

Proposal to Encode 3 Additional Latin Characters for Wakashan and Salishan Languages to the Unicode Standard

Prepared for:

The Unicode Technical Committee

Prepared by:

Robyn Humchitt

Heiltsuk Revitalization

Rhumchitt@heiltsuk.ca

Denis Moyogo Jacquerye

Independent

Moyogo@gmail.com

Kevin King

Typotheque

Kevin@typotheque.com

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1 Summary of Proposed Characters

The following proposal requests 3 additional characters to be added to the encoded script of Latin. The proposed characters have been summarized below with representative glyphs and proposed character names with annotations have been provided where applicable. The Script Ad Hoc has recommended the proposed characters by added to the Latin Extended-D block, in code point positions U+A7DA, U+A7DB, and U+A7DC.

The authors have prepared a style-matched font for the purpose of implementing into the code chart.

Letters

A7DA λ LATIN CAPITAL LETTER LAMBDA

- Used in Salishan and Wakashan languages of North America
- Latin capital form of A7DB (λ)

A7DB λ LATIN SMALL LETTER LAMBDA

- Used in Salishan and Wakashan languages of North America
- Greek small letter 03BB (λ)

A7DC λ LATIN CAPITAL LETTER LAMBDA WITH STROKE

- Used in Salishan and Wakashan languages of North America
- Latin capital form of 019B (λ)

2 Unicode character properties

The following lists provides the Unicode general category properties for the proposed additions to Latin Extended-D, as well as requests a necessary update to the Unicode character properties data for 019B to map to the proposed case pair of A7DC:

Add the following:

```
A7DA;LATIN CAPITAL LETTER LAMBDA;Lu;0;L;;;;;N;;;;;A7DB;
A7DB;LATIN SMALL LETTER LAMBDA;Ll;0;L;;;;;N;;;;;A7DA;;A7DA
A7DC;LATIN CAPITAL LETTER LAMBDA WITH STROKE;Lu;0;L;;;;;N;;;;;019B;
```


Update the following:

```
019B;LATIN SMALL LETTER LAMBDA WITH STROKE;Ll;0;L;;;;;N;;;;;A7DC;;A7DC
```

3 Proposed Latin Additions

The following proposed characters are required for rendering the complete bi-cameral orthographies for some Wakashan and Salishan languages of North America. These

language orthographies do not have an encoded Latin capital version to correspond to the letters U+03BB λ GREEK SMALL LETTER LAMDA and U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE, which they require for case pairing in their orthographies. This proposal has chosen to request a Latin lambda case pair, as well as a capital Latin lambda with stroke to case pair to U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE, in order to avoid mixing scripts (Greek-Latin) which would have resulted from proposing a Latin capital letter to case pair to a Greek small letter (U+03BB λ GREEK SMALL LETTER LAMDA). The solution proposed in this document will result in less exceptions and provide the most future stability for the user communities, where all characters will be within the Latin script, no case mapping required between scripts, and making searching and sorting easier for the language communities.


 A large, black, serif capital letter lambda (Λ) with a horizontal bar across the top and two diagonal strokes meeting at the center.

A7DA LATIN CAPITAL LETTER LAMBDA

(figures 1, 2, 3, 4, 5, 6, 7, 12, 16, 18, 19, 22, 23, 24, 27, 29, 32)


 A large, black, serif small letter lambda (λ) with a curved top and a tail that curves to the right.

A7DB LATIN SMALL LETTER LAMBDA

(figures 1, 2, 3, 4, 5, 6, 7, 12, 13, 16, 18, 19, 22, 23, 24, 27, 29, 32)


 A large, black, serif capital letter lambda (Λ) with a horizontal bar across the top and two diagonal strokes meeting at the center. A horizontal stroke is drawn across the middle of the letter, passing through the junction of the diagonal strokes.

A7DC LATIN CAPITAL LETTER LAMBDA WITH STROKE

(figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 16, 18, 19, 22, 23, 24, 27, 29, 32)

3.1 Variation in Glyph Representation

There is known variation amongst Wakashan and Salishan user communities towards graphical representations of the capital and small lambda and lambda with stroke characters. This is primarily seen in the form of the capital Lambda characters' base glyph form that Wakashan and Salishan users recognize, the variation in the form of the small lambda and lambda with stroke contrast model, and the form of the middle stroke in the capital and small lambda with stroke character representations. The authors have proposed representative glyphs that reflect the forms that the Wakashan and Salishan communities recognize, while also remaining consistent with the existing Unicode code charts's representative glyphs.

Small Lambda contrast model variation

There is variation amongst Wakashan and Salishan language communities towards the graphic representation of the characters small lambda and lambda with stroke characters. The difference is primarily the variation in the modulation structure between the Greek contrast, top row, and a "latinized" stroke contrast model, bottom row:

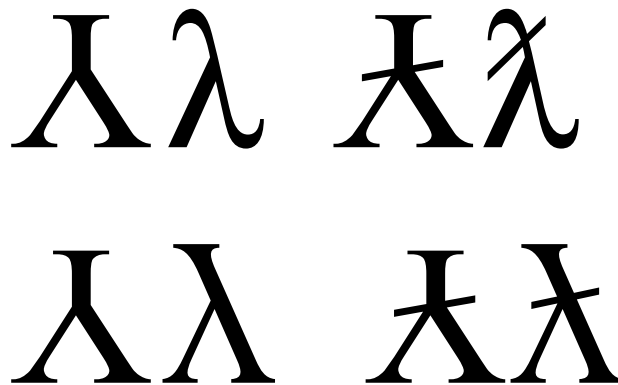


Figure 1 An illustration showing the variation in the preferred form of the small lambda base form, showing a difference between the Greek contrast, top row, and "latinized" contrast models, bottom row. The authors have chosen to propose the representative glyph for U+A7DB λ LATIN SMALL LETTER LAMBDA which follows the Greek contrast model, which is consistent with the current representative glyph form for U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE used in the Unicode code charts for this character.

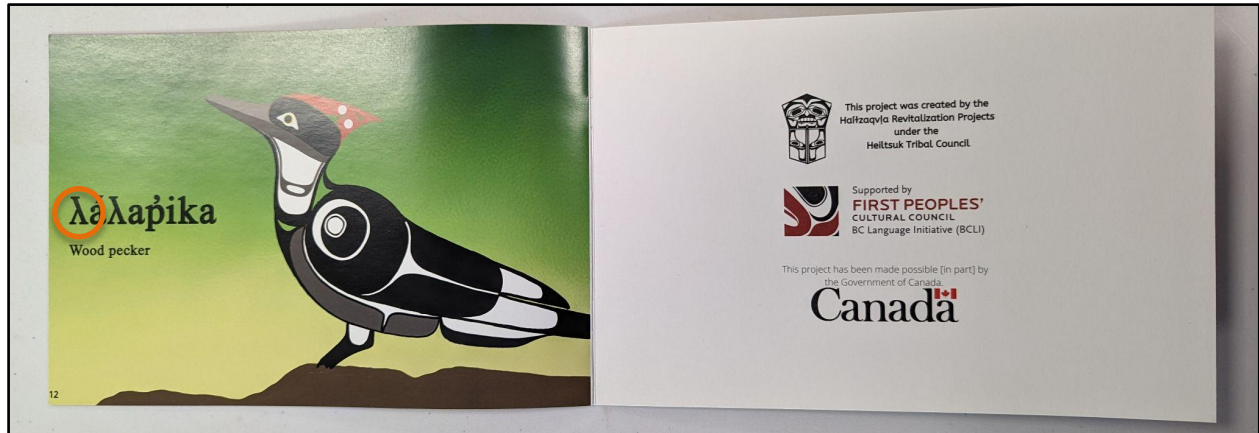


Figure 2 The inside cover of a book on Haítzaqv̓ɫa language lessons, from *Heiltsuk Revitalization*, showing attestation for the “latinized” glyph representation of character U+A7DB λ LATIN SMALL LETTER LAMBDA.



Figure 3 A spread from a Haítzaqv̓ɫa language learning book, from *Heiltsuk Revitalization*, showing attestation for the “latinized” glyph representation of character U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE.

Both representations are common and mutually intelligible by all users, and represent the same Unicode character, as evidenced by the above attestations in figures 2 and 3, as well as throughout the figures in Section 5. While users recognize the two form variants equally, it is important that both the small letter lambda and lambda with stroke have the same contrast model used in both characters in a given text.

The authors have chosen to propose the Greek contrast for A7DB λ LATIN SMALL LETTER LAMBDA in this document due to the current representative glyph form of U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE in the Unicode code charts.

On Capital Latin Lambda Representation

The representation of the capital Latin Lambda form as proposed is that of a rotated Latin Capital "Y", with the Capital Latin Lambda with Stroke following this base form as well. This is the representation of this capital form that is expected for the orthographic unit represented by the lambda in Wakashan and Salishan language communities. While the standard Greek Capital Lambda, U+039B Λ GREEK CAPITAL LETTER LAMDA, is indeed the case pair to U+03BB λ GREEK SMALL LETTER LAMDA, the representation of the Greek Capital Lambda is not intelligible for Wakashan and Salishan language orthographies to represent the capital Lambda. Furthermore, a capital Greek Lambda form would not create an appropriate LATIN CAPITAL LAMBDA WITH STROKE:

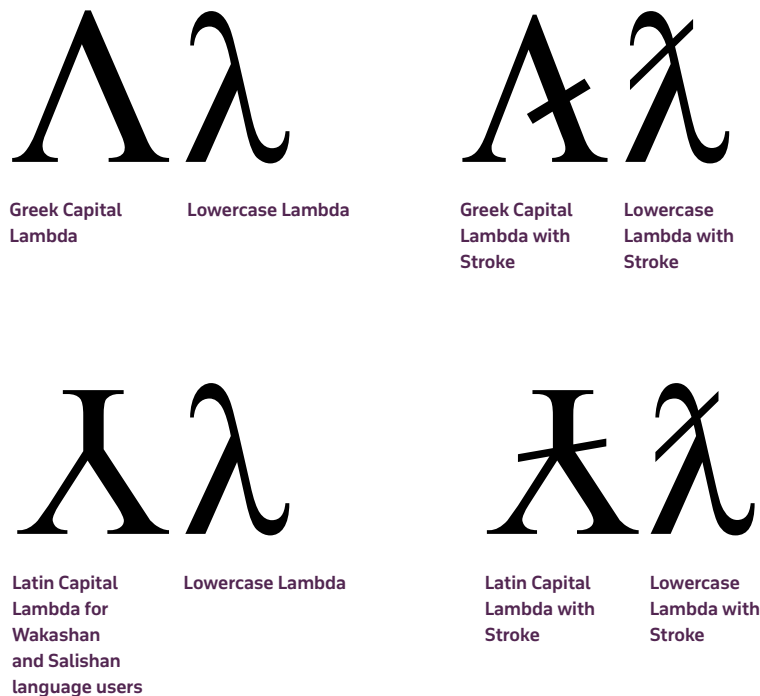


Figure 4 The above illustration shows the difference between a case pair containing a graphical representation of the traditional Capital Greek Lambda, used for both the Capital Lambda and Lambda with stroke, to that of the rotated Latin Capital Letter "Y" representation of the Capital Latin Lambda and Lambda with stroke. The bottom form variant is the graphic representation recognized for these characters by Wakashan and Salishan language users as the capital form of the Lambda in their orthographies.

