Proposal to Encode the Gurung Khema in Universal Character Set

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1. Introduction

This is a proposal to encode the Gurung Khema in the Universal Character Set. It supersedes the following documents:

- ‘N4019 L2/11-106’ Introducing the Khema Script for Writing Gurung
- ‘L2/11-047’ Submission of Gurung Script

The major changes include:

- Renaming of the block and character names to refer to “Gurung Khema”, after script creator Pim Bahadur Gurung, rather than “Khema”.
- Inclusion of LineBreak, Syllabic Categories and Positional Categories.[§ 6.2,6.3 & 6.4]
- Inclusion of Punctuation “Double Danda”. [§ 3.13]

2. Background

Gurung Khema (also called ‘Khemā Pẖīr’ བྷ་ོད་,Khemā līpi’ བྷ་ོད་ or ‘Tamū Khemā Pẖīr’ ཁ་མ་ཡ་) is an alphasyllabary based upon the Brahmi model. Gurung Khema (ཁོད) is a script used for writing Gurung (ISO 639:gnn) and (ISO 639:gvr), a Tibeto-Burman minority language of 325,622 people (census 2011) [6] primarily spoken in Kaski District, Syangja District, Lamjung District, Tanahu District, Gorkha District, Manang District, Mustang District and Parbat District Nepal [6] and in the South Sikkim District, West Sikkim District and East Sikkim District of Sikkim, India[25][see fig.7]. It was recognized as an official language of Sikkim. The Sikkim state government has been recognizing the Gurung Khema as the Gurung script in year 1997 [see fig.25] and Indian government in year 2020. And till class 12th Gurung language class is being conducted by preparing textbooks in Gurung Khema.

Gurung people also known as Tamū ཡ་/་. The autonyms are Tamū Kyui (་ ཡ་, ཡ་ རེ་) , Tamuk, Tamukya, Tamu Qi, Tamu Kui, Tamu Ta, etc. Gurung Language written in five scripts i,e. Gurung Khema, Khe Phri, Devanagari, Tibetan and Roman. Devanagari is commonly used by Gurung people specifically in Nepal, but Gurung Khema and Khe Phri are the own script of Gurung Language.

Khe Phri created by Jagan Lal Gurung during 1944’s World War. In 1944, when Jagan Lal Gurung was fighting in Burma during World War II, he came up with an ingenious method of communication. As his battalion was composed primarily of Gurungs, Jagan Lal began to communicate in Gurung language. When the war ended, Jagan Lal had acquired a newfound interest in his native tongue, an interest that led to him developing a script for the oral Gurung language. Combining various signs and symbols, Jagan Lal developed a rudimentary script, which today is known as Khe Phri. When Jagan Lal returned to Nepal, he began teaching Khe Phri to the children in his village of Hyanjakot. But Jagan Lal received a lot of threats from Kings of Nepal for teaching the children, but he did not budge. When he was about to be arrested, he ran away from Nepal, back to his duty in the Indian Army. Jagan Lal came back to Nepal in 1965, and immediately began lobbying for his beloved script. He taught many, but he made little progress in his lifetime.[17][19]
Khe Phri and Gurung Khema are the two most widely used scripts, and although Khe Phri is older, Gurung Khema is much more popular, used in Nepal, India and Bhutan and also listed as the official script of the Gurung language by the Nepal Language Commission.

Despite Jagan Lal’s efforts, Khe Phri was never fully adopted by the Gurung community, which was largely unaware of its existence. Furthermore, the Pye, religious text isn’t in written form. The pye is passed down from guru to student orally, and if students cannot memorize it then they cannot pass it down. In 1977, the committee decided to develop a script to help in preservation, and Bal Narsingh Gurung, secretary of Gurung Samaj Sudhar Samiti was tasked with the responsibility. At that time, the committee wasn’t aware about the Khe Phri, and Bal Narsingh, under the supervision of Guru Pim Bahadur Gurung, developed the Gurung Khema and presented in the first National General Convention of the Tamu Chonj Dhin was held in Kathmandu in 1995 AD. And the consensus has passed the Gurung Khema as a script of Gurung language. Gurung people call male ancestor as KHE, female ancestor as MA and they worship/pray KHE-MA from birth to till death. ‘Phri’ means ‘script’ or ‘to write’. So the script is given the name ‘GURUNG KHEMA’. Since its development, the Gurung Khema has largely been adopted by the Gurung community. After that, Bhim Gurung, the founding chairman of The Central Committee of Nepal Tamu Vidyarthi Chonj Dhi and campaigner of Gurung language and Gurung Khema script, started teaching Gurung language and Gurung Khema by establishing Devdaha Mother Tongues Academy in Devdaha, Rupandeshi, Nepal. In Sikkim, the campaign has been started with the active participation of the Rodhi Sikkim Chairman Meghraj Kon Tamu. Subsequently, the first International Tamu Conference held in Kathmandu on 08th, 09th and 10th of July, 2019 also unanimously recognized the Gurung Khema as the official script of the Gurungs.[see fig.8]

Initial Gurung Khema doesn’t have Long Vowel letters but Gurung language has long vowel sounds, i.e. [i:], [u:], [e:], [o:]. In 2019, Gurung Khema Lipi Board revised the vowels and added 4 new long vowel letters i.e. vowel letter ii, vowel letter uu, vowel letter ee and vowel letter oo and 4 new long vowel signs i.e. vowel sign ii, vowel sign uu, vowel sign ee and vowel sign oo. [see fig 5(b)]

In Sikkim, 37 government schools, more than 720 students and more than 40 teachers teaching Gurung Khema [see fig.19], 9 teachers and 9,000 participants in Gurung Khema Lipi Learning workshop of United States, 3 teachers and 189 students engaged in Gurung Khema Lipi Learning Virtual Workshop of Israel [see fig.20(b)], more than 500 teachers teaching Gurung Khema through Gurung Khema Lipi workshops in Nepal.[see fig.26(a)][see fig.26(c)]

Only one digitized font “KHEMA” (both in True Type and Open Type) available for Gurung Khema, was designed by Tilak Gurung in the year 2000 and revised in the year 2019. True Type Font is used in the proposed code chart and names list. “KHEMA” font is not freely available for general people [see fig.6].

