LGR must be the only source for processing the following cases:</p> <ul style="list-style-type: none"> • Validate an applied-for TLD label and determine its variant labels with corresponding dispositions • Calculate variant labels, and corresponding disposition values, for each one of the already allocated or delegated TLD labels 	<p>Recommendation 25.2: Compliance with Root Zone Label Generation Rules (RZ-LGR, RZ-LGR-2, and any future RZ-LGR rules sets) must be required for the generation of TLDs and variants labels, including the determination of whether the label is blocked or allocatable. IDN TLDs must comply with IDNA2008 (RFCs 5890-5895) or its successor(s). To the extent possible, and consistent with Implementation Guidance 26.10, algorithmic checking of TLDs should be utilized.</p>		See comments section 8 of original Board report

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	<ul style="list-style-type: none"> Calculate variant labels, and corresponding disposition values, for each one of the reserved TLD labels 			
3	<p>GNSO and ccNSO should work collaboratively and consider their respective policy, procedure and/or contract changes to address any existing possible deviations from the calculation of the RZ-LGR:</p> <ul style="list-style-type: none"> Delegated TLDs. Self-identified “variant” TLDs. <p>3.1. Delegated TLDs: These are cases that have occurred under special circumstances in which labels generally deemed as the same (i.e. variant TLDs under RZ-LGR) were previously delegated as independent TLDs, albeit with special considerations (e.g. synchronized TLDs). Any such variations should be considered for alignment with RZ-LGR.</p> <p>3.2. Self-identified “variant” TLDs: Historically IDN TLD applications, for gTLDs and ccTLDs, have asked the applicant to identify and list any variant labels (based on their own calculations) corresponding to the applied-for string. These self-identified “variant” labels may or may not conform to the RZ-LGR once implemented. The self-identified “variant” labels which are also</p>	No corresponding SubPro recommendations		

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	<p>variant labels based on RZ-LGR will need to be assigned a variant disposition based on RZLGR calculation. Further, self-identified “variant” labels that are not variant labels based on the RZ-LGR definition should not be considered as variant TLD labels and it needs to be determined on how to address such labels previously identified by the applicants.</p> <p>GNSO and ccNSO must consider a resolution of such outstanding cases that conforms to the LGR Procedure and RZ-LGR calculations.</p>			
4	<p>For an applied-for TLD label whose script(s) are supported by the applicable version of the RZ-LGR, the RZ-LGR will calculate either of two values: “valid” or “invalid”. Consequently, an applied-for TLD that is determined “valid” may proceed with the subsequent evaluation process, whereas an applied-for TLD that is determined “invalid” must not proceed, because it did not pass the validation by RZ-LGR.</p> <p>Recommendation 4 describes the cases in which an applied-for label, whose script is supported by the RZ-LGR, is determined to be “invalid”. The SG defers to the GNSO and ccNSO to determine the process to deal with these cases (e.g. suspend or reject the applied-for TLD) as this is considered a matter of</p>	<p>[Regarding the remedy element]</p> <p>Recommendation 32.1: The Working Group recommends that ICANN establish a mechanism that allows specific parties to challenge or appeal certain types of actions or inactions that appear to be inconsistent with the Applicant Guidebook.</p> <p>The new substantive challenge/appeal mechanism is not a substitute or replacement for the accountability mechanisms in the ICANN Bylaws that may be invoked to determine whether ICANN staff or Board violated the Bylaws by making or not making a certain decision. Implementation of this mechanism must not conflict with,</p>		

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	<p>policy or procedure. While there may be merits for either choice, the SG provides items 4.1 to 4.4 as technical input for community's consideration, to help address SSAC's SAC060 recommendation: "ICANN must maintain a secure, stable, and objective process to resolve cases in which some members of the community (e.g., an applicant for a TLD) do not agree with the result of the LGR calculations."</p> <p>Consequently, an applied-for TLD that is determined "valid" may proceed with the subsequent evaluation process, whereas an applied-for TLD that is determined "invalid" must not proceed, because it did not pass the validation by RZ-LGR. While policy needs to determine how an "invalid" label should be dealt with (Recommendation 2 in SAC060), the following technical input should be considered by the relevant policy development process:</p> <p>4.1 Conformance with IDNA2008. An applied-for label must be in Normalization Form C7 and must conform to IDNA2008.</p> <p>4.2. Conformance with LGR Procedure. Policy or procedure must not override the results of the RZ-LGR. That is, policy or procedure alone cannot turn an "invalid" label into a "valid" label, or vice-versa. Doing so would invalidate the entire RZLGR. Any change to the RZ-LGR (e.g. repertoire, variant rules or WLEs) must be undertaken using the process stipulated in</p>	<p>be inconsistent with, or impinge access to accountability mechanisms under the ICANN Bylaws.</p> <p>The Working Group recommends that the limited challenge/appeal mechanism applies to the following types of evaluations and formal objections decisions:</p> <p>(Specifically, likely the DNS Stability aspect of evaluation/challenge procedures)</p>		

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	<p>the LGR Procedure.</p> <p>4.3. Script LGR can be updated, if justified, using the LGR Procedure. In general, GPs make design choices based on current knowledge and available information. These choices determine the code point repertoire and its context rules, the whole-label evaluation rules and variant sets. If and when there is new information available, the LGR Procedure defines the process to update the RZLGR9.</p> <p>4.4. Re-validation of applied-for label is possible. The applied-for TLD label may be re-validated when a new RZ-LGR version becomes available.</p>			
5	<p>For an applied-for TLD label whose script is not yet supported by the applicable version of the RZ-LGR, the application should not proceed until the relevant script is integrated into the RZ-LGR. It is implied that the application should remain on-hold (or other appropriate status) until the relevant script is integrated into the RZ-LGR.</p>	<p>Implementation Guidance 25.3: If a script is not yet integrated into the RZ-LGR, applicants should be able to apply for a string in that script, and it should be processed up to but not including contracting. Applicants under such circumstances should be warned of the possibility that the applied-for string may never be delegated and they will be responsible for any additional evaluation costs.</p>		<p>See question on Recommendation 1 staff paper. Under Fast Track process an application for a string could be submitted and ultimately delegated without requirement that relevant script is integrated into the RZ-LGR. Note that the issue of variants or variant management was not addressed for the Fast Track</p>

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6	SSAC advises in SAC060 that too many variant labels should not be delegated. The SG considers that the matter on limiting the number of allocatable variant labels to be a policy matter.	No corresponding SubPro recommendations		<p>Staff question: should meaningfulness criteria also apply to variants?</p> <p>If v1-5 are all variants of or include a variant of t1t2, should v1-5 meet all meaningfulness criteria? What happens if only v1 and v2 meet meaningfulness criteria?</p>
7	It is expected that the RZ-LGR be revised throughout its lifecycle, either as a result of a new script LGR being integrated or a revision of an existing script LGR being adopted. There may be cases where a script LGR does not support an existing TLD. In such cases, it is possible that the existing TLD(s) may need to be grandfathered.	No corresponding SubPro recommendations		