ICANN 60

ANNUAL GENERAL

ABU DHABI

28 October–3 November 2017

IDN Program Update

ICANN 60
1 November 2017

Overview of Session Presentations

- ◉ IDN Program Overview and Progress - Sarmad Hussain

- ◉ Update by Integration Panel - Marc Blanchet

- ◉ Update on IDN Implementation Guidelines - IDN Guidelines WG

- ◉ Community Updates
  - ○ Cyrillic GP Update - Dušan Stojičević
  - ○ Latin GP Update - Mirjana Tasić
  - ○ Neo-Brahmi GP Update - Ajay Data

- ◉ Q/A

IDN Program Overview and Progress

Sarmad Hussain
Director, IDN Programs

Overview

- ⊙ IDNs at Top Level
  - ○ IDN TLD Program
    - • Root Zone Label Generation Rules (RZ-LGR)
    - • LGR Toolset
    - • IDN Variant TLD Implementation
  - ○ IDN ccTLD Fast Track Process
- ⊙ IDNs at Second Level for gTLDs
  - ○ IDN Implementation Guidelines
  - ○ Reference Second Level LGRs
- ⊙ Community Outreach and Involvement

LGR Specification and Tool (P1)

LGR Development (P2.2)

IDN Variant TLD Implementation (P7)

IDN ccTLD Fast Track

Reference Second Level LGRs

IDN Implementation Guidelines

Communications Plan Execution

Root Zone Label Generation Rules (RZ-LGR)

- ◉ IDNA2008 expects registries at all levels, including the top-level, will reduce opportunities for confusion by, for example, restricting characters or using variant techniques

  - ○ RZ-LGR basis for such mechanism for the Root Zone

- ◉ RZ-LGR aims to:

  - ○ Support IDN TLDs in scripts used by communities globally

  - ○ Provide a secure and stable definition for valid IDN TLDs

  - ○ Determine variant labels of IDN TLDs

RZ-LGR Process

Generation Panel 1

Generation Panel 2

Generation Panel 3

Etcetera

One Generation Panel per writing system (script)

Integration Panel

Needs more work

RZ- LGR

Script 1
Script 2

Etcetera
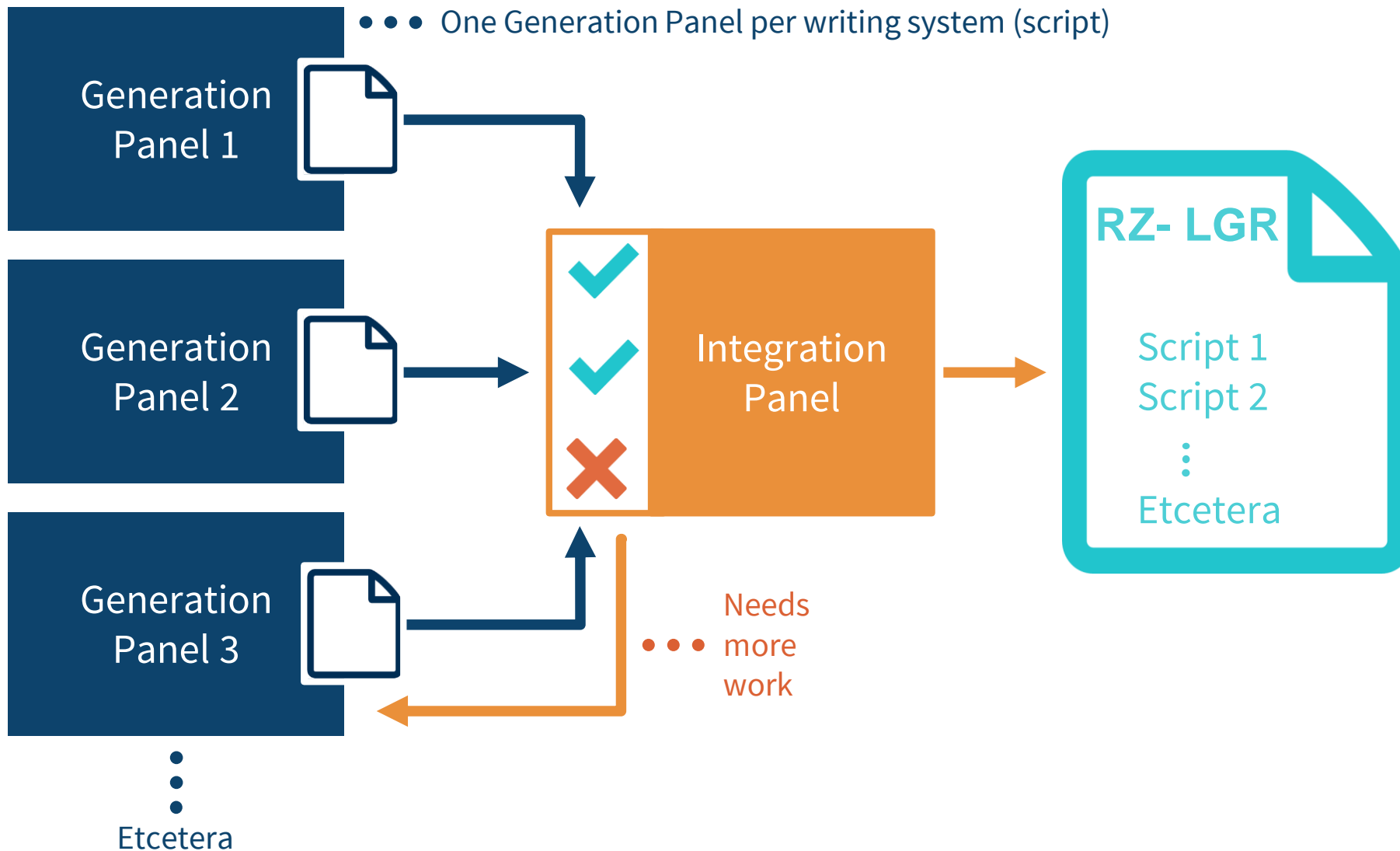
Status of Generation Panels (GPs)

