

Overview of GNSO Expedited Policy Development Process on Internationalized Domain Names (EPDP-IDNs)

GAC Webinar

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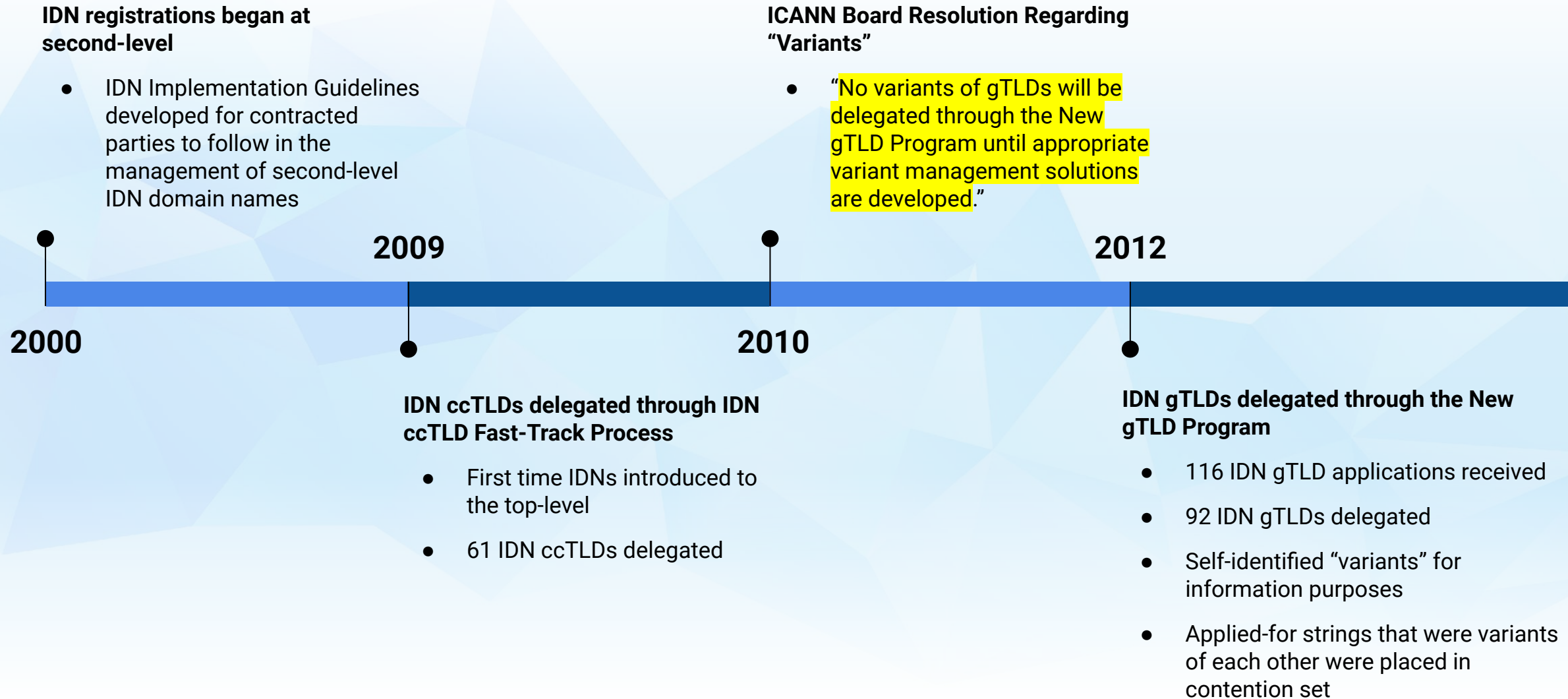
15 February 2023



Agenda

- **Timeline: Introduction of IDNs**
- **Understanding Variants**
- **Rootzone Label Generation Rules (RZ-LGR)**
- **IDN Related GNSO Council Activities**
- **Q&A**
- **Appendix**

