Integration Panel:
Comments on the Proposal for a Latin GP

Recommendation

The Integration Panel (IP) feels that the document as presented in the attached proposal falls short in some key areas and recommends that ICANN staff work with the editors to improve the document and clarify the tasks and scope of the Latin GP. The IP realizes the complexities attending any LGR for the Latin script, but feels that the tentative schedule could be tightened up considerably.

These concerns are stated in more detail in the following section.

The IP further feels that the proposed membership is satisfactory for seating the panel, but that it would be ideal if additional members or expert advisors could be recruited to help with deeper coverage of the rather wide-ranging set of languages and world-wide use of this particular script.

General Comments

The Integration Panel has reviewed the attached proposal and has these general comments:

1. Schedule – the proposed schedule appears unnecessarily drawn out, the IP suggests to organize some activities in parallel rather than strictly serially
2. Cross-script variants — these should be reviewed by other panels, therefore, having an early draft will prevent delays. The IP suggests that the GP plan to generate a "maximal set of cross-script variants" early; this "maximal" set can be initially based on the MSR-2 subset for Latin, it does not have to be limited to the final repertoire right away.
3. Scope – the IP strongly request that the GP update the document to describe how the scope of the work derives from MSR-2, and to not make it read as if it derived directly from the set of PVALID code points in IDNA2008.
    - The IP suggest a revision of sections 1.3 and 1.4 specifically to address which issues (exclusions) have been taken care of by MSR-2
4. Role of principles - in evaluating inclusions the GP is supposed to satisfy the [Principles] listed in the [Procedure].
    - The GP should elaborate on how the task of the GP is to verify and select for inclusion specific codepoints from the MSR-2, based on criteria that they will develop in accordance with the Principles stated in [Procedure].
    - This does not preclude finding and resolving issues with the MSR-2, however the GP should not spend time to merely repeat the work of the IP in defining MSR-2.
5. Role of Normalization – the IP finds that the document lacks awareness that because of NFC there isn't an issue related to order of combination.
    - The document should recognize that IDN labels are in NFC and labels will therefore contain **only** precomposed codepoints (unless those are unavailable for some graphemes).

6. Role of diacritics — The document should discuss how to treat the case where inclusion of some combining code points is necessary.
    - Normally, the IP would expect that the necessary combining sequences are listed individually in the LGR, instead of allowing "productive" use of combining marks.
    - The document should describe how such sequences intersect with the mostly precomposed code points.
7. Diacritics – as outlined above, the IP views the questions of how to handle these as a key aspect of the intersection of Latin script and IDNs.
    - Collect all discussion of diacritics into a single section.
8. Handwriting discussion – the IP suggests that this should be removed as not relevant
9. Arabic chat example contains digits — the IP notes that digits are not allowed in the root zone and therefore this is at best an example of something that is out of scope by definition.
10. Illustration of early document – The IP does not find this graphic all that helpful. There's no need to create an "interesting" document with lots of figures.
11. Minor comment: ordering of languages by EGIDS needs to be numeric

Specific comments

The IP then reviewed the document in more detail and provides the attached annotated version for the GP to use in creating a revision of the document.

All comments are agreed upon by the IP, independent of who entered it into the document.

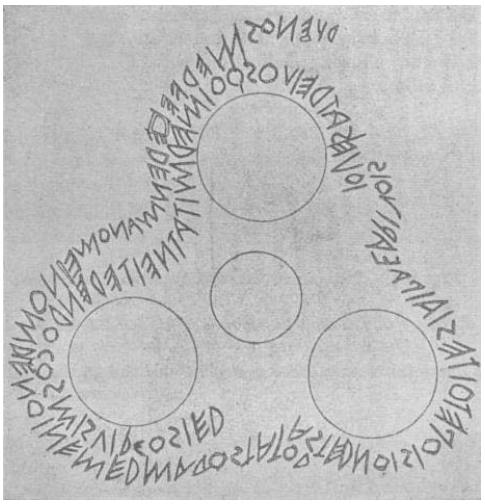
Proposal for Generation Panel for Latin Script Label Generation Ruleset for the Root Zone. Ed. C. Dillon. Version 10 (5 May 2016)

1. General Information

The Latin script[1] is derived from the Greek alphabet[2], as is the Cyrillic script. The Greek alphabet is in turn derived from the Phoenician alphabet which dates back to the mid-11th century BC and is itself based on older scripts. This explains why Latin, Cyrillic and Greek share some letters.

The Latin alphabet originated in Italy in the 7th Century BC. The original letters were: A, B, C, D, E, F, Z, H, I, K, L, M, N, O, P, Q, R, S, T, V and X. There were only upper case letters.

G developed from C and J from I. V and U split and a ligature of VV became W. Languages added new letters, for example þ (thorn) for Scandinavian languages, borrowed from the runic alphabet. Letters were often combined to form ligatures, (for example, æ from a and e in Danish and Norwegian) or ß (from Gothic s and z, in German). The current basic set is: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y and Z.



The Latin script is alphabetic – there are letters for both consonants and vowels. Some languages, such as Esperanto, use it phonemically, so that sounds are represented in a systematic way; other languages, such as English, use it so that other aspects, such as etymology, are represented. For example, the spelling of *night* connects it with German *Nacht*, although *gh* is no longer pronounced.

Letters of the Latin script now exist in upper and lower case forms. There may be little visual similarity between a letter's upper and lower case forms, for example, A and a.

The Duenos Inscription, 6th Century B.C., one of the earliest surviving documents in Latin

The Latin script is almost always written left-to-right.

Letter shapes ("glyphs[3]" in RFC 6365) may be considerably different depending on the language and whether the script is handwritten or printed.

