

A promotional graphic for the ICANN 61 Community Forum in San Juan. The background is a scenic view of San Juan, Puerto Rico, featuring a mix of colorful residential buildings and historic stone fortifications overlooking the ocean at sunset. The sky is a vibrant orange and red. A white-bordered box in the top right contains the event details in white text.

**ICANN**

**COMMUNITY FORUM**

**61**

**SAN JUAN**

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# IDN Variant Domain Names and Universal Acceptance



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# Overview of Session Presentations

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- ⦿ What are IDN variant code points and labels
- ⦿ Challenges with IDN variant code points and labels
- ⦿ Defining the IDN variant labels
  - Top-level with Root-Zone Label Generation Ruleset (RZ-LGR)
  - Second-level guided by IDN Implementation Guidelines
- ⦿ Where are we now?
- ⦿ IDN variant domain names and Universal Acceptance?
- ⦿ Q/A

# What are Variant Code Points and Labels?

- ◉ Example of within-script variant labels (Arabic script)

شبكة (06C3 06A9 0628 0634)

شبكة (0629 06A9 0628 0634)

شبكة (0629 0643 0628 0634)

- ◉ Example of within-script variant labels (Simplified Chinese and Traditional Chinese)

名称 (540D 79F0)

名稱 (540D 7A31)

- ◉ Example of cross-script variant label (Latin script and Cyrillic script)

epic (0065 0070 0069 0063)

epic (0435 0440 0456 0441)

- ◉ These are possible labels available for registration



# Challenges with Variant Code Points and Labels

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- ⦿ Challenge 1: No consistent definition of variant code points
  - In the [Integrated Issues Report](#) (2012), in the context of top-level labels the ICANN community noted that in the DNS environment today:
    - (i) *“there is no accepted definition for variant”* and
    - (ii) *there is no “variant management’ mechanism”*

# Challenges with Variant Code Points and Labels

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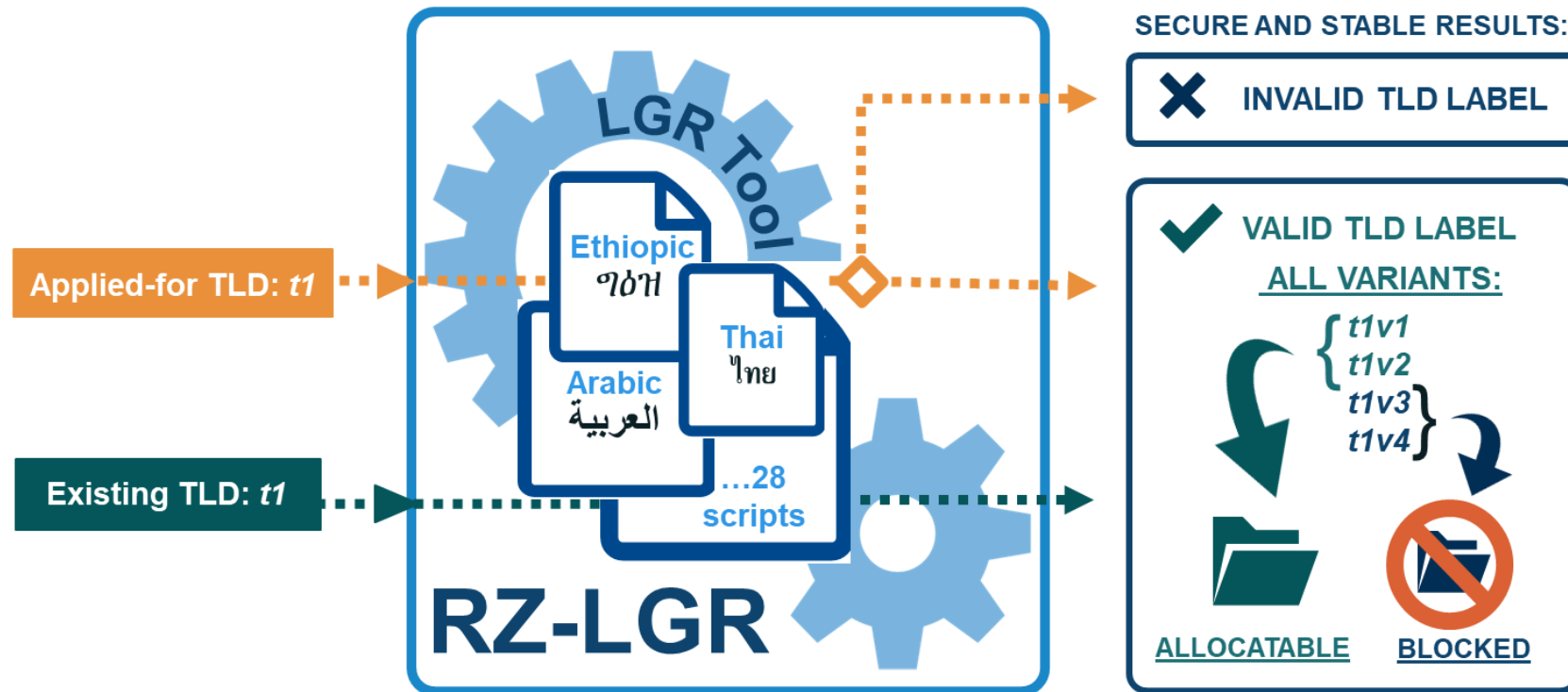
- Challenge 2: Permutation creates numerous variant domain names
  - Variant label could appear at any level in a domain name
  - SSAC notes in Recommendation 14 of SAC060 (2013):