2.1 Usage

Gurung Khema is currently used in writing and print for various purposes:

- **Educational Materials:** Primary and upper primary educational materials for teaching Gurung and Gurung Khema are published by Human Resource Development Department, Government of Sikkim, Gangtok. Examples of two school books are ‘Tamu Khyui Lule volume-I’ (2006), ‘Khyui Talokye volume-I’ (2005 & 2013) [see fig. 1(a) & (b)][8]. Human Resource Development Department, Government of Sikkim, Gangtok also published so many textbooks for primary and upper primary-level of education. [see fig.1(a), fig.1(b), fig.1(d) & fig.1(e)]
Central Board of Secondary Education (CBSE) of India conducting Gurung Board Examination for class 10th every year. In 2019, due to lack of Unicode standard font they used handwritten form of Gurung Khema for making question paper [see fig.13][21]. Sample paper of Gurung language for Class 10th is now available in Gurung Khema, using “KHEMA” font.[see fig.14][22]

Gurung language and Gurung Khema is teaching in the schools of Sikkim (South and West District), India. [see fig.19]

- **Newspaper**: A Gurung edition of the ‘Sikkim Herald’ is produced in Gurung Khema. The newspaper was first published in July 16, 2001 edited by Pradeep Gurung. For some kinds of reason this newspaper is not publishing, last publishing date was July 24, 2019. This newspaper used unofficial font of Gurung Khema, which is not comprehensible by most of the people. Because its glyphs and diacritics are different from official Gurung Khema, many Gurung Associations rejected this font.[see fig.17][23]

- **Ephemera**: Tamu Hyul Cõj Dhi Gurung Rashtra Pariṣad produces and distributes calendars using Gurung Khema.[see fig.15]

- **Linguistic works**: Tamu Samaj Belgium has published a textbook ‘Ngyoi Tamu Kyui’ written by linguists Ratna Bahadur Tamu and Bhim Gurung, is the first ever Gurung book written in Gurung Khema [see fig.10][26] and the book ‘Sigre Cõ Ŭthi Pe Chogi’[see fig.11] written in both Gurung and Nepali for to learn Gurung Khema. [see fig.11]

- **Ritualistic works**: People using the Gurung Khema in their rituals, they are used it to write on tombstones.[see fig.18]

- **Literary Works**: Anthologies of Gurung poetry are printed in the Gurung Khema in the book of ‘Ādhī Layā’ [see fig.9]

- **Digital Resources**: Gurung Khema has been adapted for use in digital media. It is based upon a non-Unicode encoding. An Android Application ‘Khema Lipi -Type Tamu’ is available in Google Playstore.[see fig.12][4]

- **Workshops**: Many workshops still conducting by the various Gurung associations throughout the years in Nepal, in India and in other countries also. [see fig.21(a)][21(b)][21(c)]

3. **Implementation Details**

3.1 **Script**

The script is assigned the name ‘Gurung Khema’. The proposed characters are intended for presenting current forms of Gurung Khema. The set consists of 58 characters: 1 vowel, 29 consonants, 11 vowel signs, 6 various signs, 1 punctuation and 10 digits.

3.2 **Structure**
Gurung Khema is an abugida/alphasyllabary writing system. It is written from left-to-right. Consonants may have an inherent vowels; it typically is pronounced [a] or [a], normally never occurs in final position. The script has no regular system of conjuncts but it has virama to mute the inherent vowel §3.10. There is a vowel letter, functions as a vowel carrier. There are 6 auxiliary signs along with 11 dependent vowel signs. All the letters are the same as those of Devanagari but the vowel and consonants are read with post-fixed ‘-Mā’ (♀) and ‘-khe’ (♂) like ‘amā’, ‘kakhe’, ‘khakhe’, ‘gakhe’, etc. Its ligature is based on Brahmic model but GURUNG KHEMA CONSONANT HA, GURUNG KHEMA CONSONANT VA are in place of ‘nya’ and ‘nna’ as per Brahmic order; and there is one SA letter. Pim Bahadur created the alphabet with HA and VA where ‘nya’ and ‘nna’ would be expected in the usual Brahmic order as defined by Pim Bahadur is still taught today. [see table 1] [see fig.1(f)]

<table>
<thead>
<tr>
<th>Consonants</th>
<th>Character name</th>
</tr>
</thead>
<tbody>
<tr>
<td>KA</td>
<td>KHA</td>
</tr>
<tr>
<td>GA</td>
<td>GHA</td>
</tr>
<tr>
<td>NGA</td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>CHA</td>
</tr>
<tr>
<td>JA</td>
<td>JHA</td>
</tr>
<tr>
<td>HA</td>
<td></td>
</tr>
<tr>
<td>TTA</td>
<td>TTHA</td>
</tr>
<tr>
<td>DDA</td>
<td>DDHA</td>
</tr>
<tr>
<td>VA</td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>THA</td>
</tr>
<tr>
<td>DA</td>
<td>DHA</td>
</tr>
<tr>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>PHA</td>
</tr>
<tr>
<td>BA</td>
<td>BHA</td>
</tr>
<tr>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>YA</td>
<td>RA</td>
</tr>
<tr>
<td>LA</td>
<td>SA</td>
</tr>
</tbody>
</table>

Table 1: showing the letter HA and VA are in place of letters ‘nya’ and ‘nna’ as per Brahmic model.

3.2 Vowel

VOWEL LETTER A अ functions as a vowel carrier. Other vowels are represented as dependent signs. Independent forms of other vowels are produced by writing dependent vowel signs with this letter. [see fig.1(c)], [see fig.2] and [see fig.5 (a) & 5 (b)]. §4.1

3.3 Consonants

There are 29 consonants letters, indigenously known as ‘Khepliri’ (केघपङ्ग) and the consonants are the same as those of Devanagari but the consonants are read with post-fixed ‘-khe’ (♂) like ‘kakhe’, ‘khakhe’, ‘gakhe’, etc [see fig.1(c)].
### 3.3.1 Other uses of Consonants

- There is only one sibilant phoneme \( s \) \([s]\) \( \text{‘GURUNG KHHEMA CONSONANT SA’} \) in Gurung, but to spell Nepali loanwords which has \( \delta \) \([\delta]\) and \( \xi \) \([\xi]\) sounds they use this only ‘GURUNG KHEMA CONSONANT’
SA’ letter to represent both the sounds. For example: राष्ट्रिया ‘National’, श्यामने ‘with Shyam’.

- ‘GURUNG KHEMA CONSONANT NA’ is also used to write Nepali loanword phoneme न [ŋ] न. For example: झण्डा ‘Flag’.
- ‘GURUNG KHEMA CONSONANT JHA’ and ‘GURUNG KHEMA CONSONANT DDHA’ are usually used to write Nepali, Sanskrit loanwords. For example: झ्याल ‘Window’, ढाड ‘Black’.
- Gurung Khema र is also used to write Nepali and Sanskrit loanword phoneme ‘VOCALIC R’ रङ्ग ‘Season’.
- ख [tsʰa] and ग्ज [gja] are used to write Devanagari conjunctions क्ष ‘Area’ and ज्ञ ‘Knowledge’.