There are many different writing styles. Until the 1940s, for example, German was commonly written in Gothic (or blackletter) script ("Fraktur"). Sütterlin was a common form:

[1] *Script* is used here to indicate the whole writing system including basic letters, ligatures and diacritics. See also RFC 6365 and ISO 15924.
[2] *Alphabet* is used to refer to the basic set of letters, as used, for example, in a dictionary.
[3] image of a character that can be displayed after being imaged onto a display surface

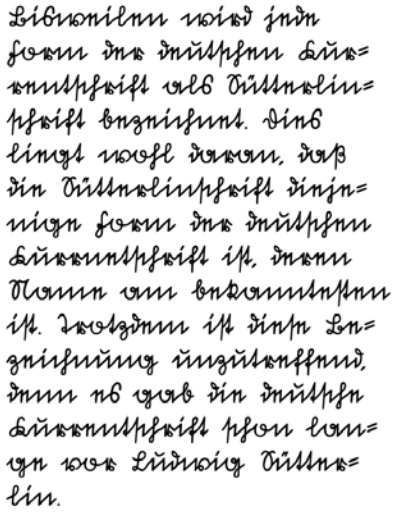
Comment [a1]: Please make sure to note editorial corrections and suggestions provided directly in the text, not just in the comments.

Comment [a2]: There is an ongoing, or at least still relatively recent, process of borrowing some forms from related scripts into Latin (e.g. iota), even though iota is also the source, by derivation, of the letter 'i'. (The reverse process also exist – viz Q and W added to Cyrillic to represent Kurdish.
This process would actually be useful to document, because it is relevant to the question of cross-script variants.

Comment [a3]: Nit: the actual derivation is from a long s/short s ligature – as can clearly be seen in the font used in this document. (ß)

Comment [a4]: Alternatively, remove the grahic.

Comment [a5]: As fascinating a topic as this is, the consideration of handwritten forms is outside the scope of this work.

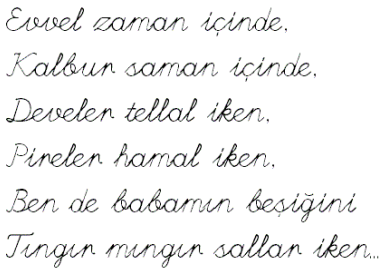


Normally Latin script letters appear separately when printed and joined together when written by hand. However, some printed fonts join the letters together and many people have individual preferences for writing at least some letters separately in their handwriting.

Spaces are almost always used to separate words. The hyphen (-) is used in many languages to separate elements that belong together in some way, for example, parts of a compound word or to indicate that a word has been truncated, for example, at the end of a line.

Comment [a6]: the hyphen is not allowed in the root zone

Sample of printed Fraktur by -donald-



Comment [a7]: there is no sample of Fraktur in the document – and in any case the discussion of Fraktur should conclude with it being irrelevant to the scope.

Sample of Turkish handwriting. Note how T and i are not joined at the start of the last line.

Diacritics also came to be used to modify letters in many languages. These may appear anywhere around, most commonly above (é), below (ç), or through (ø) a letter. Several diacritics may attach to the same letter; Vietnamese ~~ợ~~, for example, has a hook on the right and a dot below.

Some languages consider letter + diacritic as one letter. Norwegian (both Bokmål and Nynorsk varieties), for example, lists these three letters at the end of its alphabet: Æ, Ø and Å.

Diacritics may perform different roles depending on the language:

- For example, in French the acute accent over e (é) is used to indicate a closed e sound, for example, café.
- In Spanish, however, the same diacritic is used to indicate ~~cases where~~exceptions to the stress ~~does not fall~~ rules, ~~on the penultimate syllable,~~ for example, dieciséis 'sixteen', Cádiz.
- In Vietnamese, the same diacritic would indicate a high rising tone.

Comment [MS8]: Diacritics, pre-composed characters, and possible combining sequences should be discussed in a comprehensive section discussing how these should be implemented in a Latin LGR, given that the large majority of Latin letters with diacrictics are normalized in precomposed forms. IP would expect very few standalone combining marks part of a Latin LGR and preferably only as part of a sequence.

Comment [a9]: If possible, some discussion as to how these different roles affect the task of creating a Root Zone repertoire. Minimally required would be some acknowledgement that many diacritics are used for specialized purposes, like phonetic notation/romanization and therefore may not be part of an actual orthography. When used for an orthography, usually only a few sequences are needed (the rest is precomposed); such sequences should be enumerated in the LGR, instead of allowing the "bare" diacritic to be an element of the LGR repertoire.

1.1 Latin Script as Represented in Unicode

As represented in Unicode, the Latin script has some identical glyphs, for example, 0259 ə (schwa) and 01DD ~~ə~~ (turned e). The following letters belong to both the Latin and Cyrillic

Comment [MS10]: From (schwa) until COMBINING CEDILLA, text uses a different font, please fix back to Calibri

scripts: a, e, s, i, j, к, м, o, p, c, y, and x (non-exhaustive list). Here only lower case letters are considered, as upper case ones may not be used in IDNs.

A letter with two diacritics, for example, ć, may be typically represented in several ways in Unicode – as a pre-composed form (U+1E09), or as the letter and the first diacritic with the second added (U+0107 ć + U+0327 ¸COMBINING CEDILLA), or with the letter and the second diacritic with the ~~second~~ first diacritic added (U+00E7 ç + 0301 ◌́ COMBINING ACUTE ACCENT).

It is likely that scripts of African languages, for example, contain letters for which Unicode has no pre-composed forms. It is also possible that combining marks may be required for some languages in widespread modern use.

1.2 Target Script for the Proposed Generation Panel

The Latin script has the following specifications:

ISO 15924 code: Latn

ISO 15924 no.: 215

English Name: Latin

Note that the Gaelic and Fraktur variants of Latin have their own ISO 15924 codes and numbers (Latg 216 and Latf 217 respectively), and so do not fall within the remit of the Latin Generation Panel (LGP).

The complete set of code points in the Latin script lie in the following Unicode ranges:

Controls and Basic Latin	U+0061 – U+007A
Controls and Latin-1 Supplement	U+0080 – U+00FF
Latin Extended-A	U+0100 – U+017F
Latin Extended-B	U+0180 – U+024F
Latin Extended-C	U+2C60 – U+2C7F
IPA Extensions	U+0250 – U+02AF
Combining Diacritical Marks	U+0300 – U+036F
Latin Extended-D	U+A720 – U+A7FF
Combining Diacritical Marks Supplement	U+1DC0 – U+1DFF
Latin Extended Additional	U+1E00 – U+1EFF
Latin Ligatures	U+FB00 – U+FB0F
Full-width Latin Letters	U+FF00 – U+FF5E

MSR2 excluded the following ranges:

Comment [a11]: These multiple representations are (nearly always) eliminated by normalization. IDNs are in normalization form NFC; this fact should be mentioned and the NFC form of the character given in the example.