Root Zone Label Generation Rules (RZ-LGR) Oct. 2017
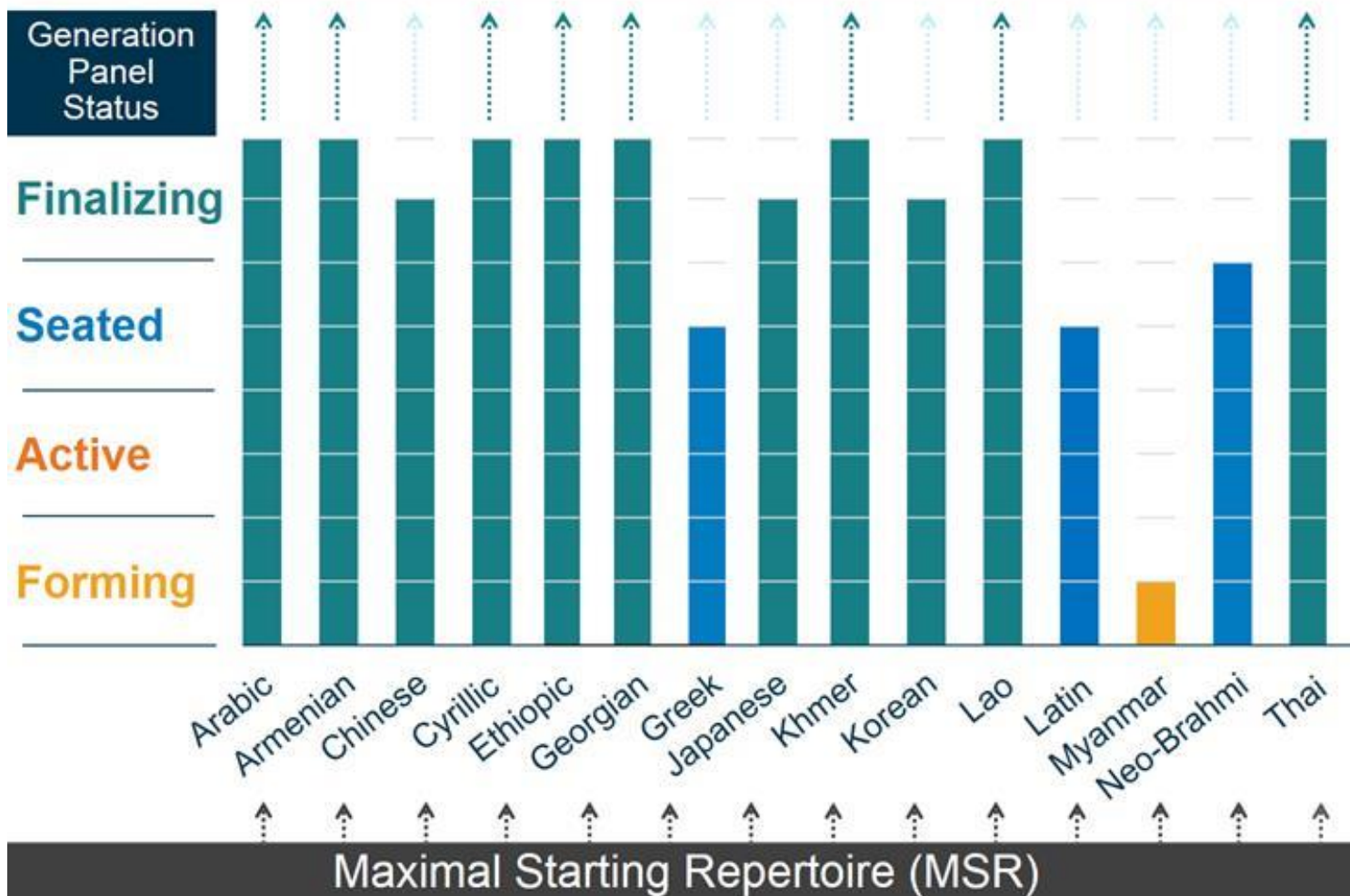
28+ Scripts
19+ GPs

Other:
- Hebrew
- Sinhala
- Thaana
- Tibetan

Status of RZ-LGR

Mar 2016	Aug 2016	Nov 2016	Jan 2017	May 2017	Aug 2017
RZ-LGR-1 Released	Khmer LGR Proposal	Georgian LGR Proposal	Lao LGR Proposal	Ethiopic LGR Proposal	**RZ-LGR-2 Released**

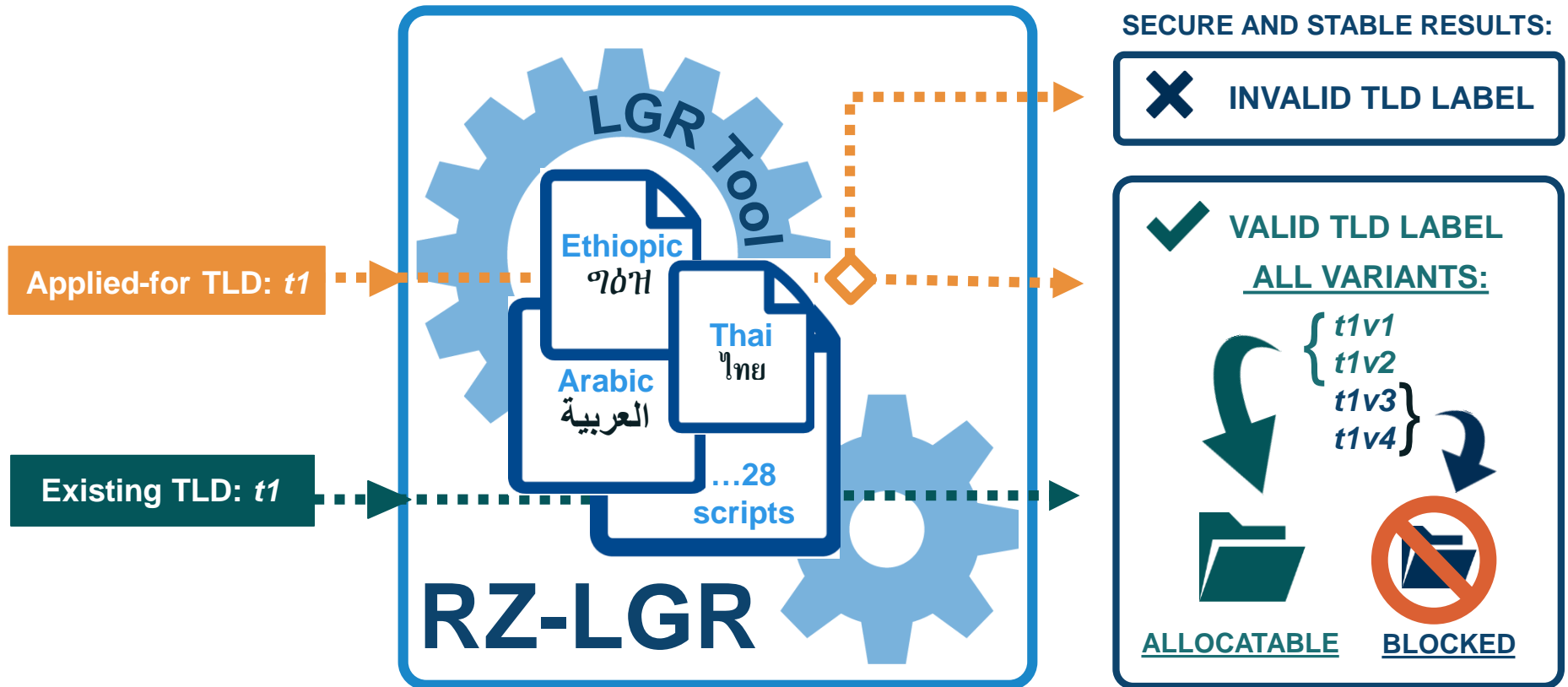Additional scripts integrated in future versions of RZ-LGR