3.4 Vowel Signs

There are 11 dependent vowel signs, indigenously called Vowel signs as ‘Priima’ (प्र) and the vowel signs are the same as those of Devanagari but the vowel signs are read with post-fixed ‘-ma’ (म) [see fig.4(b), 5(a) & 3(b)][§ 4.2]

<table>
<thead>
<tr>
<th>Letter</th>
<th>Character name</th>
</tr>
</thead>
<tbody>
<tr>
<td>आ</td>
<td>GURUNG KHEMA VOWEL SIGN AA</td>
</tr>
<tr>
<td>इ</td>
<td>GURUNG KHEMA VOWEL SIGN I</td>
</tr>
<tr>
<td>ई</td>
<td>GURUNG KHEMA VOWEL SIGN II</td>
</tr>
<tr>
<td>उ</td>
<td>GURUNG KHEMA VOWEL SIGN U</td>
</tr>
<tr>
<td>ऊ</td>
<td>GURUNG KHEMA VOWEL SIGN UU</td>
</tr>
<tr>
<td>ए</td>
<td>GURUNG KHEMA VOWEL SIGN E</td>
</tr>
<tr>
<td>ऐ</td>
<td>GURUNG KHEMA VOWEL SIGN AE</td>
</tr>
<tr>
<td>ओ</td>
<td>GURUNG KHEMA VOWEL SIGN O</td>
</tr>
<tr>
<td>औ</td>
<td>GURUNG KHEMA VOWEL SIGN OU</td>
</tr>
</tbody>
</table>

3.5 Various Signs

There are 6 various signs, also known as लहोमा (लहोमी), means ancillary or auxiliary signs [see fig.3(b) & 4(a)]. These लहोमास were included in Gurung Khema in year of 2000 by Bal Narsingh Gurung during reshaping the all letters. [see fig.1(f)]
<table>
<thead>
<tr>
<th>Letter</th>
<th>Character name</th>
</tr>
</thead>
<tbody>
<tr>
<td>☄️</td>
<td>GURUNG KHEMA CONSONANT SIGN MEDIAL YA</td>
</tr>
<tr>
<td>☄️</td>
<td>GURUNG KHEMA CONSONANT SIGN MEDIAL VA</td>
</tr>
<tr>
<td>☄️</td>
<td>GURUNG KHEMA CONSONANT SIGN MEDIAL HA</td>
</tr>
<tr>
<td>☄️</td>
<td>GURUNG KHEMA CONSONANT SIGN MEDIAL RA</td>
</tr>
<tr>
<td>☄️</td>
<td>GURUNG KHEMA SIGN VIRAMA</td>
</tr>
<tr>
<td>☄️</td>
<td>GURUNG KHEMA SIGN ANUSVARA</td>
</tr>
</tbody>
</table>

3.6 Gurung Khema Consonant sign Medial Ya <☄️>

It is also known as ‘Yakār’ ( yakār ). The sign <☄️> is written in the left side of the consonants in question. When it combines with consonants it kills the inherent /a/ of the consonants. Its IPA is [ -ja ]. For examples:

<table>
<thead>
<tr>
<th>recommended</th>
<th>not recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>☄️</td>
<td>☄️</td>
</tr>
<tr>
<td>☄️</td>
<td>☄️</td>
</tr>
</tbody>
</table>

3.7 Gurung Khema Consonant sign Medial Va <ौ> 

It is also known as ‘Vakār’ ( vakār ). The sign <ौ> is written in the left side of the consonants in question. When it combines with consonants it kills the inherent [a] of the consonants. Its IPA is [ -wa ]. For examples:

<table>
<thead>
<tr>
<th>recommended</th>
<th>not recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>औ</td>
<td>औ</td>
</tr>
<tr>
<td>औ</td>
<td>औ</td>
</tr>
</tbody>
</table>

3.8 Gurung Khema Consonant sign Medial Ha <ॉ> 

- It is also known as ‘Hakār’ ( hakār ). The sign <ॉ> is written in the right side of the GURUNG KHEMA VOWEL A, GURUNG KHEMA VOWEL AA and consonants in question. GURUNG KHEMA CONSONANT SIGN MEDIAL HA represents breathiness on the syllable in the Gurung Khema. When it combines with consonants, it kills the inherent [a] of the consonants. Its IPA is [ -ḥa ]. For examples:

<table>
<thead>
<tr>
<th>recommended</th>
<th>not recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>छॉ</td>
<td>छॉ</td>
</tr>
<tr>
<td>छॉ</td>
<td>छॉ</td>
</tr>
</tbody>
</table>
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* Tinhor ‘Inside’
  - Gurung Khema does not have Visarga. Devanagari Sign Visarga and GURUNG KHEMA CONSONANT SIGN MEDIAL HA are quite different from each other in case of shape, position and uses. Devanagari Sign Visarga does not kill the initial letter’s inherent vowel or inherent schwa, but GURUNG KHEMA CONSONANT SIGN MEDIAL HA does and vowel signs can be carried by GURUNG KHEMA CONSONANT SIGN MEDIAL HA. GURUNG KHEMA SIGN MEDIAL HA represented by Devanagari in form of (ू+ह) for example:  
    - Pugrī ‘Snake’
    - Prukī ‘Breakfast’

3.9 Gurung Khema Consonant sign Medial Ra <॒>

It is also known as ‘Rakār’ (रकार). The sign <॒> is written in the beneath of the consonants in question. When it combines with consonants it kills the inherent /a/ of the consonants. It carries all the vowel signs and it does not carry various signs (Lōmā). Its IPA is [-ra]. It has similarity in glyph with ‘COMBINING CIRCUMFLEX ACCENT BELOW’ U+032D (˚), but this proposal for separate encoding for GURUNG KHEMA CONSONANT SIGN MEDIAL RA.

For examples:

<table>
<thead>
<tr>
<th>recommended</th>
<th>not recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>ब्रह्म</td>
<td>क्र</td>
</tr>
<tr>
<td>ब्रह्म</td>
<td>क्र</td>
</tr>
</tbody>
</table>

3.10 Gurung Khema sign Virama <॓>

also known as ‘Palithobā’ (पलिथोबा). The sign <॓> is written in the beneath of the consonants in question. It functions as like to mute the inherent vowel [a] of the consonants.

For example:

<table>
<thead>
<tr>
<th>तान्ग</th>
<th>क्र</th>
<th>Tāṅgā</th>
<th>‘Fish’</th>
</tr>
</thead>
<tbody>
<tr>
<td>लार्डिद</td>
<td>क्र</td>
<td>लार्डिद</td>
<td>‘Fight’</td>
</tr>
</tbody>
</table>
It never carries vowel signs and other signs, but the modified syllable can also carry MEDIAL HA to create glottal stop phoneme [ʔ]. For example:

\[\text{IPA} \quad कृषि → \text{कर्न-}+\text{न-}\text{कृषि} \quad [\text{K}’\text{i}’\text{u}’\text{i}] \quad ‘\text{Gurung}’\]

3.11  Gurung Khema sign Anusvara &lt;ृ&gt;

It is also known as ‘Laũcve’ (लाँवेज). The sign &lt;ृ&gt; is written on the top of the vowels and consonants in question. It is a nasalization mark of Gurung Khema. It corresponds to the Candrabindu (्) in Devanagari. Its IPA is [ ʔ ].

It has similarity in glyph with ‘CARON’ U+02C7 (´) and ‘COMBINING CARON’ U+030C (´), but this proposal for separate encoding for GURUNG KHEMA SIGN ANUSVARA.