Comment [MS12]: Another example of diacritics being discussed in a non-rigorous way. Please move diacritics consideration in a single section, and just refer to it if needed in other parts.

Comment [NDMO13]: Neither of these is in everyday use nowadays. But if they were, it is moot who would be responsible for selecting or excluding them.

Comment [a14]: Importantly, in Unicode, there's no distinction in coding for Fraktur or Gaelic, so these "script" codes (largely) refer to what are font choices for a document. The IDN work is, in principle, independent of font choice. As it is, the use of Fraktur is effectively historic – which makes it doubly irrelevant based on the scope of the project. If Gaelic fonts were used widely in computer interfaces, that might have consequences for determining confusables, but that doesn't seem to be the case.

Comment [a15]: What is missing is an introductory or concluding paragraph that clearly states that MSR-2 defines the outer limit of the scope.

The [Procedure] should be mentioned as the source for defining the tasks of the Latin GP.

MSR2 should be formally cited (i.e. [MSR2]) – the same is true for all other source documents.

- Latin Extended-D; technical use (phonetic)/obsolete/punctuation
- Latin Ligatures; compatibility characters not PVALID in IDNA 2008
- Full-width Latin letters; compatibility characters not PVALID in IDNA 2008

1.3 Inclusion

To determine whether a code point is in a language in modern use, websites such as Ethnologue including EGIDS (Expanded Graded Intergenerational Disruption Scale), Omniglot, ScriptSource and Unicode (especially the Common Locale Data Repository) and Wikipedia will be used. Other major criteria include the number of speakers and whether there exists a modern literature or newspapers in the language.

The panel will need to develop criteria for inclusion in the Latin script repertoire of code points (or sequences of code points). Examples of such criteria could be:

- Code points must be PVALID in the IDNA 2008 protocol and CONTEXT O/J.
- The code point is used to write a language with an EGIDS score between 1 and 4.
- The code point is used to write a language with an EGIDS score of 5 or above, but the language is in **modern use**:
    - Current newspapers use Latin script to write the language.
    - The language is written in the Latin script and spoken by a large number (to be defined) of speakers.

Even if a code point falls under a criterion, there could be a reason (to be defined) why it is not possible to include it in the table.

EGIDS defines these levels[4]:

Level	Label	Description
0	International	The language is widely used between nations in trade, knowledge exchange, and international policy.
1	National	The language is used in education, work, mass media, and government at the national level.
2	Provincial	The language is used in education, work, mass media, and government within major administrative subdivisions of a nation.
3	Wider Communication	The language is used in work and mass media without official status to transcend language differences across a region.
4	Educational	The language is in vigorous use, with standardization and literature being sustained through a widespread system of

[4] See www.ethnologue.com/about/language-status.

Comment [a16]: The point of the MSR was to exclude these kinds of code points a-priori, so that the GP doesn't need to waste time in evaluating them. This discussion is misleading about what the GP is really supposed to focus on.

Comment [a17]: Generally, we like to avoid mere numerical arguments in this context. Some very vibrant languages with very stable orthographies have surprisingly small number of speaker (by global comparison) – for example Icelandic with about 300K.

Comment [a18]: The criteria listed as examples are the criteria used for creating the MSR-2. These criteria do not need to be "developed" again by the GP.

Comment [a19]: This is a given, if MSR-2 is the base.

Comment [a20]: These are excluded from the Root per [Procedure] and [MSR2].

Comment [a21]: "at least one language" – and the focus for the GP should be on being able to document which language to use as the "index" language supporting inclusion of the code point in the LGR. The IP expects accurate citation of at least one (and usually at most one) language per code point as the cause for inclusion. This process could be summarized here, instead.

Comment [a22]: it should be "widely written" and for "everyday purposes" (that is **not** for limited use like religious texts only, poetry only, phonetic notation only).

Comment [NDMO23]: The taks of a GP is not so much developing new criteria as investigating whether the language use in fact matches what the EGIDS listing claims it to be – remember, EGIDS is about speakers, but for LGRs the relevant aspects are WRITERS and a STABLE ORTHOGRAPHY.

Comment [a24]: This is the area where additional "criteria" MAY need to be "developed".

For example, some languages may use diacritics for purposes other than what would be the ordinary spelling of a word. (Comparable to the way English may use italics to indicate stress on a word in a sentence which disambiguates between possible readings for the phrase, but that's not part of the "spelling".)

Level	Label	Description
		institutionally supported education.
5	Developing	The language is in vigorous use, with literature in a standardized form being used by some though this is not yet widespread or sustainable.
6a	Vigorous	The language is used for face-to-face communication by all generations and the situation is sustainable.
6b	Threatened	The language is used for face-to-face communication within all generations, but it is losing users.
7	Shifting	The child-bearing generation can use the language among themselves, but it is not being transmitted to children.
8a	Moribund	The only remaining active users of the language are members of the grandparent generation and older.
8b	Nearly Extinct	The only remaining users of the language are members of the grandparent generation or older who have little opportunity to use the language.
9	Dormant	The language serves as a reminder of heritage identity for an ethnic community, but no one has more than symbolic proficiency.
10	Extinct	The language is no longer used and no one retains a sense of ethnic identity associated with the language.

Comment [a25]: repeating the EGIDS table is probably not really appropriate for this document (it's supposed to be a summary of the process to be applied, not the listing of all the details)

1.4 Exclusions

Code points must not be **punctuation**, or solely for **historical**, **religious** text or other **specialist** use.

Comment [a26]: Another "given" by earlier parts of this process (e.g. "Letter Principle" in the procedure and the selection of code points in the MSR.

Certain characters are only used for historical purposes. For example, some consonants in Irish Gaelic were formerly written with a dot above them, e.g., ḃ, ċ, ḋ, ḟ, ġ, ṁ, ṗ, ṡ and ṫ; now they are written: bh, ch, etc.

Comment [NDMO27]: This only really applied in Gaelic style.