RZ-LGR-2 Summary

o Arabic, Ethiopic, Georgian, Khmer, Lao and Thai scripts integrated

o Armenian finalized – to be integrated after LGRs of related scripts received

o Available at www.icann.org/idn

LGR Toolset (beta)

- ◉ Label Generation Rulesets (LGRs) used to generate domain name labels, as specified in RFC 7940

- ◉ LGR Toolset currently allows for the following:
  - ○ **Create** single LGR or merge multiple LGRs
  - ○ **View** LGR in XML form or user friendly HTML form
  - ○ **Use** a LGR to validate a label and determine its variant labels
  - ○ **Manage** LGRs, by comparing or combining them
  - ○ **Review** impact of a new or a revised LGR on existing labels

- ◉ Online beta deployment at: https://lgrtool.icann.org/

- ◉ Open source package(s) released with BSD license
  - ○ Released at github: lgr-core, lgr-django, munidata

- ◉ User guide available for further details

Pre-Requisite for IDN Variant TLD Implementation

⊙ Update relevant procedures to incorporate Root Zone Label Generation Rules (RZ-LGR) cohesively across IDN ccTLDs and IDN gTLDs

IDN Country Code Top-Level Domains

ccTLDs: 58 for 40*

укр (ua)
бел (by)
.бг (bg)
срб (rs)
ею (eu)
мкд (mk)
ελ (gr)
المغرب (ma)
გე (ge)
հայ (am)
سورية (sy)
فلسطين (ps)
عراق (iq)
ايران (ir)
پاکستان (pk)
قاز (kz)
پارت भारोत भारतम् بارت భారత్ ভারত ভাৰত भारत بھارت ಭಾರತ ભારત ਭਾਰਤ ভারত இந்தியா (in)
рф (ru)
Мон (mn)
한국 (kr)
中国 中國 (cn)
台灣 台湾 (tw)
الجزائر (dz)
تونس (tn)
موريتانيا (mr)
مصر (eg)
سودان (sd)
الاردن (jo)
السعودية (sa)
عمان (om)
امارات (ae)
قطر (qa)
اليمن (ye)
বাংলা (bd)
ලංකා இலங்கை (lk)
ไทย (th)
香港 (hk)
澳門 (mo)
新加坡 சிங்கப்பூர் (sg)
مليسيا (my)

* Successfully evaluated IDN ccTLDs for total countries and territories

IDN ccTLD Fast Track Process

- Launched in late 2009
  - 58 IDN ccTLDs evaluated representing 40 countries/territories
  - 56 IDN ccTLDs delegated representing 38 countries/territories
  - Requests cover 33 languages in 19 scripts for

- Currently under review
  - Public comment in Jan 2015 raised issues with second similarity review process (EPSRP)
  - Board resolution in June 2015 to review EPSRP
  - ccNSO formed Working Group (WG) on EPSRP
  - Public comment in July 2016 on updated EPSRP guidelines
  - Final report published, incorporating feedback and discussion
  - ccNSO adopted the final report by WG on EPSRP
  - Joint ccNSO SSAC Response to ICANN Board

Reference Second Level IDN Tables

- Reference IDN tables in LGR format in RFC 7940
- Developed using Guidelines, vetted for security and stability
- Finalized after a public comment process
- Can be referred to, as registries enhance IDN implementations
- Currently 27 LGRs published
  - Latin: Bosnian, Danish, English, Finnish, French, German, Hungarian, Icelandic, Italian, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Spanish, Swedish
  - Cyrillic: Belarusian, Bosnian, Bulgarian, Macedonian, Montenegrin, Russian, Serbian, Ukrainian
  - Mixed scripts: Korean
  - Others: Chinese, Hebrew

Communication and Outreach Efforts

- ⊙ IDN web pages at icann.org/idn
- ⊙ IDN Program sessions at ICANN meetings
- ⊙ IDN Program updates to SOs/ACs at ICANN meetings

- ⊙ Direct outreach
  - ○ Africa Internet Summit, Jun 2017, Nairobi
  - ○ DNS Forum, Jul 2017, Tanzania
  - ○ APrIGF, Jul 2017, Bangkok
  - ○ PKSIG, Aug 2017, Pakistan
  - ○ APTLD, Sep 2017, Georgia

- ⊙ IDN community wiki pages
- ⊙ IDN mailing lists
  - ○ {vip, lgr, ArabicGP, ArmenianGP, ChineseGP, …}@icann.org

Thank You

- For information on IDN Program projects, please visit:
  www.icann.org/idn

- For queries regarding the IDN Program, please email:
  IDNProgram@icann.org

Update by Integration Panel

Marc Blanchet
Integration Panel

Integration Panel Scope

"The Integration Panel is a panel of independent experts tasked with reviewing proposals presented by the Generation Panels and, if accepted, integrating them into a consistent set of Label Generation Rules for the Root Zone. The decisions by the integration Panel are required to be unanimous."

(https://community.icann.org/display/croscomlgrprocedure/Integration+Panel)

IP Activities Summary – Since ICANN58

- ◉ Reviewed GP proposals
    - ○ Latin

- ◉ Reviewed draft LGRs
    - ○ Ethiopic
    - ○ Thai
    - ○ Japanese
    - ○ Greek
    - ○ Korean
    - ○ Cyrillic
    - ○ Devanagari

- ◉ Monitoring the need for new MSR (ver. 3) for additional scripts and issues related to Unicode 6.3

IP Activities Summary (cont.)

- ⦿ Root Zone LGR-2 final integration and publication
  - ○ Scripts included: Arabic (from RZ-LGR-1), Ethiopic, Georgian, Khmer, Lao, Thai
  - ○ Postponed: Armenian (waiting for other related scripts to be submitted)

  - ○ Iterative process
  - ○ Multiple independent implementations were used to verify the content

  - ○ Public comments on 6 June 2017
    - • https://www.icann.org/public-comments/rz-lgr-2-2017-06-06-en
    - • Support received from the community
    - • Thanks to GP members who have verified
    - • No issues found
  - ○ Posted final 17 August 2017
    - • https://www.icann.org/resources/pages/root-zone-lgr-2015-06-21-en

IP Activities Summary (cont.)

- ◉ The Root Zone LGR is split into the following
  - ○ One **Element LGR** per script
  - ○ A single **Merged LGR**
  - ○ Each of these files in XML (normative) and HTML (informative)
  - ○ Plus documentation files (Overview and Code Tables)

- ◉ Use the LGR to verify a label (e.g. for a new application)
  - ○ Validate the label
  - ○ Generate allocatable variants
  - ○ Check for collisions with delegated labels and their variants

- ◉ More details in the IDN RZ-LGR session
  - ○ 15.15 – 16.45, 1 November 2017

IP Activities Summary (cont.)