Position of GURUNG KHEMA SIGN ANUSVARA is in the exactly same place of all other vowel signs, so it looks serried that because due to limitations of the non-Unicode standard font. The exact position of the GURUNG KHEMA SIGN ANUSVARA would be atop of the all vowel signs. [see fig.4(a)] For example:

\[\text{IPA} \quad \text{.testing} → \text{.testing} + \text{ृ} \quad \text{кт}’\text{и}’\text{у}’\text{и} \quad ‘\text{Master of slave}’\]

\[\text{IPA} \quad Nā → \text{न}+\text{ृ} \quad \text{Nā} \quad ‘\text{Take it}’\]

3.12  Digits

There is full set of decimal digits: । ZERO, । ONE, । TWO, । THREE, । FOUR, । FIVE, । SIX, । SEVEN, । EIGHT, । NINE. [see fig.2][see fig.1(c)]

3.13  Punctuation

Gurung Khema uses DOUBLE DANDA (||) at the end of the sentence. Full stop is used for to make abbreviations only. There are no script-specific punctuation marks. Latin marks, such as : ; ,<; _” () ? \ - and I are used. [see fig.22]

3.14  Basis for Character Shapes

The Gurung Khema proposed here for encoding in the UCS in the Standard Gurung Khema developed and promoted by the various Gurung Associations and provisional government of Sikkim, India after 2019 the proposed script is an extension of Standard Gurung Khema, which includes not commonly found in written or printed documents (before 2000) like in the book ‘The Evaluation of Man and the Modern Society in Mountainous Sikkim’ by Jash Raj Subba [see fig.25][16] and in the blog of ‘Gorkha Times’[see fig.26][20].

Pim Bahadur Gurung created initial Gurung Khema, has 8 vowel letters (A,AA,I,U,E,AI,O,AU), 7 vowel signs (AA,I,U,E,AI,O,AU) and 29 consonants. But due to lack of printing font and good communications Gurung people of various regions started to write their own style of Gurung Khema letters. So variations in shapes of letter are very common in old handwritten texts [see fig.23].
The Newspaper *Sikkim Herald* Gurung Edition started to print newspaper by using their own non official font in the year 2001. Sikkim Herald’s shapes of various letters of Gurung Khema are different from official Gurung Khema, they used their own style of vowel signs and anusvara sign in their newspaper. The dependent vowel sign u of *Sikkim Herald* and Official VOWEL SIGN II both are quite similar in glyphs, and so faults are there in *Sikkim Herald*’s font. For that reason most of the Gurung Khema users of Sikkim and Nepal they are not able to read this newspaper properly. This newspaper is not publishing yet. The last time it was published in July 24, 2019. [see table no.3]

In year of 2000, Bal Narsingh Gurung reshaped the Gurung Khema and added 6 more auxiliaries (Lhomā). The modern Standard font is totally based on Bal Narsingh’s design [see fig.1 (f)]. There are few documents has been written in old style of Gurung Khema. After 2000, maximum books and other materials were published in current form of letters. [see fig. 24]

The font “GURUNG KHEMA” for the proposed Gurung Khema was drawn by Tilak Gurung in the year 2000 and revised in 2019[see fig.1(c)]. This font is the official script font accepted by the various Gurung Associations. Modern printed books are publishing with this font. Gurung Language has long vowel sounds ([i:], [u:], [e:], [o:]) but Khe Prih and initial Gurung Khema hasn’t the long vowel letters and long vowel signs too. To represent these long vowel sounds, *Gurung Khema Lipi Board* decided to make new letters and signs and revised the Gurung Khema and created 4 new vowels (II,UU,EE,OO) and 4 new vowel signs (II,UU,EE,OO) in the year of 2019.

The comparison table no. 3 doesn’t include Lhomas and vowel signs. It includes only Subba, Gorkha Time’s handwritten styles, *Sikkim Herald*’s non-official self-made font with Standard Gurung Khema font “KHEMA”. [see table no.3]

4. **Encoded Representations**

4.1 **Vowel letters**

Some independent vowel may be a combination of a vowel letter and a dependent vowel sign. This is recommended. The encoded character for the independent vowel should be used.

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>जी</td>
<td>letter aa</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,1611E&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter i</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,1611F&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter ii</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16120&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter u</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16121&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter uu</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16122&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter e</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16123&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter ee</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16124&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter ai</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16125&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter o</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16126&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter oo</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16127&gt;</td>
</tr>
<tr>
<td>जी</td>
<td>letter au</td>
</tr>
<tr>
<td>जी</td>
<td>&lt;16100,16128&gt;</td>
</tr>
</tbody>
</table>
4.2 Vowel Signs

There 11 dependent vowel signs in GURUNG KHEMA. The dependent vowel signs should be atomically encoded with no decomposition. *Table no.2* shows vowel signs that can be analyzed, the single code point that should used to represent them in text, and the sequence of code points resulting from analysis that should not be used.

<table>
<thead>
<tr>
<th>Use</th>
<th>Do Not Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ॉ</code></td>
<td>1611F &lt;0304&gt;</td>
</tr>
<tr>
<td><code>्</code></td>
<td>1611F &lt;030A&gt;</td>
</tr>
<tr>
<td><code>ौ</code></td>
<td>16120 &lt;1611F,1611F&gt;</td>
</tr>
<tr>
<td><code>ॆ</code></td>
<td>16121 &lt;1611E,1611E&gt;</td>
</tr>
<tr>
<td><code>े</code></td>
<td>16122 &lt;16121,030D&gt;</td>
</tr>
<tr>
<td><code>ै</code></td>
<td>16123 &lt;1611E,1611F&gt;</td>
</tr>
<tr>
<td><code>ॉ</code></td>
<td>16124 &lt;16123,030D&gt;</td>
</tr>
<tr>
<td><code>ो</code></td>
<td>16125 &lt;16123,1611F&gt; &lt;1611E,16120&gt;</td>
</tr>
<tr>
<td><code>्</code></td>
<td>16126 &lt;1611E,16123&gt; &lt;16121,1611F&gt;</td>
</tr>
<tr>
<td><code>ौ</code></td>
<td>16127 &lt;1611E,16124&gt; &lt;16122,1611F&gt;</td>
</tr>
<tr>
<td><code>ॆ</code></td>
<td>16128 &lt;16126,1611F&gt; &lt;16121,16120&gt; &lt;1611E,16125&gt;</td>
</tr>
</tbody>
</table>

5. Collation

The collation order is as follows:

\[
\begin{align*}
\text{A} & < \text{KA} < \text{KHA} < \text{GA} < \text{GHA} < \text{NGA} < \text{CA} < \text{CHA} < \text{JA} < \text{CHA} < \text{HA} < \text{TTA} < \text{TTHA} < \text{DDA} < \text{DDHA} < \text{VA} < \text{TA} < \text{THA} < \text{DA} < \text{DHA} < \text{NA} < \text{PA} < \text{PHA} < \text{BA} < \text{BHA} < \text{MA} < \text{YA} < \text{RA} < \text{LA} < \text{SA} < \text{SIGN AA} < \text{SIGN I} < \text{SIGN II} < \text{SIGN U} < \text{SIGN UU} < \text{SIGN E} < \text{SIGN EE} < \text{SIGN AI} < \text{SIGN O} < \text{SIGN OO} < \text{SIGN AU} < \text{CONSONANT SIGN MEDIAL YA} < \text{CONSONANT SIGN MEDIAL VA} < \text{DOUBLE DANDA} < \text{DIGIT ZERO} < \text{DIGIT ONE} < \text{DIGIT TWO} < \text{DIGIT THREE} < \text{DIGIT FOUR} < \text{DIGIT FIVE} < \text{DIGIT SIX} < \text{DIGIT SEVEN} < \text{DIGIT EIGHT} < \text{DIGIT NINE}
\end{align*}
\]
6. Character Data
6.1 Character Properties