Ligatures such as ij 0133 (LATIN SMALL LIGATURE IJ) are not PVALID in IDNA2008 and excluded. The strong visual similarity with the component parts in most such cases would seem to represent a case for excluding most ligatures. There are, however, some cases such as æ, mentioned above, for which there is a strong case for inclusion, as the letters have fused together into a new letter, with little visual similarity.

Comment [a28]: There are probably even better examples of historic characters, but as MSR2 excludes nearly all of them (any the IP could find and verify as such) the only ones left would be those without precomposed forms, because the IP did not enumerate specific sequences for combining marks.

It is possible that there may not be pre-composed forms in Unicode 6.3[5] for all letters in languages in modern use or even letters that cannot be represented in Unicode 6.3.

The Latin script is often used to **Romanize** other languages. For example, in the Hepburn Romanization of Japanese, 東京 would be written as Tōkyō. Romanization may require the use of unusual diacritics, for example, a dot under a consonant (for example, ~~ḍ~~) may represent a retroflex sound, as in Indian languages. Many unofficial Romanizations also exist such as Arabic chat: ana raye7 el gam3a el sa3a 3 el 3asr.

Use in a Romanization is not a criterion for inclusion, unless the Romanization counts as a language in modern use, with newspapers, literature, etc. written in it. The Pinyin Romanization of Mandarin is a borderline case in this respect, with further work required on whether its code points, for example ~~ǔ,~~ should be included or not.

1.5 Foundation documents and RFCs

Terminology Used in Internationalization in the IETF (RFC 6365) is used for definitions.

The normative statement of the protocol-valid code points is given in RFC 5892 (The Unicode Code Points and Internationalized Domain Names for Applications (IDNA)) with a corresponding reference table in the IANA Protocol Registry.

The work of the panel is to be based on *Considerations in the use of the Latin script in variant internationalized top-level domains: Final report of the ICANN VIP Study Group for the Latin script* and especially on *Procedure to develop and maintain Label Generation Rules for the Root Zone in respect of IDNA labels*.

As regards the definition of *variant*: "An IDN variant, as understood here, is an alternate code point (or sequence of code points) that could be substituted for a code point (or sequence of code points) in a candidate label to create a variant label that is considered the "same" in some measure by a given community of Internet users. There is not general agreement of what that sameness requires…" (from: *Procedure to develop and maintain Label Generation Rules for the Root Zone in respect of IDNA labels*).

1.6 Principal languages using the script

Major world languages using the Latin script include:

- Europe: Many Romance, Germanic and Slavonic, and some other languages including Spanish, French, Italian, Portuguese, English, German, Dutch, Swedish, Danish, Norwegian, Polish, Czech, Croatian, Finnish and Hungarian.
- America: Many European languages plus indigenous languages including Guaraní, Cubeo, Q'eqchi', Shavante, Ixil, Zapotec, Atikamekw, etc.
- Eskimo-Aleut: Inuit and Yupic languages, and Aleut.
- Africa: Many European languages plus indigenous languages including Swahili, Hausa and Yoruba.
- Central Asia and Asia Minor: Azeri, Turkish, Turkmen, Uzbek, etc.

[5] As of the time of writing, Unicode is at version 8.0. IDNA 2008, however, is based on Unicode 6.3.

Comment [a29]: Make that a near certainty.

Comment [MS30]: This discussion about pre-composed does not belong here. (pre-composed characters are not typically excluded, combining sequences are.). Such consideration should be in a section about diacritics.

Comment [a31]: This is a separate thought. Suggested to break it out: "MSR-2, based on IDNA2008 is currently limited to Unicode 6.3. The latest version of Unicode is Unicode 8.0. It is possible that there are eligible languages that would require a code point encoded only after Unicode 6.3. In these cases, the GP will need to investigate the requirements for such languages and make sure that the design of the Latin Script LGR does not preclude later extensions to cover at least such known "future" code points.

Comment [a32]: This would be ineligible due to the inclusion of digits, which are not allowed in the root by both [Procedure] and [MSR-2]

Comment [a33]: Good. However, it should be "orthography" not "language" here.

Comment [a34]: As far as the Latin GP is concerned the foundational documents are not the RFCs for IDNA but the [Procedure], as well as the [MSR2], the [Guidelines], and other documents published by the IP, which collectively set the parameters for the work.

Comment [a35]: This and all other documents need proper citation

Comment [a36]: The tabular representation of this appears to be in a separate document. Nothing wrong with that, but shouldn't there be a citation (later also a link)?

Comment [a37]: Note editorial corrections in the text of this section (by NDM)

- Oceania and Southeast Asia: Many European languages plus Pitjantjatjara, Maori, Indonesian, Bahasa Malaysia, Tagalog, Vietnamese, Polynesian languages, etc.

See Appendix A for a longer but probably non-exhaustive list.

Europe

- The Latin script is the script in widest use in Europe. The Cyrillic script is used by several countries, for example Bulgaria and Serbia (the latter also widely uses Latin script unofficially), and the Greek script is used in Greece.
- Many languages have modified letters by adding diacritics, for example, ą in Polish (U+0105 LATIN SMALL LETTER A WITH OGONEK) or created digraphs, for example, U+0153 œ LATIN SMALL LIGATURE OE~~œ in French~~ or new letters, for example þ (thorn) in Icelandic.

Americas

- Over a t~~T~~housand~~s of~~ languages ~~were~~ may have been spoken before contact with Europeans.
- Many are now critically endangered, with only about ten with an EGIDS score between 1 and 4, but some have been given official status, ~~for example~~notably~~,~~ Guaraní, Quechua and Aymara.
- Several hundred indigenous languages belonging to many language families are or were spoken in North America.
- Creoles, stable natural languages developed from pidgins (simplified languages or mixture of languages used by non-native speakers) are in use, for example, in the Caribbean and South America.
- In Mexico and Central America, Mayan languages are spoken by some six million people. Yucatec Maya alone has about 800,000 speakers.
- In South America about 350 languages, belonging to, for example, the Tupian, Cariban and Macro-Jê language families, are spoken.
- The Latin script is now used, at least as one option, to write ~~most~~ all American indigenous languages and creoles. Syllabics (see also the next section) is used to write some Canadian languages. The Maya script was used historically to write some Mayan languages.