- ◉ Updated documents
  - ○ Guidelines for Developing Script-Specific Label Generation Rules for Integration into the Root Zone LGR
  - ○ Considerations for Designing a Label Generation Ruleset for the Root Zone
  - ○ Requirements for LGR Proposals from Generation Panels
  - ○ Packaging the MSR and RZ-LGR
  - ○ Out of Repertoire Variants in Root-Zone LGR and Proposals
  - ○ Summary Guidelines
  - ○ Whole Label Evaluation (WLE) Rules

- ◉ Variant Rules IP document replaced by RFC 8228 "Guidance on Designing Label Generation Rulesets (LGRs) Supporting Variant Labels"
  - ○ The RFC is heavily based on the IP document
  - ○ Independent effort

Thank You

- For queries regarding the Integration Panel , please email integrationpanel@icann.org

- For information on IDN Program projects, please visit www.icann.org/idn

- For queries regarding the IDN Program, please email IDNProgram@icann.org

IDN Implementation Guidelines

ICANN

Agenda

- ◉ Purpose and Status

- ◉ IDN Guidelines WG

- ◉ Scope and Topics

- ◉ Next Steps

Purpose

- Background
  - For second-level IDN registration policies and practices
  - To minimize the risk of cybersquatting and consumer confusion

- Relevance
  - gTLD – registries and registrars offering IDNs contractually bound
    - Required by most Registry Agreements
      - For example, new gTLD Registry Agreement: Specification 6 Section 1.4
    - Required by many Registrar Agreements
      - For example, 2013 Registrar Accreditation Agreement: Additional Registrar Operation Specification Clause 3
  - IDN ccTLDs – "expected" by the Fast Track Process

Status

- [Call for Community Experts](#) in July 2015

- Working Group formed in October 2015

- [Initial issues list](#) presented at ICANN 55

- [Interim draft](#) presented at ICANN 57

- [Final draft](#) for [Public Comment](#) released in March 2017

- Final draft for Public Comment presented at ICANN 58

- [Final draft](#) open for [Second Public Comment](#) until 10 December 2017

- Final draft for Second Public Comment being presented at ICANN 60

IDN Guidelines WG (IDNGWG)

	Name	Organization	SO/AC
1	Satish Babu	ISOC-TRV	ALAC
2	Wael Nasr	TLDVILLA LLC	ALAC
3	Mats Dufberg	IIS	ccNSO
4	Pablo Rodríguez	Puerto Rico TLD	ccNSO
5	Edmon Chung	.asia	GNSO
6	Christian Dawson	i2Coalition	GNSO
7	Chris Dillon		GNSO
8	Kal Feher	Neustar	GNSO
9	Dennis Tan	Verisign	GNSO
10	Jian Zhang (until 7 April 2017)	KNET	GNSO
11	Patrik Fältström (will only review)		SSAC

Scope and Topics

- ⊙ Scope limited to only the owner-name of the DNS records added to the zone file by the registration system
    - ○ Any glue records and right-hand or target names excluded from scope

- ⊙ Total of 7 topics with19 guidelines and Additional Notes:
    - ○ Transition (4)
    - ○ Format of IDN Tables (2)
    - ○ Consistency of IDN Tables and Practices (4)
    - ○ IDN Variant Labels (3)
    - ○ Similarity and Confusability of Labels (4)
    - ○ Publishing IDN Registration Policy and Rules (1)
    - ○ Terminology (1)
    - ○ Additional Notes

Next Steps

- ⊙ Finalize IDN Guidelines 4.0 after second public comment

- ⊙ Submit final IDN Guidelines 4.0 for consideration by ICANN Board

Thank you

- For second public comment visit https://www.icann.org/public-comments/idn-guidelines-2017-10-19-en

- Visit IDN Guidelines wiki page for the list of WG members, email archive, call recordings and summaries: https://community.icann.org/display/IDN/IDN+implementation+Guidelines

- For feedback, email at: idngwg@icann.org or IDNProgram@icann.org

Cyrillic Generation Panel Update

Душан Стојичевић
Dusan Stojicevic
Chair, Cyrillic GP

Introduction – Script of LGR

- ◉ ISO 15924 Code: Cyrl

- ◉ ISO 15924 English Name: Cyrillic

- ◉ Latin transliteration of native script name: Cyrillic

- ◉ Maximal Starting Repertoire (MSR) version: MSR-2

Background on Script and Principle Languages

- Based on Early Cyrillic, from First Bulgarian Empire in 9th century AD

- Used for languages across eastern Europe and north and central Asia

- Basis of alphabets in languages, past and present, especially those of Slavic origin, and non-Slavic languages influenced by Russian

- Used by more than 250 million people as the official script for their languages, about half from Russia

- With the accession of Bulgaria to the European Union in 2007, Cyrillic became **the third official script of the European Union, in addition to the Latin and Greek scripts**

Background on Script and Principle Languages

- South Eastern part of Europe (Serbia, Montenegro, Macedonia, Bulgaria, Bosnia and Herzegovina)

- Eastern Europe (Belorussia, Ukraine, Russia)

- Central Asia (Kazakhstan, Turkmenistan, Uzbekistan, Kyrgyzstan, Tajikistan, Mongolia)

is the only official orthography

is the only official orthography, but others are recognized for national or regional languages

Methodology

- According to work plan in the proposal for Cyrillic script GP

- Initially language based repertoire compiled, based on second level IDN tables used by different ccTLDs, including the .su ccTLD which contained inventory for languages currently spoken in Russia

- Language repertoires collated in a face to face meeting in Istanbul on 25-26 Nov. 2016.

- Continued to use the mailing list to share and finalize documents

- Consulted with Integration Panel (IP), including on crucial query regarding inclusion of U+02BC MSR for Ukrainian and Belarusian

Code Point Repertoire

86 code points recommended for inclusion

7 code points recommended for exclusion (shown in the table)

#	Unicode CP	Glyph	Unicode Name	Lang. using CP	EGIDS value	Ref.
1	04EB	ӫ	CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS	Khanty	Khanty 6b	Rule 6 http://www.omniglot.com/ writing/khanty.htm
2	04ED	ӭ	CYRILLIC SMALL LETTER E WITH DIAERESIS	Sami	Sami 8b	Rule 6
3	04DB	ә	CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS	Khanty	Khanty 6b	Rule 6 http://www.omniglot.com/ writing/khanty.htm
4	04C2	ӂ	CYRILLIC SMALL LETTER ZHE WITH BREVE	Gagauz	Gagauz 5	Rule 5 http://www.omniglot.com/ writing/gagauz.htm Gagauz alphabet not in Cyrillic from 1996
5	04CC	ӌ	CYRILLIC SMALL LETTER KHAKASSIAN CHE	Khakas	Khakas 5	Rule 5 http://www.omniglot.com/ writing/khakas.htm
6	045D	ѝ	CYRILLIC SMALL LETTER I WITH GRAVE	Historical sign		Rule 6
7	0450	ѐ	CYRILLIC SMALL LETTER IE WITH GRAVE	Stressed sign		Rule 6