In the format of UnicodeData.txt:

16100;GURUNG KHEMA LETTER A;Lo;0;L;;;;;N;;;;
16101;GURUNG KHEMA LETTER KA;Lo;0;L;;;;;N;;;;
16102;GURUNG KHEMA LETTER KHA;Lo;0;L;;;;;N;;;;
16103;GURUNG KHEMA LETTER GA;Lo;0;L;;;;;N;;;;
16104;GURUNG KHEMA LETTER GHA;Lo;0;L;;;;;N;;;;
16105;GURUNG KHEMA LETTER NGA;Lo;0;L;;;;;N;;;;
16106;GURUNG KHEMA LETTER CA;Lo;0;L;;;;;N;;;;
16107;GURUNG KHEMA LETTER CHA;Lo;0;L;;;;;N;;;;
16108;GURUNG KHEMA LETTER JA;Lo;0;L;;;;;N;;;;
16109;GURUNG KHEMA LETTER JHA;Lo;0;L;;;;;N;;;;
1610A;GURUNG KHEMA LETTER HA;Lo;0;L;;;;;N;;;;
1610B;GURUNG KHEMA LETTER TTA;Lo;0;L;;;;;N;;;;
1610C;GURUNG KHEMA LETTER TTHA;Lo;0;L;;;;;N;;;;
1610D;GURUNG KHEMA LETTER DDA;Lo;0;L;;;;;N;;;;
1610E;GURUNG KHEMA LETTER DDHA;Lo;0;L;;;;;N;;;;
1610F;GURUNG KHEMA LETTER VA;Lo;0;L;;;;;N;;;;
16110;GURUNG KHEMA LETTER TA;Lo;0;L;;;;;N;;;;
16111;GURUNG KHEMA LETTER THA;Lo;0;L;;;;;N;;;;
16112;GURUNG KHEMA LETTER DA;Lo;0;L;;;;;N;;;;
16113;GURUNG KHEMA LETTER DHA;Lo;0;L;;;;;N;;;;
16114;GURUNG KHEMA LETTER NA;Lo;0;L;;;;;N;;;;
16115;GURUNG KHEMA LETTER PA;Lo;0;L;;;;;N;;;;
16116;GURUNG KHEMA LETTER PHA;Lo;0;L;;;;;N;;;;
16117;GURUNG KHEMA LETTER BA;Lo;0;L;;;;;N;;;;
16118;GURUNG KHEMA LETTER BHA;Lo;0;L;;;;;N;;;;
16119;GURUNG KHEMA LETTER MA;Lo;0;L;;;;;N;;;;
1611A;GURUNG KHEMA LETTER YA;Lo;0;L;;;;;N;;;;
1611B;GURUNG KHEMA LETTER RA;Lo;0;L;;;;;N;;;;
1611C;GURUNG KHEMA LETTER LA;Lo;0;L;;;;;N;;;;
1611D;GURUNG KHEMA LETTER SA;Lo;0;L;;;;;N;;;;
1611E;GURUNG KHEMA VOWEL SIGN AA;Mn;0;NSM;;;;;N;;;;
1611F;GURUNG KHEMA VOWEL SIGN I;Mn;0;NSM;;;;;N;;;;
16120;GURUNG KHEMA VOWEL SIGN II;Mn;0;NSM;;;;;N;;;;
16121;GURUNG KHEMA VOWEL SIGN U;Mn;0;NSM;;;;;N;;;;
16122;GURUNG KHEMA VOWEL SIGN UU;Mn;0;NSM;;;;;N;;;;
16123;GURUNG KHEMA VOWEL SIGN E;Mn;0;NSM;;;;;N;;;;
16124;GURUNG KHEMA VOWEL SIGN EE;Mn;0;NSM;;;;;N;;;;
16125;GURUNG KHEMA VOWEL SIGN AI;Mn;0;NSM;;;;;N;;;;
16126;GURUNG KHEMA VOWEL SIGN O;Mn;0;NSM;;;;;N;;;;
16127;GURUNG KHEMA VOWEL SIGN OO;Mn;0;NSM;;;;;N;;;;
16128;GURUNG KHEMA VOWEL SIGN AU;Mn;0;NSM;;;;;N;;;;
16129;GURUNG KHEMA CONSONANT SIGN MEDIAL YA;Mc;0;L;;;;;N;;;;
6.2 Linebreaking

In the format of LineBreak.txt:

16100..1611D ; AL # [30] GURUNG KHEMA LETTER A .. GURUNG KHEMA LETTER SA
16129..1612C ; SA # [04] GURUNG KHEMA CONSONANT SIGN MEDIAL YA .. GURUNG KHEMA CONSONANT SIGN MEDIAL RA
1612D..1612E ; CM # [02] GURUNG KHEMA SIGN VIRAMA .. GURUNG KHEMA SIGN ANUSVARA
1612F ; BA # GURUNG KHEMA DOUBLE DANDA
16130..16139 ; NU # [10] GURUNG KHEMA DIGIT ZERO .. GURUNG KHEMA DIGIT NINE

6.3 Syllabic Categories

In the format of IndicSyllabicCategory.txt:

# Indic_Syllabic_Category=Bindu
1612E ; Bindu # Mn GURUNG KHEM A CONSONANT SIGN ANUSVARA
# Indic_Syllabic_Category=Virama
1612D ; Virama # Mn GURUNG KHEMA CONSONANT SIGN VIRAMA
# Indic_Syllabic_Category=Vowel_Dependent
1611E..16128 ; Vowel_Dependent # Mn [11] GURUNG KHEMA VOWEL SIGN AA .. GURUNG KHEMA VOWEL SIGN AU
# Indic_Syllabic_Category=Consonant Placeholder
16100 ; Consonant Placeholder # Lo GURUNG KHEMA VOWEL A
# Indic_Syllabic_Category=Consonant
16101..1611D ; Consonant # Lo [29] GURUNG KHEMA LETTER KA .. GURUNG KHEMA LETTER SA
# Indic_Syllabic_Category=Consonant_Medial
16129..1612B ; Consonant_Medial # Mc [03] GURUNG KHEMA CONSONANT SIGN MEDIAL YA .. GURUNG KHEMA CONSONANT SIGN MEDIAL HA
1612C ; Consonant_Medial # Mn GURUNG KHEMA CONSONANT SIGN MEDIAL RA
# Indic_Syllabic_Category=Number
16130..16139 ; Number # Nd [10] GURUNG KHEMA DIGIT ZERO .. GURUNG KHEMA DIGIT NINE
6.4 Positional Categories