Eskimo-Aleut[6]

- Eskimo languages split into Inuit languages written in Latin and Inuktitut Syllabics and ~~Yupic~~ Yupik languages written in the Latin and Cyrillic scripts. Kalaallisut, spoken in Greenland, is an EGIDS 1 language.
- Aleut is spoken in Alaska. It is an EGIDS 7 language, using, for example, ĝ circumflex (U+011D) and X̂~~x~~ circumflex (which has no pre-composed form even in Unicode 8.0).

Africa

- Today, the Latin script is the writing system[7] in widest use in Africa.
- It is estimated that over 500 out of the 2000 languages spoken in Africa today have orthographies (Bendor-Samuel 1996: p.689), with the vast majority being Latin script-based.

[6] These languages are filed under Asia East in the appendix, as are Ainu and Okinawan.
[7] RFC 6365: A set of rules for using one or more scripts to write a particular language.

Comment [a38]: The footnote seems weirdly non-apropos. (Word doesn't allow comments on the footnotes themselves). If the RFC makes a statement of usage, the IP would find it difficult to accept a technical standard such as that document as authority on this question of script use.

- The Latin script has been significantly extended or modified to represent African languages:
    - Frequently, supra-segmental features such as tone were encoded using super-and subscripted graph(eme)s, such as accent marks.
    - Next to entirely new letters, di-, tri- and quadrigraphs, for example, are often-much used to represent single phonological units.
- A number of code-points are already excluded by the "letter principle" in the MSR, as well as IDNA 2008.

Central Asia and Asia Minor

- The languages of the majority of the inhabitants are Turkic: Azeri, Tatar, Turkish, Turkmen, Uzbek, etc.
- Some languages in the area are sometimes, and others exclusively, written in the Cyrillic or Arabic scripts. In general, Latin script is not used for the languages centred within the Russian Federation.
- Some diacritics are used, for example, ü and ş in Azeri, Turkish and Turkmen, and some additional letters are used, for example, ə (schwa) in Azeri.

Oceania

This area contains Polynesian, Australian, Austronesian and Papuan languages.

- Major Polynesian languages include Hawaiian, Maori, Samoan, Tahitian and Tongan. Long vowels may be indicated by macrons, for example, ō.
- There are fewer than 150 Australian languages in modern use. Some use digraphs, and some diacritics, for example, ~~ŋ~~ in Pitjantjatjara.
- There are over 1,000 Austronesian languages, including Bahasa Malaysia, Indonesian, Formosan languages and Tagalog. Most Austronesian languages now use the Latin script, but there is some use of the Arabic script, for example, Jawi for Malay.
- Some Austronesian languages are spoken in New Guinea. Most of the over 1,000 languages spoken there are Papuan languages with Latin-based writing systems.

1.6 Related Scripts

As mentioned above, the Latin and Cyrillic scripts developed from the Greek script and share several letters. The Greek, Arabic and Hebrew scripts developed from the Phoenician alphabet, but the relationship is so distant that there is little visual similarity among most related letters among them. The Armenian script may be modelled on the Greek script and a small number of letters are shared.

The Fraktur and Irish Gaelic writing styles of the Latin script are so different that Unicode considers them different scripts.

Ċuaiġ bé mórṫáċ le dlúṫġráð
fíonḟinn trí hata mo ðea-ṗorcáin
bïg. jkqvwxy 7 z & 1234567890:
Ceanannas an cló a úsáidtear anseo.

sample of Irish Gaelic by Arthur Baker

Comment [a39]: spelling

Comment [a40]: The OPPOSITE is true: Unicode unifies Fraktur and Gaelic, they are not separately encoded.

2. Proposed Initial Composition of the Panel

The role of the LGP is to establish the repertoire and Label Generation Rules for top level internationalized domain names in Latin script.

Comment [a41]: This belongs in a section on "scope"

2.1 Panel Chairs and Members (with Expertise)

The current working group includes the following members in alphabetical order:

No.	Name	Position	Organization	Country	Language Expertise
1	Tunde Adegbola	Observer	African Languages Technology Initiative	Nigeria	
2	Sarat Assirou	Member	Institute of Applied Linguistics at Université Felix Houphouët Boigny de Cocody, Abidjan	Ivory Coast	Dioula, Baoulé Bété, Ebrié
3	Dwayne Bailey	Observer	Translate.org.za	South Africa	Afrikaans, Northern Sotho, Venda, Tswana and Southern Sotho
4	Ahmed Bakhat Masood	Member	Pakistan Telecom Authority	Pakistan	Urdu, English
5	Fahd Batayneh	Observer	ICANN	Jordan	Arabic, English
6	Matthias Brenzinger	Observer	University of Cape Town	South Africa	
7	Eric Brunner-Williams	Observer	CORE	US	English
8	Chris Dillon	Chair	University College London	UK	English, German, Spanish
9	Tarkan Doruk	Observer	Sanofi	UAE	Turkish
10	Yashar Hajiyev	Observer	Information Policy Analytical Center	Azerbaijan	Azerbaijani, English
11	Hazem Hezzah	Member	League of Arab States	Egypt	Use of Latin script for Arabic chat language, German
12	Paul Hoffman	Observer	ICANN	US	English
13	Danko Jevtovic	Observer	Fondacija	Serbia	Serbian, English
14	Tarik Merghani	Observer	AfTLD	Sudan	
15	Meikal Mumin	Member	University of Cologne	Germany	German, English, use of Latin script for African

					languages
16	Abdeslam Nasri	Member	ATOS	Algiers	
17	Ngô Thanh Nhàn	Member	New York University	US	Vietnamese
18	Daniel Omondi	Observer	Internet Society	Kenya	
19	Oscar Gabriel Ledesma Piñeiro	Observer	Alfa-REDI	Argentina	Spanish, English
20	Gideon Kiprono Rop	Observer	DotConnectAfrica	Kenya	
21	Dušan Stojičević	Observer	RNIDS	Serbia	Serbian, English
22	Jean-Jacques Subrenat	Member	NCUC; Individual Users; NMI/CC; ICG	France	French, English
23	Mirjana Tasić	Member	National Internet Domain Names of Serbia (RNIDS)	Serbia	Serbian, English
24	Aysegul Tekce	Observer	ICANN	Turkey	Turkish
	Vladimir Visnjic	Member	Temple University	US	English, German, Serbian, Croatian, Greek
25	Bonface Witaba	Member	Global Knowledge Partnership Foundation	Kenya	Swahili
26	Jiankang Yao	Observer	Computer Network Information Center (CNIC, CAS)	China	Mandarin Chinese, Pinyin and English