The authors have provided this section to clarify why the capital Greek letter lambda is not a suitable option for both the graphical representation of the capital lambda in Wakashan and Salishan language communities, and why this character is not a suitable case pair for the community to use to pair to a small letter lambda.

Form of Middle Horizontal Stroke in Lambda with Stroke

There is variation amongst user communities towards the form of the middle, horizontal “stroke” in the representation of U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE, where the form either appears as a diagonal, horizontal bar (“barred lambda”) or a tilde crossing the centerline of the lambda base:



Figure 5 An illustration showing the typical graphical representations of the middle, horizontal stroke for U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE, between the standard representation presented in Unicode, left pair, and the local Wakashan and Salishan variation seen in some typographic documents that use a middle tilde shape in place of the diagonal bar, right pair. Both graphic representations exist in use in these communities, represent the same character, and are intelligible by all readers.

Attestation towards these variant showing the use of the tilde for the lambda with stroke from multiple Wakashan language communities can be seen in figures , respectively. The earliest attestations of the lambda with horizontal stroke, capital and small letter, can be seen in publications composed via typewriter and authored by John Rath (see Figure 9).

The authors have chosen to propose the representative glyph for of A7DC Λ LATIN CAPITAL LETTER LAMBDA WITH STROKE to follow the current standardized glyph representation for U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE in the Unicode code charts using the straight, diagonal horizontal bar form.

3.2 Known Issues and Possible Solutions Explored

The following section presents the issues identified and options that the authors explored towards developing a suitable solution to encode the U+A7DA Ꞥ LATIN CAPITAL LAMBDA. The authors considered all of the following options within this subsection, however, ultimately chose to propose the encoding of 3 characters (A7DA Ꞥ LATIN CAPITAL LETTER LAMBDA, A7DB λ LATIN SMALL LETTER LAMBDA, and A7DC Ꞥ LATIN CAPITAL LETTER LAMBDA WITH STROKE). This direction was chosen in order to avoid mixing scripts (Greek-Latin) which would have resulted from proposing a Latin capital letter to case pair to a Greek small letter. Therefore, this proposed solution will result in less exceptions and provide the most future stability for the user communities, where all characters will be within the Latin script, no case mapping required between scripts, and making searching and sorting easier for the language communities.

Issues using U+2144 ꝶ TURNED SANS-SERIF CAPITAL Y

The Hałtzaqvł̓a (Heiltsuk) community, for one, actively encodes a capital letter variant to character U+03BB λ GREEK SMALL LETTER LAMDA using U+2144 ꝶ TURNED SANS-SERIF CAPITAL Y. However, based on feedback from the Script Ad Hoc's review of [L2/21-206](#) in [L2/21-174](#) "Recommendations to UTC #169 October 2021 on Script Proposals", U+2144 is not a good choice for the community to use to encode this letter, as it lacks a casing relationship to any other character. Therefore, U+A7DA Ꞥ LATIN CAPITAL LAMBDA has been proposed to resolve this issue and provide a stable option for this character for these communities.

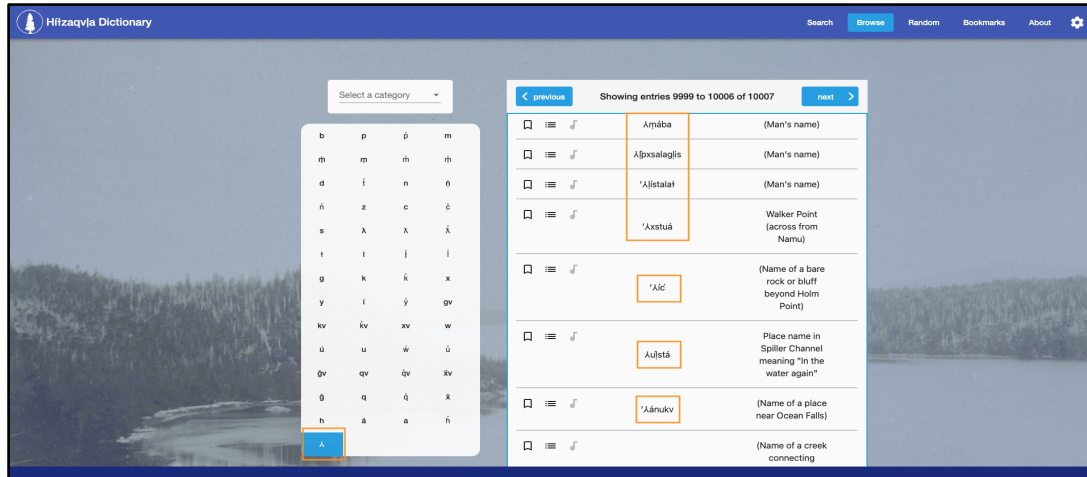


Figure 6 The interactive orthography chart as presented in the Heiltsuk (Heiltsuk) online dictionary, showing attestation for U+A7DA λ LATIN CAPITAL LAMBDA. The Heiltsuk community actively encodes LATIN CAPITAL LAMBDA using U+2144 λ TURNED SANS-SERIF CAPITAL Y, however, based on feedback from the Script Ad Hoc's review of L2/21-206 in L2/21-174, U+2144 is not a good choice for the communities to use to encode this letter, as it lacks a casing relationship to any other character. From <https://mothertongues.org/heiltsuk/dictionary/#/browse>

Using U+2144 is not an ideal solution for encoding the Latin Capital Lambda, not only due to the lack of case pairing to any other letter, but also regarding the system level representation of this character as a sans-serif form, in the general category of "Symbol, math", which is typically represented on the macOS and Windows operating systems by Cambria Math:


 A large, black serif font rendering of the Latin Capital Lambda character (Λ) followed by the word "lsta". The Lambda is styled as a capital letter with a decorative flourish on its right side. The word "lsta" is in a lowercase serif font.

Expected Serif Graphic Representation of Latin Capital Lambda


 A large, black sans-serif font rendering of the Latin Capital Lambda character (Λ) followed by the word "lsta". The Lambda is rendered as a simple, blocky capital letter. The word "lsta" is in a lowercase sans-serif font.

Common Representation of U+2144 as Letterlike Symbol

Figure 7 An illustration showing the standard, default representation of U+2144 Λ TURNED SANS-SERIF CAPITAL Y, which is being represented by the Cambria Math fallback font for this character.

The community could have fonts tailored to represent this character graphically in the expected style, to match a given typeface style, such as a serif font, however, when text is rendered in environments where system level typefaces are only available, the representation will default to the sans-serif form, regardless of font style employed.

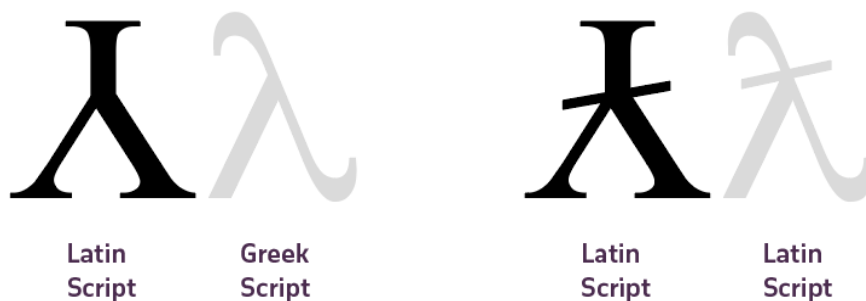
Script boundary issue between proposed characters

Figure 8 The above figure shows the bicameral correspondence of the proposed U+A7DA Λ LATIN CAPITAL LAMBDA and U+A7DC Λ̄ LATIN CAPITAL LAMBDA WITH STROKE to the small letter U+03BB λ GREEK SMALL LETTER LAMDA and U+019B λ̄ LATIN SMALL LETTER LAMBDA WITH STROKE. Currently, the Haítzaqv̄la community encodes this character using U+2144 Λ TURNED SANS-SERIF CAPITAL Y.

LATIN CAPITAL LETTER TURNED Y to pair with U+028E

Propose a LATIN CAPITAL LETTER TURNED Y to case pair with the existing U+028E λ LATIN SMALL LETTER TURNED Y. U+028E would not be an appropriate character for the community to use from a graphical representation perspective, however, the community could potentially continue to use U+03BB λ GREEK SMALL ... LAMBDA without a case pairing:



Figure 9 The above figure explores a sketch of proposing a capital case variant LATIN CAPITAL LETTER TURNED Y to pair with the existing U+028E λ LATIN SMALL LETTER TURNED Y.

Potential issues with following this path could be:

- There would not be a case pair for Wakashan and Salishan communities towards LATIN CAPITAL TURNED Y and the use of U+03BB λ GREEK SMALL LETTER LAMBDA which is currently used to encode the small letter lambda in these orthographies.

LATIN CAPITAL and SMALL LAMBDA case pair

Propose a distinct LATIN CAPITAL and SMALL LETTER LAMBDA case pair that would place both letters within the Latin script to avoid the Latin-Greek script boundary issue. The resulting proposal would therefore request 3 character additions:



Figure 10 The above figure explores a sketch of proposing three new Latin characters in order to resolve the script boundary issue towards the current use of small U+03BB λ GREEK LAMBDA.

Potential issues with following this path could be:

- There could be issues towards community adoption with this solution, resulting in non-standard encoding practices. An example that relates to this case would be the Latin Chi, U+AB53 χ LATIN SMALL LETTER CHI, that was proposed and encoded distinctly to the Latin script in version 7.0 of the Standard as part of a set of characters for German dialectology. Although these characters have now been available for a period of 10 years, is not used actively by the ɕəʔamən (Tla'amin), Éyɔ́ɔ́juuthem (Comox), hə́ŋqəmiñə́m (Halkomelem) – or within the IPA – who rather continue to use U+03C7 χ GREEK SMALL LETTER CHI to encode their texts. From the Wakashan and Salishan perspective, this could be as a result of language users not being aware of the availability of the Latin character, and therefore the need to update encoded texts and language tools. This case of the Greek and Latin small letter chi characters is a helpful example towards the importance of the authors of this proposal, and other technologist's supporting the language user community, to

provide adequate communication towards the availability of the new characters proposed in this document, to ensure an opportunity for users to organize a conversion to the new characters, particularly a change from the current use of U+03BB λ GREEK SMALL LETTER LAMDA to the proposed U+A7DB λ LATIN SMALL LETTER LAMBDA

- This would require the Wakashan and Salishan communities to update their existing fonts and keyboard tools, as well as to perform a conversion of existing texts that have been encoded using U+03BB λ GREEK SMALL LETTER LAMDA. This may not be a significant issue given that conversion will be required for changing from U+2144 to a LATIN CAPITAL LAMBDA.

4 Overview of Wakashan and Salishan languages using lambda and barred lambda

This section provides an overview of Wakashan and Salishan communities that use the capital and small letter lambda and lambda with stroke characters in their language orthographies, in order to provide background context towards the proposed 3 Latin character additions requested in this document.

Many Indigenous language orthographies in the Pacific Northwest region of Canada require the use of a capital Lambda letter that differs in shape from the Greek capital Lambda, U+039B Λ GREEK CAPITAL LETTER LAMDA. Although the small letter equivalent to this character is U+03BB λ GREEK SMALL LETTER LAMDA, these communities employ and require the use of a Latinized variant in order to facilitate synchronization with the pairing U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE and proposed U+A7DC λ LATIN CAPITAL LETTER LAMBDA WITH STROKE.

Many Wakashan and Salishan First Nations communities in the Pacific Northwest region of North America use U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE in their standardized Latin script orthographies. These communities, however, lack a Latin capital case variant in the Unicode Standard that is necessary for the capitalization of this character for marking proper nouns and capitalizing the first word in a sentence.

These proposed characters have been in active use by Haítzaqv̓la (Heiltsuk) language users, as well as other Wakashan and Salishan communities, from the late 1970s to the present day in order to provide bi-cameral usage within their respective orthographies for words requiring capitalization (proper nouns, place names, etc.). Historically, these orthographies were developed from a mixture of a Latin script base and characters deriving from Americanist and IPA phonetic notation systems. As such, this introduced both traditional Greek and Latinized-Greek forms which lacked uppercase equivalents. When these communities began organizing attempts at standardizing their digital orthographic encoding in the early 1990s, letters were chosen across script boundaries, particularly from the Latin and Greek scripts, respectively.

The following Wakashan and Salishan language orthographies, shown below, use U+03BB λ GREEK SMALL LETTER LAMDA and/or U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE in their orthographies, and would be affected by an encoding-level implementation resulting from this proposal. Note that in the below charts, The capital and small letter lambda and lambda with stroke characters have been highlighted in orange in order to distinguish their presence within each orthography:

WAKASHAN**Haiłtzaqvļa Orthography**

Bb Pp Ṗp Mm Ṁṁ Ṁṁ Ṁṁ Dd Tt Ṫt Nn Ṅṅ
 Ṅṅ Ṅṅ Zz Cc Ċc Ss ʌʌ ʌʌ ʌʌ Łł Ll Ł̇l̇ Ł̇l̇ Ł̇l̇ Gg
 Kk K̇k̇ Xx Yy Íí Ii Ýý Ĭĭ Gvgv Kvkv K̇vk̇ Xvxv
 Ww Úú Uu Ẇẇ Ú̇ú̇ Ğvǧv Qvqv Q̇vq̇ Ǻv ǺǺ Qq Q̇q̇
 ǺǺ Áá Aa Ḣḣ Hh Áá Ḣḣ ? ˆ ˆ ˆ

Kwak'wala (Kwak'wala) Liq'wala (Liq'wala)

Aa Əə Bb Cc Ċc Dd Ḋḋ Ee Gg Ġġ Ğǧ Ğ̇ǧ̇ Hh Ii Kk
 K̇k̇ Kẇk̇ K̇k̇ Ll L̇l̇ Łł ʌʌ ʌʌ ʌʌ Mm Ṁṁ Nn Ṅṅ Oo Pp
 Ṗṗ Qq Q̇q̇ Q̇q̇ Ss Tt Ṫṫ Uu Ww Ẇẇ
 Xx Ẋẋ ǺǺ Ǻ̇Ǻ̇ Yy Ýý ? ˆ ˆ ˆ

Ǻḣisłakala (Haisla)

Aa Àà Áá Bb Cc Ċ Dd Ee Èè Əə Ə̇ə̇ ʌʌ ʌʌ ʌʌ Gg Ğǧ H
 h Ḣḣ Ḣḣ Ĭĭ Ĭĭ K̇k̇ Ll L̇l̇ Łł Ł̇l̇ Mm Ṁṁ Ṁṁ Nn
 Ṅṅ Ṅṅ Oo Òò Pp Ṗṗ Qq Q̇q̇ Ss Tt Ṫṫ Yy Ýý Uu Úú
 Ww Ẇẇ Xx Ẋẋ ǺǺ Zz Ww ? ˆ ˆ ˆ

nuučaahut (Nuu-chah-nulth)

Aa ʔa ʕa Aaaa ʔaa ʕaa Eeee ʔe ʕe Ee ʔee ʕee Cc Ċċ
 Čč Č̇č̇ Hh Ḣḣ Ii ʔi ʕi Ii ʔii ʕii Kk K̇k̇ Kẇk̇ K̇k̇ Łł
 ʌʌ ʌʌ Mm Ṁṁ Nn Ṅṅ Pp Ṗṗ Qq Q̇q̇ Q̇q̇ Ss
 Šš Tt Ṫṫ Uu ʔu ʕu Uu ʔuu ʕuu Ww Ẇẇ Xx Ẋẋ Ẋẋ
 Ẋẋ Yy Ýý ʕ ? ˆ ˆ ˆ

Q̇wi-q̇wi-diččaḡ (Makah)

Aa A·a· Bb Cc Čč Ċċ Ċċ Dd Ee E·e· Gg Hh Ḣḣ Ii I·i·
 Jj Kk Kẇk̇ K̇k̇ k̇k̇ Ll ʌʌ ʌʌ Łł Mm Nn Oo O·o· Pp
 Ṗṗ Qq Q̇q̇ Q̇q̇ S Š T Ṫ U U· W X ǺǺ Yy Zz ?
 ˆ ˆ ˆ ˆ

SALISHIAN**ꞥəʔamen (Tla'amin) (Comox) (Klahoose) (Homalco)**

Aa Ææ AWaw AYay ɔɔ ɔyɔy Čč Ćć Ee Ee Əə ƏWəw
 ƏYəy Gg Gygy Hh Ii Ii Ĵĵ Kk Kḳ Kʷkʷ Ḳ̣ḳ̣ Kʷkʷ
 Ḳ̣ḳ̣ Ll Lḷ Łł ʌʌ Āā Mm Mṃ Nn Nṇ Oo ɔYɔy Pp P̣p̣ Qq
 Q̣q̣ Qʷqʷ Q̣̣q̣̣ Ss Šš Tt Ṭṭ ʈʈ Tʰtʰ Uu Ūū Ww Ẉẉ Ẉ̣
 ʷ ʷ̣ Xx Xʷxʷ Yy Ỵỵ ʔ ɔʷ ɔ̣ʷ ɔ̣̣ ɔ̣̣̣

itʷslhk'mstalh (Nuxalk)

Aa Xx Cc Xʷxʷ Cwew Hh Ii Kk Ḳḳ K'k' Kʷkʷ Kwkʷ
 Ḳ̣ḳ̣ Kʷkʷ' Ll Lḷ Lhlh Mm Nn Pp P̣p̣ P'p' Qq Q̣q̣
 Q'q' Qʷqʷ Qwqw Q̣̣q̣̣ Qw'qw' Ss Tt Ṭṭ T't' ʌʌ Tl'tl'
 Tsts Ćć Ts'ts' Uu Ww Xx Xx XʷXʷ Xw Yy ʔ 7 Mṃ
 Nṇ Lḷ ɔʷ ɔ̣ ɔ̣̣ ɔ̣̣̣

xʷəlšucid (Lushootseed)

Bb Dd Dʒdʒ Ĵĵ Gg Gʷgʷ Pp Tt Cc Čč Kk Kʷkʷ Qq
 Qʷqʷ ʔ P̣p̣ Ṭṭ Ćć ʌʌ Ćć Ḳḳ Ḳ̣ḳ̣ Q̣q̣ Q̣̣q̣̣ Ss Lḷ Šš Xʷxʷ
 X̣x̣ X̣̣x̣̣ Hh Lḷ Yy Ww Lḷ Ỵỵ Ẉẉ Ii Uu Əə Aa
 I-i· Łł Lḷ Íí Ìì Ùù Úú Əə Əə Áá Àà ɔʷ ɔ̣ ɔ̣̣ ɔ̣̣̣ ɔ̣̣̣̣

Nəxʷsʌəyəmúcən (S'Klallam)

Aa Cc Ćć Čč Ćć Ee Əə Hh Ii Kk Kʷkʷ Ḳ̣ḳ̣ Lḷ Łł
 ʌʌ Mm Mṃ Nn Nṇ Dɲ Dɲ' Pp P̣p̣ Qq Q̣q̣ Qʷqʷ
 Q̣̣q̣̣ Ss Šš Tt Ṭṭ Uu Ww Ẉẉ Xʷxʷ X̣x̣ X̣̣x̣̣ Yy Ỵỵ Áá É
 é Íí Úú Əə ʔ ɔʷ ɔ̣ ɔ̣̣ ɔ̣̣̣ ɔ̣̣̣̣

ciiqciqasaʔi (Ehattlesht Nuchatlait)

Aa Aaaa Cc Ćć Čč Ćć Hh Hḥ Ii Iiii Kk Ḳḳ Kʷkʷ
 Ḳ̣ḳ̣ Lḷ ʌʌ ʌʌ Mm Mṃ Nn Nṇ Pp P̣p̣ Qq Qʷqʷ Ss
 Šš Tt Ṭṭ Uu Uuuu Ww Ẉẉ Xx X̣x̣ Xʷxʷ X̣̣x̣̣ Yy Ỵỵ ʔ ?
 Ee Eeee Oo Oooo ɔʷ ɔ̣ ɔ̣̣

hə́nq̓əmiḥə́m (Halkomelem) (Musqueam)

p t c č k kʷ q qʷ ? p̓ t̓ é ǰ k̓ q̓ θ s š ł ł x
 xʷ ǰ χ ǰʷ χʷ h m n l y w m̓ n̓ l̓ y̓ w̓ i i: u u: e e: ə
 a a: ɔʷ ɔ: ɔ̇ ɔ̈

Sǰaǰimxəc (Lillooet)

p t c ç k kʷ q qʷ ? p̓ ç ǰ k̓ k̓ʷ q̓ q̓ʷ s š ł x xʷ ǰ
 ǰʷ h m n z l l̓ y y w ʎ ʎʷ m̓ n̓ z̓ l̓ l̓ y̓ y̓ w̓ ʎ̓ ʎ̓ʷ i i̓ u u̓
 ə ə̓ a a̓ á á̓ é é̓ í í̓ ú ú̓ ɔʷ ɔ̇ ɔ̈ ɔ̉ ɔ̊

Nteʔkepmxcin (Thompson River Salish)

p t c ç k kʷ q qʷ ? p̓ t̓ é ǰ k̓ k̓ʷ q̓ q̓ʷ θ s š ł x xʷ ɣ ɣʷ h
 m n z l y y w ʎ ʎʷ m̓ n̓ z̓ l̓ y̓ y̓ w̓ ʎ̓ ʎ̓ʷ i u i̓ e ə o ə̓ a í
 ú í̓ é é̓ ó ó̓ á ɔʷ ɔ̇ ɔ̈ ɔ̉

diitiidʔaaʔtx̣ (Ditidaht)

a aa b b̓ c č č̓ d d̓ e ee h i ii k k̓ k̓ʷ l̓ l̓ ł ǰ ǰ̓ m̓ m̓
 n̓ n̓ o oo p p̓ q qʷ q̓ q̓ʷ s š t t̓ u uu w w̓ x
 xʷ ɣ ɣʷ y y̓ ? ʎ ɔʷ ɔ̇ ɔ̈

Čišaaʔatḥ (Cisaaath)

a aa c č č̓ h h̓ i ii k k̓ k̓ʷ k̓ʷ ł ǰ ǰ̓ m̓ m̓ n̓ n̓ p p̓ q qʷ s
 š t t̓ u uu w w̓ x ɣ xʷ ɣʷ y y̓ ʎ ? e ee oo
 ɔʷ ɔ̇ ɔ̈

Nxaʔamxcín (Columbia-Moses)

a aa c č č̓ ə ə̓ h h̓ h̓ʷ i k k̓ k̓ʷ k̓ʷ l̓ l̓ ll̓ ll̓ ł ǰ m̓ m̓ n̓ n̓ p
 p̓ q q̓ qʷ q̓ʷ r r̓ š s t t̓ u uu w w̓ x xʷ ǰ ǰʷ y y̓ ? ʎ ʎ̓ ʎ̓ʷ ʎ̓
 w ɔʷ ɔ̇ ɔ̈

ḥsə́lxcin̓ (Okanagan)

a c č ə h i k k̓ k̓ʷ k̓ʷ l̓ l̓ ł ǰ m̓ m̓ n̓ n̓ p p̓ q q̓ qʷ
 q̓ʷ r s t t̓ u w w̓ x ǰ xʷ ǰʷ y y̓ ʎ ʎ̓ ʎ̓ʷ ? i a u ə o
 ɔʷ ɔ̇ ɔ̈

Use of Greek Lambda (U+03BB) in Wakashan and Salishan Orthographies

Only four Wakashan languages use the lambda in their orthographies, Haítzaqv̄la (Heiltsuk), kʷakʷala, Liqʷala, and ǰàhisłakala (Haisla), encoded as U+03BB λ GREEK SMALL LETTER LAMDA. These four languages also use the barred lambda (U+019B) along with the lambda. None of these four languages require the lambda to be glottalized, or, require a combining mark to be used in conjunction with this character. No other Wakashan or Salishan language uses lambda in their orthography, and rather only employ the barred lambda, encoding as U+019B λ̄ LATIN SMALL LETTER LAMBDA WITH STROKE.

On Case in Wakashan and Salishan Orthographies

It should be noted that not all Wakashan and Salishan orthographies employ a bi-cameral orthographic system, with the above orthographic representations. The following use a unicameral writing system: hæñqəminəḿ (Halkomelem) (Musqueam), Słax̄imxəc (Lillooet), Nłeʔkepmxcin (Thompson River Salish), diitiidʔaaʔtɣ (Ditidaht), čišaaʔath (Cisaaath), Nxaʔamxcín (Columbia-Moses), and ḥsəłxciḥ (Okanagan).

Population Sizes of Wakashan and Salishan Communities

The figures below list the population sizes of the various Wakashan and Salishan communities that would use either of the two proposed capital Latin characters:

1,600	Haítzaqv̄la (Heiltsuk)
3,665	kʷakʷala/Liqʷala
1,500	ǰàhisłakala (Haisla)
4,310	nuučaaḥuł (Nuu-chah-nulth)
1,213	qʷi-qʷi-diččəq (Makah)
2580	ɬəʔamən/Tla'amin: Éγáʔjuuthem (k'ómoks / λoʔos (Klahoose) / χʷemaɬku (Homalco)
3,000	itʔslhk'mstalh (Nuxalk)
350	xʷəlšucid (Lushootseed)
2,695	Nəxʷsłəyəmúcən (S'Klallam)
22,413	Total

4.1 Current Encoding Practices in Haítzaqv̓la (Heiltsuk) Community

The Haítzaqv̓la (Heiltsuk) language community employs a variety of legacy font and keyboard tools to encode the LATIN CAPITAL LAMBDA and LATIN CAPITAL LAMBDA WITH STROKE in their current digital language use. This subsection looks at a short overview of those particular tools and how they encode these characters. Please note that the graphic representations shown in the following section are from the typefaces employed actively by the community for each investigated case. These are not intended to be confused with the representative glyphs proposed in Section 3, page 5.

Haítzaqv̓la Orthography

Bb Pp P̓p̓ Mm M̓m̓ M̓m̓ M̓m̓ Dd Tt T̓t̓ Nn N̓n̓
 N̓n̓ N̓n̓ N̓n̓ Zz Cc C̓c̓ Ss λλ λ̓λ̓ λ̓λ̓ Łł Ll Ł̓ł̓ L̓l̓ L̓l̓ Gg K
 k K̓k̓ Xx Yy Íí Ii Ýý Īĩ Gvgv Kvk̓v̓ K̓vk̓v̓ Xvxv
 Ww Úú Uu W̓w̓ U̓u̓ Ğv̓ğv̓ Qv̓qv̓ Q̓v̓q̓v̓ X̓v̓ Ğ̓ğ̓ Qq Q̓q̓
 X̓x̓ Áá Aa H̓h̓ Hh̓ Àà H̓h̓ ? ̓ ̓ ̓

Figure 11 The above standardized orthography bicameral representations for Haítzaqv̓la (Heiltsuk), showing in orange the position of A7DA λ LATIN CAPITAL LAMBDA and A7DC λ̓ LATIN CAPITAL LAMBDA WITH STROKE, the capital versions corresponding to the existing practice of encoding the small letter variants of these characters as U+03BB λ GREEK SMALL LETTER LAMDA and U+019B λ̓ LATIN SMALL LETTER LAMBDA WITH STROKE. From “Haítzaqv̓la Dictionary”, 2023, <https://mothertongues.org/heiltsuk/dictionary/#/browse>

Heiltsuk Doulos Typeface (SIL, 1994)

An early digital typeface named *Heiltsuk Doulos* was developed by SIL International in 1994 for Hałtzaqvł̓a (Heiltsuk) language users. The Capital lambda, small letter lambda, and capital and small letter lambda with stroke, as composed by the Heiltsuk Doulos font, are encoded at the code points listed below each character:

Heiltsuk Doulos (SIL, 1994)

Figure 12 An illustration showing how the legacy, custom typeface Heiltsuk Doulos encodes the Capital and small letter lambda and lambda with stroke.

Key Commands		
Heiltsuk:		
é á í ú Option e, then letter	ε Option \	
ù Option u, then u	˘ Option 8	Á (capital á) . . . Shift Option y
ñ Option n, then n		É (capital é) . . . Option e, then E
á ç k l p t w		Ú (capital ú) . . . Shift Option ;
y h g x m q Option letter		
i Option i, then i	Key Commands	
ñ Option 1	Oowekyala:	
ñ Option 2	à è ì ù À È Ì Ù . . Option ` , then letter	
ñ Option ,	ò Option 6	
ù Option 4	ñ Option 3	
η Option 5	ì Option 0 (zero)	
ò Option b		
í Option o		básbúlí rúxva puái
l Option 9		muáci éñ kvúdm ññúkv
l Option ;		kváxdñha dañdñ tsá
l Option ' (l ; ')		lálús nínúya lñta yádñ
Ł (capital l) Shift Option '		ñusí éñíłlá zúsa cása
λ Option s		éñ síñs kákañika ñizáyú
λ (capital λ) Shift Option s		łgís lálá luál młxvlá
λ Option d		tsłsá łgñ sññbá glá
λ (capital λ) Shift Option d		kála káskás xñdaçi mít
ł Option f		yúgva pñpíú gvúgví
ł (capital ł) Shift Option f		kvikva kvákvñta xvłtłá
˘ Option z		wáwádi gvusí wáxaçi
' Shift Option)		lútúa gñválás qvínáyu
? Shift Option r		qñúqñs xñdáyú gññ qqs
h Option j		qñná xáx háyásu kvás
o Option v		kvas lálhá lálús láluhłs
. Shift Option 9		niniha líx?ñ hññ?ñx
		'łixsñ ˘Gúlñx 'Cúxvlísa

Figure 13 A keyboard specification created by the *Heiltsuk Cultural Education Centre*, Wáglisła (Bella Bella), British Columbia, created in 1995, to present a mapping of keys for the customized version of the Times New Roman typeface created for the community in order to accommodate their orthographic requirements. Showing attestation for A7DA Ł LATIN CAPITAL LAMBDA, A7DB λ LATIN SMALL LETTER LAMBDA, and A7DC λ LATIN CAPITAL LAMBDA WITH STROKE.

Regarding the practice of using the glottalization mark before capital letters in an inline sequence, rather than in a combining mark sequence, as in the text above, please see Figure 9 in the section “Encoding practice for glottalization mark”.

The Heiltsuk Doulos typeface is used by some language users in order to encode texts. For those users that use this typeface, a conversion application has been developed in order to switch the above incorrectly mapped code points for Greek lambda and Latin lambda with stroke to their correct code points.

Heiltsuk Unicode Keyboard Layout (Heiltsuk Language & Culture Mobilization Partnership)

The Heiltsuk (Hałtzaqv!a) Unicode Keyboard Layout, developed by the Heiltsuk Language & Culture Mobilization Partnership in collaboration with the University of British Columbia, provides a Unicode-compliant means of text input. This keylayout is designed to work in conjunction with Unicode compliant fonts, and is not intended to work with the legacy, custom Heiltsuk Doulos font (SIL, 1994).

Heiltsuk Unicode Keyboard Layout

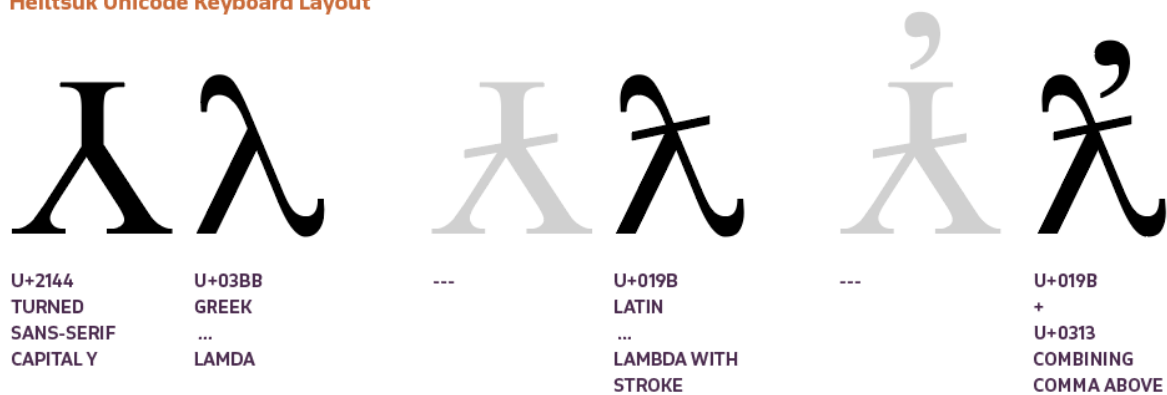


Figure 14 An illustration showing the encoding of Latin capital Lambda and small letter lambda and lambda with stroke in the Heiltsuk Unicode keyboard layout. Note that this layout does not provide a means of encoding the Latin Capital Lambda with Stroke through the use of a PUA code point.

Note that this keyboard layout does not provide a means for encoding a LATIN CAPITAL LETTER LAMBDA WITH STROKE, only LATIN CAPITAL LETTER LAMBDA, encoded as U+2144 λ TURNED SANS-SERIF CAPITAL Y.

Source: <https://heiltsuk.arts.ubc.ca/keyboard/>

Languagegeek Haiṭzaqvḷa (Heiltsuk) Font and Keyboard Tools:

Proposal co-author Robyn Humchitt, of *Heiltsuk Reviatilization*, notes that many language teachers within the Haiṭzaqvḷa (Heiltsuk) language community prefer to use the languagegeek keyboard and font language tool setup in their work over the *FirstVoices* tools that are available. These keyboard layouts are Unicode compliant (and corresponding fonts), and are made freely available for download and use online.

Languagegeek Haiṭzaqvḷa (Heiltsuk) Keyboard Layout

Figure 15 An illustration showing the encoding of the languagegeek Haiṭzaqvḷa (Heiltsuk) keyboard layout.

Note that the above keyboard layout does not provide an encoding option for CAPITAL LATIN LAMBDA (via U+2144) or CAPITAL LATIN LAMBDA WITH STROKE. The keyboards made available on the languagegeek website for the other Wakashan and Salishan languages also follow this same pattern, of providing Unicode-compliant encoding of small letter Greek lambda, Latin lambda with stroke, and mark attachment sequence, but no option for encoding the Capital Latin Lambda or Lambda with Stroke.

Languagegeek Haítzaqv̓la (Heiltsuk) Font and Keyboard Tools:

Languagegeek makes available two typeface families, Rotinonh Serif and Rotinonh Sans, which provide a Unicode-compliant font to correspond to the keyboard layouts made available on this site. These are the only fonts made available on this website for First Nations Roman orthographies. They do not encode the Latin Capital Lambda using U+2144, and rather encode this character, as well as the Capital Lambda with Stroke in the PUA range:

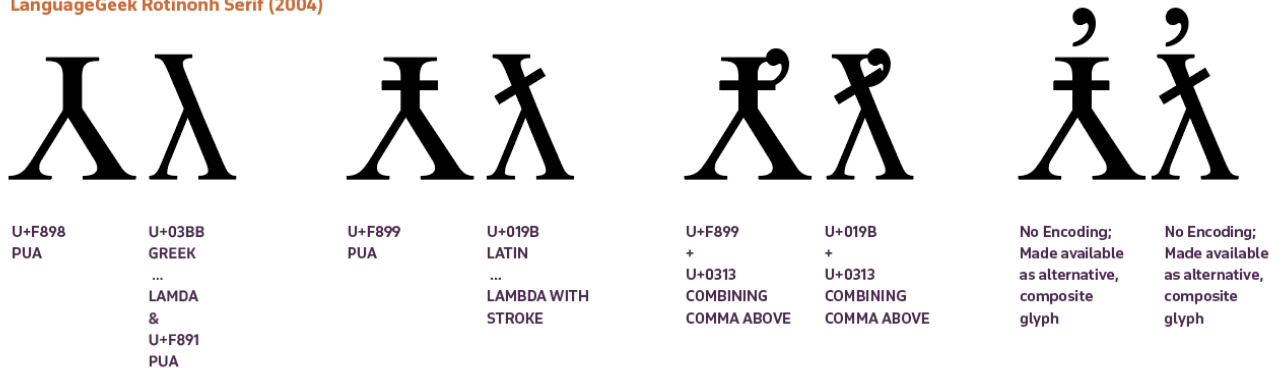
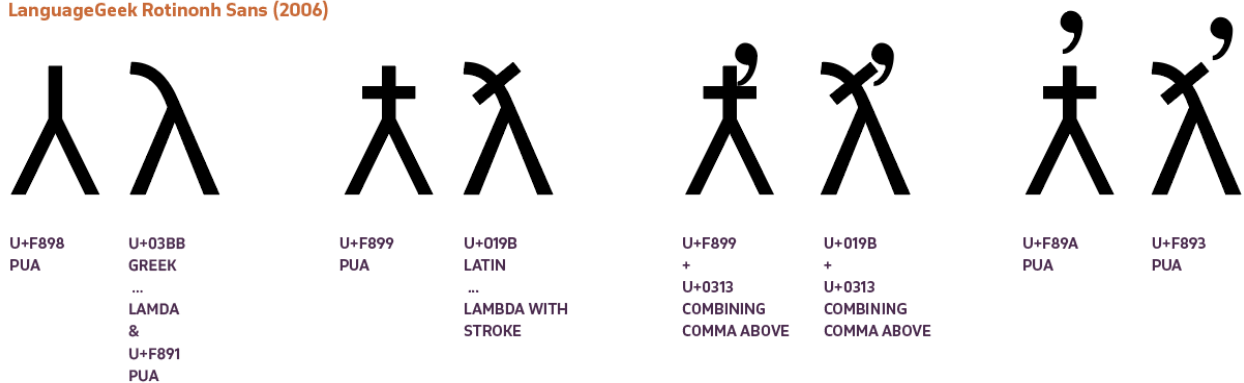
LanguageGeek Rotinonh Serif (2004)**LanguageGeek Rotinonh Sans (2006)**

Figure 16 An illustration showing how the two languagegeek fonts, Rotinonh Serif and Sans, encode the capital and small lambda and lambda with stroke.

Note that both of the above languagegeek fonts do not provide a top anchor within the respective fonts in order to encode the common sequence of base + mark (U+0313 ◌ COMBINING COMMA ABOVE), even though the keyboard made available by the same provider provides a key in the layout with U+0313. Instead, these fonts provide pre-composed, composite glyphs of the base + mark using either an unencoded, alternative

glyph, or, a glyph encoded within the PUA. This is despite the Unicode base + combining mark sequence being the common encoding practice that Wakashan and Salishan language users follow towards shaping their texts (see Figure 8).

Encoding Practice for Glottalization Mark

The Haítzaqv̑la (Heiltsuk) orthography requires the capital and small barred lambda character to accept a combining comma mark above the base glyph in order to mark glottalization.



Figure 17 The above illustration expresses the requirement for U+A7DC ꞗ LATIN CAPITAL LAMBDA WITH STROKE (as well as U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE) to accept the combining mark U+0313 ◌̑ COMBINING COMMA ABOVE, which the Haítzaqv̑la (Heiltsuk) language community currently uses to encode the glottalization modification mark in their orthography. No Wakashan or Salishan orthography requires additional shaping for the capital or small letter lambda.

There is an additional practice within the Haítzaqv̑la (Heiltsuk) community towards encoding the glottalization mark in capital letters, by using U+2019 RIGHT SINGLE QUOTATION MARK to precede the base glyph that is being modified. This is a legacy practice that continues to persist within the community for some users, resulting from language tools that were not capable of performing mark-to-mark attachment to place the combining mark above the base glyph that was desired for modification. The authors are aware that the practice described below, in Figure 9, would cause text representation issues, particularly case mapping issues between U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE and the corresponding A7DC ꞗ LATIN CAPITAL LAMBDA WITH STROKE.

’ꞗuxv́alá

Figure 18 Additionally, communities may also encode the glottalization mark in an inline sequence as well, commonly using U+2019 RIGHT SINGLE QUOTATION MARK, as demonstrated in the above illustration. U+02BC MODIFIER LETTER APOSTROPHE may also be used for this purpose, however, the community does not actively encode their texts for these sequences with this character, rather using U+2019 instead.

5 Attestations

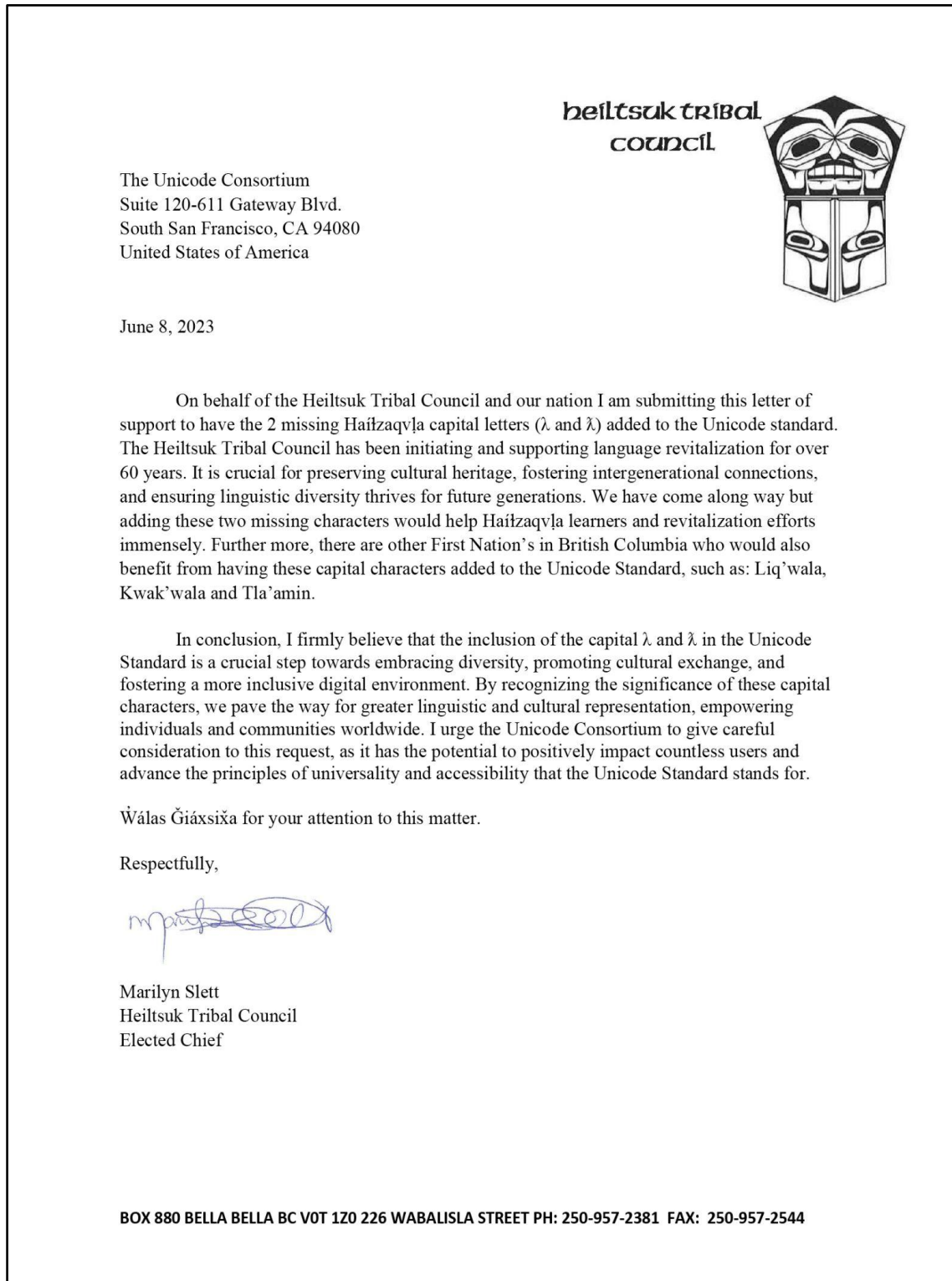


Figure 19 A letter of support dated 8 June 2023 from the Heiltsuk Tribal Council, providing support and context on behalf of the whole Haíłzaqv̓ɫv̓ (Heiltsuk) community towards the need of having the requested characters encoded into the Unicode Standard. Showing attestation U+A7DA Ꝁ LATIN CAPITAL LAMBDA, and U+A7DC ꝁ LATIN CAPITAL LAMBDA WITH STROKE.



Hałtzaqvja Revitalization 67 Waglisla Street Bella Bella BC V0T 1Z0

The Unicode Consortium
Suite 120-611 Gateway Blvd.
South San Francisco, CA 94080
United States of America

June 7 2023

Subject: Inclusion of capital characters (λ and λ̄) for Language Revitalization.

Dear Unicode Consortium,

I am writing to strongly advocate for the inclusion of characters crucial to language revitalization efforts in the Unicode Standard. The representation of these characters will play a pivotal role in preserving our cultural heritage, fostering linguistic diversity, and empowering communities striving to revitalize their endangered languages.

Language revitalization is an essential endeavor that requires the collaboration and support of various stakeholders. By including the specific capital characters (λ and λ̄) needed for our language in the Unicode Standard, we can overcome digital barriers, enabling proper representation and accurate communication.

The inclusion of these characters will not only facilitate the creation of language learning materials, dictionaries, and educational resources, but it will also provide speakers of endangered languages with the tools necessary to revitalize their linguistic heritage. It will empower our language learners to reclaim their identities, strengthen intergenerational connections, and facilitate a sense of pride in their language and culture.

Moreover, the addition of these characters in the Unicode Standard will foster accessibility and inclusivity in the digital realm. It will ensure that speakers of Hałtzaqvja can fully participate in the modern world, contribute to online content, and engage with the global community on an equal footing.

Ǵiáxsiǵa for your attention to this important cause. I am confident that the Unicode Consortium, as a champion of universal character encoding, will embrace the significance of these characters in supporting language revitalization endeavors.

Respectfully,

Joanne Green

Heiltsuk Language Authority Board Chair

Figure 20 A letter of support dated 7 June 2023 from the Heiltsuk Language Authority Board Chair, providing support on behalf of the whole Hałtzaqvja (Heiltsuk) community and providing context towards the barriers faced by the community with the absence of these characters, and the need of having the requested characters encoded into the Unicode Standard. Showing attestation for U+A7DA λ LATIN CAPITAL LAMBDA and U+A7DC λ̄ LATIN CAPITAL LAMBDA WITH STROKE.



Figure 21 A letter of support dated 30 June 2023 from Mark Turin, Associate Professor, First Nations and Endangered Languages Program, University of British Columbia, expressing context, support and showing attestation for U+A7DA ʌ LATIN CAPITAL LAMBDA and U+A7DC ʌ LATIN CAPITAL LAMBDA WITH STROKE.

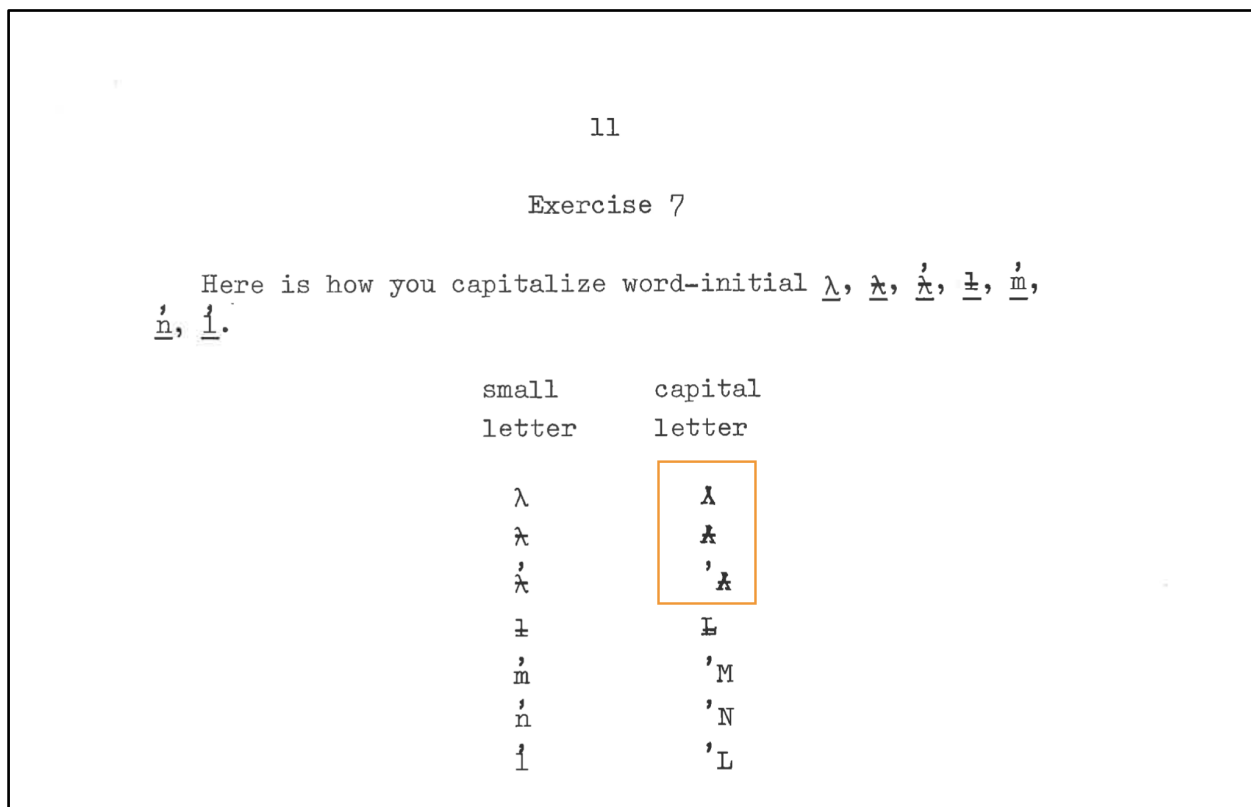


Figure 22 Page 11 from *Exercises in Heiltsuk spelling*, 1984, John C. Rath, a manual instructing local Heiltsuk language users in how to use a customized typewriter layout to set their language, showing an exercise instructing the method of capitalizing small letters lambda and lambda with stroke to their capital letter variants. Furthermore, the above example also demonstrates the requirement for these characters to accept a combining mark above – U+0313 ◌ COMBINING COMMA ABOVE RIGHT – to indicate glottalization. The above example shows attestation for U+A7DB λ LATIN SMALL LETTER LAMBDA, U+A7DA λ LATIN CAPITAL LAMBDA, and U+A7DC λ LATIN CAPITAL LAMBDA WITH STROKE.

Now try the following sentences.

- | | |
|---------------------|----------------------------|
| 1. Łáłabiłaxi. | 8. 'Másbilixili. |
| 2. Łíłabiłaxí. | 9. 'Másilili. |
| 3. Łíłabiłaxáí. | 10. 'Másilíli. |
| 4. Łáłabiłíli. | 11. 'Mási míclús. |
| 5. Łáłabiłáli. | 12. Li łápánúmabilixíłala. |
| 6. Łápabilaxsú. | 13. Láxáili nánánuma. |
| 7. Lasu núłáxíłasi. | 14. 'Łínáisi. |

Figure 23 Page 11 from *Exercises in Heiltsuk spelling*, 1984, by John C. Rath, showing attestation for U+A7DA Ł LATIN CAPITAL LAMBDA, and U+A7DC Ł LATIN CAPITAL LAMBDA WITH STROKE.

ing rather than the word directly following.

1. 'Áyáciisi.
2. 'Áyáciḡisi.
3. Li Áyáciílasi.
4. Li Áyáciḡílasí.
5. 'Kúsi ÁxÁksúsa.
6. Yi núláyus ÁííksÁ.
7. Yáu, ḡuyáu. 'Mási láulḡilus miá laýasi Malḡns.
8. Púyláḡilius laýasi Yútxvpḡsa.
9. Cúylái miáyasi gi la Áxsiwála.
10. YíÁí yímás.
11. Yi ḡúyayus ÁíáÁ miás, gi yi núláyus ÁíáÁ miá.
12. 'Kús siá yis ḡúyayus.
13. 'Kús sásḡ yis ḡíḡasi.
14. Yíḡ miáya yis ḡúyayus ksÁ Áúpasú.
15. YiÁ ḡúyaya yis yímásus ks ḡḡá búdiasí.
16. YxaláÁsu yíta.
17. MíḡxaxtkíḡÁ.

In sentence no. 17 you could write and pronounce íḡ instead of íḡ. On this see exercise 6 on pages 22 and 23.

Figure 24 Page 27 from *Exercises in Heiltsuk spelling*, 1984, by John C. Rath, showing attestation for U+A7DA Ḷ LATIN CAPITAL LAMBDA, and U+A7DC Ḷ LATIN CAPITAL LAMBDA WITH STROKE. Note that there is a comma placed to the left of U+A7DC Ḷ LATIN CAPITAL LAMBDA WITH STROKE. The limitations of the technology used to typeset the text for the above document (typewriter) would not allow the “stacking” of the comma above the capital Lambda with Stroke, and so it was placed to the left of the character to mark glottalization. The community confirms that in current orthographic practices, U+0313 ◌ COMBINING COMMA ABOVE is used to encode the glottalization mark, and should be positioned above the base character it is modifying.

(continuation of Exercise 3)

gi húa xλ'ákvlá ~Xí'ísa'xi du wáukvas líl'qv'la'xi la t'xas
 L'ndu qn gvúkv'la'isi lá'xi.

'Híka'gáwá 'gvixsdm'asi la t'xas L'ndu yis h'ík'ímásay'asi
 'ís'í'íalá gvúdiúkvvas lqv'á'xi d'um'xa w'czu'álaya'xi d'um'xa
 'útáyás h'p'címas'xi.

(Yi wálá 'A'stu'álagvuli.)

As illustrated above, English words are either underlined or italicized in a Heiltsuk text. Also study the following sentences.

1. Pí'xvstáutgilaxvsu há'nta'xi la wá'npa'xi.
2. Mál'úxv'λ'pugva pála dúi.
3. 'Qíkasdm's q'uis wí'liá'xi.
4. Lá'yax'cíáyú 'g'iasás λ'á'ús yis q'íkasas w'ls'lá'xi.
5. 'A'uxv'álá qs qqsgá qs λ'í'stiga qs dú't'g'váyú'stuaya.

Note the use of the proclitic qs in sentence no. 5.

Exercise 4

Figure 25 Page 41 from *Exercises in Heiltsuk spelling*, 1984, by John C. Rath, showing attestation for U+A7DC λ LATIN CAPITAL LAMBDA WITH STROKE.

BELLA BELIA (NOW : HEILTSUK) BAND RESERVES					
Bella Bella	No. 1	Wágłísł̑	1625.00 acres	1888	original survey
Tcimotf	No. 1A	Zmáuf	17.00	1888	
Hoonees	No. 2	Xvńis	21.00	1888	
Quartcha	No. 3	'Qvářcu	32.00	1888	
Noota	No. 4	Núda	16.50	1888	
Clatse	No. 5	ł̑ácsa	222.00	1888	
Elcho	No. 6	'Háłkv	80.00	1888	
Kisameet	No. 7	'Ksńł̑	13.00	1888	
Howeet	No. 8	Húyat	610.00	1888	
Kunsoot	No. 9	'Qł̑sutkv	95.00	1888	
Kajustus	No. 10	'Kákusdis	16.50	1888	
Werkinellek	No. 11	Wáķńálakv	63.00	1888	
Yellertlee	No. 12	Yáláł̑i	161.50	1888	
Yeo Island	No. 13	'Kvágiúsdias	11.80	1926	
Pole Island	No. 14	Láł̑skvs	1.90	1926	
Grave Island	No. 14A	'Pápalńssmala	0.61	1926	
formerly Strom Bay	No. 15	'Kluńt	129.00	1998	Order in Council
KOKYET (NOW : HEILTSUK) BAND RESERVES					
Kokyet	No. 1	'Qábá	185.00	1888	
Grief Island	No. 2		75.00	1888	
Kyarti	No. 3	~Gáyáł̑ti or ~Gláł̑ti	1.25	1888	
Neekas	No. 4	Nígás	11.00	1888	
Tankeah	No. 5	Tńkia	32.00	1888	
Koqui	No. 6	'Qvúqvái	95.00	1888	
Total Reserves : 23			3515.06	Total Acres	
Heiltsuk Cultural Education Centre 1998					

Figure 26 An administrative document prepared by the Heiltsuk Cultural Education Centre, 1998, showing attestation for U+A7DC ł̑ LATIN CAPITAL LAMBDA WITH STROKE.

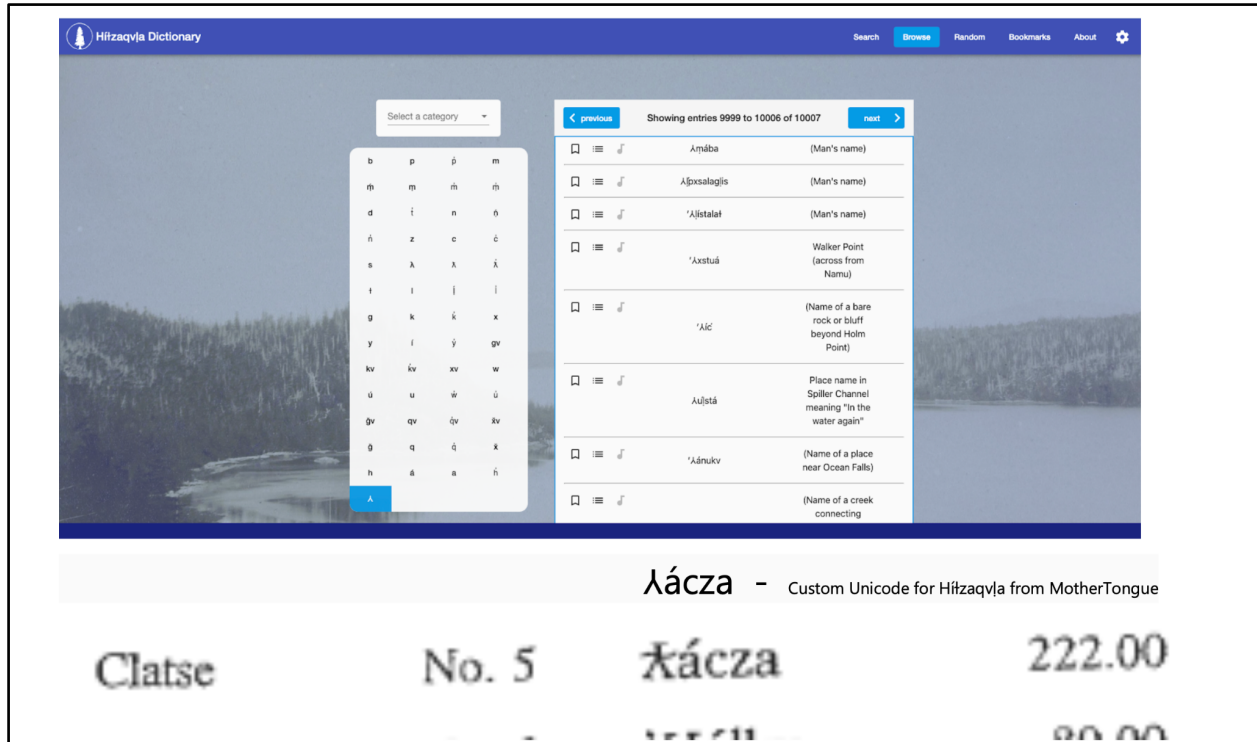


Figure 27 From *Capital barred lambda in Unicode problem*, 2023, prepared by Jennifer Carpenter of the Heiltsuk Cultural Education Centre, Wág̱ḻis̱la (Bella Bella), British Columbia, showing attestation for U+A7DC ꞗ LATIN CAPITAL LAMBDA WITH STROKE. U+A7DC is required for providing the capital case variant of U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE. The above document shows how the community currently uses U+2144 λ TURNED SANS-SERIF CAPITAL Y for representing the capital case variant of both U+03BB λ GREEK SMALL LETTER LAMDA and U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE in the online Hítzaqv̄la (Heiltsuk) dictionary, as there is currently no encoding option available in the Unicode Standard for representing the capital variant of U+019B.

**Topic 3:
Parts of the Head**

a. Híxtí.
Head

(*Esther* :) Qs híxtiáǵ
(*Marina* :) Qs híxtiiáǵ

My head

(*Esther* :) 'ǵux wála qs híxtiáǵ.
(*Marina* :) 'ǵux wála qs híxtiiáǵ.

My head hurts (or, My head aches or, I have a headache).

b. 'Pspíú
Ears

Qs p'spiuáǵ
My ears

'ǵux wála qs p'spiuáǵ.
My ears hurt (or, I have an earache).

c. Gík
Teeth

Qs gígíáǵ
My teeth

'ǵux wála qs gígíáǵ.
My teeth hurt (or, I have a toothache).

d. Síá
Hair

Qs síáyáǵ
My hair

e. Qqs
Eyes

Qs qqsáǵ
My eyes

'ǵux wála qs qqsáǵ.
My eyes are sore.

f. Xvmáq
Nose

Qs xvmáqaǵ
My nose





Figure 28 From *Conversational Heiltsuk 1: Some simple Heiltsuk words, phrases, and sentences*, from the Heiltsuk Language Programme, Heiltsuk Band Council, 1988, showing attestation for U+A7DC ǵ LATIN CAPITAL LAMBDA WITH STROKE.

Child: 'Wúǵvmí,
Lord,
 La qs laxstáíłáíga
As I am about to go to bed
 'Hńǵáǵłánugva qń čísłáyusńłńtxv
I pray that you take care of us
 'Húxvsi čísłńłńtxv la quǵń níkvkvaǵń
Please take care of us through the night
 'Giaxsiǵa yis* gviáǵaqvńǵla gi la kńqá
And thank you for waking us in the morning.
 Yisu ġviála.
So be it.




Bed-time story -a yis qs ġǵǵmpa,
A bedtime story of my grandparents,

gi la ýíxála *time* yis laxstáíł.
told when it was almost time to go to bed.

Wa li ħuáíla lázǵń?ila,
Then they would begin telling,

núsáíla yis quǵń táqaniálayaǵs ħixs núyń.
tell all kinds of nice stories.

łápa a 'Káqáuaǵi, lápális.
Legend has it that little Crow was digging clams, digging away on the beach.



.....

*pronounce "yis" as "s"

Figure 29 From *Conversational Heiltsuk 2: A day in Bella Bella*, from the Heiltsuk Language Programme, Heiltsuk Band Council, 1988, showing attestation for U+A7DA ǵ LATIN CAPITAL LAMBDA.

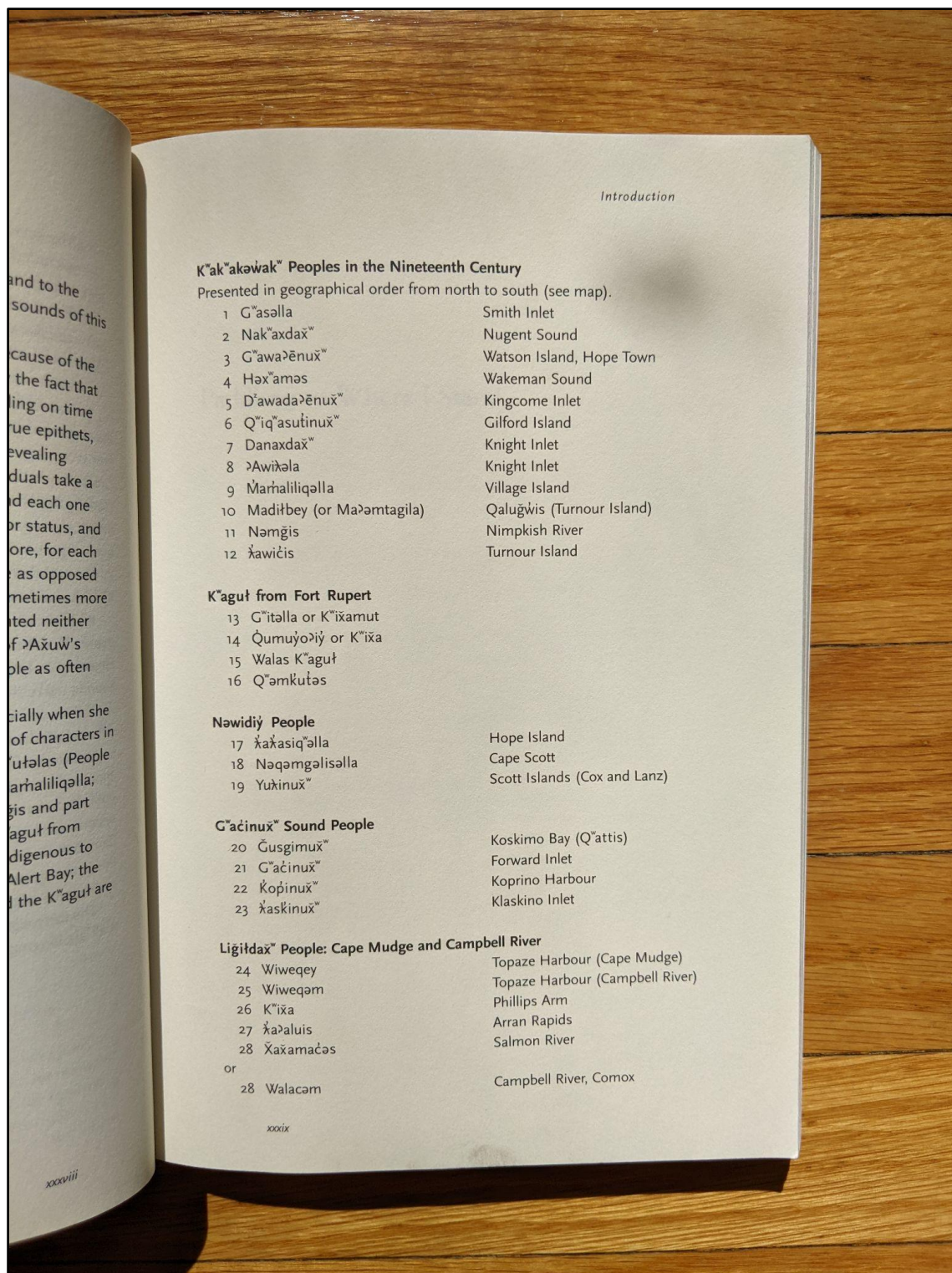


Figure 30 A place name list in Kwakwaka'wakw (Kwak'wala) and English. This list shows the use of a capitalization and the requirement of a bi-cameral orthography to render placenames in Kwakwaka'wakw, however, shows the issue of the community not having an encoded option for a capital Latin letter Lambda with stroke to provide capitalization for words such as "ʔaxasiq'əlla" (Hope Island, British Columbia).

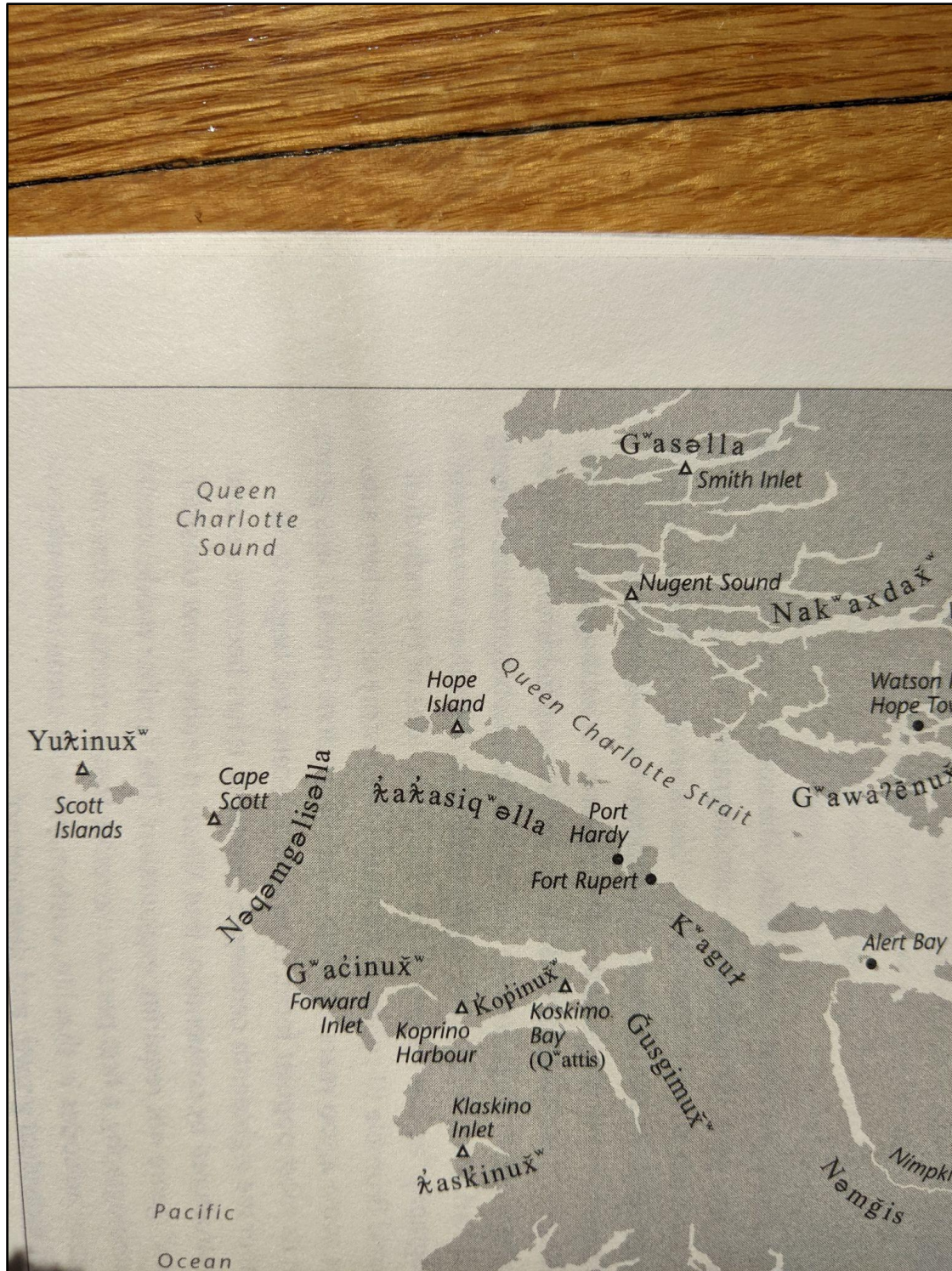


Figure 31 A map of Vancouver Island with place names in the kʷakʷala (Kwak'wala) language and English, showing the use of Capitalization, and the lack of a capital Latin Letter Lambda with Stroke for providing capitalization of the word "ʔaʔasiqʔəlla" (Hope Island, British Columbia) or "ʔaskinuʔ". Note that the place names in this map clearly indicate that case variation is used within the kʷakʷala orthography, as indicated by the words "gʔaʔinuʔ", "kʔopinuʔ", and "Yuʔinuʔ". From Paddling to where I stand : Agnes Alfred, Qwiqwasu tinuxw noblewoman, UBC, 2004

Liq'wala follows an orthography based on [Americanist phonetic notation](#) and thus varies significantly from [Kwak'wala](#).^{[23][24]}

Liq'wala alphabet

Uppercase	A	Ə	B	C	Č	D	D ^z	E	G	G ^w	Ğ	Ğ ^w	H	I	K	K'
Lowercase	a	ə	b	c	č	d	d ^z	e	g	g ^w	ğ	ğ ^w	h	i	k	k'
Uppercase	K ^w	K' ^w	L	L'	Ł	Λ	Λ̄	Λ̇	M	M'	N	N'	O	P	P'	Q
Lowercase	k ^w	k' ^w	l	l'	ł	λ	λ̄	λ̇	m	m'	n	n'	o	p	p'	q
Uppercase	Q ^w	Q'	Q' ^w	S	T	T'	U	W	W'	X	X ^w	Ǻ	Ǻ ^w	Y	Y'	
Lowercase	q ^w	q'	q' ^w	s	t	t'	u	w	w'	x	x ^w	ǻ	ǻ ^w	y	y'	?

Revitalization efforts [\[edit \]](#)

Figure 32 The Liq'wala orthography chart, as represented in the Wikipedia page for Kwak'wala language and its dialects, showing attestation for U+A7DA Λ LATIN CAPITAL LAMBDA, and U+A7DC Λ̄ LATIN CAPITAL LAMBDA WITH STROKE. Note that in this chart, the author has deliberately represented the capital Latin Lambda and capital Lambda with stroke in the graphical representation specified in this proposal by the use of a static image. This representation is inline with the representation expected by Hałtzaqvł̄a language community. Accessed 22 June 2023, <https://en.wikipedia.org/wiki/Kwak%CA%bcwala#Bibliography:-:text=23%5D%5B24%5D-,Liq%CA%bcwala%20alphabet,-Uppercase>

6 Recommended annotation additions to character names list

The following annotation additions are recommended to the following character names within the names lists for respectively:

U+03BB λ GREEK SMALL LETTER LAMDA

- Used by Wakashan and Salishan communities of North America
- Latin small letter lambda - A7DB

U+019B λ LATIN SMALL LETTER LAMBDA WITH STROKE

- Capital is A7DC
- Used by Wakashan and Salishan communities of North America

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Proposal Summary Form

ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹

Please fill all the sections A, B and C below.
Please read Principles and Procedures Document (P & P) from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.
Please ensure you are using the latest Form from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.
See also <http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title: *Proposal to Encode 3 Additional Latin Characters for Wakashan and Salishan Languages to the Unicode Standard*

2. Requester's name: *Robyn Humchitt, Kevin King, Denis Moyogo Jacquerye*

3. Requester type (Member body/Liaison/Individual contribution): *Individual contribution*

4. Submission date: *14 July 2023*

5. Requester's reference (if applicable):

6. Choose one of the following:
This is a complete proposal:
(or) More information will be provided later:

B. Technical – General

1. Choose one of the following:
a. This proposal is for a new script (set of characters):
Proposed name of script: _____
b. The proposal is for addition of character(s) to an existing block:
Name of the existing block: *Latin Extended-D*

2. Number of characters in proposal: *3*

3. Proposed category (select one from below - see section 2.2 of P&P document):
A-Contemporary B.1-Specialized (small collection) _____ B.2-Specialized (large collection) _____
C-Major extinct _____ D-Attested extinct _____ E-Minor extinct _____
F-Archaic Hieroglyphic or Ideographic _____ G-Obscure or questionable usage symbols _____

4. Is a repertoire including character names provided? Yes
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document? Yes
b. Are the character shapes attached in a legible form suitable for review? Yes

5. Fonts related:
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard? *Kevin King*
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):
kevin@typotheque.com

6. References:
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? Yes
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? Yes

7. Special encoding issues:
Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)? Yes
Font and Keyboard encoding (pages 22–27)

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see Unicode Character Database (<http://www.unicode.org/reports/tr44/>) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

¹ Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	Yes
If YES explain	
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?	Yes
If YES, with whom? <i>Robyn Humchitt, Frances Brown, Jennifer Carpenter, Mark Turin, Marilyn Slett, Joanne Green, et al</i>	
If YES, available relevant documents: <i>See figures in section 5</i>	
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	Yes
Reference: <i>See figures in section 5</i>	
4. The context of use for the proposed characters (type of use; common or rare)	Yes
Reference: <i>See figures in section 5</i>	
5. Are the proposed characters in current use by the user community?	Yes
If YES, where? Reference: <i>In Canada and the United States of America</i>	
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	Yes
If YES, is a rationale provided?	
If YES, reference: <i>Inclusion in Latin Extended-D range</i>	
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	Yes
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?	Yes
If YES, is a rationale for its inclusion provided?	
If YES, reference: <i>See section 4</i>	
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?	Yes
If YES, is a rationale for its inclusion provided?	
If YES, reference: <i>See section 4</i>	
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character?	Yes
If YES, is a rationale for its inclusion provided?	
If YES, reference: <i>See section 4</i>	
11. Does the proposal include use of combining characters and/or use of composite sequences?	Yes
If YES, is a rationale for such use provided?	
If YES, reference: <i>See sections 4 and 5, figures 2, 3, 4, 5, 6, 7, 8, and 32</i>	
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	
If YES, reference: <i>Section 4.1, figure 17</i>	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	No
If YES, describe in detail (include attachment if necessary)	
13. Does the proposal contain any Ideographic compatibility characters?	No
If YES, are the equivalent corresponding unified ideographic characters identified?	
If YES, reference:	