Cyrillic Script Variants

⊙ No variants in Cyrillic script

    o Some code points visually confusable

        • not considered as variants by the Cyrillic community

        • provide table of confusable code points, so organizations can use as needed

Cross-Script Variants

- ⊙ Decided to limit these to homoglyphs

- ⊙ Included code points which are homoglyphs in the lower case but not homoglyphs in the upper case
  - o Only lower case because upper case disallowed in IDNA 2008
  - o Decision made in consultation with IP ("the IP, at this point, does not require that upper case homoglyphs are included")

- ⊙ Cyrillic GP found cross-script variants with
  - o Armenian
  - o Greek
  - o Latin

- ⊙ Cyrillic GP did not find cross-script variants with Georgian

Cross-Script Variants - with Armenian Script

⊙ Armenian GP indicates three (3) variants with Cyrillic script

⊙ Opinion of Cyrillic GP that only two (2) homoglyphic variant

⊙ Other one (1) not identical, so included in confusables table

Armenian glyph	Armenian code point	Name	Cyrillic glyph	Cyrillic code point
h	0570	ARMENIAN SMALL LETTER HO	h	04BB
o	0585	ARMENIAN SMALL LETTER OH	o	043E

Cross-Script Variants - with Greek Script

◉ Cyrillic has three (3) homoglyphic variants with Greek script

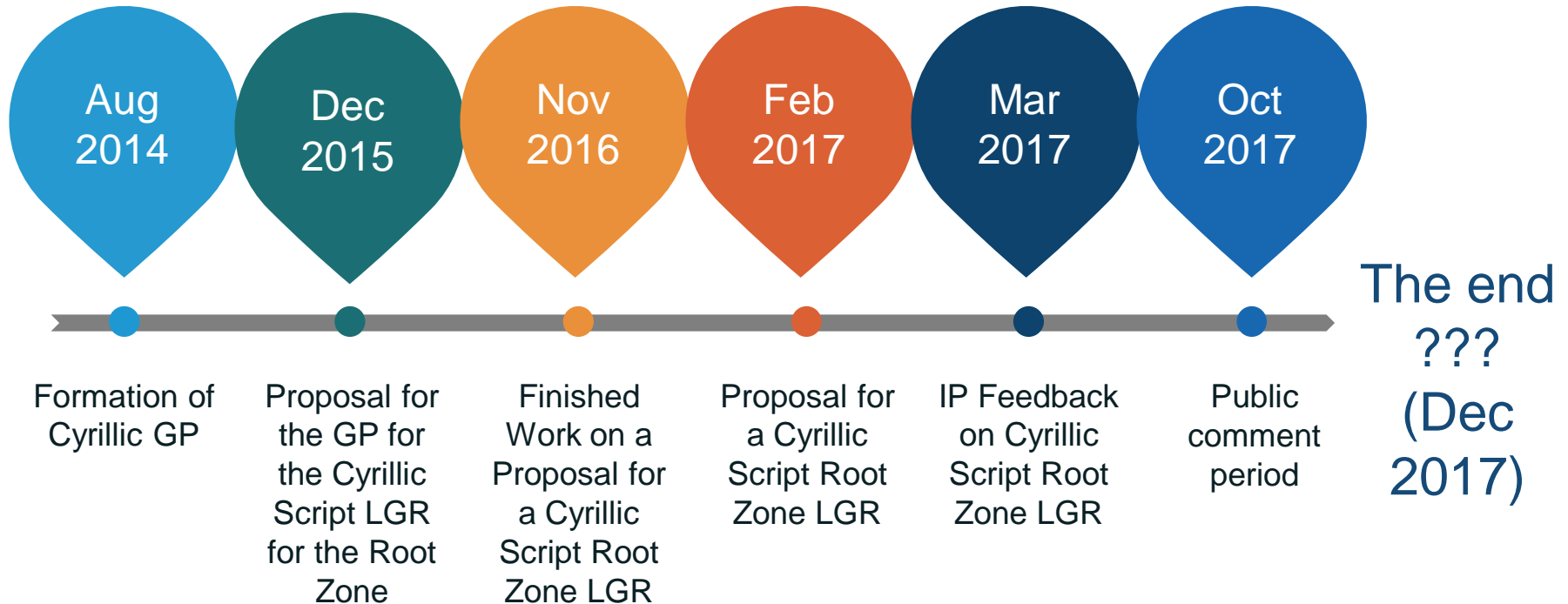| Greek glyph	Greek code point	Name	Cyrillic glyph	Cyrillic code point
κ	03BA	GREEK SMALL LETTER KAPPA	к	043A
ο	03BF	GREEK SMALL LETTER OMICRON	о	043E
φ	03C6	GREEK SMALL LETTER PHI	ф	0444

Cross-Script Variants - with Latin Script

⦿ Cyrillic has following homoglyphic variants with Latin from MSR-2

   ○ Confusables listed separately

Latin glyph	Latin code point	Cyrillic glyph	Cyrillic code point
a	0061	а	0430
c	0063	с	0441
e	0065	е	0435
o	006F	о	043E
h	0068	h	04BB
i	0069	i	0456
j	006A	j	0458
l	006C	l	04CF
p	0070	p	0440
s	0073	s	0455
x	0078	x	0445
y	0079	y	0443
ä	00E4	ä	04D3
ë	00EB	ë	0451
æ	00E6	æ	04D5
ħ	0127	ħ	045B
ə ə	01DD 0259	ə	04D9

Timeline

Aug 2014	Dec 2015	Nov 2016	Feb 2017	Mar 2017	Oct 2017
Formation of Cyrillic GP	Proposal for the GP for the Cyrillic Script LGR for the Root Zone	Finished Work on a Proposal for a Cyrillic Script Root Zone LGR	Proposal for a Cyrillic Script Root Zone LGR	IP Feedback on Cyrillic Script Root Zone LGR	Public comment period

The end ??? (Dec 2017)

To Summarize

It took Cyrillic GP more than three years to finalize proposal. But, the work has been done according to the dates defined in original Working plan, with some small delays.