Timeline: Introduction of IDNs



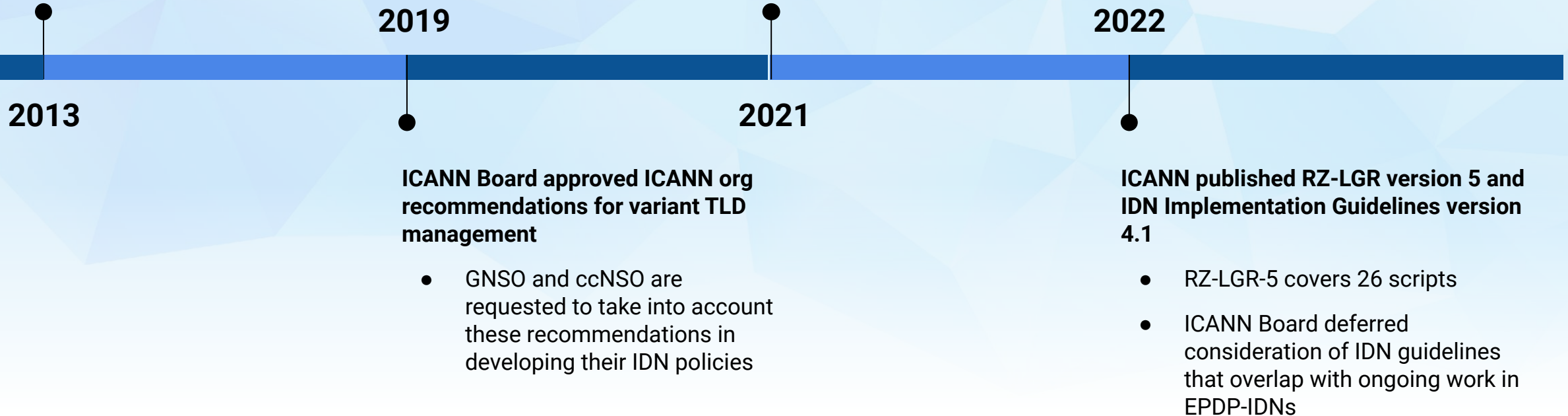
Timeline: Introduction of IDNs (Cont.)

ICANN Board endorsed procedure for developing Root Zone Label Generation Rules (RZ-LGR)

- Generation Panels started developing LGR proposals for defining parameters that determine valid IDN labels and their variants for the root zone across various scripts

GNSO and ccNSO kicked off new policy efforts on IDNs

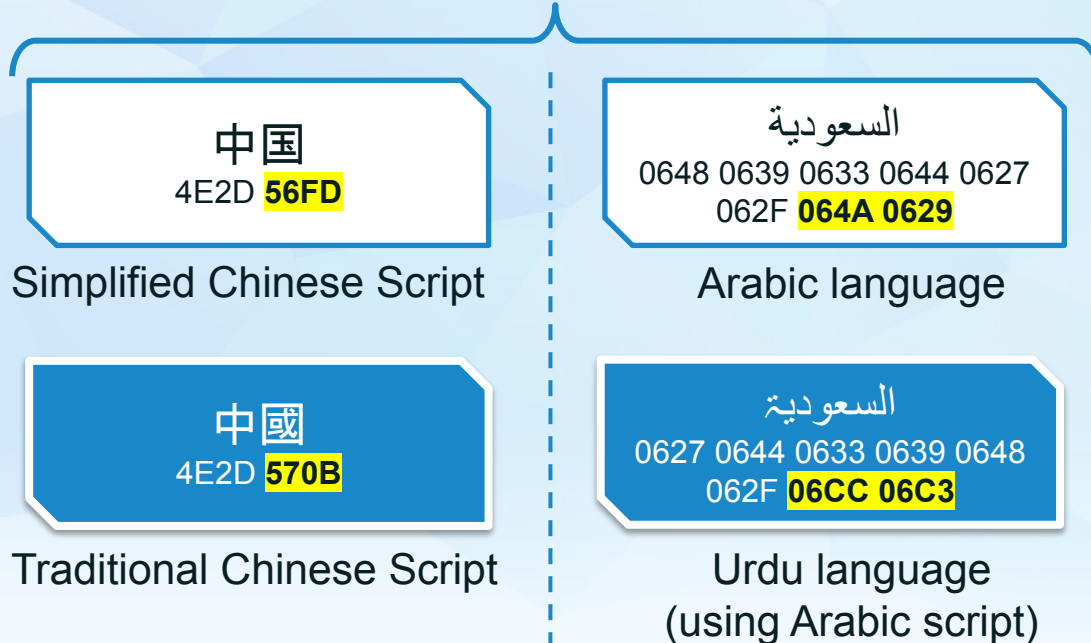
- GNSO New gTLD Subsequent Procedures PDP concluded in Feb 2021; Topic 25 on IDNs
- GNSO Council approved charter for Expedited PDP on IDNs in May 2021, started in Aug 2021
- ccNSO Council approved charter for ccPDP4 in Aug 2021