Relevant expertise

Name: Chris Dillon
Role: Generation Panel Chair, Academia (linguistic)
Designation: Research Associate, University College London
Relevant experience:

- 2012-present: Member of the VIP Chinese Generation Panel (see https://community.icann.org/display/croscomlgrprocedure/Chinese+Script+GP).
- 2016-: Member of IDN Implementation Guidelines Working Group
- 2016- Member of Next-Generation RDS Working Group
- 2014-2015 Formerly Co-Chair of the GNSO Translation & Transliteration of Contact Information Policy Development Project Working Group
- (see https://community.icann.org/display/tatcipdp).
- 2011-2014 Member of the JIG [ccNSO/GNSO Joint IDN Working Group] (see http://ccnso.icann.org/workinggroups/jiwg.htm).
- 08/2012–12/2012 Project 2.1 (Root IDN Table Process) (see www.icann.org/en/news/announcements/announcement-3-21mar13-en.htm).
- Formerly member of the Variant Issues Project Chinese Case Study (see https://community.icann.org/display/VIP).

- 2010-2012 Project Manager of the String Similarity Evaluation Panel during the first round of ICANN's New gTLD Program

Name: Sarat Assirou
Role: Linguistic Expert / Community Representative
Designation: Instructor, Institut de Linguistique Appliquée, Université Félix Houphouet Boigny de Cocody, Abidjan, Ivory Coast
Relevant experience

- Linguist, specialist in functional alphabetization
- Consultant on alphabetization
- Lecturer in the department of language sciences at the Université Félix Houphouet Boigny de Cocody

Seminars and experiences on alphabetization:

- October 2007: Participation in the editing seminar to set up the Institutions for Training and Women's Education (Institutions de Formation et d'Education Féminine - IFEF) in Cote d'Ivoire.
- July-August 2010: Realization (in association with Dr Kalilou TERA) of the diagnostic study on alphabetization in Côte d' Ivoire, sponsored by the National Ministry of
- Education (MEN) with financial support from UNICEF.
- October 2011: Seminar on the validation of the diagnostic study on alphabetization in Abidjan, Côte d'Ivoire (AIBEF).
- Since January 2012: TV presenter under the heading "PARLONS NOS LANGUES" ("Let's speak our Languages) in the broadcast "LES TRESORS DU MONDE" ("Treasures of the World") on channel TV2 on Radio Télévision Ivoirienne (RTI).
- November 2014: Training officers for the direction of Alphabetization and Informal Education (Direction de l'Alphabétisation et de l'Education Non Formelle - DAENF) in methods and techniques for the alphabetization of national languages

Name: Ahmed Bakhat Masood
Role: Regulator, DNS, Arabic Generation Panel, Security
Designation: Deputy Director (ICT/Network)/ Pakistan Telecom Authority
Relevant experience

- 2013 to present: Member of Task Force on Arabic IDN (TF-AIDN)
- 2014- to present: Member of Program Committee Middle East DNS Forum (http://www.mednsf.org/en/program-committee/)

1998 to present: Pakistan Telecom Authority (PTA)

- Initiation of different ICT projects for community development like IXP for Pakistan
- Coordination for IPv6 Task Force for Pakistan Network Management, Network Security including DNSSec and Network forensic
- Coordination with APNIC, SANOG, ICANN and academia for trainings on modern technologies like IPV6, DNSSec, IRM
- Network and Security management
- Implementation of ISO 27001 standards in PTA

Name: Hazem Hezzah
Role: Arabic Generation Panel member, National and regional policy makers
Designation: IT Expert for ICT Development / League of Arab States
Relevant experience:

- 2013-present: Member of the Task Force for Arabic Script IDNs (TF-AIDN)
- 2012- present: Member of the Multistakeholder advisory group and preparation team for the Arab Internet Governance Forum.
- 2012-present: Participated in preparation, evaluation and contracting for the (.arab) gTLDs, and currently preparing policies for the new gTLD.
- 1991-2011: Performed various IT related roles as support, consultant and technical project manager.
- Languages: English, German, use of Latin script for Arabic chat langauge

Name: Meikal Mumin
Role: Linguist
Designation: Institute for African Studies and Egyptology, University of Cologne
Relevant experience:

- Member of Arabic Generation Panel
- Member of Task Force on Arabic Script IDNs (TF-AIDN)
- Expertise in Roman/Latin script usage for a number of African languages, as well as a general overview of further scripts used in Africa. Active knowledge of German, English, Italian, and French, and familiarity with the writing traditions of those languages and further languages of Modern Europe. Also some familiarity with languages of the Middle East including Arabic and Persian.

Name: Abdeslam Nasri
Role: ICT Architect, Arabic Generation Panel
Designation: ICT Architect and Project Manager / AtoS
Relevant experience

- 2014 to present: Member of the Arabic GP
- 2014 to present: Member of the Task Force on Arabic IDN (TF-AIDN)
- Expertise in various IT domains like software development, Internet development and multi-tiered architectures, Enterprise architecture. PSPO I and TOGAF certification
- Panellist at the Internet Governance Forum

Name: Nhàn Ngô
Role: Linguist
Designation: Ph.D. Linguistics at Center for Vietnamese Philosophy, Culture & Society,Temple University
Relevant experience

- Expert on Latin-based Vietnamese script in display/rendering, storage and access (search) according to the Vietnam's General Department of Standards, Metrology and Quality Control.
- First to propose a computer character code for Vietnamese in 1984. It finally came to being in Unicode around 1990 (with two other colleagues). Work on Latin-based Vietnamese: http://www.cs.nyu.edu/~nhan/linguistics.html.

Name: Jean-Jacques Subrenat
Role: Policy Expert
Relevant experience

Currently:

- Member of the NTIA IANA Functions' Stewardship Transition Coordination Group (ICG)
- Member of the NETMundial Coordination Council
- President of the Steering Committee, IndividualUsers.org (elected in October 2015)

Member of the ICANN Board of Directors 2007-10 during which:

- Member of President's Strategy Committee (where he was a co-author of the "Implementation Plan for Improving Institutional Confidence")
- Structural Improvements Committee; Public Participation Committee (as its first Chair)
- Member of Board Working Groups: ALAC Review, Board Review, ccNSO Review (as its Chair)

Name: Mirjana Tasić
Role: Registry / DNS/Unicode Expert / Linguist
Designation: Executive Advisor, RNIDS (Register of National Internet Domain Names of Serbia)
Relevant experience

- 08/2012–12/2012 ICANN IDN variant TLD Program: Project (P2.1) - Procedure to Develop and Maintain the Label Generation Rules for the DNS Root Zone in Respect of IDNA Labels ICANN volunteer
- 03/2009 – present: Executive Advisor at RNIDS (Register of National Internet Domain Names of Serbia). Introduction and implementation of IDN ccTLD Fast Track Process for ccTLD <срб><xn—90a3ac>: string evaluation, domain delegation, sunrise and open registration.
- 07/2006–03/2009 Acting Director of RNIDS (volunteer work) Realization of organizational, political and financial prerequisites for the establishment of RNIDS: RNIDS registration; provision of legal framework for RNIDS operation; organization and establishment of RNIDS office; preparation and implementation of .rs landrush procedures; organization and implementation of the transition process from .yu to .rs domain.
- 04/2006–07/2006 Founder of RNIDS (volunteer work). Organized the RNIDS founding assembly meeting on July 7, 2006.
- 04/1994–09/2008 YU TLD (YU Top Level Domain) Administrator (volunteer work). Managed operation of .yu DNS; Maintained database of .yu domains.
- 1992–1994 Chairwoman, Technical Committee, Academic Network of Yugoslavia. Actively participated in the introduction of internet in Serbia. (volunteer work)
- 1991–10/2010 Administrator of Class B IP address (147.91) assigned to the University of Belgrade, Serbia. (volunteer work)

Name: Vladimir Visnjic
Role: Linguist
Designation: Professor at the Department of Mathematics, Temple University, Philadelphia
Relevant experience

- PhD in Theoretical Physics, University of Bonn, 1979
- Associate Scientist at Fermi National Laboratory, Batavia, IL, 1988-1994
- Professor at the Department of Physics, University of Crete, Greece
- Author of over 40 scientific publications in top Physics Journals
- Fluent in English, German, Serbian, Croatian, Greek. Good working knowledge of French and Russian

Name: Boniface Witaba
Role: Linguist
Designation: Technical / Linguist
Relevant experience

- Expert on Internet governance analysis, monitoring and evaluation of project impacts.
- Programme planning, evaluation and assessment
- Country expertise in Kenya, Tanzania and South Africa

- Swahili (native), English (proficient), Portuguese (beginner)

2.2 Panel Diversity

As the Latin script is used by several hundred languages (see the appendix), it is not possible to have representation from experts of all of them. The approach taken, therefore, is to have experts covering areas of languages, for example, African languages using the Latin script. Because of the panel's wide remit, the intention is for it to remain open to new members throughout its work. Those without short CVs and currently marked as observers in this document may easily become members.

Comment [a42]: It would be appropriate for the panel to reach out to experts (including scholars) who are not formally members of the panel. They would be, in the terms of the [Procedure], "advisors". (Advisors may be volunteers)

The current section should have a bullet item describing the panels intent and planned outreach efforts with regards to advisors.

National and regional policy makers

Some members of the panel are well versed in ICANN policy, others in national and regional policy.

Technical community (general and DNS)

Although the panel lacks technical expertise, XML training and the LGR Toolset (which automatically generates XML code point by code point) are available.

Security and law enforcement

The panel has little expertise in this area. It is possible that some code points that otherwise would have been included will need to be excluded for security reasons such as lack of compatibility with IDNA or visual similarity. The panel will bear in mind the sentence in the Procedure to develop and maintain Label Generation Rules for the Root Zone in respect of IDNA labels: "Finally, in investigating the possible variant rules, Generation Panels should ignore cases where the relation is based exclusively on aspects of visual similarity."

Comment [NDMO43]: This is a direct quote, of a sentence that occurs alone in its paragraph, hence not further elucidated. It leaves it unclear whether "visual identity" is a subcase of "visual similarity". We seem to have been assuming that it is not. [AF] REPLY: from the genesis of the document, "similarity" and "identlty" are not the same thing – what was aimed at was to rule out "happens to look alike at arms length", but to allow "is identical in appearance (BECAUSE) characters are related in origin". Etc.

Academia (technical and linguistic)

The panel has good coverage of European languages (Romance, Germanic and Slavonic), some coverage of North American indigenous languages, some coverage of African languages, but only weak coverage of South East Asian and especially Central Asian languages and again weak coverage of Australasian languages.

Community-based organizations

Several members of the panel work for community organizations.

Local language computing using Unicode and specifically IDNs

Several of the linguists have a good knowledge of local language computing, Unicode, IDNA and ICANN's Variant Issues Project.

2.3 Relationship with Past Work or Working Groups

Until the advent of IDNs in 2003, the "LDH set" – Latin letters "a" to "z" in both upper and lower case, the digits "0" to "9" and the hyphen was used for the registration of names in the DNS.

IDNA (Internationalized Domain Names in Applications) is the protocol used for implementing IDNs. The latest version is 2008, but changes from the 2003 version are likely to break the Longevity Principle in the *Procedure to develop and maintain Label Generation Rules for the Root Zone in respect of IDNA labels*.

ICANN's Variant Issues Project Study Group for the Latin Script produced *Considerations in the use of the Latin script in variant internationalized top-level domains* in 2011.

3. Work Plan

3.1 Suggested Timeline with Significant Milestones

The Generation Panel intends to divide the work on the LGR for the Root Zone into four stages:

1. Finalization of Code Points
2. Finalization of Variants
3. Finalization of Whole Label Rules
4. Finalization of LGR Documents for Latin Script and Submission to ICANN

At all stages there will be consultation with the Integration Panel, the Generation Panels of related scripts, and the public via periodic public comments.

1. Finalization of Code Points

This stage involves the listing of PVALID code points from the parts of Unicode listed in section 1.1 above. Each code point will be evaluated and its attestation status indicated. This situation will be represented in an XML file. For the non-exhaustive list of languages using the Latin script that is to be used, see the appendix.

2. Finalization of Variants (if any)

The LGP will list in-script and/or cross-script variants. This information will be added to the XML file. It is expected that variants will be blocked. That means that if, for example, labels aaıaa, aalaa and aaiaa (where the first contained 0131 LATIN SMALL LETTER DOTLESS I and the second LATIN SMALL LETTER IOTA which were blocked variants of LATIN SMALL LETTER I in the third) were applied for in that order, the first application would block the two subsequent applications.

3. Finalization of Whole Label Rules

The LGP will check that no problems are caused by any default WLE and then list any Latin script-specific WLEs. This would be the case, if, for example, some code point may only occur in certain positions in a label (for example, German ß would be mid-label or label-final only), or may only occur together with certain other code points or ranges of code points. This situation will be represented in the XML file.

4. Finalization of LGR Documents for Latin Script and Submission to ICANN

The proposal document and XML files will be completed, taking into account public comments and the work of the Generation Panels of related scripts (at least Cyrillic and Greek). It is possible that a delay may be necessary at this stage.

3.2 Proposed schedules of meetings and teleconferences

The schedule below roughly presumes the Arabic Generation Panel's schedule. The AGP's experience is likely to speed up the LGP's work. The Latin script, however, is used by a larger number of languages and consists of a larger number of code points; both factors which will slow down its work. The schedule presumes about four months on work with variants. It may be necessary to appoint advisors to fill gaps in the panel's experience. The panel is composed largely of volunteers and not all of them will have time at all stages of the work.

Comment [a44]: This is immediately subsettable from the Latin repertoire in the MSR-2. The document should be explicit that this will be done.

Comment [a45]: The determination of the maximal set of cross-script variants does not depend strongly on "finalization" of code points. The reason for that is based on the nature of cross-script variants: they are based in the common history of the scripts.

In the unlikely event that a code point with a cross-script variant is later excluded based on secondary considerations, the removal of the then unnecessary reverse mapping listed in the other script(s) can be carried out without risk of incompatibilities as late as final integration.

Front loading this part of the investigation would reduce the possibility of overall delays of panels waiting for each other.

Comment [a46]: see comment above – to put it this way: the process could be simplified if there was a ***"maximal starting cross-script variant set"*** based on the full MSR-2 repertoires for the various related scripts. This set could be determined without need for attestation or detailed research of code point usage needed to refine the repertoire.

Afterwards, it is a simple matter to trim down this "maximal" set – if it turns out that it contains a few variants to/from some code point that didn't make the final cut – that final subsetting could even be done mechanically during integration. There is simply no reason to court a delay of the process.

Having a tentative maximal set allows everybody to review the issue upfront. If eventual subsetting is needed, that would not appear to represent a risk to the process – as long as the issue is cross-script (non-overlapping repertoires).

Task name	By	Status
Develop call for participation	Tue 06-23-15	Done
Publicly release call for participation	Fri 07-24-15	Done
Meeting	Tue 9-22-15	Done
Face-to-face meeting (Dublin)	Sun 10-18-15	Done
Meeting on character set	Tue 11-10-15	Done
Invitation to experts to ensure diversity	Fri 11-20-15	In progress
Meeting on character set	Tue 11-24-15	Done
Meeting on character set	Tue 12-08-15	Done
Meeting on panel-formation proposal	Tue 01-05-16	Done
Meeting on panel-formation proposal	Tue 01-26-16	Done
Meeting on panel-formation proposal	Tue 02-09-16	Done
Face-to-face meeting (Marrakech)	Sun 03-06-16	Done
Meeting on character set	Tue 03-22-16	Done
Meeting on character set	Tue 04-12-16	Cancelled
Meeting on panel formation proposal	Tue 04-26-16	Done
Submit panel formation proposal for informal comment by IP	Weds 05-04-16	
Meeting on analysis of Second Level work	Tue 05-10-16	
Meeting on character set	Tue 05-24-16	
Release of character set for public comment	Tue 06-07-16	
Meeting	Tue 06-21-16	
Meeting on finalization of character set	Tue 07-12-16	
Meeting: Discussion on variants	Tue 07-26-16	
Meeting: In-script variants	Tue 08-09-16	
Meeting: Cross-script variants	Tue 08-30-16	
Meeting	Tue 09-13-16	
Meeting	Tue 09-27-16	
Meeting on finalization of variants	Tue 10-11-16	

Meeting: Release of variants for public comment	Tue 10-25-16	
Possible delay as variants are coordinated across related scripts		
Face-to-face meeting (Puerto Rico)	Sun 10-29-16	
Incorporation of comments from public and IG	Tue 11-29-16	
Finalization of variants	Tue 12-13-16	
Discussion of Whole Label Rules	Tue 01-10-17	
Documenting Whole Label Rules	Tue 01-24-17	
Meeting	Tue 02-07-17	
Meeting on finalization of Whole Label Rules	Tue 02-21-17	
Release of Whole Label Rules for public comment	Tue 03-07-17	
Face-to-face meeting (Europe)	Sun 03-12-17	
Incorporation of comments from public and IG	Tues 03-21-17	
Finalize document	Tues 04-04-17	
Meeting	Tues 04-18-17	
Finalize LGR XML structure	Tues 05-02-17	
Final edits	Tues 05-16-17	
Submission to ICANN	Tues 05-30-17	

4. References

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Bendor Samuel, J., “African languages” (1996 p.689-691). Oxford University Press

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IDNA 2008. See RFCs 5890, 5891, 5892, 5893 and 5895. https://tools.ietf.org/html/rfc5895 , etc.

ISO 15924 “Codes for the representation of names of scripts”. http://unicode.org/iso15924/iso15924-codes.html