In the format of IndicPositionalCategory.txt:

```plaintext
# Indic_Positional_Category=Right
1612B ; Right # Mc GURUNG KHEMA CONSONANT SIGN MEDIAL HA
# Indic_Positional_Category=Left
16129..1612A ; Left # Mc [02] GURUNG KHEMA CONSONANT SIGN MEDIAL YA .. GURUNG KHEMA CONSONANT SIGN MEDIAL VA
# Indic_Positional_Category=Top
1611E..16128 ; Top # Mn [11] GURUNG KHEMA VOWEL SIGN AA .. GURUNG KHEMA VOWEL SIGN AU
1612E ; Top # Mn GURUNG KHEMA SIGN ANUSVARA
# Indic_Positional_Category=Bottom
1612C ; Bottom # Mn GURUNG KHEMA CONSONANT SIGN MEDIAL RA
1612D ; Bottom # Mn GURUNG KHEMA SIGN VIRAMA
```

7. Acknowledgement

I would like to thank Resham Gurung, Tilak Gurung, Bhim Gurung and The National Council House of Tamu for support on a draft of this proposal and sharing insights on various aspects of encoding Gurung Khema.
<table>
<thead>
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<th></th>
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<th>1611</th>
<th>1612</th>
<th>1613</th>
</tr>
</thead>
<tbody>
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<td>अ</td>
<td>र</td>
<td>ो</td>
<td>ो</td>
</tr>
<tr>
<td>1</td>
<td>क</td>
<td>रा</td>
<td>ी</td>
<td>ी</td>
</tr>
<tr>
<td>2</td>
<td>का</td>
<td>र</td>
<td>ी</td>
<td>ी</td>
</tr>
<tr>
<td>3</td>
<td>श</td>
<td>शा</td>
<td>ो</td>
<td>ो</td>
</tr>
<tr>
<td>4</td>
<td>आ</td>
<td>ा</td>
<td>ु</td>
<td>ु</td>
</tr>
<tr>
<td>5</td>
<td>इ</td>
<td>इ</td>
<td>ु</td>
<td>ु</td>
</tr>
<tr>
<td>6</td>
<td>आ</td>
<td>ा</td>
<td>ु</td>
<td>ु</td>
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<td>ा</td>
<td>ु</td>
<td>ु</td>
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<td>ा</td>
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<td>9</td>
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<td>ा</td>
<td>ु</td>
<td>ु</td>
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<tr>
<td>A</td>
<td>श</td>
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<td>ो</td>
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<tr>
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<td>द</td>
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<td>ो</td>
<td>ो</td>
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<tr>
<td>C</td>
<td>दा</td>
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<td>ो</td>
<td>ो</td>
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<tr>
<td>D</td>
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<tr>
<td>E</td>
<td>द</td>
<td>द</td>
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</tr>
<tr>
<td>F</td>
<td>द</td>
<td>द</td>
<td>ो</td>
<td>ो</td>
</tr>
</tbody>
</table>

Proposal to Encode the Gurung Khema in Universal Character Set
Independent Vowel

16100 अ  GURUNG KHEMA LETTER A

Consonants

16101 .SEVERE  GURUNG KHEMA LETTER KA
16102 ण  GURUNG KHEMA LETTER KHA
16103 ञ  GURUNG KHEMA LETTER GA
16104 ञ  GURUNG KHEMA LETTER GHA
16105 ञ  GURUNG KHEMA LETTER NGA
16106 ञ  GURUNG KHEMA LETTER CA
16107 ञ  GURUNG KHEMA LETTER CHA
16108 ञ  GURUNG KHEMA LETTER JA
16109 ञ  GURUNG KHEMA LETTER JHA
1610A ञ  GURUNG KHEMA LETTER HA
1610B ञ  GURUNG KHEMA LETTER TTA
1610C ञ  GURUNG KHEMA LETTER TTHA
1610D ञ  GURUNG KHEMA LETTER DDA
1610E ञ  GURUNG KHEMA LETTER DDHA
1610F ञ  GURUNG KHEMA LETTER VA
16110 ञ  GURUNG KHEMA LETTER TA
16111 ञ  GURUNG KHEMA LETTER THA
16112 ञ  GURUNG KHEMA LETTER DA
16113 ञ  GURUNG KHEMA LETTER DHA
16114 ञ  GURUNG KHEMA LETTER NA
16115 ञ  GURUNG KHEMA LETTER PA
16116 ञ  GURUNG KHEMA LETTER PHA
16117 ञ  GURUNG KHEMA LETTER BA
16118 ञ  GURUNG KHEMA LETTER BHA
16119 ञ  GURUNG KHEMA LETTER MA
1611A ञ  GURUNG KHEMA LETTER YA
1611B ञ  GURUNG KHEMA LETTER RA
1611C ञ  GURUNG KHEMA LETTER LA
1611D �性  GURUNG KHEMA LETTER SA

Dependent Vowel Signs

1611E ञ  GURUNG KHEMA VOWEL SIGN AA
1611F ञ  GURUNG KHEMA VOWEL SIGN I
16120 ञ  GURUNG KHEMA VOWEL SIGN II
16121 �性  GURUNG KHEMA VOWEL SIGN U
16122 �性  GURUNG KHEMA VOWEL SIGN UU
16123 �性  GURUNG KHEMA VOWEL SIGN E
16124 �性  GURUNG KHEMA VOWEL SIGN EE
16125 �性  GURUNG KHEMA VOWEL SIGN AI
16126 �性  GURUNG KHEMA VOWEL SIGN O
16127 �性  GURUNG KHEMA VOWEL SIGN OO
16128 �性  GURUNG KHEMA VOWEL SIGN AU

Various Signs

16129 �性  GURUNG KHEMA CONSONANT SIGN MEDIAL YA
1612A �性  GURUNG KHEMA CONSONANT SIGN MEDIAL VA
1612B �性  GURUNG KHEMA CONSONANT SIGN MEDIAL HA
1612C �性  GURUNG KHEMA CONSONANT SIGN MEDIAL RA
1612D �性  GURUNG KHEMA SIGN VIRAMA
Proposal to Encode the Gurung Khema in Universal Character Set

Punctuation

| \U{1612E} | GURUNG KHEMA SIGN ANUSVARA |

Digits

| \U{1612F} || GURUNG KHEMA DOUBLE DANDA |

<p>| \U{16130} | GURUNG KHEMA DIGIT ZERO |
| \U{16131} | GURUNG KHEMA DIGIT ONE |
| \U{16132} | GURUNG KHEMA DIGIT TWO |
| \U{16133} | GURUNG KHEMA DIGIT THREE |
| \U{16134} | GURUNG KHEMA DIGIT FOUR |
| \U{16135} | GURUNG KHEMA DIGIT FIVE |
| \U{16136} | GURUNG KHEMA DIGIT SIX |
| \U{16137} | GURUNG KHEMA DIGIT SEVEN |
| \U{16138} | GURUNG KHEMA DIGIT EIGHT |
| \U{16139} | GURUNG KHEMA DIGIT NINE |</p>
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>བ</td>
<td>ཁ</td>
<td>ཁ</td>
<td>བ</td>
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<td>ཆ</td>
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<td>ཇ</td>
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<tr>
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</tbody>
</table>