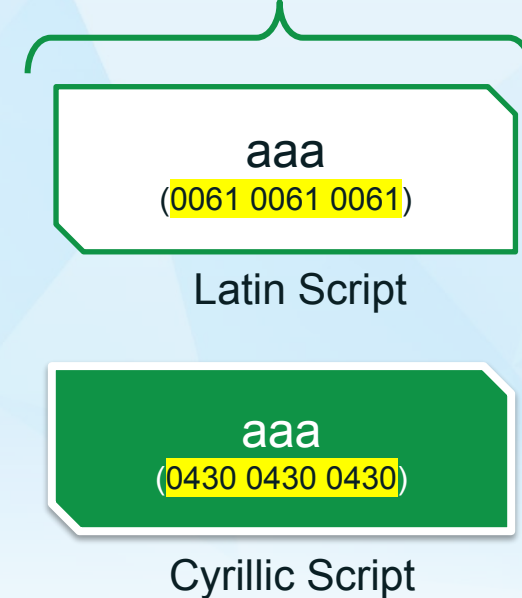
Understanding Variants: The Basics

Variant Labels are considered 'the same' by the respective script community

Example: Defining Variant for Usability Purpose



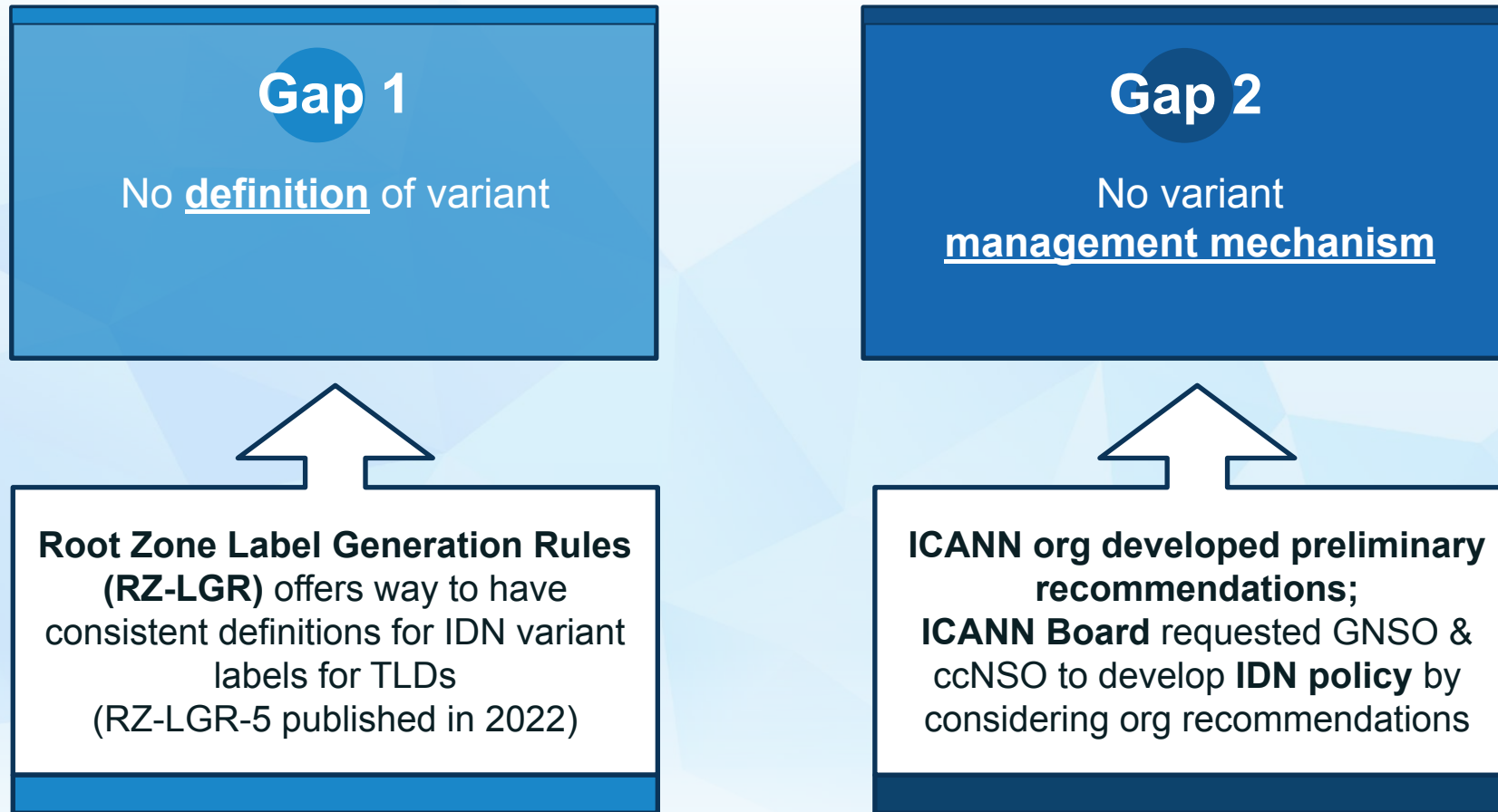
Example: Defining Variant for Security Purpose



Understanding Variants: Impact

- **Variants exist in many scripts to serve language communities globally, impacting billions of users**
- **A single script can be used in multiple languages and may be subject to variations due to how the languages work.** Examples:
 - Simplified Chinese is used in Mainland China, while Traditional Chinese is commonly used in Hong Kong, Macau, Taiwan, Singapore and other Chinese-speaking regions.
 - Arabic script is used in many languages across the Middle East, North Africa and Sahel region, North and Sub-Sahara, and Asia. Variants exist due to stylistic differences, orthographical traditions, spelling customs, and other factors.
 - Cross-script variants also exist as some characters in different scripts may be visually the same, e.g., Latin and Cyrillic; Armenian and Greek; Kannada and Telugu
- **DNS makes distinctions between variant labels with different code points, but script community recognizes them as being equivalent**
- **Variants may exacerbate confusion risks among labels that may or may not be visually similar, potentially causing security and stability issues in the DNS**