*Variants introduce a permutation issue both at the top level as well as with combinations of top level and second level*

- For TLD - assume a label with 4 characters - each has 3 variant code points
  - $3^4 = 81$  different variant labels
- For 2LD - assume label with 4 characters - each has 3 variant code points
  - $3^4 = 81$  different variant labels
- Total domain names = 2LD.TLD =  $3^4 \times 3^4 = 72171$

# Defining IDN Variant TLD Labels

- ◉ The Root Zone Label Generation Rules (RZ-LGR) Procedure is a community based process to define valid and variant top-level labels for different scripts

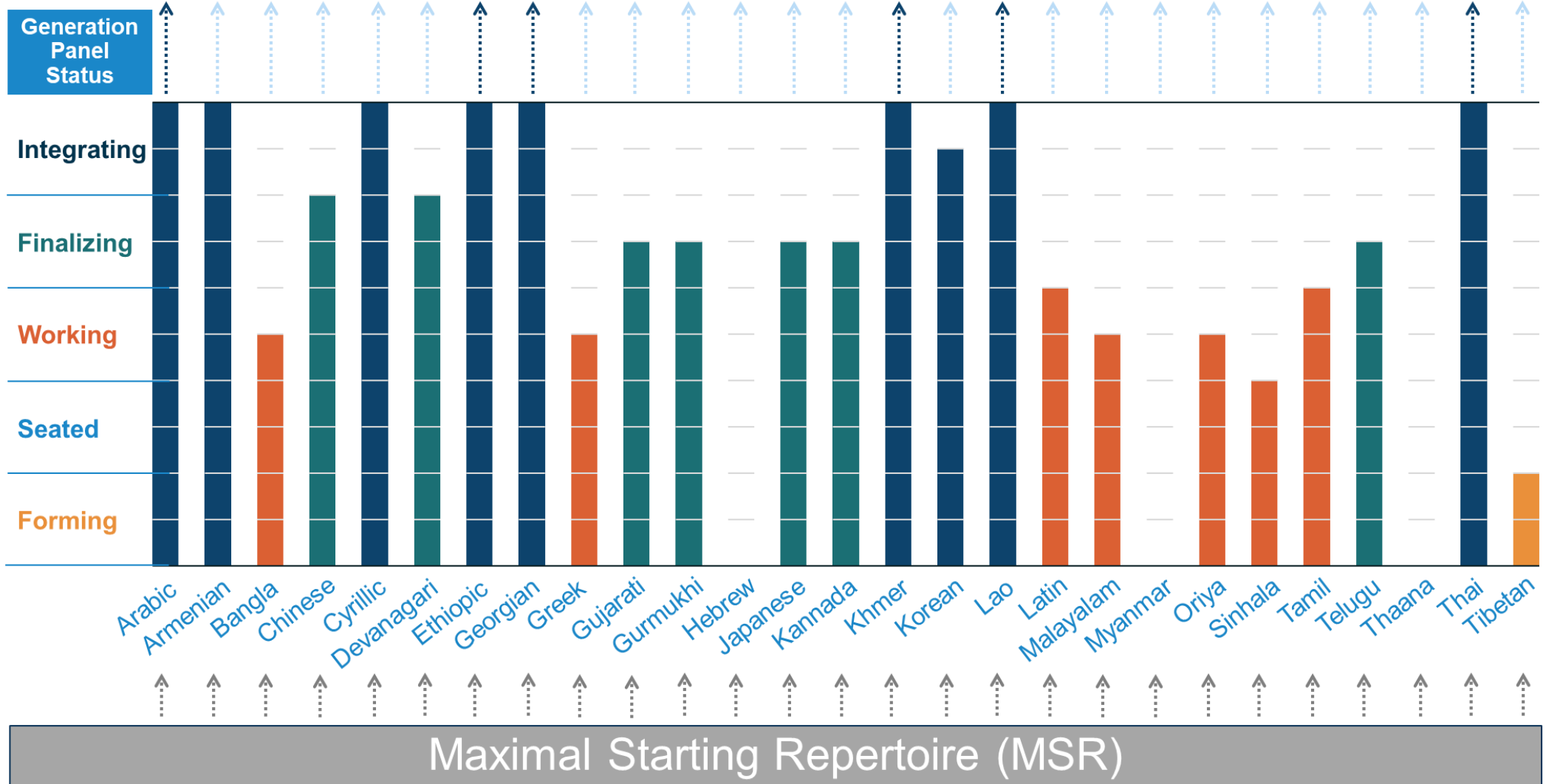


- ◉ To date Arabic, Armenian, Cyrillic, Ethiopic, Georgian, Khmer, Korean, Lao and Thai script RZ-LGR proposals have been [submitted](#)