Next Steps

1. **Very short term**
   Celebrate actual end of the work with one dinner together

2. **After public comment phase**

   Finalize the LGR proposal to include community feedback

3. **Long term phase**

   Address new code points included in the MSR in the future

   o if needed in the Root Zone LGR, GP to re-convene and create additional proposal

Members of Cyrillic GP

Alex Khmyl (Belarus)	Nelly Stoyanova (Bulgaria)
Alexei Sozonov (Russia)	Nodir Mirzoev (Tajikistan)
Almaz Bakenov (Kyrgyz Republic)	Oleksandr Tsaruk (Ukraine)
Daniel Kalchev (Bulgaria)	Pavel Gusev (Kazakhstan)
Dmitry Belyavskiy (Russia)	Predrag Lesic (Montenegro)
Dmitry Kohmanyuk (Ukraine)	Sanja Simonova (Macedonia)
Dušan Stojičević (Serbia, chair)	**Sergey Povalishev (Belarus)**
Enkhbold Gombo (Mongolia)	Tattu Mambetalieva (Kyrgyzstan)
Iliya Bazlyankov (Bulgaria)	Yashar Hajiyev (Azerbaijan)
Kadamjon Safiev (Tajikistan)	Yuliya Morenets (Russia)
Mirjana Tasić (Serbia)	**Yuriy Kargapolov (Ukraine)**
Nazgul Kurmanalieva (Kyrgyzstan)	Yuriy Honcharuk (Ukraine)

Latin Generation Panel Overview

Mirjana Tasić
Latin GP Chair

Latin GP Overview - Introduction

1 Short History

2 Scope of Work

3 Members

**4** Organization of Working Groups

5 Work Accomplished

6 Project Timeline

Latin GP Overview - Short History

- ⊙ Summer 2016 - GP restarted with new call for volunteers

- ⊙ Real work started October 2016

- ⊙ GP proposal finalized and sent to ICANN at the beginning of May 2017

- ⊙ GP seated on Monday, 15 May 2017

  - ○ Proposal for Formation of Latin Generation Panel

Latin Script Geographic and Linguistic Spread
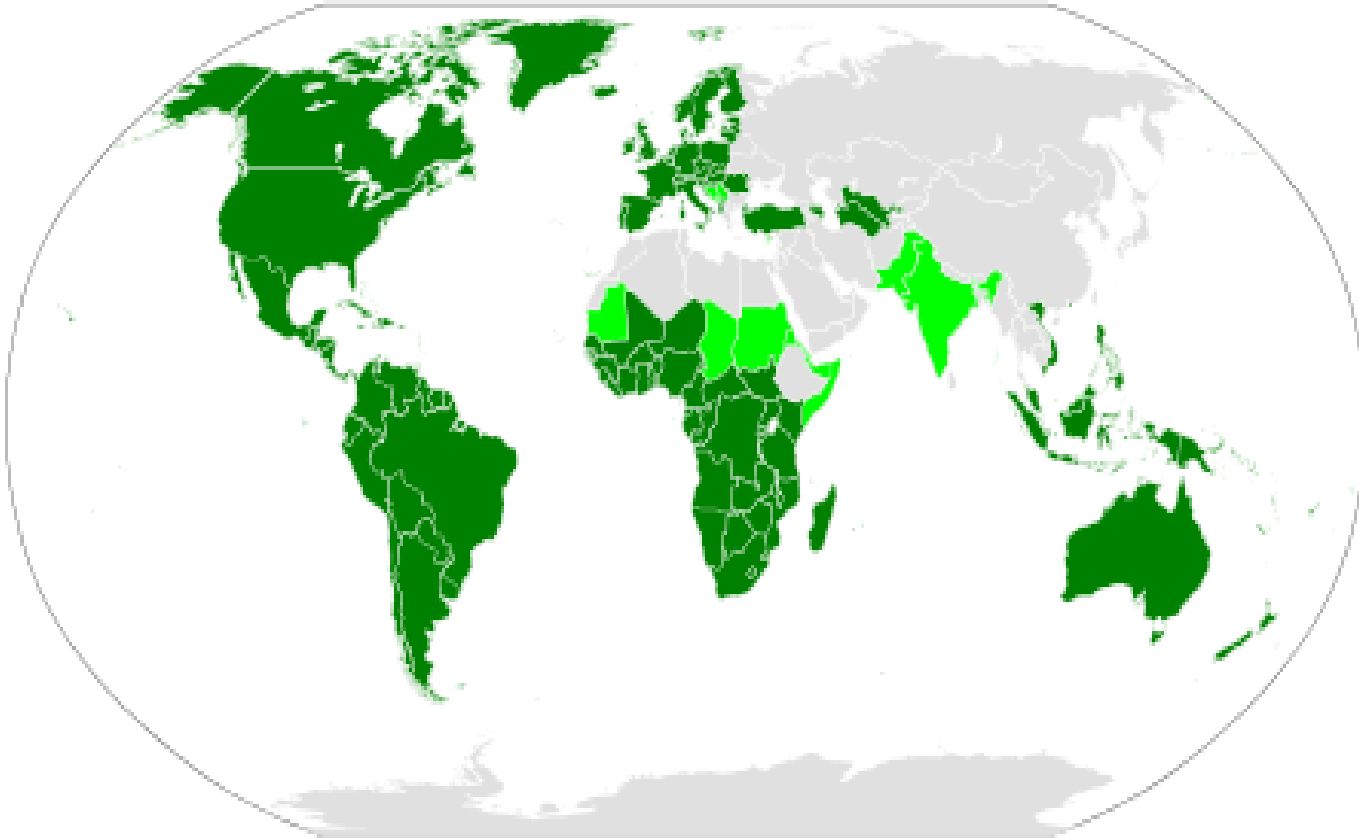
The dark green areas show the countries where the Latin script is the sole main script.
Light green shows countries where Latin co-exists with other scripts.
Grey areas - Latin-script alphabets are sometimes extensively used in areas
colored grey due to the use of unofficial second languages, such as French in Algeria
and English in Egypt, and to Latin transliteration of the official script, such as pinyin in China or *rōmaji* in Japan.

Latin GP Overview – Scope of Work

- Maximal Starting Repertoire version 2 (MSR-2)

- Lowercase letters

- Unicode ranges
  - Controls and Basic Latin
  - Controls and Latin-1 Supplement
  - Latin Extended-A
  - Latin Extended-B
  - IPA Extensions
  - Combining Diacritical Marks
  - Combining Diacritical Marks Supplement
  - Latin Extended Additional
  - Latin Extended-C

- Non exhaustive list of 455 languages in scope

- Non exhaustive list of EGIDS 1-5 languages contains 300 languages

- Non exhaustive list of EGIDS 1-4 languages contains 180 languages

- Maximal Starting repertoire version 2 (MSR-2) shows 279 Latin script code points

Note: **EGIDS** stands for the Expanded Graded Intergenerational Disruption Scale. This is a tool that is used to measure the status of a language in terms of endangerment or development.