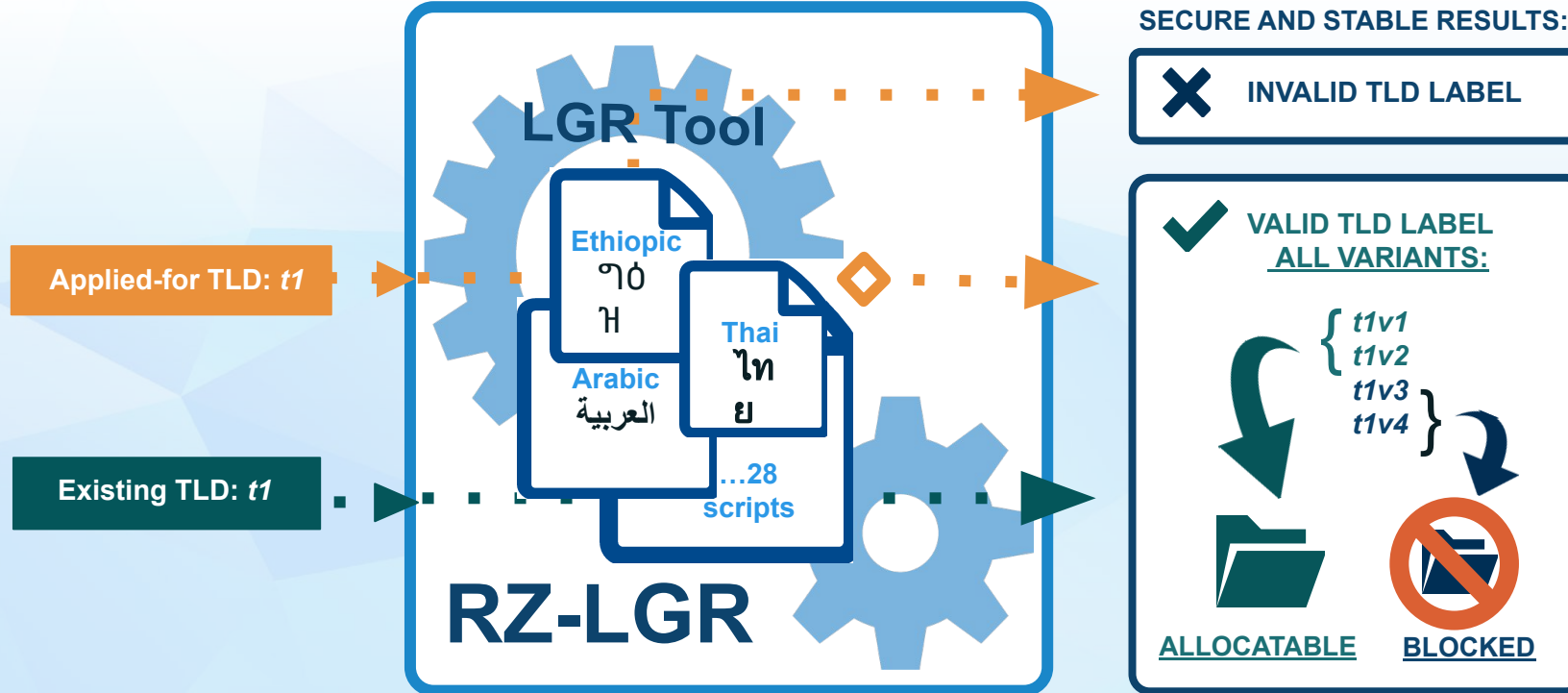
Why Variant gTLDs Have Not Been Delegated



Learn More:

<https://go.icann.org/idnstaffpaper>

Root Zone Label Generation Rules (RZ-LGR)



Total number of script communities (Generation Panels): 17

Total number of participant across script communities: 270+

Total number of languages represented: 386+

Total number of population represented: 5 billions

Total number of hours worked (estimated): 10,000+ hours

Total number of LGRs developed: 25

Using the RZ-LGR: LGR Tool Illustration

<https://lgrtool.icann.org>

Validate label

← 1 Input the label: aob

Maximum length: 63 code points

← 2 Click validate

✓ VALID

U-label	Disposition	Code point sequence	
aob	valid	U+0061 (a) U+006F (o) U+0062 (b)	Show / hide log

[Action index: 9] <action disp="valid" comment="catch all (default action)"/>

Variant labels (including original as last)

50 variant label(s) generated.
By disposition: blocked: 49, valid: 1

aób	blocked	U+0061 (a) U+00F3 (ó) U+0062 (b)	Show / hide log
xn--ab-5ja			
aob	blocked	U+0061 (a) U+03BF (o) U+0062 (b)	Show / hide log
xn--ab-jbc			

← 3 The tool returns valid or invalid, and displays the code points.

← 4 The tool calculates the variant labels of 'aob', which acts as the source or primary label.

- Calculates the number of variant labels in the set.
- Calculates the disposition ('blocked' or 'allocatable') of each variant label.

Using the RZ-LGR: Example Output

A real example of RZ-LGR output for an Arabic label

Allocatable means available for delegation but must still be applied for delegation

#	Type	U-label	A-label	Disposition	Code point sequence
1	original	شبكة	xn--ngbc5azd	valid	U+0634 U+0628 U+0643 U+0629
2	varlabel	شبكة	xn--ngbx0cq	allocatable	U+0634 U+0628 U+0643 U+0647
3	varlabel	شبكة	xn--ngbx0c15a	blocked	U+0634 U+0628 U+0643 U+06BE
4	varlabel	شبكة	xn--ngbx0c95a	blocked	U+0634 U+0628 U+0643 U+06C0
5	varlabel	شبكة	xn--ngbx0cy6a	blocked	U+0634 U+0628 U+0643 U+06C1
6	varlabel	شبكة	xn--ngbx0c26a	blocked	U+0634 U+0628 U+0643 U+06C2
7	varlabel	شبكة	xn--ngbx0c66a	allocatable	U+0634 U+0628 U+0643 U+06C3
8	varlabel	شبكة	xn--ngbx0c31b	blocked	U+0634 U+0628 U+0643 U+06D5
9	varlabel	شبكة	xn--ngbc5az1b	allocatable	U+0634 U+0628 U+06A9 U+0629
10	varlabel	شبكة	xn--ngbx2d5u	allocatable	U+0634 U+0628 U+06A9 U+0647
11	varlabel	شبكة	xn--ngbx66ayc	blocked	U+0634 U+0628 U+06A9 U+06BE
12	varlabel	شبكة	xn--ngbx66a6c	blocked	U+0634 U+0628 U+06A9 U+06C0
13	varlabel	شبكة	xn--ngbx66agd	blocked	U+0634 U+0628 U+06A9 U+06C1
14	varlabel	شبكة	xn--ngbx66akd	blocked	U+0634 U+0628 U+06A9 U+06C2
15	varlabel	شبكة	xn--ngbx66aod	allocatable	U+0634 U+0628 U+06A9 U+06C3
16	varlabel	شبكة	xn--ngbx66a0f	blocked	U+0634 U+0628 U+06A9 U+06D5
17	varlabel	شبكة	xn--ngbc5a31b	allocatable	U+0634 U+0628 U+06AA U+0629
18	varlabel	شبكة	xn--ngbx2d9u	allocatable	U+0634 U+0628 U+06AA U+0647
19	varlabel	شبكة	xn--ngbx96asc	blocked	U+0634 U+0628 U+06AA U+06BE
20	varlabel	شبكة	xn--ngbx96a0c	blocked	U+0634 U+0628 U+06AA U+06C0
21	varlabel	شبكة	xn--ngbx96a4c	blocked	U+0634 U+0628 U+06AA U+06C1
22	varlabel	شبكة	xn--ngbx96a8c	blocked	U+0634 U+0628 U+06AA U+06C2
23	varlabel	شبكة	xn--ngbx96ahd	allocatable	U+0634 U+0628 U+06AA U+06C3
24	varlabel	شبكة	xn--ngbx96arf	blocked	U+0634 U+0628 U+06AA U+06D5

Not All Scripts Have Variants



- Arabic
- Armenian
- Bangla (Bengali)
- Chinese (Han)
- Cyrillic
- Devanagari
- Ethiopic
- Georgian
- Greek
- Gujarati
- Gurmukhi
- Hebrew
- Japanese
- Kannada
- Khmer
- Korean
- Lao
- Latin
- Malayalam
- Myanmar
- Oriya
- Sinhala
- Tamil
- Telugu
- Thaana
- Tibetan
- Thai

- Variant - 22 scripts
- Allocatable variant - 7 scripts
- No variant - 4 scripts
- Work in progress - 2 scripts

IDN Related GNSO Policy Activities

Complete

New gTLD Subsequent Procedures PDP

- Topic 25 focuses on IDN related recommendations
- Final Report approved by GNSO Council on **18 February 2021**
- Operational Design Assessment currently being considered by ICANN Board

Ongoing

Expedited PDP on IDNs

- GNSO Council determined that Issue Report is not needed to initiate policy work on IDNs
- Charter approved by GNSO Council on **20 May 2021** (48 questions under 7 topics)
- Two-phased approach to facilitate SubPro implementation planning

Enable future delegation of variant gTLDs at the top-level

SubPro: What Was Discussed & Not Discussed

What SubPro WG discussed

Partially adopted high-level ICANN org variant management recommendations for future gTLDs, such as:

- RZ-LGR as sole source for validating future gTLDs and calculating variant labels
- Variant gTLDs must be managed by the same registry operator and supported by backend registry service provider
- Second-level variant labels registered to the same registrant

What SubPro WG did NOT discuss

- Whether the ICANN org recommendations should apply to **existing gTLDs and second-level IDN variant registrations**
- How to **operationalize** the ICANN org recommendations
- **Other recommendations, studies, and requirements related to IDNs** (e.g, technical utilization of RZ-LGR, SSAC advice, IDN Implementation Guidelines)

EPDP-IDNs Overview

Who We Are:

- “Representative + Open” model: consisting members, participants, observers, and liaisons across ICANN community, board, and org

Our Role:

- Determine approach for a consistent definition of variant gTLDs: utilization of RZ-LGR
- Develop policy that will allow for the introduction of variant gTLDs

Our Work:

- Apply SubPro recommendations to existing gTLDs and second-level domains
- Operationalize SubPro recommendations for existing and future gTLDs
- Address topics not discussed by SubPro

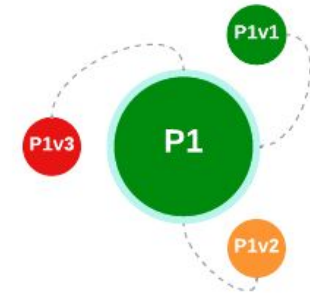
Our Challenges:

- Conservatism: permit delegation of variant gTLDs that meet user needs while maintaining DNS security/stability
- Allocatable and blocked variant labels introduce complexity due to their ‘permutation’
- Charter requires coordination with SubPro Implementation Review Team (IRT) to address overlapping topics

EPDP-IDNs Overview (Cont.)

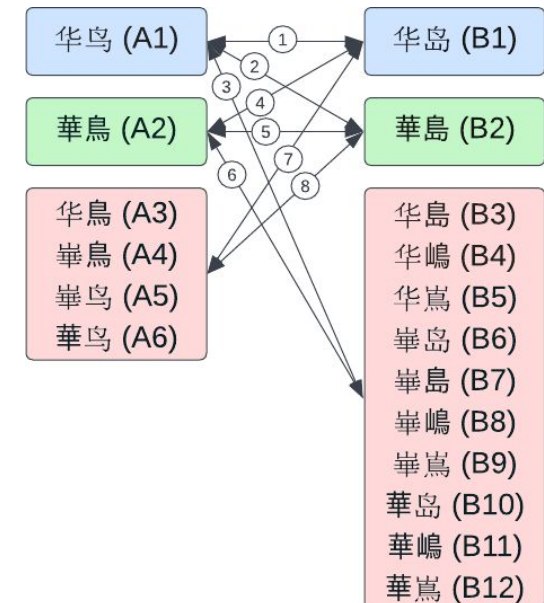
Some key concepts in our deliberation:

