

**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://www.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://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title:	<i>Proposal for the Nepaalalipi script in the UCS</i>	
2. Requester's name:	<i>Dev Dass Manandhar, Samir Karmacharya and Bishnu Chitrakar</i>	
3. Requester type (Member body/Liaison/Individual contribution):	<i>Individual contribution</i>	
4. Submission date:	<i>2012-10-29</i>	
5. Requester's reference (if applicable):	<i>Enclosed Annex-I Requester's reference</i>	
6. Choose one of the following:		
This is a complete proposal:	<i>Yes</i>	
(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):	<i>Yes</i>	
Proposed name of script:	<i>Nepaalalipi</i>	
b. The proposal is for addition of character(s) to an existing block:	<i>No</i>	
Name of the existing block:		
2. Number of characters in proposal:	<i>113</i>	
3. Proposed category (select one from below - see section 2.2 of P&P document):		
A-Contemporary <input checked="" type="checkbox"/> B.1-Specialized (small collection) <input type="checkbox"/> B.2-Specialized (large collection) <input type="checkbox"/>		
C-Major extinct <input type="checkbox"/> D-Attested extinct <input type="checkbox"/> E-Minor extinct <input type="checkbox"/>		
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/> G-Obscure or questionable usage symbols <input type="checkbox"/>		
4. Is a repertoire including character names provided?	<i>Yes</i>	
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	<i>Yes</i>	
b. Are the character shapes attached in a legible form suitable for review?	<i>Yes</i>	
5. Fonts related:		
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	<i>Samir Karmacharya</i>	
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	<i>Samir Karmacharya Kalimati, Kathmandu, Nepal ; saneer@gmail.com; saneer@hotmail.co.uk</i>	
6. References:		
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	<i>Yes</i>	
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?	<i>NO</i>	
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)?	<i>Yes</i>	
	<i>Annex-II Rendering Nepaalalipi covers normative rules required for rendering the Nepaalalipi script.</i>	

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: N3902-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)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	
If YES explain	No
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?	Nepālabhāsā Academy, Tribhuvan University, Lumbini Buddhist University and Government of Nepal
If YES, available relevant documents:	L2/12-120 N4322 Annex-VI List of included letters
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	Yes
Reference:	L2/12-120 N4322
4. The context of use for the proposed characters (type of use; common or rare)	Common
Reference:	Enclosed
5. Are the proposed characters in current use by the user community?	
If YES, where? Reference:	Worldwide
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?	Yes
If YES, reference:	Enclosed
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 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?	Yes
If YES, is a rationale for such use provided?	Yes
If YES, reference:	Annex-II Rendering Nepaalalipi
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	No
If YES, reference:	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	Yes
If YES, describe in detail (include attachment if necessary)	Annex-II Rendering Nepaalalipi
13. Does the proposal contain any Ideographic compatibility characters?	No
If YES, are the equivalent corresponding unified ideographic characters identified?	
If YES, reference:	

Proposal for the Nepaalalipi script in ISO/IEC 10646

This is a proposal to encode normalized Nepaalalipi script in **Basic Multiple Plane of the ISO/IEC 10646**. This proposal is presented on the basis of L2/12-120 N4322. The purpose of this document is to present Universal Character Set (UCS) of Nepaalalipi script with modified vowels.

NOTE: Use of diacritical mark in roman alphabets are , ~ or for nasal sound and • for long sound.

1 Introduction.

It is an alternative proposal to L2/12-120 N4322 on Nepaalalipi script which has gone through the UNICODE Consortium meeting held in May 7-11, 2012. The view expressed in the meeting to include independent code point to the long Vowels I and U is adapted in this proposal.

Dhamalipi (Bramhi) script is known as an alpha-syllabic script. Its letters are pronounced with a vowel. It is natural that construction of an alpha-syllabic letters was significantly influenced by monosyllabic languages like Nepaalabhaasaa. A character with different formats of vowels is still an alpha-syllabic in nature. Long vowels come under this nature that includes long vowels I and U. A portion as long vowels I and U are not enough to present alpha-syllabic nature of a character. Vowels with long sound, nasalized sound and nasalized long sound have equal importance in alpha-syllabic characters. Nepaalalipi script is derived from Dhamalipi script. Nepaalalipi script is designed to accommodate all the four formats of prime vowels used in contemporary writing.

There are six prime vowels in Nepaalabhaasaa language. All six vowels are modified by long sound, sound nasalization and long sound nasalization. The six prime vowels are used in four different ways or formats in Nepaalabhaasaa language. They are either directly presented by stand alone characters or by their representative marks.

Presentation of six vowels in four different ways includes long vowels ङी and ऊ. Inclusion of long vowels I and U in UCS will be necessary to include all the four formats of vowels in use. Addition of all four formats of vowels increases the number of code points in UCS.

The presentation of all four formats of vowel in UCS makes the script more understandable, easy to use and reduce the memory requirement in a massive scale.

This new proposal contains four formats of prime vowel each with independent code point.

2 The Writing System

The **Nepaalalipi** script is written from left to right and top to bottom. The composition of characters are vowels, vowel representative marks, baa-aakha:(consonants with a vowel अA), consonantal mark, syllabic characters, syllabic mark, symbols, punctuation marks, numerals and clusters.

A cluster is presented by a single compound character containing two or more characters one on top of the other.

Clusters are not included in the UCS of this proposal. Inclusion of all the clusters in UCS, will exceed the code points by five thousands.

2.1 Vowels- Maa-aakha:

Six sounds are represented by six prime vowel characters and are known as **maa-aakha:.** The six vowel characters are अA, आAA, इI, उU, एE, ओO. All six vowel characters are independent and each one can be modified by long sound, nasalised sound and long nasalized sound. This makes each prime vowel into four different formats.

Prime vowel अA character is presented by a code point XX00 in UCS.

Prime vowel अA character is modified by a long sound, is presented by a single code point XX01(अA:) in UCS.

Prime vowel अA character modified by a nasalised sound, is presented by a single code point XX02(अँ) in UCS.

Prime vowel अA character modified by a long nasalised sound, is presented by a single code point XX03(अँः) in UCS.

The different formats of all six prime vowels are presented in Table 2.1.

Table 2.1 Six prime vowels and their modified formats

Prime vowels	Prime vowels modified into long vowel	Prime vowels modified into nasalized sound	Prime vowels modified into long nasal sound
अ A (XX00)	अःA: (XX01)	अँÃ(XX02)	अँÃ:(XX03)
आ AA(XX04)	आःAA:(XX05)	आँAÃ(XX06)	आँAÃ:(XX07)
इ I (XX08)	इःI: (XX09)	इँĨ(XX0A)	इँĨ:(XX0B)
उ U(XX0E)	उःU: (XX0F)	उँŨ(XX10)	उँŨ:(XX11)
ए E(XX14)	एःE: (XX15)	एँẼ(XX16)	एँẼ:(XX17)
ओ O(XX18)	ओःO: (XX19)	ओँÕ(XX1A)	ओँÕ:(XX1B)

Note: Characters XX01, XX02,XX05,XX06,XX09, XX0A, XX0F, XX10, XX15, XX16, XX19 and XX1A are presented by two code points, characters XX03, XX07, XX0B, XX11, XX17 and XX1B are presented by three code points in L2/12-120.

2.2 Vowel Representative Marks

Six prime vowels are presented by their respective representative marks. All six vowel characters are modified by long sound, nasalized sound and long nasalized sound mark and presented by a representative mark when applied to a Baa-aakha:.

Vowel representative marks are presented in UCS as combining characters defined by a symbol with a dotted circle ◌̣.

Table 2.2.1 Vowel and vowel modified marks presented in the UCS.

Prime vowels	Vowel representative mark (VRM)	VRM modified into long Sound	VRM modified by nasalized sound	VRM modified by long nasalized Sound
अ A	(No Mark) A	◌̣A: (XX43)	◌̣̃A (XX44)	◌̣̃A: (XX45)
आ AA	◌̣AA (XX46)	◌̣̃AA: (XX47)	◌̣̃AÃ (XX47)	◌̣̃AÃ: (XX49)
इ I	◌̣I (XX4A)	◌̣̃I: (XX4B)	◌̣̃Ĩ (XX4C)	◌̣̃Ĩ: (XX4D)
उ U	◌̣U (XX4E)	◌̣̃U: (XX4F)	◌̣̃Ũ (XX50)	◌̣̃Ũ: (XX51)
ए E	◌̣E (XX52)	◌̣̃E: (XX53)	◌̣̃Ẽ (XX54)	◌̣̃Ẽ: (XX55)
ओ O	◌̣O (XX56)	◌̣̃O: (XX57)	◌̣̃Õ (XX58)	◌̣̃Õ: (XX59)

Two diphthong representative marks are included in the UCS to represent AI and AU diphthongs. Table 2.2.1 shows that vowel A does not have representative mark. Therefore diphthongs AI and AU require separate representative marks. They are presented in the Table 2.2.1.1.

Table 2.2.1.1 Diphthong and modified diphthong marks.

Diphthongs	Diphthong representative mark	Diphthong modified by long nasalized sound	Application
अAI	◌̣̃ AI (XX0C)	◌̣̃̃ AĨ: (XX0D)	Annex- <i>A character as a single word with a vowel AI-AU</i>
औAU	◌̣̃̃ AU (XX12)	◌̣̃̃̃ AŨ: (XX13)	

Table 2.2.2 presents vowel and vowel modified marks applicable to mola-madu baa-aakha: not listed in UCS but will appear during contextual application. Their UCS equivalent code point is given along with the character.

Table 2.2.2 Tabulation of vowel and vowel modification representative marks applicable to Baa-aakha:.

Prime Vowels	Vowel Representative Mark (VRM)	VRM with Long Sound mark	VRM with Sound nasalization Mark	VRM with Long Sound Nasalization Mark
ᲐAA	ᲐAA(XX46)	ᲐAA:(XX47)	ᲐAÃ(XX48)	ᲐAÃ:(XX49)
ᲑE	ᲑE(XX52)	ᲑE:(XX53)	ᲑẼ(XX54)	ᲑẼ:(XX55)
ᲒO	ᲒO(XX56)	ᲒO:(XX57)	ᲒÕ(XX58)	ᲒÕ:(XX59)

Beside the mola-du and mola-madu characters, a group of characters GA, TA, VA and SHA have different U vowel and modified marks. They are presented in the Table 2.2.3

Table 2.2.3 Tabulation of vowel and vowel modification representative marks applicable to ᲑGA, ᲑTA, ᲑBHA and ᲑSHA Baa-aakha: They are not listed in UCS but will appear during contextual applications.

Prime vowels	Vowel representative mark (VRM)	VRM with long sound mark	VRM with sound nasalized mark	VRM with long sound nasalized Mark
Დ U	ᲓU(XX4E)	ᲓU:(XX4F)	ᲓŨ(XX50)	ᲓŨ:(XX51)

Table 2.2.4 Tabulation of vowel and vowel modification representative marks applicable to Ბ RA Baa-aakha: not listed in UCS will appear during contextual presentation.

Prime vowel	U vowel representative mark with R	U vowel long Sound mark with R	U vowel with sound with nasalized mark	U vowel long sound nasalized mark
Დ U	ᲓRU(XX4E)	ᲓRU:(XX4F)	ᲓRŨ(XX50)	ᲓRŨ:(XX51)

Note: Application of Tables 2.2.1; 2.2.2;2.2.3;2.2.4

Annex-A character as a single word with a vowel A

Annex-A character as a single word with a vowel AA

Annex-A character as a single word with a vowel I

Annex-A character as a single word with a vowel U

Annex-A character as a single word with a vowel E

Annex-A character as a single word with a vowel O

2.3 Baa-aakha:

Baa-aakha: is a single character pronounced with a short vowel अA. Thirty-nine phonemes **baa-aakha:** are pronounced with the final vowel अA. This includes two semi-vowels and seven allographs. All combining characters in the UCS are applied only to Baa-aakha:.

2.3.1.1 Aakha:(character) with vowel अA

2.3.1.2 Allograph (aakha:) with vowel अA

2.3.1.3 Semi-vowel characters(aakha:) with vowel अA

2.3.1.1 Characters with vowel अA

The Baa-aakha: characters are presented in Table 2.3.1.

Table 2.3.1: Bā-ākha:

क KA(XX1C)	ख KHA(XX1D)	ग GA(XX1E)	घ GHA(XX1F)	ङ NGA(XX20)	ङ्ग NGHA(XX21)
च CA(XX22)	छ CHA(XX23)	ज JA(XX24)	झ JHA(XX25)	ञ NJA (XX26)	ञ्ज NJHA (XX27)
ट TA(XX28)	थ THA(XX29)	ड DA(XX2A)	ध DHA (XX2B)	न NA(XX2C)	न्ना NHA(XX32)
प PA(XX33)	फ PHA(XX34)	ब BA(XX35)	भ BHA(XX36)	म MA(XX37)	म्मा MHA(XX38)
र RA(XX3A)	र्र RHA(XX3B)	ल LA(XX3C)	ल्ल NHA(XX3D)	स SA(XXEF)	ह HA(XX42)

2.3.1.2 Allograph Bā-ākha:

Table 2.3.2 : Alphabet and their allograph

Seven allograph alphabets are the followings:	
Alphabet – टTA	allograph ट्टTA(XX29)
Alphabet – थTHA	allograph ठTTTHA(XX2B)
Alphabet – डD	allograph ड्डDA(XX2D)
Alphabet – धDHA	allograph ध्धDDHA(XX2F)
Alphabet – नNA	allograph णNNA(XX31)
Alphabet सSA	Allograph शSHA(XX40)
Alphabet – सSA	allograph षSSA(XX41)

Note: Few centuries ago, alphabet रRA was considered as an allograph to the alphabet लLA Gualberto and Cappuccino(1792).

2.3.1.3 Semi-vowels with vowel अA

Two semivowels य(XX39)YA(EA) and व(XX3E)WA(OA) are used as single alphabets . Both the characters यYA(EA) and वWA(OA) end with a vowel sound अA and are included in the baa-aakha: group.

2.3.2 Lower-letter as baa-aakha:

The lower character is placed at the bottom of a cluster.

The Baa-aakha: within clusters, are listed below as lower-letter Baa-aakha:.

Table 2.3.3 : Extraction of lower characters from clusters

का KA	खा KHA	गा GA	घा GHA	ङा NGA
चा CA	छा CHHA	जा JA	झा JHA	ञा NJA
ता TA, ट्टा	था THA, ट्ठा	दा DA, ड्डा	धा DHA, ड्ढा	ना NA, ण्णा
पा PA	फा PHA	बा BA	वा VA	मा MA
या YA	रा RA	ला LA	वा WA	सा SA, शा SHA, ससा SSA
हा HA				

Note: Allographs are placed in the same cells along with their corresponding alphabet.

Some bā-ākha: have different shapes when placed at the bottom.

They are ण्णा, ता, था alphabets. The lower characters are not presented in UCS.

Table 2.3.4: Lower-letter as bā-ākha: with different shapes

Alphabet bā-ākha:	Lower-letter as bā-ākha: with different shapes
ण्णा	कण्णा, ण्णा
ता	कता, ता
था	कथा, था
भा	कभा, कभु (BHA changes its lower shape when U vowel diacritic mark is added to its cluster.)

Lower-alphabets ङा, ञा, णा, , ण्मा, ण्हा, ण्हा are not used as lower bā-ākha:.
The lower letters are not written alone. They exist only within a cluster.

2.3.3 Classification of bā-ākha: by its mola property.

Nepālalipi script is recognized by its horizontal head stroke property. It is known as Mola. The head stroke may be replaced by a curly mark as per the application of a particular diacritic mark. But seven of the alphabets are devoid of the head stroke entirely. Therefore, Nepālalipi can be categorized by existence of its horizontal head stroke known as a **mola-du** and non-existence of its horizontal head stroke known as a **mola-madu**.

Seven characters गा, जा, था, ट्ठा, धा, ण्णा and शा are recognized under mola-madu category and the remaining thirty-two characters are mola-du type.

2.4 Consonantal Mark

The concept of turning a character into a consonant is a new adaptation in Nepaalalipi. Consonantal mark is a part of diacritic marks used in Nepaalalipi. The mark is an integral part of character presentation. It does not exist independently. It comes at the bottom of a baa-aakha:. Baa-aakha: with a consonantal mark (ँ) defines the character as a consonant applicable only to the characters which can turn into a consonant.

It is placed at the bottom of a character without touching it.

Example : 2.4.1-Application of consonantal mark

Character Baa-aakha:	Consonant
क	क

2.5 Syllabic Characters

Four syllabic characters presented in UCS are given in the Table 2.5

Table 2.5 Syllabic Characters

XX5C	ॠ	NEPAALALIPi SYLLABIC LETTER RRI
XX5D	ॡ	NEPAALALIPi SYLLABIC LETTER RRiI
XX5E	ॢ	NEPAALALIPi SYLLABIC LETTER LRRI
XX5F	ॣ	NEPAALALIPi SYLLABIC LETTER LRRII

Among the four characters, character **RRI** have found to be used in manuscripts. The rest three are found only during alphabetical presentation. All four characters are not recognized in Dhamalipi script. The word **RRISi** is spoken as **ISI** in **PALi** language. Addition of all the four characters are the evidence of inclusion of characters during its evolution. At present all four characters are represented as group mark of tense.

In Sanskrit language, a word **BHAWATI**(to be) is presented in past, present, future, **RRI**, **RRiI**, **LRI** and **LRiI** tense.

All four syllabic characters are included in UCS as independent characters and do not form clusters with other characters.

2.6 Syllabic mark

Few words are used with syllabic mark in Sanskrit language. The mark is applicable to baa-aakha: only and turns ba-aakha: into a syllabic character. In UCS, the

syllabic mark is presented by ॥(XX5B).

The mark is placed at the bottom of a baa-aakha:. The character turns into an equivalent cluster of baa-aakha: and syllabic character **RRI**.

Example 2.6 - Syllabic mark

Character Baa-aakha:	With Syllabic Mark	Approximately Equivalent Presentation
क KA	कृ KRRI	क्रि KRI

2.7 Symbols

The millennium long history on Nepaalalipi script contains thousands of symbols created by different writers. Their uses are different for different uses by many authors. They are variants of characters, pictures representing events and stories, mathematical uses, group indications, tags for repeated recitation, starting symbols, punctuation marks and so on. Many more symbols are added after the introduction of printing technology in India by the British Government. Writers have copied, improvised their ideas and implemented these in their writings.

Nepaalalipi is basically used to write Sanskrit and Nepaalabhaasaa languages. Addition of unnecessary symbols may change the orthography of both the languages. Therefore symbols have been selected carefully and included in UCS.

The selected symbols are the followings :

1- Starting symbols

In many cases inscriptions are started with SIDDHA(XX60) symbol and OM(XX61) symbol followed and then the text. Both the symbols have distinct place in Nepaalalipi.

2- Word Joining symbol KHAGWA SWAPU(XX62)

In most of the cases when a word comes in between a picture or word does not end at the end of line, then a word break symbol is used to show the continuity.

3-Sign to represent a deletion of a character. Instruction to avoid the character written below (XX63).

Starting Symbol

XX60	ॐ	NEPAALALIPi SIGN SIDDHA
XX61	ॐ	NEPAALALIPi SIGN OM

Word Break Symbol

XX62	≡	NEPAALALIPi SIGN KHAGWA SWAPU
------	---	-------------------------------

DELETE SIGN

XX63	///	NEPAALALIPi SIGN MHUSAA
------	-----	-------------------------

2.8 Punctuation Marks

There are many punctuation marks in Nepaalalipi. To make the script compatible with contemporary writing, many are not included except the full stop marks. The three marks are used in manuscripts. Use of three different full stop marks depends on the context of subject matter.

All other punctuation marks are adopted with the existing punctuation marks in UNICODE.

Full Stop Marks

XX63		NEPAALALIPi SIGN CHDHWADIPU
XX64		NEPAALALIPi SIGN NIDWADIPU
XX65	⊗	NEPAALALIPi SIGN FLOWER

2.9 Numerals

Numerals in Nepaalalipi are of two types, letters and numerical symbols. Letters and word as numerals were used in Sanskrit and Nepaalabhaasaa languages. To avoid dual meaning of letters, ten characters are presented as numerals in UCS. Few numerals in Nepaalalipi are sometimes mixed with numerals from Bhujimola(Head stroke of a character as a snake-like hand) scripts. They are avoided in UCS.

The 0 to 9 numerals are ०, १, २, ३, ४, ५, ६, ७, ८, ९.

2.10 Cluster (Chinaa-aakha:)

Chinaa-aakha: (Sequential stacking of one letter on the top of other) is a cluster in Nepaalalipi. Stacking is done with two or more characters.

Example : Sequential stacking of one letter on the top of other

TA as 𑒠 upper Letter and RA as 𑒡 a lower letter- Cluster TRA is 𑒠𑒡.

Properties of individual character is preserved in **Chinaa-aakha:**. After the formation of a cluster, properties of upper character and lower character remains unchanged. Therefore a new type of character is formed by the combination of different properties.

Properties of a cluster can be presented in two different ways. The first property is related to the application of vowel mark. The other property is related to the combination of physical structure of alphabets.

12.1 Properties of a cluster related to vowel mark.

Vowel marks of ്AA, ്E, and ്O are applied depending on the upper character as mola-du and mola-madu.

Vowel marks of U are applied depending on the lower character as ്GA, ്TA, ്BHA, ്SHA or ്R or other characters.

12.2 Properties of a cluster related to a physical structure of letters

Characters are different in shape. Within a defined area, they are differentiated by curves and lines.

Characters are categorized by the existence or non-existence of mola(horizontal head stroke line).

All characters contain a vertical line. The vertical line may be single or double, and straight, curve or both.

Table 2.10 Example of Vertical lines

Single line, straight and curved	Double lines, curved and straight
l, 6, 9	4, 5, 1, 4, 4, 4

Top part of vertical line is the ending point of a mola drawn from left to right. The left part of the vertical line possesses a curved line and is never disturbed during a cluster formation. The right part of a vertical line may or may not have a curved line. If a right part exists, then the right part may be elongated horizontally or vertically downward as per the shape of a lower alphabet. The length of mola may not cover the part of the vertical line. The bottom part of a vertical line is the joining point of another alphabet. It is also a placement point for a U vowel diacritic.

If two vertical lines exist, then the bottom part of second line is a joining point for U vowel diacritic and for joining other alphabets.

If two vertical lines exist, then the top part of first line is taken as a joining point to other alphabets.

If a mola-madu alphabet is stacked with an alphabet containing two vertical lines, then a line is drawn from the middle of the first line to the second line.

If mola-madu alphabet is accompanied by an extra vertical line, then a line is drawn from the middle part of the first line to the second line showing the integrity of alphabetical structure. The joining line is known as “JANI:(a belt)”.

The cluster formation in details are presented in L2/12-120.

3 UNIVERSAL CHARACTER SET Table XX00 – Row XX7F: NEPAALALIPI

	XX0	XX1	XX2	XX3	XX4	XX5	XX6	XX7
0	अ XX00	उ XX10	ढ XX20	न XX30	ष XX40	ॠ XX50	ॡ XX60	ॢ XX70
1	अ१ XX01	उ१ XX11	ढ१ XX21	न१ XX31	ष१ XX41	ॠ१ XX51	ॡ१ XX61	ॢ१ XX71
2	अ२ XX02	उ२ XX12	ढ२ XX22	न२ XX32	ष२ XX42	ॠ२ XX52	ॡ२ XX62	ॢ२ XX72
3	अ३ XX03	उ३ XX13	ढ३ XX23	न३ XX33	ष३ XX43	ॠ३ XX53	ॡ३ XX63	ॢ३ XX73
4	आ XX04	च XX14	ज XX24	रु XX34	ं XX44	ँ XX54	। XX64	४ XX74
5	आ१ XX05	च१ XX15	म XX25	व XX35	ं१ XX45	ँ१ XX55	॥ XX65	५ XX75
6	आ२ XX06	च२ XX16	ॐ XX26	ए XX36	ा XX46	ॉ XX56	॥ॐ॥ XX66	६ XX76
7	आ३ XX07	च३ XX17	क XX27	म XX37	ा१ XX47	ॉ१ XX57		७ XX77
8	ॠ XX08	उ१ XX18	ग XX28	क XX38	ा२ XX48	ॉ२ XX58		८ XX78
9	ॠ१ XX09	उ११ XX19	ट XX29	य XX39	ा२१ XX49	ॉ२१ XX59		९ XX79
A	ॠ२ XX0A	उ१२ XX1A	थ XX2A	न XX3A	ि XX4A	ॠ XX5A		
B	ॠ३ XX0B	उ१३ XX1B	० XX2B	क्र XX3B	ी XX4B	ॠ XX5B		

C	ॐ XX0C	क XX1C	द XX2C	ल XX3C	िं XX4C	मृ XX5C		
D	ॐ XX0D	ख XX1D	उ XX2D	क्ष XX3D	िं XX4D	मृ XX5D		
E	उ XX0E	ग XX1E	ध XX2E	न XX3E	् XX4E	ॐ XX5E		
F	ऊ XX0F	घ XX1F	ढ XX2F	स XX3F	् XX5F	ॐ XX5F		

4- Code Chart Details of NEPAALALIPI

Code Point	Character	Character Name Vowel Letters
XX00	अ	NEPAALALIPI LETTER A
XX01	अः	NEPAALALIPI LETTER LONG AL
XX02	अँ	NEPAALALIPI LETTER NASAL AN
XX03	अं	NEPAALALIPI LETTER LONG NASAL ALN

Code Point	Character	Character Name Vowel Letters
XX04	आ	NEPAALALIPI LETTER AA
XX05	आः	NEPAALALIPI LETTER LONG AAL
XX06	आँ	NEPAALALIPI LETTER NASAL AAN
XX07	आं	NEPAALALIPI LETTER LONG NASAL AALN

Character Name		
Code Point	Character	Vowel Letters
XX08	ॐ	NEPAALALIPI LETTER I
XX09	ॐ	NEPAALALIPI LETTER LONG IL
XX0A	ॐ	NEPAALALIPI LETTER NASAL IN
XX0B	ॐ	NEPAALALIPI LETTER LONG NASAL ILN

Vowel Diacritic

Character Name		
Code Point	Character	Vowel Diacritic
XX0C	ॐ	NEPAALALIPI MARK AI
XX0D	ॐ	NEPAALALIPI LETTER LONG NASAL AILN

Vowel Letter

Character Name		
Code Point	Character	Vowel Letters
XX0E	ॐ	NEPAALALIPI LETTER U
XX0F	ॐ	NEPAALALIPI LETTER LONG UL
XX10	ॐ	NEPAALALIPI LETTER NASAL UN
XX11	ॐ	NEPAALALIPI LETTER LONG NASAL ULN

Vowel Diacritic

Character Name		
Code Point	Character	Vowel Diacritic
XX12	ॐ	NEPAALALIPI VOWEL MARK AU
XX13	ॐ	NEPAALALIPI LETTER LONG NASAL AULN

Vowel Letter

Code Point	Character	Character Name
		Vowel Letters
XX14	ॲ	NEPAALALIPI LETTER E
XX15	ॲ४	NEPAALALIPI LETTER LONG EL
XX16	ॲँ	NEPAALALIPI LETTER NASAL EN
XX17	ॲं	NEPAALALIPI LETTER LONG NASAL ELN

Vowel Letter

Code Point	Character	Character Name
		Vowel Letters
XX18	ॳ	NEPAALALIPI LETTER O
XX19	ॳ४	NEPAALALIPI LETTER LONG OL
XX1A	ॳँ	NEPAALALIPI LETTER NASAL ON
XX1B	ॳं	NEPAALALIPI LETTER LONG NASAL OLN

Bā-ākha Letters

XX1C	क	NEPAALALIPI LETTER KA
XX1D	ख	NEPAALALIPI LETTER KHA
XX1E	ग	NEPAALALIPI LETTER GA
XX1F	घ	NEPAALALIPI LETTER GHA

XX20	ढ	NEPAALALIPi LETTER NGA
XX21	झ	NEPAALALIPi LETTER NGHHA
XX22	च	NEPAALALIPi LETTER CA
XX23	छ	NEPAALALIPi LETTER CHA
XX24	ज	NEPAALALIPi LETTER JA
XX25	झ	NEPAALALIPi LETTER JHA
XX26	ञ	NEPAALALIPi LETTER NJA
XX27	झ	NEPAALALIPi LETTER NJHA
XX28	ट	NEPAALALIPi LETTER TA
XX29	ठ	NEPAALALIPi LETTER TTA
XX2A	थ	NEPAALALIPi LETTER THA
XX2B	ठ	NEPAALALIPi LETTER TTHA
XX2C	द	NEPAALALIPi LETTER DA
XX2D	ड	NEPAALALIPi LETTER DDA
XX2E	ध	NEPAALALIPi LETTER DHA
XX2F	ढ	NEPAALALIPi LETTER DDHA
XX30	न	NEPAALALIPi LETTER NA

XX31	६	NEPAALALIPI LETTER NNA
XX32	७	NEPAALALIPI LETTER NHA
XX33	५	NEPAALALIPI LETTER PA
XX34	८	NEPAALALIPI LETTER PHA
XX35	४	NEPAALALIPI LETTER BA
XX36	९	NEPAALALIPI LETTER BHA
XX37	३	NEPAALALIPI LETTER MA
XX38	१०	NEPAALALIPI LETTER MHA
XX39	५	NEPAALALIPI LETTER YA
XX3A	४	NEPAALALIPI LETTER RA
XX3B	११	NEPAALALIPI LETTER RHA
XX3C	२	NEPAALALIPI LETTER LA
XX3D	१२	NEPAALALIPI LETTER LHA
XX3E	६	NEPAALALIPI LETTER WA
XX3F	३	NEPAALALIPI LETTER SA
XX40	७	NEPAALALIPI LETTER SHA
XX41	४	NEPAALALIPI LETTER SSA

XX42	ह	NEPAALALIPi LETTER HA
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Vowel Mark

XX43	ॠ	NEPAALALIPi LONG SOUND VOWEL MARK LIPHUTi AL
XX44	ॡ	NEPAALALIPi NASAL SOUND VOWEL MARK SINHAfUTi AN
XX45	ॢ	NEPAALALIPi LONG NASAL SOUND VOWEL MARK MILAfUTi ALN

Vowel Mark

XX46	ा	NEPAALALIPi VOWEL MARK AA
XX47	ाॠ	NEPAALALIPi LONG SOUND VOWEL MARK LIPHUTi AAL
XX48	ाॡ	NEPAALALIPi NASAL SOUND VOWEL MARK SINHAfUTi AAN
XX49	ाॢ	NEPAALALIPi LONG NASAL SOUND VOWEL MARK MILAfUTi AALN

Vowel Mark

XX4A	ि	NEPAALALIPi VOWEL MARK I
XX4B	ी	NEPAALALIPi LONG SOUND VOWEL MARK LIPHUTi IL
XX4C	िॡ	NEPAALALIPi NASAL SOUND VOWEL MARK SINHAfUTi IN
XX4D	िॢ	NEPAALALIPi LONG NASAL SOUND VOWEL MARK MILAfUTi ILN

Vowel Mark

XX4E	ु	NEPAALALIPi VOWEL MARK U
XX4F	ू	NEPAALALIPi LONG SOUND VOWEL MARK LIPHUTi UL

XX50	𑍑	NEPAALALIPI NASAL SOUND VOWEL MARK SINHAFUTI UN
XX51	𑍒	NEPAALALIPI LONG NASAL SOUND VOWEL MARK MILAFUTI ULN

Vowel Mark

XX52	𑍓	NEPAALALIPI VOWEL MARK E
XX53	𑍔	NEPAALALIPI LONG SOUND VOWEL MARK LIPHUTI EL
XX54	𑍕	NEPAALALIPI NASAL SOUND VOWEL MARK SINHAFUTI EN
XX55	𑍖	NEPAALALIPI LONG NASAL SOUND VOWEL MARK MILAFUTI ELN

Vowel Mark

XX56	𑍗	NEPAALALIPI VOWEL MARK O
XX57	𑍘	NEPAALALIPI LONG SOUND VOWEL MARK LIPHUTI OL
XX58	𑍙	NEPAALALIPI NASAL SOUND VOWEL MARK SINHAFUTI ON
XX59	𑍚	NEPAALALIPI LONG NASAL SOUND VOWEL MARK MILAFUTI OLN

Consonantal Mark

XX5A	𑍛	NEPAALALIPI CONSONANTAL MARK
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Syllabic Mark

XX5B	𑍜	NEPAALALIPI SYLLABIC MARK RRI
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Syllable Letters

XX5C	𑍝	NEPAALALIPI SYLLABIC LETTER RRI
XX5D	𑍞	NEPAALALIPI SYLLABIC LETTER RRII

XX5E	ॐ	NEPAALALIPi SYLLABIC LETTER LRRI
XX5F	ॐ	NEPAALALIPi SYLLABIC LETTER LRRII

Starting Symbol

XX60	ॐ	NEPAALALIPi SIGN SIDDHA
XX61	ॐ	NEPAALALIPi SIGN OM

Word Break Symbol

XX62	≡	NEPAALALIPi SIGN KHAGWA SWAPU
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DELETE SIGN

XX63	///	NEPAALALIPi SIGN MHUSAA
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Full Stop Marks

XX64		NEPAALALIPi SIGN CHADWADIPU
XX65		NEPAALALIPi SIGN NIDHWADIPU
XX66	❀	NEPAALALIPi SIGN FLOWER

Numerals

Code Point	Character	Character Name
XX70	०	NEPAALALIPi DIGIT 0
XX71	१	NEPAALALIPi DIGIT 1
XX72	२	NEPAALALIPi DIGIT 2
XX73	३	NEPAALALIPi DIGIT 3
XX74	४	NEPAALALIPi DIGIT 4

XX75	ॡ	NEPAALALIPI DIGIT 5
XX76	ॢ	NEPAALALIPI DIGIT 6
XX77	ॣ	NEPAALALIPI DIGIT 7
XX78	।	NEPAALALIPI DIGIT 8
XX79	॥	NEPAALALIPI DIGIT 9

5 Collation order

The order sequence of NEPAALALIPI is presented in the UCS.

It is a tradition to write bā-ākha: at first and its cluster afterward. Therefore the consonantal mark is placed after the vowel, long vowel, nasalized sound and long nasalized sound mark.

Example: कKA, कॢKAI, कॣKAI, क।, क॥KAU, काKAA, किKI, कुKU, केKE, कोKO, क॥KA: , क॥KĀ

Syllabic alphabet ॠRRI has its own syllabic mark representation. It is placed separately at the end. Any alphabet written with RI makes the alphabet a consonant.

Example :

Baa-aakha: character कKA is applied with a syllabic diacritic mark ॠ RRI will result in to a syllabic कॠ KRRI character, where K is a consonant.

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8 Included documents

Annex-I Requesters' reference

Annex-II Rendering Nepālali Script

Annex-Prime vowel character as a single word

Annex-A character as a single word with a vowel A

Annex- A character as a single word with a vowel AA

Annex- A character as a single word with a vowel I

Annex- A character as a single word with a vowel U

Annex- A character as a single word with a vowel E

Annex- A character as a single word with a vowel O

Annex- A character as a single word with a diphthong AI or AU

Annex-I Requesters' reference

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Annex-II Rendering Nepaalalipi Script

Rendering Nepaalalipi Script explains rules for minimal rendering of Nepaalalipi script as part of a plain text sequence. It gives a map and sequential placement between UNICODE character and the glyph in a Nepaalalipi font. Two rules, RR1 to RR2 are described.

Mark with the symbol ◌ represents Combining Character.

RR1-Combining character is applicable only after a Baa-aakha: or a Baa-aakha: containing a cluster.

RR2- If a baa-aakha: or cluster with a baa-aakha: precedes with Consonantal Combining Character CCC, then both are joined together to form a cluster if supported by the font.

Application of Consonantal Combining Character (CCC)

Figure 1 Formation of a Consonant

		Display
a) KA + CCC	->	K
क + ◌	->	क्
b) K + KA	->	KKA (Word PAKKA means astonished)
क् + क	->	क्क
c) KKA + CCC	->	KK
क्क + ◌	->	क्क्
d) KK + KA	->	KKKA (not supported by font)
क्क + क	->	क्कक
e) NT + RA	->	NTRA (word MANTRA means a formula)
न् + न	->	न्त्र
f) RK + RA	->	RKRA
र्क + न	->	र्क्क

Application of Syllabic Combining Character (SCC)

Figure 2 Formation of a Syllabic cluster

a) KA	+	CCRRI	->	Display KRRI (name KRRISHNAA)
क	+	ॠ	->	कृ
b) KKA	+	CCRRI	->	KKRRI
क	+	ॠ	->	कृ

Application of Vowel Representative Combining Character (VRCC)

VRCC -Vowel A and Vowel A modified by sound nasalization and long sound.

Figure 3 Application of Vowel and modified vowel mark

a) Long Vowel A Representative mark is ॠ

क KA + ॠ -> कॠ

b) Sound Nasalized Vowel A Representative mark is ँ

क KA + ँ -> क॑

c) Long Sound Nasalized Vowel A Representative mark is ँ̄

VRCC- Vowel AA modified and non-modified marks

Baa-aakha:	Vowel Representative Combining Character	Display
क KA + ॠ	->	कॠ
AA Vowel Mark		Character with a Vowel AA Mark
क KA + ॠॠ	->	कॠॠ
Long Vowel AA Mark		Character with a Long Vowel AA Mark
क KA + ॠ̣	->	क॑
Sound Nasalized Vowel AA Mark		Character with a Nasalized Vowel AA Mark
क KA + ॠ̄	->	क॑̄
Long Sound Nasalized AA Vowel Mark		Character with a Long Sound Nasalized Vowel AA Mark

Same is the case with VRCC- Vowel I, U, E, O and diphthong AI and AU. Annex-

Prime vowel character as a single word

Single Character as a single word			
Prime Vowels	Long Sound Format	Sound Nasalization Format	Long Sound Nasalization Format
अ A- oh!	अः A: -no !	अँ Aँ-agree !	अँः Aँ:-a mango
आ AA- no !	आः AA:-now	आँ AAँ-make shape	आँः AAँ:-open mouth
इ I - this	इः I: -time	इँ Iँ	इँः Iँ:- sickle
उ U- that	उः U: -similar	उँ Uँ-disagree	उँः Uँ:-colour
ए E- hellow	एः E:-ok	एँ Eँ- you are wrong !	एँः Eँ:-
ओ O- understood	ओः O:-bread	ओँ Oँ	ओँः Oँ:-

Annex-A character as a single word with a vowel A

Single character as single word with four formats of a vowel A				
Consonant	Consonant with			
	vowel A-(Baa-aakha:)	long sound vowel A	nasalized sound vowel A	nasalized long sound vowel A
K	क KA- exclamation of disapproval, surprise	कः KA:-residue of any process	कँ KĀ- black soil	कं KĀ: - thorn
KH	ख KHA- let it be, ok	खः KHA:- a chariot, yes	खँ KHĀ- talk, subject matter	खं KHĀ: - some one saw something
G	ग GA- climb !	गः GA:- a nest, cage	गँ GĀ- restrain, dries	गं GĀ: - bell
GH	घ GHA- distaste	घः GHA:- water pot, millstone	घँ GHĀ- dry leaves, twigs	घं GHĀ: -
NG	ङ NGA- listen !	ङः NGA:-listened	ङँ NGĀ- listen !	ङं NGĀ: - listened
NGH	ङ्ग NGHA-	ङ्गः NGHA:-	ङ्गँ NGHĀ-	ङ्गं NGHĀ: -
C	च CA- small	चः CA:- The black head of boil	चँ CĀ- decay !, wittle	चं CĀ: - a wire hook
CH	छ CHA-You	छः CHA:-	छँ CHĀ- whittle, to prune	छं CHĀ: - by you, your
J	ज JA- graze !	जः JA:- light	जँ JĀ- waist	जं JĀ: -problem, matted hair
JH	झ JHA- graze !	झः JHA:- bright	झँ JHĀ- singe	झं JHĀ: -singed

Annex-A character as a single word with a vowel A

Consonant	Single character as single word with four formats of a vowel A			
	Consonant with			
	vowel A-(Baa-aakha:)	long sound vowel A	nasalized sound vowel A	nasalized long sound vowel A
NJ	𑌕 NJA-	𑌕𑌕 NJA:-	𑌕̣ NJĀ-	𑌕̣̣ NJĀ: -
NJH	𑌕𑌃 NJHA-	𑌕𑌕𑌃 NJHA:-	𑌕̣̣ NJHĀ-	𑌕̣̣̣ NJHĀ: -
T	𑌕 TA-great	𑌕𑌕 TA:- big, large	𑌕̣ TĀ- floor, storey	𑌕̣̣ TĀ: - anger
TH	𑌕𑌃 THA- save !	𑌕𑌕𑌃 THA:- self	𑌕̣̣ THĀ- elderly	𑌕̣̣̣ THĀ: - to awaken
D	𑌕 DA- ok	𑌕𑌕 DA:- to me	𑌕̣ DĀ- year	𑌕̣̣ DĀ: - cheap
DH	𑌕 DHA-	𑌕𑌕 DHA:- drain, weight unit	𑌕̣ DHĀ- to stand	𑌕̣̣ DHĀ: -it stands
N	𑌕 NA- eat !	𑌕𑌕 NA:- eats	𑌕̣ NĀ- iron	𑌕̣̣ NĀ: - also, too
NH	𑌕𑌃 NHA-dampness	𑌕𑌕𑌃 NHA:- slightly moist	𑌕̣̣ NHĀ- to distroy	𑌕̣̣̣ NHĀ: -to destroy completely
P	𑌕 PA- copulate !	𑌕𑌕 PA:- copulated	𑌕̣ PĀ- pile	𑌕̣̣ PĀ: - bamboo
PH	𑌕 PHA- ability	𑌕𑌕 PHA:- pavement	𑌕̣̣ PHĀ- measurement of eight maanaas	𑌕̣̣̣ PHĀ: -bunch
B	𑌕 BA- prefix	𑌕𑌕 BA:- strength	𑌕̣ BĀ- floor	𑌕̣̣ BĀ: - penalty, fine
BH	𑌕 BHA- to wear away	𑌕𑌕 BHA:-tools	𑌕̣̣ BHĀ-	𑌕̣̣̣ BHĀ: -

Annex-A character as a single word with a vowel A

Single character as single word with four formats of a vowel A				
Consonant	Consonant with			
	vowel A-(Baa-aakha:)	long sound vowel A	nasalized sound vowel A	nasalized long sound vowel A
M	म MA- husk	म॑ MA:- glue	मँ MĀ-boil	मं MĀ: -swell
MH	म्ह MHA- body	म्ह॑ MHA:- lead(n)	म्हँ MĤA- Dream	म्हं MĤA: -dreams
Y	य YA- love	य॑ YA:- likes	यँ YĀ- take it away	यं YĀ: -a spinning wheel
L	ल LA-harvest !, mow !	ल॑ LA:- water	लँ LĀ- path, road	लं L Ā: - dress
LH	ल्ह LHA-	ल्ह॑ LHA:-	ल्हँ LĤA-	ल्हं LĤA: -
W	व WA- he, and	व॑ WA:- a bread	वँ WĀ- blue	वं WĀ: -by him, the past
S	स SA-locative suffix	स॑ SA:-sound	सँ SĀ- hair	सं SĀ: -shakes, vibrate
H	ह HA- bring !	ह॑ HA:-leaf	हँ HĀ- felicitate ! celebrate !	हं HĀ: - honors

Annex-A character as a single word with a vowel AA

Single character as single word with four formats of a vowel AA				
Consonant	Consonant with			
	vowel AA	long sound vowel AA	nasalized sound vowel AA	nasalized long sound vowel AA
K	का KAA-thread	काः AA:-long rumpet	काँ AA-	काँ AA:- a blind man
KH	खा KHAA-cock, hen	खाः KH AA: -glass	खाँ KHAA-a subject matter	खाँ KHAA: -by a hen
G	गा GAA-a shawl	गाः GAA: -ditch	गाँ GAA-	गाँ GAA: - village
GH	घा GHAA- hang, or attached to	घाः GHAA: -wound	घाँ GHAA-	घाँ GHAA: -
NG	ढा NGAA- fish	ढाः NGAA:	ढाँ NGAA-- fish	ढाँ NGAA: - by fish
NGH	झा NGHAA	झाः NGHAA:	झाँ NGHAA-	झाँ NGHAA:
C	चा CAA- soil	चाः CAA: ring	चाँ CAA-	चाँ CAA: -by soil, maternal unt
CH	छा CHAA- offer ! (to god)	छाः CHAA: - a kind of leek	छाँ CHAA-	छाँ CHAA:-
J	जा JAA- cooked rice	जाः JAA:-height	जाँ JAA-	जाँ JAA: - by cooked rice
JH	मा JHAA- event	माः JHAA: -bush	माँ JHAA-	माँ JHAA:

Annex-A character as a single word with a vowel AA

Single character as single word with four formats of a vowel AA				
Consonant	Consonant with			
	vowel AA	long sound vowel AA	nasalized sound vowel AA	nasalized long sound vowel AA

NJ	अ NJAA	अः NJAA:	अँ NJAÃ	अं NJAÃ:
NJH	झा NJHAA	झाः NJHAA:	झाँ NJHAÃ	झां NJHAÃ:
T	ता TAA-type, kind, pattern	ताः TAA:-luck	ताँ TAÃ-bridge	तां TAÃ:-a hand-loom
TH	था THAA-stoppage	थाः THAA:-limitation	थाँ THAÃ	थां THAÃ:-a pillar
D	दा DAA- measure ! beat !	दाः DAA:- fat	दाँ DAÃ	दां DAÃ:- money
DH	धा DHAA- tell !	धाः DHAA:-a drum	धाँ DHAÃ	धां DHAÃ:
N	ना NAA- take it !	नाः NAA:-water, mud	नाँ NAÃ	नां NAÃ:- name
NH	न्हा NHAA-knead	न्हाः NHAA:-	न्हाँ NHAÃ	न्हां NHAÃ:-beware
P	पा PAA- an axe	पाः PAA:- place	पाँ PAÃ	पां PAÃ:- guest
PH	रा PHAA- a pig	राः PHAA:- flat	राँ PHAÃ	रां PHAÃ:- by pig
B	वा BAA- male	वाः BAA:- father	वाँ BAÃ	वां BAÃ:- shape

Annex-A character as a single word with a vowel AA

Single character as single word with four formats of a vowel AA				
Consonant	Consonant with			
	vowel AA	long sound vowel AA	nasalized sound vowel AA	nasalized long sound vowel AA
BH	ब BHAA-	बः BHAA:- price rate	बँ BHAA-	बं BHAA:
M	मा MAA- plant, female	माः MAA:- to need	माँ MAA-	माँ MAA:- mother
MH	महा MHAA- control diet	महाः MHAA:- to disagree, not interested	महाँ MH AA-	महाँ MH AA:- not interested
Y	या YAA- do !, glue	याः YAA:- festive, a yak	याँ YAA- perform	याँ YAA:- far distance
L	ला LAA- meat	लाः LAA:- saliva	लौ LAA-	लौ LAA:- a chisel
LH	लाहा LHAA- fill a ditch	लाहाः LHAA:- palm, hand	लौँ LHAA-	लौँ LH AA:
W	वा WAA- tooth	वाः W AA:- fence, week	वाँ WAA-	वाँ WAA:- right
S	सा SAA- cow	साः SAA:- a joint, testy	साँ SAA-	साँ SAA:- even though
H	हा HAA- sing !, steam, bee	हाः HAA:- length	हाँ HAA-	हाँ HAA:- by steam, by bee

Annex-A character as a single word with a vowel I

Single character as single word with four formats of a vowel A				
Consonant	Consonant with			
	vowel I	long sound vowel I	nasalized sound vowel I	nasalized long sound vowel I
K	कि KI- uncooked rice	की KI:-an insect	किँ KI-	किं KI- a nail
KH	खि KHI- waste	खी KI:- in west	खिँ KI-	खिं KI- a drum
G	गि GI-offensive smell	गी GI:-rotten	गिँ GI-	गिं GI- taper
GH	घि GHI-	घी GHI:-	घिँ GHI-	घिं GHI-
NG	ढि NGI	ढी NGI:-	ढिँ NGI-	ढिं NGI-
NGH	ङि NGHI	ङी NGHI:-	ङिँ NGHI-	ङिं NGHI-
C	चि CI- salt	ची CI:- small	चिँ CI-	चिं CI- a mark
CH	छि CHI- you (hon)	छी CHI:-to make bricks, to dye	छिँ CHI- to sneeze	छिं CHI- easy, by you (hon)
J	जि JI- I, me	जी JI:- a cumin seed	जिँ JI-	जिं JI- by me
JH	मि JHI- ten	मी JHI:- - we (inclusive)	मिँ JHI- melancholy	मिं JHI- by ten
NJ	णि NJI- to grind	णी NJI:- healthy	णिँ NJI- healthy food	णिं NJI-

Annex-A character as a single word with a vowel I

Single character as single word with four formats of a vowel A				
Consonant	Consonant with			
	vowel I	long sound vowel I	nasalized sound vowel I	nasalized long sound vowel I
		food		
NJH	𑌕 NJHI- mucus, pus	𑌕 NJHI:- in pus	𑌕 NJHI-pus	𑌕 NJHI- daily
T	𑌕 TI- soup	𑌕 TI:- a mole	𑌕 Tī- reed	𑌕 Tī- restless
TH	𑌕 THI-to touch	𑌕 THI:- gem	𑌕 THī-	𑌕 THī-pattern
D	𑌕 DI- pause, rest	𑌕 Dī- stop	𑌕 Dī-	𑌕 Dī- day
DH	𑌕 DHI-height	𑌕 DHI:-a lump	𑌕 DHī-	𑌕 DHī-
N	𑌕 NI- two	𑌕 Nī- twenty	𑌕 Nī-	𑌕 Nī- healthy food
NH	𑌕 NHI- day	𑌕 NHI:- in mucus	𑌕 NHī- pus	𑌕 NHī- daily
P	𑌕 PI- four	𑌕 Pī- forty	𑌕 Pī-	𑌕 Pī- a painting brush
PH	𑌕 PHI- sand	𑌕 PHi- thickness	𑌕 PHī-	𑌕 PHī- the fin
B	𑌕 BI- snake	𑌕 Bī- act of giving	𑌕 Bī-	𑌕 Bī- by snake
BH	𑌕 BHI-a fence, a	𑌕 BHi:-a vertical	𑌕 BHī-	𑌕 BHī- good, fine

Annex-A character as a single word with a vowel I

Single character as single word with four formats of a vowel A				
Consonant	Consonant with			
	vowel I	long sound vowel I	nasalized sound vowel I	nasalized long sound vowel I

	reed partition	section of a citrus food		
M	मि MI- fire, person	मी MI:- fenrigreek seed	मि̣ MI- fire	मि̣ MI- by fire
MH	मि̣ MH	मी̣ MH:	मि̣ MḤ	मि̣ MḤ
Y	यि YI	यी YI:	यि̣ YI-	यि̣ YI-
L	लि LI- later, behind	ली LI:- brass	लि̣ LI-	लि̣ LI-
LH	लि̣ LHI	ली̣ LHI:	लि̣ LḤ-	लि̣ LḤ-
S	सि SI-a louse, fruit	सी SI:- wax	सि̣ SI- timber	सि̣ SI- by the wood
H	हि HI- blood	ही HI:- in blood	हि̣ HI-	हि̣ HI- asafoetida

Annex-A character as a single word with a vowel U

Single character as single word with four formats of a vowel U				
Consonant	Consonant with			
	vowel U	long sound vowel U	nasalized sound vowel U	nasalized long sound vowel U
K	क KU- load	कू KU: - a short handle hoe	कँ KŪ- smoke	कं KŪ:- a corner
KH	ख KHU-six	खू KHU: - a scar, a limping person	खँ KHŪ- thief	खं KHŪ:- by thief
G	ग GU- nine	गू GU: - tore, a trust	गँ GŪ- a forest	गं GŪ:-from the forest
GH	घ GHU- swallow	घू GHU: - an auspicious moment	घँ GHŪ-	घं GHŪ:- pretence
NG	ङ NGU-	ङू NGU: -	ङँ NGŪ-	ङं NGŪ:-
NGH	ङ्ह NGHU-	ङ्हू NGHU: -	ङ्हँ NGHŪ-	ङ्हं NGHŪ:-
C	च CU- a handle	चू CU: - to face	चँ CŪ-	चं CŪ:- powder
CH	छ CHU- what	छू CHU: - pretence, pretext	छँ CHŪ-mouse, rat	छं CHŪ:- some, any
J	ज JU- a pair	जू JU: - gamble	जँ JŪ-	जं JŪ:-
JH	झ JHU- numb	झू JHU: - get wet thoroughly	झँ JHŪ-	झं JH Ū:-

Annex-A character as a single word with a vowel U

Single character as single word with four formats of a vowel U				
Consonant	Consonant with			
	vowel U	long sound vowel U	nasalized sound vowel U	nasalized long sound vowel U

NJ	ଞ NJU-	ଞ NJU: -	ଞ̃ NJŨ-	ଞ̃ NJŨ:-
NJH	ଞ୍ଝ NJHU-	ଞ୍ଝ NJHU: -	ଞ̃ଞ̃ NJHŨ-	ଞ̃ଞ̃ NJHŨ:-
T	ଟ TU- sugar cane	ଟ TU: - mustard	ଟ̃ TŨ- a maggot	ଟ̃ TŨ:- a draw-well
TH	ଥ U- a bundle, a roll	ଥ U: - an owner	ଥ̃ Ũ- bury !	ଥ̃ Ũ:- irritating
D	ଢ U- existence	ଢ U: - a palanquin	ଢ̃ Ũ- sinks !	ଢ̃ Ũ:- collapse
DH	ଧ DHU- the length	ଧ DHU: - dust	ଧ̃ DHŨ- tiger	ଧ̃ DHŨ:- a stick of cense
N	ନ NU- oral, let us go	ନ NU: -satisfy	ନ̃ NŨ- let's go	ନ̃ NŨ:- -satisfy
NH	ନ୍ନ NHU- a day	ନ୍ନ NHU: - new	ନ୍ନ̃ NHŨ-	ନ୍ନ̃ NHŨ:-
P	ପ PU- seed	ପ PU: - glass bead	ପ̃ PŨ- wear	ପ̃ PŨ:- a painter
PH	ଫ PHU- able	ଫ PHU: - to blow	ଫ̃ PHŨ-	ଫ̃ PHŨ:-asthmatic
B	ବ BU- rub	ବ BU: - cooked	ବ̃ BŨ- field	ବ̃ BŨ:- from the field

Annex-A character as a single word with a vowel U

Single character as single word with four formats of a vowel U				
Consonant	Consonant with			
	vowel U	long sound vowel U	nasalized sound vowel U	nasalized long sound vowel U

BH	ग BHU- a plate, dish	ग BHU: - a joint	ग BHU- cover up !	ग BHU:- from the plate
M	म MU- collect !, burst !	म MU: - price	म MU- gather !	म MU:- a collection
MH	म्ह MHU- a fist	म्ह MHU: - a bundle	म्ह MHU-	म्ह MHU:-
Y	य YU- wipe	य YU: - jade	य YU- distribute !	य YU:- distributes
L	ल LU- the scene of a drama	ल LU: -sunrise	ल LU- gold	ल LU:- by gold
LH	ल्ह LHU- bath !	ल्ह LHU: - used to wash	ल्ह LHU-	ल्ह LHU:-
S	स SU- straw, who, pinch !	स SU: the mouldy, whim	स SU-	स SU:- any body, someone
H	ह HU- erase	ह HU: - whimsical	ह HU- go !	ह HU:- remote indication

Annex-A character as a single word with a vowel E

Single character as single word with four formats of a vowel E				
Consonant	Consonant with			
	vowel E	long sound vowel E	nasalized sound vowel E	nasalized long sound vowel E
K	क _{KE-}	कॆ _{KE:-}	कँ _{KẼ- lentils}	कँ _{KẼ:- sister}
KH	ख _{KHE- upper part of a body}	खॆ _{KHE:-}	खँ _{KHẼ-}	खँ _{KHẼ:- egg}
G	ग _{GE- anvil}	गॆ _{GE:- exchange}	गँ _{GẼ- anvil}	गँ _{GẼ:- at anvil}
NGH	ङ _{NGHE-}	ङॆ _{NGHE:-}	ङँ _{NGHẼ-}	ङँ _{NGHẼ:-}
C	च _{CE-}	चॆ _{CE:-}	चँ _{CẼ-}	चँ _{CẼ:- scratchy fiber}
CH	छ _{CHE- dislike}	छॆ _{CHE:-}	छँ _{CHẼ- house}	छँ _{CHẼ:- from house}
J	ज _{JE-}	जॆ _{JE:-}	जँ _{JẼ-}	जँ _{JẼ:-}
JH	झ _{JHE-}	झॆ _{JHE:-}	झँ _{JHẼ-}	झँ _{JHẼ:-}
NY	ञ _{NYE-}	ञॆ _{NYE:-}	ञँ _{NYẼ-}	ञँ _{NYẼ:-}
NYH	ञ्ह _{NYHE-}	ञ्हॆ _{NYHE:-}	ञ्हँ _{NYHẼ-}	ञ्हँ _{NYHẼ:-}
T	ण _{TE-}	णॆ _{TE:-}	णँ _{TẼ-}	णँ _{TẼ:- wool}
TH	थ _{THE-}	थॆ _{THE:-}	थँ _{THẼ-}	थँ _{THẼ:- similar}

Annex-A character as a single word with a vowel E

Single character as single word with four formats of a vowel E				
Consonant	Consonant with			
	vowel E	long sound vowel E	nasalized sound vowel E	nasalized long sound vowel E
D	द _{DE- Ok}	द४ _{DE:- a village}	दँ _{DE-}	दं _{DE:-}
DH	ध _{DHE- a pod, a capsule}	ध४ _{GHE:-}	धँ _{DHE-}	धं _{DHE:- competition}
N	न _{NE-}	न४ _{NE:-}	नँ _{NE-}	नं _{NE:-}
NH	न् _{E-}	न्४ _{E:-}	नँ _{E-}	नं _{E:-}
P	प _{PE- four}	प४ _{PE:- a handful of food}	पँ _{PE- straw ring, base}	पं _{PE:-}
PH	रू _{PHE-}	रू४ _{PHE:-}	रूँ _{PHÉ-}	रूं _{PHÉ:-}
B	व _{BE- slice}	व४ _{BE:- flute like pipe}	वँ _{BE- tilt}	वं _{BE:- slant}
BH	र _{BHE-}	र४ _{BHE:-}	रँ _{BHE-}	रं _{BHE:-}
M	म _{ME- buffalo}	म४ _{ME:- a song}	मँ _{ME-}	मं _{ME:- by song, by tongue}
MH	क्क _{MHE-a sac}	क्क४ _{MHE:-tenant farmer}	क्कँ _{MHE-}	क्कं _{MHE:- by sack}
Y	य _{YE- denoting suspension}	य४ _{YE:- yes indeed, see}	यँ _{YE- Kathmandu city}	यं _{YE:- from Kathmandu}

Annex-A character as a single word with a vowel E

Single character as single word with four formats of a vowel E				
Consonant	Consonant with			
	vowel E	long sound vowel E	nasalized sound vowel E	nasalized long sound vowel E
L	ल LE- driving animal away	ल४ LE:-	लँ LE- to float	लं LE:-
LH	ल्ल LHE-	ल्ल४ LHE:-	ल्लँ LHE-	ल्लं LHE:-
W	व WE-	व४ WE:-	वँ WE-	वं WE:- mad man
S	स E- excuse me !	स४ E:- liver	सँ E-	सं E:- by liver
H	ह E- oh !	ह४ E:-	हँ E-	हं E:- a duck

Annex-A character as a single word with a vowel O

Single character as single word with four formats of a vowel O				
Consonant	Consonant with			
	vowel O	long sound vowel O	nasalized sound vowel O	nasalized long sound vowel O
K	का KO- down,	काः KO:- crow	काँ KO:- younger	काँ KO:- traditional facial
KH	खा KHO- cry !	खाः KHO:- a hoof, bottom part of a animal leg	खाँ KHO:-	खाँ KHO:- dirt patch, stain
G	गा GO- where	गाः GO:- spherical	गाँ GÔ:-	गाँ Ô:- log
GH	घा GHO-	घाः GHO:-	घाँ GHÔ:-	घाँ GHÔ:- a pig, to kneel down
NG	ढा NGO-	ढाः NGO:-	ढाँ NGÔ:-	ढाँ NGÔ:-
NGH	ढाः NGHO-	ढाःः NGHO:-	ढाँः NGHÔ:-	ढाँः NGHÔ:-
C	चा CO- write !	चाः CO:- edge, a trap	चाँ CÔ:- be here !	चाँ CÔ:- from top
CH	छा CHO- wheat	छाः CO:- food, burns	छाँ CÔ:- to provoke, to insist	छाँ CÔ:- bamboo sooth
J	जा JO- graze !	जाः JO:- sharp	जाँ JÔ:- take !	जाँ JÔ:- takes
JH	मा JHO- graze !	माः O:- line	माँ Ô:-	माँ Ô:-

Annex-A character as a single word with a vowel O

Single character as single word with four formats of a vowel O				
Consonant	Consonant with			
	vowel O	long sound vowel O	nasalized sound vowel O	nasalized long sound vowel O
NJ	ਐ NJO-	ਐੜ NJO:-	ਐਂ NJO:-	ਐਂੜ NJO:-
NJH	ਐੜ NJHO-	ਐੜੜ NJHO:-	ਐਂੜੜ NJHO:-	ਐਂੜੜੜ NJHO:-
T	ਐ TO- take off	ਐੜ TO:- excuse, pretence	ਐਂ TO:- drink !	ਐਂੜ TO:- drinks
TH	ਐ THO- this	ਐੜ THO:- echo	ਐਂ THO:- beer	ਐਂੜ THO:- by this person
D	ਐ DO-	ਐੜ O:- thousand	ਐਂ O:- heap up	ਐਂੜ O:- bull, fault
DH	ਐ O- push !	ਐੜ O:- line	ਐਂ O:-	ਐਂੜ O:- drain, a jackal
N	ਐ NO-	ਐੜ NO:- support	ਐਂ NO:-	ਐਂੜ NO:-
NH	ਐੜ NHO-	ਐੜੜ NHO:-	ਐਂੜੜ NHO:-	ਐਂੜੜੜ NHO:-
P	ਐ PO- pill !	ਐੜ PO:-bundle	ਐਂ O:- empty, hail	ਐਂੜ O:- vacant
PH	ਐ O- rinse in water	ਐੜ O:- swell, flower object	ਐਂ O:- beg !	ਐਂੜ O:- a blister
B	ਐ BO- a single unit	ਐੜ B O:- shout	ਐਂ BO:- study !	ਐਂੜ BO:- studies

Annex-A character as a single word with a vowel O

Single character as single word with four formats of a vowel O				
Consonant	Consonant with			
	vowel O	long sound vowel O	nasalized sound vowel O	nasalized long sound vowel O
BH	ભ BHO- entire family	ભઃ BHO:-	ભૌ BHO:-	ભૌ BHO:- paper
M	મા MO- rice husk	માઃ MO:- crowd	માૌ MO:- husk	માૌ MO:- a coin
MH	મ્હા MHO- little	મ્હાઃ MHO:-	મ્હૌ ઠ:-	મ્હૌ ઠ:-
Y	યા YO-	યાઃ YO:- like	યાૌ YD:-	યાૌ YD:-
L	લા LO-	લાઃ LO:- match	લાૌ LD:-	લાૌ LD:- stone
LH	લ્હા LHO- vomit !	લ્હાઃ LHO:- vomits	લ્હૌ LHd:- lift !	લ્હૌ LHd:- fat
W	વા WO- bread	વાઃ WO:- bread	વાૌ Wd:-	વાૌ Wd:- by him
S	સા SO- look !, three	સાઃ SO:- see	સૌ ઠ:-a lung	સૌ ઠ:- the trunk
H	હા O- hurl !	હાઃ O:- a whole	હૌ ઠ:- join together	હૌ ઠ:-a confluence of river

Annex- A character as a single word with a diphthong AI or AU

Single character as one word		
Consonant	Consonant with AI representative mark	Consonant with AU representative mark
K	क KAI- a pimple, a boil	का KAU- black smith, a courieshell
KH	ख KHAI- sputum	खा KHAU- oil cake
G	ग GA- will ride	गा GAU- the ankle
GH	घ GHAI-	घा GHAU- a type of fish
C	च CAI	चा CAU- crunchy raw food
JH	ज JHAI	जा JHAU- sealing wax
T	त TAI- will put	ता TAU- a base of a pot
TH	थ THAI- will save	था AU
D	द DAI- will exist	दा AU
DH	ध DHAI-	धा DHAU- yogurt
N	न NAI- will eat	ना NAU- a barber, ash
NH	न् NHAI- reassurance	न् AU
P	प PAI- will copulate	पा PAU- a roof, letter

Annex- A character as a single word with a diphthong AI or AU

Single character as one word		
Consonant	Consonant with AI representative mark	Consonant with AU representative mark
PH	𑖥 PHAI- a sheep, ram	𑖦 FAU-
B	𑖧 BAI-	𑖨 BAU- father, spirit of ancestors
BH	𑖩 BHAI-	𑖪 BHAU- cat, daughter-in-law
M	𑖫 MAI- a young girl	𑖬 MAU
MH	𑖭 MHAI- will collect	𑖮 MHAU
Y	𑖯 YAI-will like	𑖰 YAU
L	𑖲 LAI- will harvest	𑖳 LAU
W	𑖵 WAI- will come	𑖶 WAU
S	𑖹 SAI- will learn, will grow	𑖺 SAU- cow dung
H	𑖼 HAI- a centipede	𑖽 AU