Latin GP Overview – Members

- 14 members, 3 observers

- Language representatives
  - Africa
  - Asia
  - Australia and Oceania
  - Europe
  - North America

- Diversity
  - Community Representatives
  - Linguistic Experts
  - Registry/Registrar Experts
  - Policy Experts
  - Technical Community, DNS Experts
  - IDNA/Unicode Experts

Latin GP Overview - Challenges and Solutions

- ⊙ Challenges
  - ○ Many languages
  - ○ Many code points to process
  - ○ Not enough members to cover workload

- ⊙ Solutions
  - ○ Process languages with EGIDS=1-4 first (180)
  - ○ Consider processing languages with EGIDS=5 (120)
  - ○ Define simple procedure for developing Latin script repertoire
  - ○ Workload divided in two groups
    - • Repertoire Working Group
    - • Variant Working Group

Latin GP Overview – Organization of Working Groups
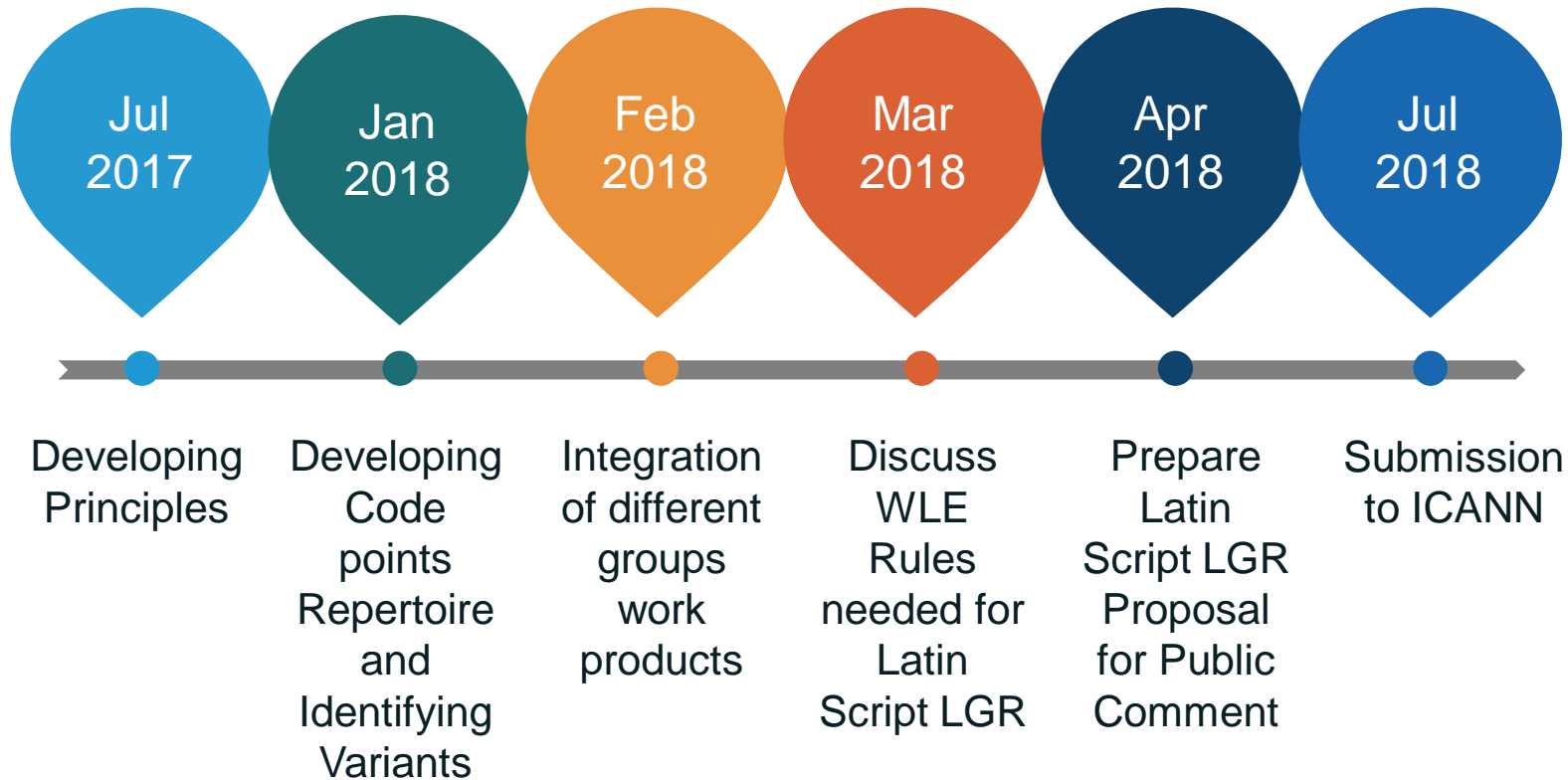
- ⊙ Repertoire Working group

  - ○ 10 members

  - ○ Developing Principles for Inclusion and Exclusion of Code Points in Latin Script for the Root Zone LGR

  - ○ Processing Languages to build the repertoire

- ⊙ Variant Working Group

  - ○ 4 members

  - ○ Developing Principles for Analysis of Variants in the Latin Script for the Root Zone LGR

  - ○ Identifying variants

Latin GP Overview – Work Accomplished

- ⊙ Developing Repertoire

  - o 180 of 180 EGIDS 1- 4 languages processed

  - o 114 of 279 MSR-2 code points attested

  - o 38 non-MSR-2 code points or code point sequences detected

- ⊙ Developing Variants

  - o Variants with Cyrillic script - work in progress

  - o Variants with Greek script - to be done

  - o Variants with any other script - to be done

  - o In-script variants - to be done

Note: Figures as of 24 October 2017

Latin GP Overview – Project Timeline

Jul 2017 — Developing Principles

Jan 2018 — Developing Code points Repertoire and Identifying Variants

Feb 2018 — Integration of different groups work products

Mar 2018 — Discuss WLE Rules needed for Latin Script LGR

Apr 2018 — Prepare Latin Script LGR Proposal for Public Comment

Jul 2018 — Submission to ICANN

To Summarize: work started on 15 May 2017
14 months is estimated time for project duration

Neo-Brahmi General Panel (NBGP)

Ajay Data, Mahesh Kulkarni, Udaya Narayana Singh
NBGP Co-Chairs

Agenda

1 Introducing NBGP: Scope: Scripts, Languages, Geo Coverage

2 Akshara System and its Impact

3 NBGP Members and Expertise

4 Efforts and Progress so far - Timeline

5 Future Plan of Action

6 Get Connected

1

Introduction to NBGP, its Scope, Scripts, Languages, and Geo-Coverage

NBGP, Scope, Scripts, Coverage etc.

1

Introduction

Generate proposals for script specific LGRs, based on community expertise and requirements. Ensure Global Acceptability of Neo-Brahmi Script based language IDN'S and variants.

2

Scope

Devanagari, Gujarati, Bengali, Gurmukhi/Punjabi, Odia/Oriya, Tamil, Kannada, Telugu and Malayalam.

3

Geo Coverage

India, Sri Lanka, Nepal, Bangladesh

4

Coverage

Devanagari under the **Brāhmī** family is used by 11 out of 22 scheduled languages of India - Bodo, Dogri, Hindi, Kashmiri, Konkani, Maithili, Marathi, Nepali, Sanskrit, Santhali and Sindhi.

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Why Devanagari

Devanagari is also used by 45 other languages in India, and is being adopted by new literary tribal languages of Arunachal Pradesh, Bihar and Andaman & Nicobar Islands. It is also popularly used in Fiji, Mauritius, Malaysia, England, Canada, South Africa, and Indonesia

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Akshara System

Akshara System – Binds Brahmi Based Scripts

- ⊙ Each consonant under Devanagari has an implicit schwa /ə/ added to it. In traditional phono-graphic classification, the consonants are categorized in terms of FIVE "Varga" or Groups – made up of both Place and Manner of Articulation. In addition, there are a few under the Non-Varga group (includes nine).

- ⊙ Each Varga, which corresponds to Stops, contains five consonants classified as per their phonetic properties.

- ⊙ The first four consonants are classified on the basis of Voicing and Aspiration and the last one is the corresponding nasal for each category.

- ⊙ All consonants have an implicit vowel sign (schwa) within them. A special sign is needed to denote that this implicit vowel is stripped off. This is known as the Halanta (◌੍) – the Vowel-killer.

- ⦿ The Halanta thus joins two consonants and creates conjuncts, which can be generally from 2 to 4 consonant combinations. In rare cases it can join up to 5 consonants

- ⦿ Each vowel is pronounced and symbolically represented independently

- ⦿ To indicate a Vowel sound other than the implicit one, a vowel modifier (Matra) is attached to the consonant. Since the consonant has a built in schwa, there are equivalent Matras for all vowels excepting the अ

- ⦿ Hindi, Marathi, and Konkani also admit two more vowels and their Matras given at the end

- ⦿ Then there are vowel modifiers, Anusvara (homo-organic nasal) & Chandrabindu (or nasalization marker), Visarga as well as 'Nukta' for Perso-Arabic words

Consonants In "Varga"	Unvoiced		Voiced		Nasal
	-Asp	+Asp	-Asp	+Asp	
Velar	क	ख	ग	घ	ङ
Palatal	च	छ	ज	झ	ञ
Retroflex	ट	ठ	ड	ढ	ण
Dental	त	थ	द	ध	न
Bi-labial	प	फ	ब	भ	म

Non-Varga Consonants	य	र	ल	ळ	व	श	ष	स	ह

Vowels	अ	आ	इ	ई	उ	ऊ	ऋ	ए	ऐ	ओ	औ	ऍ/अॅ	ऑ
Matras		ा	ि	ी	ु	ू	ृ	े	ै	ो	ौ		

- **Vowel Signs / Matras (M) :**
  - ॆ ा ि ी ु ू ृ ॆ ै ॅ ो ॊ ो ॉ ॕ ़ ॏ ॎ ॒ ॒
- **Vowel modifiers (D) :** ँ ं ः
- **Halant (H) :** ्
- **Nukta (N) :** ़

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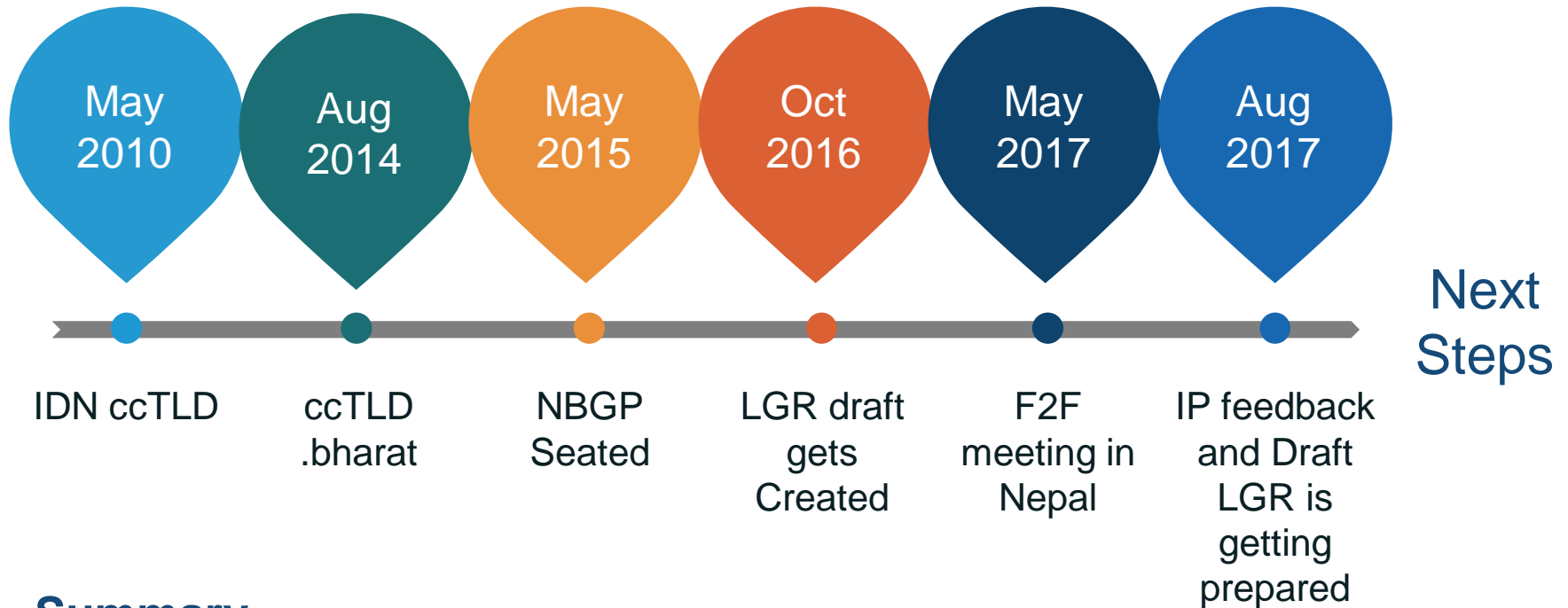Rajiv Kumar
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Timeline

Timeline

May 2010	Aug 2014	May 2015	Oct 2016	May 2017	Aug 2017
IDN ccTLD	ccTLD .bharat	NBGP Seated	LGR draft gets Created	F2F meeting in Nepal	IP feedback and Draft LGR is getting prepared

Next Steps

Summary

Draft LGR for Devanagari is at final stages to be released for public comments.

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Future Plan of Action

Future Timeline

Nov 2017	Dec 2017	Jan 2018	Oct 2018	May 2019	Aug 2019
Release of Devanagari LGR for Public Comments	Review of LGR for Other Scripts	LGR Drafts for Other Scripts get Created	Final Versions of LGR for Other Scripts	IP Feedback on LGRs Received	Release of all Neo-Brahmi LGRs for Public Comments

Important Follow up

Draft LGR for Devanagari is at final stages to be released for public comments.

Thank you

Connect with NBGP
NeobrahmiGP@icann.org

Engage with ICANN and IDN Program

Thank You and Questions

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