- Same entity principle
- Sanctity of the “set”



Most difficult discussions so far:

- Limiting the number of variant gTLDs that can be delegated
- Process by which existing IDN registry operators could apply for variant gTLDs
- Adapting the String Similarity Review (a test of whether a string is visually confusingly similar to another) to address introduction of variant gTLDs



EPDP-IDNs: Two Phased Approach

	Phase 1	Phase 2
Scope	Top-level IDN variant management	Second-level IDN variant management
Timeline	<ul style="list-style-type: none">Initial Report: April 2023Final Report: November 2023	<ul style="list-style-type: none">Initial Report: April 2025 (tentative)Final Report: November 2025 (tentative)
Topics	<p>A. Consistent definition and technical utilization of RZ-LGR</p> <p>B. “Same entity” at the top-level</p> <p>D. Processes/procedures related to the domain name lifecycle (top-level related questions)</p> <p>E. Adjustments to New gTLD Program</p>	<p>C. “Same entity” at the second-level</p> <p>D. Processes/procedures related to the domain name lifecycle (second-level related questions)</p> <p>F. Registration dispute resolution procedures and trademark protection mechanisms</p> <p>G. Process to update the IDN Implementation Guidelines</p>

Q&A

Appendix: Resource Links

- ❑ **ICANN Board Resolution regarding “Variants”:**
<https://www.icann.org/en/board-activities-and-meetings/materials/approved-resolutions-special-meeting-of-the-board-of-directors-25-09-2010-en#2.5>
- ❑ **RZ-LGR Version 5:** <https://www.icann.org/resources/pages/root-zone-lgr-2015-06-21-en>
- ❑ **ICANN org Recommendations on Variant Management:**
<https://www.icann.org/resources/pages/idn-variant-tld-implementation-2018-07-26-en>
- ❑ **IDN Implementation Guidelines:**
<https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en>
- ❑ **EPDP-IDNs Charter:**
<https://gnso.icann.org/sites/default/files/policy/2021/presentation/CharterGNSOIDNsEPDPWorkingGroup20May21.pdf>
- ❑ **ccPDP4 Charter:**
<https://community.icann.org/download/attachments/138969190/Draft%20Charter%20ccPDP4%20WG.pdf?version=1&modificationDate=1592141220002&api=v2>

Appendix: Our Work - Issue Examples

1

Apply SubPro Recommendations to existing gTLDs and second-level domains

- ❑ Using RZ-LGR to calculate variant labels of existing gTLDs
- ❑ Variant labels of existing gTLDs managed by the same registry and backend service provider
- ❑ Management of existing second-level IDN variant domain names

2

Operationalize SubPro recommendations for existing and future gTLDs

- ❑ Adjustments to New gTLD Program for variant applications
- ❑ Evaluation of variant gTLD applications (e.g., string similarity review, objection processes, contention resolution, reserved names, strings ineligible for delegation)
- ❑ Adjustments to contracts for managing variant gTLDs and lifecycle management (e.g., data escrow, registry transition process)
- ❑ Mechanism to identify same registrant at second-level
- ❑ Harmonization of IDN tables and use of machine readable LGR format
- ❑ Transfer of second-level variant domains

3

Topics not discussed by SubPro

- Variant gTLD label states (e.g., allocated, withheld, blocked, etc.) and transition between states
- Limiting the number of delegated variant gTLDs
- Impact of RZ-LGR update on delegated gTLDs
- Adjustments to dispute resolution (if any) for second-level IDN variant domains
- Process to update IDN Implementation Guidelines