Table 3: Comparison of Gurung Khema handwritten form used by Subba and Gorkha Times blog (columns 'A' and 'B') and Sikkim Herald's non official font (column 'C') with the digitized Official Gurung Khema font “KHEMA” developed by Tilak Gurung (column 'D').
Table 4: Comparison table of Gurung Khema (column 'A') with Tibetan (column 'B') and Devanagari (column 'C').
KUHYI TALOKYE
Volume i

Prepared By: Megraj Gurung

Reprint - 2013

Published on behalf of the Human Resource
Development Department, Government of Sikkim and
Printed by Jana Pakshyan Prakashan-7, Super Market, Gangtok at
Systematic Designer and Printer Pvt.Ltd. Siliguri.

Figure 1(a): Picture from Khyui Talokye Volume-1 for class one (2013:2).[13]
Proposal to Encode the Gurung Khema in Universal Character Set

Figure 1(b): Cover picture of Tamu Khuyi Lule volume-I for class one (2006) and front page of Tamu Khuyi Lule volume-II for class two (2013:1). [8]
Proposal to Encode the Gurung Khema in Universal Character Set

Figure 1(c): Picture showing full Gurung Khema alphabetical chart (revised letters are not included) with their pronunciations in Nepali from book ‘Ngyoi Tamu Kyuhi’ न्यो तमु क्युहि written by linguists Ratna Bahadur Tamu and Bhim Gurung (2003:76). [26]
Figure 1(d): Consonants from Khyui Talokye Volume-I for class one (2013:7).[13]
Proposal to Encode the Gurung Khema in Universal Character Set

Figure 1(e): handwritten form of Gurung Khema used during workshop.2017. (Courtesy: Bhim Gurung)
Figure 1(f): Picture showing real handwritten form of Gurung Khema, redesigned by Bal Narsingh Gurung in late 2000.
<table>
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<tr>
<td>अ  आ  इ  ई  उ  ऊ</td>
</tr>
<tr>
<td>ए  ऐ  ऑ  ओ  औ</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>CONSONANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ख  खा  खा  खो  खै</td>
</tr>
<tr>
<td>खूँ  खुँ  खूँ  खुँ  खूँ</td>
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</table>

<table>
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<th>NUMERALS</th>
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</thead>
<tbody>
<tr>
<td>०  १  २  ३  ४  ५  ६  ७  ८  ९</td>
</tr>
</tbody>
</table>
Proposal to Encode the Gurung Khema in Universal Character Set

Figure 3(a): Picture showing various signs Lhomā (ऌ॰९ॷ०१२३४५६७८९०), their usage in Nepali and numerals from book ‘Ngyoi Tamu Kyuhi’ न्यो टमु क्यूहि written by linguists Ratna Bahadur Tamu and Bhim Gurung(2003:77). [26]
Figure 3(b): Picture showing various signs Lhôma (ȉӈ olicited), Vowels and Vowels signs (revised vowels and vowel signs are not included) from book ‘Ngyoi Tamu Kyuhi’ (íӈ olicited) written by linguists Ratna Bahadur Tamu and Bhim Gurung (2003:78). [26]
Proposal to Encode the Gurung Khema in Universal Character Set

Figure 4(a): Picture showing various signs Lhomā (ल्होमा) and their positions, from the book Tamu Khyui Lule volume-I तमु क्वुयु लुले खेमा-1 (2006:28)[8]
Figure 4(b): Picture representing vowel signs (revised vowel signs are not included) from the book Tamu Khyui Lule volume-I (2006:26)[8]
Proposal to Encode the Gurung Khema in Universal Character Set

Figure 5(a): Gurung Khema vowels and vowel signs with Devanagari pronunciation, provided by Tilak Gurung (2019).

Figure 6: De-facto Gurung Khema keyboard layout, for those that use the current ASCII-encoded fonts (2019).
Figure 7: Map of Sikkim (sky blue) and Nepal (green) showing Gurung speaking areas (2021).[6][24]
Figure 8: Picture showing First International Conference of Tamu Gurung Khema Script (2019) and the ‘Historical 1st International Tamu Conference-2019’ (2019).
Proposal to Encode the Gurung Khema in Universal Character Set

Figure 9: Picture showing front page and inside of the book ‘Ādhī Layā’. Note that the poem ‘Mārā Čādi Ācaudi’ खेमा खेमा written in Gurung Khema script (2021), published by Lok Bahadur Gurung Smriti Pratishthan (2021).
Figure 10: Picture representing the cover and first page of first ever Gurung Khema book ‘Ngyoi Tamu Kyuhi’ written by linguists Ratna Bahadur Tamu and Bhim Gurung (2003). [26]
Figure 11: Picture showing the cover and inside of book ‘Sigre Cô Thô Pe Chogi’ (2018).
Figure 12: Picture of Android Application ‘Khema Lipi लिपि-Type Tamu’ (Oct 29 2019).[4]
GURUNG

Time allowed : 3 hours
Maximum Marks : 80

The question paper is divided into four sections:

Section A : Reading Comprehension (Unseen Passage) 15
Section B : (i) Letter Writing 08
(ii) Essay Writing 12
(iii) Translation 05
Section C : Applied Grammar 15
Section D : Literature (Prose & Poetry) 25

Figure 13: Picture representing front page and second page of CBSE class 10th Gurung question paper (2019, page no.1).[21]
SAMPLE QUESTION - 2020-2021
SUBJECT: GURUNG (CODE-132)
CLASS – X

Time Allowed: 3 Hrs. Max. Marks: 80

Read the following instructions very carefully and follow them:
- There are two parts in this question paper, Part ‘A’ & Part ‘B’.
- Objective questions are asked in Part ‘A’.
- There are total 9 questions in Part ‘A’ in which optional questions of questions have been included.
- Descriptive questions are asked in Part ‘B’.
- There are total 7 questions in Part ‘A’ in which optional questions of questions have been included.

PART ‘A’

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<thead>
<tr>
<th>Question</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>10</td>
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</tbody>
</table>

Figure 14: Picture representing class 10th Gurung sample question paper with official “KHEMA” font (2021).[22]
Figure 15: Pictures representing Tamu Hyul Cøj Dhī Gurung Rāṣṭriya Parisad produces and distributes calendars using Gurung Khema (2017).
Figure 16: Showing various leaflets from street of Nepal using both Gurung Khema and Devanagari.
Proposal to Encode the Gurung Khema in Universal Character Set

Figure 17: Picture representing ‘Sikkim Herald’ Gurung Edition newspaper with non-official font [24th July, 2019],[23]
Figure 18: Usage of Gurung Khema in the tombstone of late Ram Pyaari Gurung (2010).
Figure 19: Picture showing teacher teaches Gurung Khema to the students in the govt. school of Sikkim (2019).
Figure 20(a): Picture representing Gurung Khema workshop conducting through video conferencing (2018).