# Status of Generation Panels (GPs)

Feb. 2018

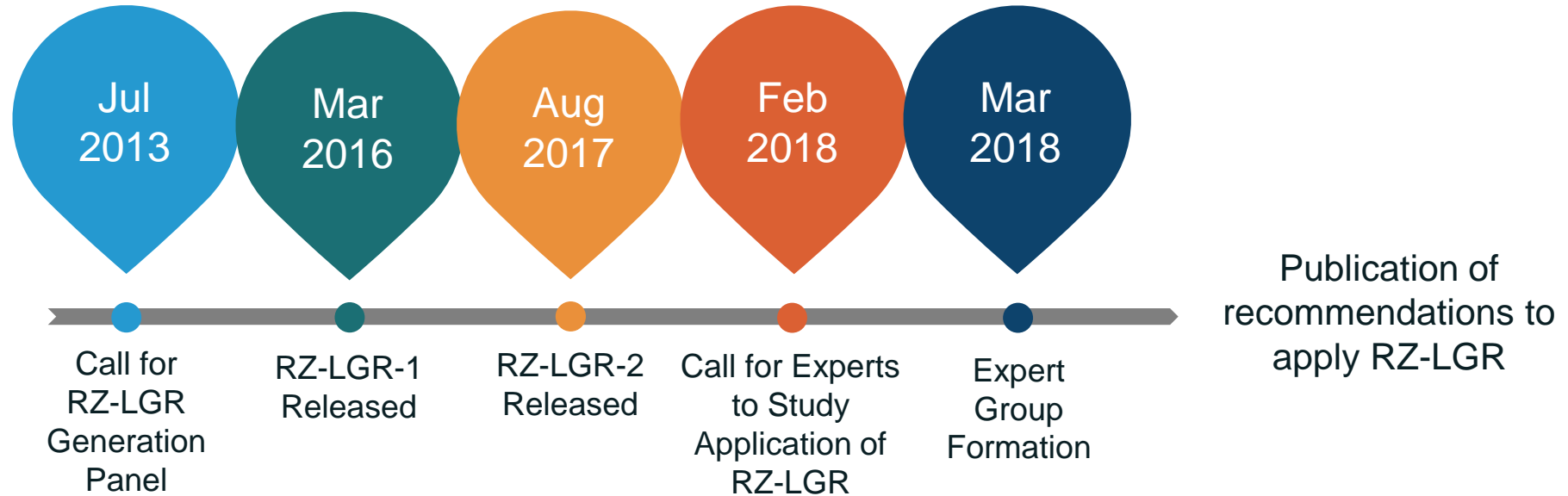
## Root Zone Label Generation Rules (RZ-LGR)



Maximal Starting Repertoire (MSR)



# IDN Variant TLD Implementation – Defining Variant Labels



## Study Group Expertise and Composition

- Experts in IDNA2008 and related standards, Procedure to Develop and Maintain RZ-LGR, Script-based RZ-LGR proposal development, Technical evaluation for IDN new gTLDs and IDN ccTLDs, Unicode security considerations, IDN TLD usability challenges
- The group to be composed of experts from GNSO, ccNSO, SSAC, ALAC and IAB

# Defining IDN Variant Labels for the Second Level

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- ⦿ Second-level variant labels defined by registries using IDN tables
  
- ⦿ IDN Implementation Guidelines being updated to address variant labels at the second level
  - Allocated to same registrant or blocked
  - Allocated on the request of registrant or corresponding registrar
    - Exceptionally automatic activation based on convention, but number of labels remains as small as possible
  - Harmonize variant code points across IDN tables for same scripts
  - Apply additional constraints to minimize whole-script confusable labels

# Where Are We Now?

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- ⦿ On 25 September 2010, the ICANN Board resolved that:
  - “No variants of gTLDs will be delegated through the New gTLD Program until appropriate variant management solutions are developed.”
- ⦿ IDN variant labels for the second level may be offered by registries, based on their policies
- ⦿ IDN variant domain names may be registered, generated by second level variant labels

# IDN Variant Domain Names and Universal Acceptance?

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- ⦿ Does the registrant of the IDN variant domain names expect these to behave in a certain way?
- ⦿ Does this expectation impact Universal Acceptance?

# Engage with ICANN and IDN Program



## Thank You and Questions

Visit us at [icann.org/idn](https://icann.org/idn)

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