Figure 20(b): Picture representing Gurung Khema workshop in Israel, behalves of Tamu Samaj Israel (2020).
Figure 20(c): Picture representing participants of various age groups in Gurung Khema teaching-learning workshop (2018).
Figure 21(a): Picture showing the ‘Tamu Lhosar’ programme of Nepal conducted by Tamu Hyul Cøj Dhī Gurung Rāṣṭriya Pariṣad (2020), and the banner of ‘Tamu Bhasha Gurung Khema Lipi Talim’ programme, conducted by Tamu Hyul Cøj Dhī Gurung Rāṣṭriya Pariṣad held in Devdaha (2019).
Figure 21(b): A banner of Tamu Lhosar 2020 having Gurung Khema script used by Tamu Samaj Israel (31st Dec 2020).
Figure 22: Picture showing various signs (blue) and Punctuations (green) from book Tamu Khuyui Lule volume-VII for class seven, chapter: "Dākṭar Sābitri Tamusvai" (2014:51) [12]
Figure 23: One of the few specimen of handwritten old form of Gurung Khema before redesigning by Bal Narsingh Gurung (2000).
7.8 Khema Script of Gurungs:

The Gurung language is written in Khema script and taught in the schools up to the primary level of education since the recognition of Gurung language as one of the official languages of Sikkim in 1997. It is yet to be ascertained who, where and when the Khema script was developed. A majority of Gurung experts suggest that the script was developed in Nepal from the Sambhota Tibetan script, but looking at the form of the letters, the script has strong influences of both, the Devnagari and Sambhota Tibetan scripts. In any case, the script was perhaps developed based on Brahmi script after the development of Sambhota and Devnagari scripts. The Khema script has the characters of both Sambhota and Devnagari scripts.

The Khema script of Gurungs has 7 vowels (a, e, u, i, ii, o, au), 7 vowel signs (aa, e, u, i, ii, o, au) and 29 consonants (same as Devnagari post-fixed with “khe”). The alphabets are the same as those of Devnagari but the vowels are read with post-fixed “ma” while the consonants post-fixed with “khe” (Gurung, Meghraj in Lipi Sangalo (ed) by Limboo, R.B.1998: 63-68).

Gurung (Tamu Khema Phri) Scripts

Vowels

\[
\begin{array}{cccc}
A & Ama & E-ma & U-ma \\
Ye-ma & Yai-ma & O-ma & Ou-ma \\
\end{array}
\]

Consonants

\[
\begin{array}{cccc}
Kakhe & Khake & Gakhe & Ghake \\
Ngakhe & Chake & Chhakhe & Jakhe \\
Jhake & Hakhe & Takhe & Thake \\
Dakhe & Dhake & Wakhe & thake \\
Dhakhe & nakhke & Pakhe & Phakhe \\
Bakhe & Bhakhe & Makhe & Lakhke \\
Sadhe & Sakhe & \end{array}
\]

Figure 25: Gorkhatimes blogs ‘Gurung(Tamu Gurung Khema Phri) scripts’, variation in letters of Gurung Khema in handwritten form (2009).[20]

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Proposal to Encode the Gurung Khema in Universal Character Set


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To Dr. Deborah Anderson  
Unicode Technical Director,  
Unicode Technical Committee USA  
Subject: Support application for ‘Proposal to Encode Khema in Universal Character Set’

Dear Madam,

In reference to the above subject matter, it is to inform that The National Council House of Tamu is an umbrella organization of Tamu (Gurung). It is an Executive board member of The Government of Nepal National Foundation for Development of Indigenous Nationalities and council member of Nepal Federation of Indigenous Nationalities. It is a non-profitable organization. The main objective of this organization is to preserve culture, religion, language of the Gurung’s Community. It has 63 district communities, around 40 social organizations in Kathmandu valley and 35 country International Chapter.

History of Khema lipi (script)

The concept of Khema Lipi (script) was introduced by late shaman Pim Bahadur Gurung in 1977 AD. And it was developed by the intellectual and linguist Bal Narsing Gurung in 1993 AD. Due to the various proposals for the use and development of the Khema script, along with the need for a hreng (long tone) in Gurung song, music and literature, the meeting of the International Coordinating Committee for Tamu (Gurung) Language and Khema Script Development held in Kathmandu in 2019 AD added four mapiros (vowels) ै, ौ, े, ी. Khema script has 8 Supporting Letter (Lhoma) ।, ।, ।, ।, ।, ।, ।, ।. Lhomas are very important characters of Khema.

“We are supporting tentative code table and Unicode block chart of Khema mentioned in ‘Proposal to Encode Khema in Universal Character Set.’ And our humble request to Unicode Committee to encode our Khema as soon as earlier. And try to give place Khema in Unicode version 14.0 and ISO as much as possible.”

Yours sincerely,

Resham Gurung
A. Administrative

1. Title:
Proposal to Encode the Gurung Khema in Universal Character Set

2. Requester's name:
Biswajit Mandal (biswajitmandal.bm90@gmail.com)

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

4. Submission date: 14/07/2021

5. Requester's reference (if applicable):

6. Choose one of the following:
This is a complete proposal:
Yes
(or) More information will be provided later:
No

B. Technical – General

1. Choose one of the following:
a. This proposal is for a new script (set of characters):
Yes
Proposed name of script:
Gurung Khema

b. The proposal is for addition of character(s) to an existing block:
Name of the existing block:

2. Number of characters in proposal:
57

3. Proposed category (select one from below - see section 2.2 of P&P document):
A-Contemporary X 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?
Biswajit Mandal (biswajitmandal.bm90@gmail.com)
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):
Tilak Gurung and The National Council House of Tamu (tamuhyula@gmail.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:
Yes

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)?

See proposal for additional details

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.

C. Technical – Justification

1. Has this proposal for addition of character(s) been submitted before?

57 Proposal to Encode the Gurung Khema in Universal Character Set
Yes
If YES explain

N4019

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?
Tilak Gurung, Bhim Gurung, Resham Gurung, The National Council House of Tamu

See citations in text of proposal

3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?
Yes
Reference:

See text of proposal

4. The context of use for the proposed characters (type of use; common or rare)

common
Reference:

See text of proposal

5. Are the proposed characters in current use by the user community?
If YES, where? Reference:

6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?
No
If YES, is a rationale provided?
If YES, reference:

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?
No
If YES, is a rationale for its inclusion provided?
If YES, reference:

9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?
No
If YES, is a rationale for its inclusion provided?
If YES, reference:

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?
No
If YES, is a rationale for its inclusion provided?
If YES, reference:

11. Does the proposal include use of combining characters and/or use of composite sequences? control function or similar semantics?
Yes
If YES, is a rationale for such use provided?
control function or similar semantics?
Yes
If YES, reference:

See text of proposal

Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?
If YES, reference:

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: