ISO/IEC JTC1/SC2/WG2 N4142 L2/11-412 2011-10-25

Title: Proposal to Encode the Soyombo Script in ISO/IEC 10646

Source: Script Encoding Initiative (SEI)

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Status: Liaison Contribution

Action: For consideration by UTC and WG2

Date: 2011-10-25

1 Introduction

This is a proposal to encode the Soyombo script in the Universal Character Set (ISO/IEC 10646). The request to include Soyombo in the UCS was made by the Mongolia and Japan national bodies in September 1998 (WG2 N1855 L2/98-358). An update on the status of the request was provided in January 2000 by Takayuki K. Sato (Japan), who stated that the project for encoding Soyombo was stalled due to funding issues (WG2 N2163 L2/00-055). The script was allocated to the Roadmap to the Supplementary Multilingual Plane (SMP) in WG2 Meeting 38 in March 2000 (WG2 N2203 L2/00-234). There was no further action.

The present proposal aims to fulfill the original request. It builds upon the following documents:

- N3949 L2/10-399: Preliminary Proposal to Encode the Soyombo Script in ISO/IEC 10646
- N3986 L2/11-054: Determining the Encoding Model for Soyombo Vowels
- N4026 L2/11-125: Revised Preliminary Proposal to Encode Soyombo in the UCS

This document is a revision of N4026 and replaces it. Major changes to the preliminary proposal include a revision of the encoding model for vowels. Independent vowel letters have been replaced with a vowel-carrier letter and a set of dependent vowel signs. The encoding model for conjuncts has also changed. Previously, consonant ligatures found in script charts were included as independent characters. Additional research has shown the use of other conjuncts in manuscripts. As a result, the independent ligatures have been removed and a full set of subjoined letters have been proposed for encoding. This subjoined-letter model will enable the encoding of a broader range of conjuncts.

The Soyombo font used here is based upon the font developed by Oliver Corff in August 1996 for his "Soyombo for LATEX" package. Modifications have been made to Corff's font and several new glyphs added by the present author.

2 Background

Soyombo (Mongolian: Соёмбо бичиг फर्जिक किन्न्स्र) हिंदू soyombo bicig) is a script used for writing Mongolian, Sanskrit, and Tibetan. It was used mainly for producing ornamental Buddhist texts. 1 The script was designed in 1686 by Zanabazar (1635–1723), the first spiritual leader of Tibetan Buddhism in Mongolia, who also developed the Xäwtää Dörböljin (Horizonal Square) script. 2 The name soyombo (अव्हा) is derived from Sanskrit स्वयंभ svayambhu 'self-existing'.

1

¹ Atwood 2004: 518.
² See N3956 L2/10-411.

There are several records in Soyombo, most of which are manuscripts, such as that shown in Figure 28. Soyombo is described in many secondary sources, such as studies of Mongolian scripts, eg. Boldsaikhan, et al. (2005), Shagdarsürüng (2001), etc. Soyombo is currently in use, as attested by a poem that was recently typeset using a digitized font (see Figure 30).

Names for characters are based upon those given in secondary sources, such as Shagdarsürüng (2001). Names for certain consonants follow those given in N1855 L2/98-358.

3 Writing System

3.1 Structure

Soyombo is an alphasyllabic script that is influenced by Tibetan and Devanagari. Vowels are represented using dependent vowel signs. Independent vowels are written by combining these signs with a vowel-carrier letter. Consonant letters have an inherent vowel, but in some language-specific contexts are purely alphabetic. Consonants are written using signs when syllable-final. Clusters of consonants are represented as conjuncts, which are written using subjoined forms of letters.

It is written left to right. Some records contain text written vertically, from top to bottom (see Section 5.1).

The graphical structure of Soyombo letters is 'two-dimensional, not linear' (Corff 1996; see figures 4 and 5). Each letter is modelled upon the template \(\bar{1} \). To this template are added distinct character primitives that represent the base letter: \(\bar{1} \). Vowel signs are written above the frame: \(\bar{1} \); within it: \(\bar{1} \); attached to a terminal: \(\bar{1} \); or to the right of the frame: \(\bar{1} \). Final-consonant signs are written inside the frame: \(\bar{1} \). Consonant conjuncts are represented using subjoined forms of non-initial letters, which are written within the frame: \(\bar{1} \). These features are described in further detail below.

3.2 Vowels

There are 21 letters shown in traditional charts of Soyombo for writing vowels:



Apart from a and -a, these letters may be considered composite characters written using a 'vowel-carrier' letter and a distinct sign for each vowel:

The representation of vowels in Soyombo is based upon the Tibetan system, in which striangled U+0F68 TIBETAN LETTER A is a vowel carrier to which dependent vowel signs are attached in order to write independent vowels. The letter $rac{e}{a}$ is the Soyombo vowel-carrier. Long vowels are written using a combination of a basic vowel sign and a $rac{e}{a}$ length mark.

Given this structure, it is practical to encode a vowel-carrier letter and dependent vowel signs instead of a full set of independent vowel letters and their associated dependent forms. All independent and dependent vowel forms may be written using the following set of 13 characters:

ङ्	LETTER A	ें	VOWEL SIGN O	္က	VOWEL SIGN VOCALIC L
ੰ	VOWEL SIGN I	ं	VOWEL SIGN OE	্	VOWEL LENGTH MARK
়	VOWEL SIGN UE	्{	VOWEL SIGN AU	গ	GALIG LETTER SMALL A
្ន	VOWEL SIGN U	्र	VOWEL SIGN AI		
ੋ	VOWEL SIGN E	្ឆ	VOWEL SIGN VOCALIC R		

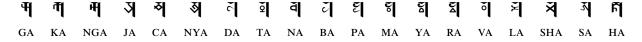
3.2.1 Notes on vowels

1. Ordering The \(\) LENGTH MARK is written after the accompanying vowel sign:

- 2. Long vowel \bar{a} When the vowel length mark is written with a bare vowel-carrier it represents the long vowel \bar{a} :
- 3. Sanskrit vocalic letters The r, \bar{r}, l, \bar{l} are used for representing Sanskrit.
- 4. *Tibetan 'a chung'* The vowel -a is used for writing Tibetan and corresponds to \mathfrak{A} U+0F60 TIBETAN LETTER -A. It has a subjoined form (see Section 3.6.2).
- 5. Variant forms The vowels $\overline{\P}$ I and $\underline{\P}$ U, and their corresponding long forms, are written by attaching the diphthong signs $\overline{\P}$ -AI to the vowel letter $\overline{\P}$ I, ie. $\overline{\P}$ u, $\overline{\P}$ \overline{u} , $\overline{\P}$ \overline{t} . The vowel Length Mark is written before the sign for the diphthong.

3.3 Consonant Letters

The basic set of consonant letters is:



There are 14 additional consonant letters for writing Sanskrit. The names for these characters contain the descriptor 'GALIG', a Mongolian term indicating letters for non-Mongolian sounds. It is used here for distinguishing between distinct characters that are given identical names in script charts, eg. ¶ GA (Mongolian) and ¶ GA (foreign), etc.:

4 ग म् Ā र्। × JHA TTA TTHA DDA DDHA DA BA SSA GHA JA NNA DHA BHA

There are 5 additional letters for writing Tibetan. The descriptor 'GALIG' is also used in the names of these characters.

3.4 Consonant Signs

Syllable-final Mongolian consonants are written using contextual forms of letters. The following characters are shown in script charts as representing such consonants:

These characters are combinations of ⁵ A + combining sign. The use of A is illustrative:

These 12 signs are proposed for encoding as the following characters:

ု	CONSONANT SIGN G	्	CONSONANT SIGN N	਼ੁ	CONSONANT SIGN L
្	CONSONANT SIGN K	ৃ	CONSONANT SIGN B	ু	CONSONANT SIGN SH
္ •	CONSONANT SIGN NG	ৃ	CONSONANT SIGN M	ु	CONSONANT SIGN S
्	VOWEL SIGN D	ৃ	CONSONANT SIGN R	୍ଦ	CONSONANT SIGN ANG

The final-consonant sign is always written after any vowel sign and VOWEL LENGTH MARK:

3.5 Geminated Consonants

Doubled consonants are written using the \circ GEMINATION MARK, which is stacked above the triangle of a letter: $< \P$ GA + \circ GEMINATION MARK> $\rightarrow \P$ kka.

3.6 Consonant Conjuncts

Consonant clusters in Sanskrit are represented as conjuncts. The initial consonant in a conjunct is the base letter. Non-initial consonants are written as subjoined forms, which are stacked within the frame of the base letter. Certain letters have pre-fixed forms when they occur in conjunct-initial position. These pre-fixed forms are attached to the following consonant. There is one conjunct that is written using an atomic ligature.

3.6.1 Prefixed forms

When LA, SHA, SA, RA occur as C_1 , they are written using prefixed forms that are attached to the regular letter for C_2 . In such conjuncts, C_2 functions as the base letter, but C_1 is parsed first in the logical order.

- PREFIXED LETTER LA Conjunct initial form of A LA. It is used for writing Tibetan A la-mgo letters: A lka = < PREFIXED LETTER LA, A GA> → A lka.
- • PREFIXED LETTER SA Conjunct initial form of \P SA. It is used for writing Tibetan \P sample letters: \P ska = \P PREFIXED LETTER SA, \P GA> \P ska.
- 'O PREFIXED LETTER RA Conjunct initial form of \mathbb{A} RA. It is used for writing Tibetan rampo letters: \mathbb{A} rka = <'O PREFIXED LETTER RA \mathbb{A} $\mathbb{A$

3.6.2 Subjoined forms

Non-initial consonants of a cluster are written as subjoined forms attached to C₁:

म्	म्	म्	K	শ	ቖ	শ	٥	ă	č
្ន	្	្ន	়	្	় %	ू	្ ទ	្ន	ွ
GA	KA	NGA	JA	CA	NYA	DA	TA	NA	BA
2	8	8	\$	ॅं	×	×	¥	F [
္မွ	្ង	្ន	្ន	ွ	्र	្ព	્ર	<u>្</u> ក	
PA	MA	YA	RA	VA	LA	SHA	SA	HA	
म्	¥	A	K	1	₹Į	ग्	41	Ħ	स्
្ន 4	្ន	়	ূ	្ន	្	្	្ន	្	្ន
GALIG GA	GALIG GHA	GALIG JA	GALIG JHA	GALIG TTA	GALIG TTHA	GALIG DDA	GALIG DDHA	GALIG NNA	GALIG DA
म्	Ğ	ૄ	×	Ø	Ø	₽	ř	۶	গ্
ુ	္မ	ૢ	្ត	○	ু ♦	़ ♦	ွ	ၟ	္
GALIG DHA	GALIG BA	GALIG BHA	GALIG SSA	GALIG TSA	GALIG TSHA	GALIG DZA	GALIG ZHA	GALIG ZA	GALIG SMALL A

The subjoined form is the base element of a letter. The glyphic representation of subjoined letters is discussed further in Section 5.5.

3.6.3 Independent conjunct

The conjunct \P $k \ sa$ is used for writing the Sanskrit cluster \P $k \ sa$ \P U+0915 DEVANAGARI LETTER KA, Q U+094D DEVANAGARI SIGN VIRAMA, U+0937 DEVANAGARI LETTER SSA>. It is proposed for independent encoding as LETTER KSSA. It is different from other conjuncts because it cannot be produced using a subjoined letter; the shape of Q SUBJOINED LETTER SSA does not correspond to any element in the graphical structure of KSSA.

3.6.4 Atomic ligatures in script charts

The following conjuncts are enumerated in charts of Soyombo:

They are not atomic characters, but conjuncts. Moreover, they are not the only conjuncts used in Soyombo; others are shown in manuscripts. These conjuncts are likely shown in charts for purposes of illustrating the types of conjuncts that may be written.

3.7 Various Signs

- ° ANUSVARA Indicates nasalization in words of Sanskrit origin, eg. * om < ANUSVARA Indicates nasalization in words of Sanskrit origin, eg. * om < ANUSVARA ANUSVARA IN CORRESPONDENT OF THE TIBETAN SIGN RJES SU NGA RO.
- S VISARGA Represents an allophone of /r/ or /s/ at word-final position in Devanagari orthography for Sanskrit. It is used in Mongolian Square for writing Sanskrit and it corresponds to S U+0F7E TIBETAN SIGN RNAM BCAD.

3.8 Punctuation

- DANDA and DOUBLE DANDA These characters are used for marking the ends of sentences and longer sections. They correspond to | U+0964 DEVANAGARI DANDA and to || U+0965 DEVANAGARI DOUBLE DANDA.
- TSHEG This character is used for marking the end of a syllable. It corresponds to U+0F0B TIBETAN MARK INTERSYLLABIC TSHEG.

3.9 Head Marks

There are two 'head marks': HEAD MARK and TERMINAL MARK. These characters are used for indicating the beginning and end of section of text.

3.10 Symbols

The symbol syayambhu was design by Zanabazar, the creator of the script. It is an officially recognized symbol in Mongolia and appears on the flag and coat of arms of the country (see figures 34 and 35). The symbol is included as a character of the script, but it is not part of the orthography of written text.

4 Language-Specific Orthography

4.1 Tibetan

The representation of consonant clusters and syllable-final consonants in Tibetan words follows the orthography for Tibetan. For example, a word-initial bare consonant may be written using the regular letter instead of forming a conjunct with the following consonant. Also, a syllable-final consonant may be represented by the regular letter instead of the final-consonant sign. The word method 'supreme' is written as make the regular of the final-consonant sign. The word of the final-consonant sign of the final-consonant sign. The word of the final-consonant sign of the final-consonant sign of the final-consonant sign. The word of the final-consonant sign of the final

5 Rendering and Shaping Behaviors

5.1 Vertical Text

Soyombo may be written vertically, from top to bottom and left to right. For example, the text segment *dzür ka* as shown in the seal in Figure 27:

$${}^{\mbox{\begin{tikzpicture}(100,0) \put(0,0){\line(0,0){100}} \put(0,0)$$

In a vertical environment, Soyombo orthography departs from general rules for writing syllables. The syllables of a word may be written using subjoined letters, as if forming a conjunct. The example below shows the word temperature for the syllables have the same vowel, which is represented using a single vowel sign above the base letter; the consonants of non-initial syllables are written using subjoined letters, while the final consonant is written using a final-consonant sign:

A similar practice is observed in the vertical form of words comprised of syllables that contain different vowels. The example below shows the word yenu. Its two syllables have different vowels, which are written above and below the base; the consonant of the second syllable is written as a subjoined form:



It is likely that the above behavior occurs only when the syllables of a word possess the same vowel or when the syllables of a word have vowels whose signs are written in different positions. It is unlikely that syllables would be written as shown above if the vowels were different and written in the same position in order to prevent clashing.

5.2 Vowel Signs

When vowel-signs that appear at the base of the letter frame are written with final-consonants signs, then the size and position of the vowel signs are modified in order to accommodate the placement of both signs. This rule affects two vowel signs: 3 VOWEL SIGN UE and 2 VOWEL SIGN U.

• Shaping and positioning of -ue: \bigcirc -ue \rightarrow \bigcirc

$$\P + 2 + \beta \rightarrow \P \rightarrow \P$$

$$KA + -U + -NG \rightarrow kung$$

5.3 Gemination Sign

The height of the base letter may be lowered to accommodate the GEMINATION MARK within the normal x-height: compare \P with \P .

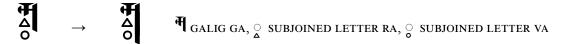
5.4 Conjuncts

The glyph of the base letter in a conjunct is generally modified in order to accommodate the placement of subjoined letters within the letter frame. For example, in writing $\{x\}$ $\{x\}$

Another such adjustment is made when \P NGA is written with \P GA, \P KA, \P GALIG GA, \P GALIG GHA. For instance, in writing \P nga, the regular shape of \P NGA changes to \P before \P SUBJOINED LETTER GA is attached. A further modification is the break in the frame that occurs in conjuncts involving GA, KA, NGA, GALIG GA, GALIG GHA.

5.5 Glyphic Representation of Subjoined Letters

The glyphs for subjoined letters represent the base element of the regular letter. In some cases, it may be necessary to include part of the frame stem in the glyphs for subjoined letters in order to maintain the Soyombo graphical structure. For example, the word *grva* consists of a base letter and two subjoined letters. The position of the second subjoined letter would straddle the baseline or fall below it. In such cases, the stem of the base-letter frame would be extended.



This could be handled by creating glyphs for subjoined letters that contain a segment of the frame stem, eg. of for o subjoined letters vA, etc.

6 Character Data

6.1 Character Properties

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11800; SOYOMBO LETTER A; Lo; 0; L; ; ; ; ; N; ; ; ;
11801; SOYOMBO VOWEL SIGN I; Mn; 0; NSM; ;; ;; N; ;; ;;
11802; SOYOMBO VOWEL SIGN U; Mn; 0; NSM;;;;; N;;;;
11803; SOYOMBO VOWEL SIGN UE; Mn; 0; NSM; ;; ;; N; ;; ;;
11804; SOYOMBO VOWEL SIGN E; Mn; 0; NSM; ;; ;; N; ;; ;;
11805; SOYOMBO VOWEL SIGN O; Mn; 0; NSM; ;; ;; ;N; ;; ;;
11806; SOYOMBO VOWEL SIGN OE; Mn; 0; NSM; ; ; ; ; N; ; ; ;
11807; SOYOMBO VOWEL SIGN AU; Mn; 0; NSM;;;;; N;;;;
11808; SOYOMBO VOWEL SIGN AI; Mn; 0; NSM; ;; ;; N; ;; ;;
11809; SOYOMBO VOWEL LENGTH MARK; Mn; 0; NSM;;;;; N;;;;;
1180A; SOYOMBO LETTER GA; Lo; 0; L;;;;; N;;;;
1180B; SOYOMBO LETTER KA; Lo; 0; L;;;;; N;;;;
1180C; SOYOMBO LETTER NGA; Lo; 0; L;;;;; N;;;;
1180D; SOYOMBO LETTER JA; Lo; 0; L;;;;; N;;;;;
1180E; SOYOMBO LETTER CA; Lo; 0; L;;;;; N;;;;;
1180F; SOYOMBO LETTER NYA; Lo; 0; L;;;;; N;;;;;
11810; SOYOMBO LETTER DA; Lo; 0; L;;;;; N;;;;
11811; SOYOMBO LETTER TA; Lo; 0; L;;;;; N;;;;;
11812; SOYOMBO LETTER NA; Lo; 0; L;;;;; N;;;;
11813; SOYOMBO LETTER BA; Lo; 0; L;;;;; N;;;;
11814; SOYOMBO LETTER PA; Lo; 0; L;;;;; N;;;;
11815; SOYOMBO LETTER MA; Lo; 0; L;;;;; N;;;;
11816; SOYOMBO LETTER YA; Lo; 0; L;;;;; N;;;;
11817; SOYOMBO LETTER RA; Lo; 0; L;;;;; N;;;;
11818; SOYOMBO LETTER VA; Lo; 0; L;;;;; N;;;;
11819; SOYOMBO LETTER LA; Lo; 0; L;;;;; N;;;;
1181A; SOYOMBO LETTER SHA; Lo; 0; L;;;;; N;;;;;
1181B; SOYOMBO LETTER SA; Lo; 0; L;;;;; N;;;;;
1181C; SOYOMBO LETTER HA; Lo; 0; L;;;;; N;;;;
1181D; SOYOMBO CONSONANT SIGN G; Mn; 0; NSM; ; ; ; ; N; ; ; ;
1181E; SOYOMBO CONSONANT SIGN K; Mn; 0; NSM; ;; ;; N; ;; ;;
1181F; SOYOMBO CONSONANT SIGN NG; Mn; 0; NSM; ; ; ; ; N; ; ; ;
11820; SOYOMBO CONSONANT SIGN D; Mn; 0; NSM; ; ; ; ; N; ; ; ;
11821; SOYOMBO CONSONANT SIGN N; Mn; 0; NSM; ;; ;; N; ;; ;;
11822; SOYOMBO CONSONANT SIGN B; Mn; 0; NSM;;;;; N;;;;;
11823; SOYOMBO CONSONANT SIGN M; Mn; 0; NSM; ;; ;; N; ;; ;;
11824; SOYOMBO CONSONANT SIGN R; Mn; 0; NSM; ; ; ; ; N; ; ; ;
11825; SOYOMBO CONSONANT SIGN L; Mn; 0; NSM;;;;; N;;;;;
11826; SOYOMBO CONSONANT SIGN SH; Mn; 0; NSM;;;;; N;;;;
11827; SOYOMBO CONSONANT SIGN S; Mn; 0; NSM;;;;; N;;;;;
11828; SOYOMBO CONSONANT SIGN ANG; Mn; 0; NSM;;;;; N;;;;;
11829; SOYOMBO LETTER GALIG GA; Lo; 0; L;;;;; N;;;;
1182A; SOYOMBO LETTER GALIG GHA; Lo; 0; L;;;;; N;;;;;
1182B; SOYOMBO LETTER GALIG JA; Lo; 0; L;;;;; N;;;;
1182C; SOYOMBO LETTER GALIG JHA; Lo; 0; L;;;;; N;;;;;
1182D; SOYOMBO LETTER GALIG TTA; Lo; 0; L;;;;; N;;;;;
1182E; SOYOMBO LETTER GALIG TTHA; Lo; 0; L;;;;; N;;;;;
1182F; SOYOMBO LETTER GALIG DDA; Lo; 0; L;;;;; N;;;;
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11830; SOYOMBO LETTER GALIG DDHA; Lo; 0; L;;;;; N;;;;;
11831; SOYOMBO LETTER GALIG NNA; Lo; 0; L;;;;; N;;;;
11832; SOYOMBO LETTER GALIG DA; Lo; 0; L;;;;; N;;;;
11833; SOYOMBO LETTER GALIG DHA; Lo; 0; L;;;;; N;;;;;
11834; SOYOMBO LETTER GALIG BA; Lo; 0; L;;;;; N;;;;;
11835; SOYOMBO LETTER GALIG BHA; Lo; 0; L;;;;; N;;;;;
11836; SOYOMBO LETTER GALIG SSA; Lo; 0; L;;;;; N;;;;;
11837; SOYOMBO LETTER GALIG TSA; Lo; 0; L;;;;; N;;;;;
11838; SOYOMBO LETTER GALIG TSHA; Lo; 0; L;;;;; N;;;;;
11839; SOYOMBO LETTER GALIG DZA; Lo; 0; L;;;;; N;;;;
1183A; SOYOMBO LETTER GALIG ZHA; Lo; 0; L;;;;; N;;;;;
1183B; SOYOMBO LETTER GALIG ZA; Lo; 0; L;;;;; N;;;;;
1183C; SOYOMBO LETTER GALIG SMALL A; Lo; 0; L;;;;; N;;;;;
1183D; SOYOMBO LETTER KSSA; Lo; 0; L;;;;; N;;;;
1183E; SOYOMBO VOWEL SIGN VOCALIC R; Mn; 0; NSM; ; ; ; ; N; ; ; ;
1183F; SOYOMBO VOWEL SIGN VOCALIC L; Mn; 0; NSM; ;;;; N;;;;;
11840; SOYOMBO SIGN ANUSVARA; Mn; 0; NSM;;;;; N;;;;;
11841; SOYOMBO SIGN VISARGA; Mc; 0; L;;;;; N;;;;
11842; SOYOMBO GEMINATION SIGN; Mn; 0; NSM; ;; ;; N; ;; ;;
11843; SOYOMBO PREFIXED LETTER LA; Mn; 0; NSM;;;;; N;;;;;
11844; SOYOMBO PREFIXED LETTER SHA; Mn; 0; NSM;;;;; N;;;;;
11845; SOYOMBO PREFIXED LETTER SA; Mn; 0; NSM;;;;; N;;;;;
11846; SOYOMBO PREFIXED LETTER RA; Mn; 0; NSM; ;; ;; N; ;; ;;
11847; SOYOMBO SUBJOINED LETTER GA; Mn; 0; NSM; ;; ;; ;; ;;
11848; SOYOMBO SUBJOINED LETTER KA; Mn; 0; NSM; ;; ;; N; ;; ;;
11849; SOYOMBO SUBJOINED LETTER NGA; Mn; 0; NSM; ;; ;; N; ;; ;;
1184A; SOYOMBO SUBJOINED LETTER JA; Mn; 0; NSM; ;; ;; N; ;; ;;
1184B; SOYOMBO SUBJOINED LETTER CA; Mn; 0; NSM; ;; ;; ;; ;;
1184C; SOYOMBO SUBJOINED LETTER NYA; Mn; 0; NSM; ; ; ; ; N; ; ; ;
1184D; SOYOMBO SUBJOINED LETTER DA; Mn; 0; NSM; ;; ;; ;; ;;
1184E; SOYOMBO SUBJOINED LETTER TA; Mn; 0; NSM; ; ; ; ; N; ; ; ;
1184F; SOYOMBO SUBJOINED LETTER NA; Mn; 0; NSM; ;; ;; N; ;; ;;
11850; SOYOMBO SUBJOINED LETTER BA; Mn; 0; NSM; ;; ;; N; ;; ;;
11851; SOYOMBO SUBJOINED LETTER PA; Mn; 0; NSM; ;; ;; N; ;; ;;
11852; SOYOMBO SUBJOINED LETTER MA; Mn; 0; NSM; ;; ;; ;; ;;
11853; SOYOMBO SUBJOINED LETTER YA; Mn; 0; NSM; ;; ;; N; ;; ;;
11854; SOYOMBO SUBJOINED LETTER RA; Mn; 0; NSM; ; ; ; ; N; ; ; ;
11855; SOYOMBO SUBJOINED LETTER VA; Mn; 0; NSM; ;; ;; N; ;; ;;
11856; SOYOMBO SUBJOINED LETTER LA; Mn; O; NSM;;;;; N;;;;;
11857; SOYOMBO SUBJOINED LETTER SHA; Mn; 0; NSM; ;; ;; N; ;; ;;
11858; SOYOMBO SUBJOINED LETTER SA; Mn; 0; NSM; ;; ;; N; ;; ;;
11859; SOYOMBO SUBJOINED LETTER HA; Mn; 0; NSM; ;; ;; N; ;; ;;
1185A; SOYOMBO SUBJOINED LETTER GALIG GA; Mn; 0; NSM; ;; ;; ;; ;;
1185B; SOYOMBO SUBJOINED LETTER GALIG GHA; Mn; 0; NSM; ; ; ; ; ; ; ; ;
1185C; SOYOMBO SUBJOINED LETTER GALIG JA; Mn; 0; NSM;;;;; N;;;;;
1185D; SOYOMBO SUBJOINED LETTER GALIG JHA; Mn; 0; NSM; ;;;; N;;;;;
1185E; SOYOMBO SUBJOINED LETTER GALIG TTA; Mn; 0; NSM; ;;;; N;;;;;
1185F; SOYOMBO SUBJOINED LETTER GALIG TTHA; Mn; 0; NSM; ; ; ; ; ; ; ; ;
11860; SOYOMBO SUBJOINED LETTER GALIG DDA; Mn; 0; NSM; ; ; ; ; N; ; ; ;
11861; SOYOMBO SUBJOINED LETTER GALIG DDHA; Mn; 0; NSM;;;;; N;;;;;
11862; SOYOMBO SUBJOINED LETTER GALIG NNA; Mn; 0; NSM; ; ; ; ; N; ; ; ;
11863; SOYOMBO SUBJOINED LETTER GALIG DA; Mn; 0; NSM; ;; ;; ;; ;;
11864; SOYOMBO SUBJOINED LETTER GALIG DHA; Mn; 0; NSM; ;;;; N;;;;;
11865; SOYOMBO SUBJOINED LETTER GALIG BA; Mn; 0; NSM;;;;; N;;;;;
11866; SOYOMBO SUBJOINED LETTER GALIG BHA; Mn; 0; NSM; ; ; ; ; ; ; ; ;
11867; SOYOMBO SUBJOINED LETTER GALIG SSA; Mn; 0; NSM; ;; ;; N; ;; ;;
11868; SOYOMBO SUBJOINED LETTER GALIG TSA; Mn; 0; NSM; ; ; ; ; ; ; ; ;
11869; SOYOMBO SUBJOINED LETTER GALIG TSHA; Mn; 0; NSM;;;;; N;;;;;
1186A; SOYOMBO SUBJOINED LETTER GALIG DZA; Mn; 0; NSM; ; ; ; ; ; ; ; ;
1186B; SOYOMBO SUBJOINED LETTER GALIG ZHA; Mn; 0; NSM; ;; ;; ;; ;;
1186C; SOYOMBO SUBJOINED LETTER GALIG ZA; Mn; 0; NSM;;;;; N;;;;
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1186D;SOYOMBO SUBJOINED LETTER GALIG SMALL A;Mm;0;NSM;;;;N;;;;
1186E;SOYOMBO DANDA;Po;0;L;;;;N;;;;
1186F;SOYOMBO DOUBLE DANDA;Po;0;L;;;;N;;;;
11870;SOYOMBO TSHEG;Po;0;L;;;;N;;;;
11871;SOYOMBO HEAD MARK;Po;0;ON;;;;N;;;;
11872;SOYOMBO TERMINAL MARK;Po;0;ON;;;;N;;;;
11873;SOYOMBO SYMBOL SVAYAMBHU;So;0;L;;;;N;;;;
```

6.2 Linebreaking Properties

Linebreaking properties given in the data format of LineBreak.txt:

```
11800; AL
                     # LETTER A
11801..11809; CM
                   # VOWEL SIGN I .. VOWEL LENGTH MARK
                   # GA .. HA
1180A..1181C; AL
1181D..11828; CM
                    # CONSONANT SIGN G .. CONSONANT SIGN ANG
11829..1183D; AL
                   # GALIG GA .. KSSA
                   # SIGN VOCALIC R .. GEMINATION SIGN
1183E..11842; CM
11843..1186D; CM
                   # PREFIXED LETTER LA .. SUBJOINED LETTER GALIG SMALL A
1186E..1186F; BA
                   # DANDA .. DOUBLE DANDA
11870; BA
                    # TSHEG
11871; BB
                   # HEAD MARK
11872; BA
                   # TERMINAL MARK
11873; AL
                   # SYMBOL SVAYAMBHU
```

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8 Acknowledgments

I would like to thank György Kara (Indiana University, Bloomington) for reviewing a draft of this proposal and for providing additional information about Soyombo.

This project was made possible in part by a grant from the United States National Endowment for the Humanities, which funded the Universal Scripts Project (part of the Script Encoding Initiative at the University of California, Berkeley). Any views, findings, conclusions or recommendations expressed in this publication do not necessarily reflect those of the National Endowment for the Humanities.

	1180	1181	1182	1183	1184	1185	1186	1187
0	ड्य	7	11920	ग	ं) 11850	11860	*
1	11800	11810	্		11840			11870
2	11801 3 11802	11811 Č 11812	11821	11831	11841		11861	11871
3	ា	11813	11823	11833	11843	○ △ 11853		11872
4	11803	11014	2 11824	11834	11844	○ ▲ 11854	기 11864	
5	11804	11815			11845	O 11855	္ 6 11865	
6	11806	11816	∵ 11826	11836	11846	<u>)</u> 11856	္ 1 % 6	
7	11807		ु 11827	X.	4	○ × 11857	○ 3 × 11867	
8	₹		11828		11848	ু ১ 11858	○ 11868	
9	11809	11819	11829	11839	11849	ה 11859	○ • • • •	
Α	1 180A	1181A	1 182A	1183A		1185A		
В	1180B	3	7 1182B	1183B	○ ♦ 1184B	1185B	္ 1 % B	
С	1180C	1 181C	1182C	7 1183C	○ \$ 1184C	2 1185C	1186C	
D	3 1180D	ူ 1181D	1182D	4	် 6) 1185D	ာ 1186D	
Ε	1180E	្ត 1181E	1182E	် 3 1183E	<u>ှ</u> ဝ 1184E	1185E	1186E	
F	1180F	↑ 1181F	1182F	် က 1183F	् 1184F	1185F	1186F	

Figure 1: Proposed code chart for Soyombo.

Vowel carrier	11830 ¶ SOYOMBO LETTER GALIG DDHA 11831 ¶ SOYOMBO LETTER GALIG NNA
11800 S SOYOMBO LETTER A	11832 ¶ SOYOMBO LETTER GALIG DA
Vowel signs	11833 4 SOYOMBO LETTER GALIG DHA
11801 ô SOYOMBO VOWEL SIGN I	11834 SOYOMBO LETTER GALIG BA
11802 § SOYOMBO VOWEL SIGN UE	11835 ₹ SOYOMBO LETTER GALIG BHA 11836 ₹ SOYOMBO LETTER GALIG SSA
11803 SOYOMBO VOWEL SIGN U	
11804 O SOYOMBO VOWEL SIGN E	Additions for Tibetan
11805 SOYOMBO VOWEL SIGN O	11837 ◀ SOYOMBO LETTER GALIG TSA
11806 Ō SOYOMBO VOWEL SIGN OE 11807 ♂ SOYOMBO VOWEL SIGN AU	11838 ◀ SOYOMBO LETTER GALIG TSHA
11808 ₹ SOYOMBO VOWEL SIGN AU	11839 ◀ SOYOMBO LETTER GALIG DZA
	1183A 利 SOYOMBO LETTER GALIG ZHA 1183B 利 SOYOMBO LETTER GALIG ZA
Vowel length mark	1183C 7 SOYOMBO LETTER GALIG SMALL A
11809	
Consonants	Consonant conjunct
1180A ¶ SOYOMBO LETTER GA	1183D ₹ SOYOMBO LETTER KSSA
 Used for Sanskrit ka 	Vowel signs for Sanskrit
1180B ¶ SOYOMBO LETTER KA	1183E ൂ SOYOMBO SIGN VOCALIC R
 Used for Sanskrit kha 	1183F g SOYOMBO SIGN VOCALIC L
1180C ¶ SOYOMBO LETTER NGA	
1180D A SOYOMBO LETTER JA	Signs for Sanskrit
• Used for Sanskrit ca 1180E ◀ SOYOMBO LETTER CA	11840 O SOYOMBO SIGN ANUSVARA
Used for Sanskrit cha	11841
1180F ▼ SOYOMBO LETTER NYA	Gemination mark
11810 즉 SOYOMBO LETTER DA	11842 SOYOMBO GEMINATION MARK
 Used for Sanskrit ta 	
11811 🖣 SOYOMBO LETTER TA	Prefixed letters
• Used for Sanskrit tha	11843 O SOYOMBO PREFIXED LETTER LA
11812 A SOYOMBO LETTER NA	11844 ' SOYOMBO PREFIXED LETTER SHA 11845 ' SOYOMBO PREFIXED LETTER SA
11813 ◀ SOYOMBO LETTER BA • Used for Sanskrit pa	11846 O SOYOMBO PREFIXED LETTER RA
11814 SOYOMBO LETTER PA	
• Used for Sanskrit pha	Subjoined letters
11815 SOYOMBO LETTER MA	11847 Q SOYOMBO SUBJOINED LETTER GA
11816 S SOYOMBO LETTER YA	11848 SOYOMBO SUBJOINED LETTER KA
11817 SOYOMBO LETTER RA	11849 🛕 SOYOMBO SUBJOINED LETTER NGA 1184A 🌼 SOYOMBO SUBJOINED LETTER JA
11818 SOYOMBO LETTER VA	1184A SOYOMBO SUBJOINED LETTER JA 1184B SOYOMBO SUBJOINED LETTER CA
11819 ₹ SOYOMBO LETTER LA 1181A ₹ SOYOMBO LETTER SHA	1184C O SOYOMBO SUBJOINED LETTER NYA
1181B N SOYOMBO LETTER SA	1184D ♥ SOYOMBO SUBJOINED LETTER DA
1181C FI SOYOMBO LETTER HA	
	1184E SOYOMBO SUBJOINED LETTER TA 1184F SOYOMBO SUBJOINED LETTER NA 11850 SOYOMBO SUBJOINED LETTER BA
Final consonant signs	11851 SOYOMBO SUBJOINED LETTER BA
1181D Q SOYOMBO CONSONANT SIGN G 1181E Q SOYOMBO CONSONANT SIGN K	11851 © SOYOMBO SUBJOINED LETTER PA 11852 © SOYOMBO SUBJOINED LETTER MA 11853 © SOYOMBO SUBJOINED LETTER YA
1181E Q SOYOMBO CONSONANT SIGN K 1181F Q SOYOMBO CONSONANT SIGN NG	11853 🏅 SOYOMBO SUBJOINED LETTER YA
11820 SOYOMBO CONSONANT SIGN D	11854 SOYOMBO SUBJOINED LETTER RA
11821 🝦 SOYOMBO CONSONANT SIGN N	11855 Ö SOYOMBO SUBJOINED LETTER VA 11856 Ö SOYOMBO SUBJOINED LETTER LA
11822 Ç SOYOMBO CONSONANT SIGN B	
11823 SOYOMBO CONSONANT SIGN M	11857 SOYOMBO SUBJOINED LETTER SHA 11858 SOYOMBO SUBJOINED LETTER SA
11824 Q SOYOMBO CONSONANT SIGN R 11825 Q SOYOMBO CONSONANT SIGN L	11859 🧘 SOYOMBO SUBJOINED LETTER HA
11826 S SOYOMBO CONSONANT SIGN E	1185A ੵ SOYOMBO SUBJOINED LETTER GALIG GA
11827 9 SOYOMBO CONSONANT SIGN S	1185B SOYOMBO SUBJOINED LETTER GALIG GHA
11828 SOYOMBO CONSONANT SIGN ANG	1185C SOYOMBO SUBJOINED LETTER GALIG JA 1185D SOYOMBO SUBJOINED LETTER GALIG JHA
Additional consonants for Sanskrit	1185E SOYOMBO SUBJOINED LETTER GALIG TTA
	1185F SOYOMBO SUBJOINED LETTER GALIG TTHA
11829 ◀ SOYOMBO LETTER GALIG GA 1182A ◀ SOYOMBO LETTER GALIG GHA	11860 SOYOMBO SUBJOINED LETTER GALIG DDA
1182B A SOYOMBO LETTER GALIG JA	11861 SOYOMBO SUBJOINED LETTER GALIG DDHA
1182C 최 SOYOMBO LETTER GALIG JHA	11862 SOYOMBO SUBJOINED LETTER GALIG NNA
1182D ¶ SOYOMBO LETTER GALIG TTA	110/4
1182E SOYOMBO LETTER GALIG TTHA	11865 SOYOMBO SUBJOINED LETTER GALIG BA
1182F I SOYOMBO LETTER GALIG DDA	11864 SOYOMBO SUBJOINED LETTER GALIG DHA 11865 SOYOMBO SUBJOINED LETTER GALIG BA 11866 SOYOMBO SUBJOINED LETTER GALIG BHA
	B.

Figure 2: Proposed names list for Soyombo (continued in Figure 3).

Date: 28-Oct-2011

11867 SOYOMBO SUBJOINED LETTER GALIG SSA
11868 SOYOMBO SUBJOINED LETTER GALIG TSA
11869 SOYOMBO SUBJOINED LETTER GALIG TSHA
1186A SOYOMBO SUBJOINED LETTER GALIG DZA
1186B SOYOMBO SUBJOINED LETTER GALIG ZHA
1186C SOYOMBO SUBJOINED LETTER GALIG ZA
1186D SOYOMBO SUBJOINED LETTER GALIG SMALL A

Punctuation

Head marks

11871 SOYOMBO HEAD MARK
11872 SOYOMBO TERMINAL MARK

Symbol

11873 SOYOMBO SYMBOL SVAYAMBHU
• national symbol of Mongolia

Figure 3: Proposed names list for Soyombo (continued from Figure 2).

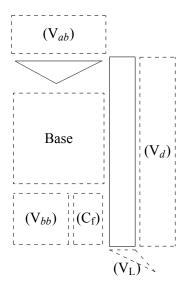


Figure 4: Structure of a Mongolian syllable in Soyombo (adapted from Corff 1996).

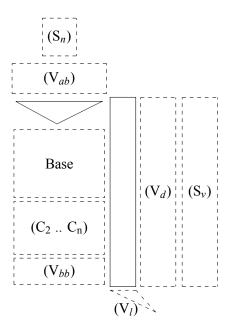


Figure 5: Structure of a Sanskrit syllable in Soyombo.



Figure 6: Photograph of a chart of the Soyombo script (from "Histoire du livre" 2010).

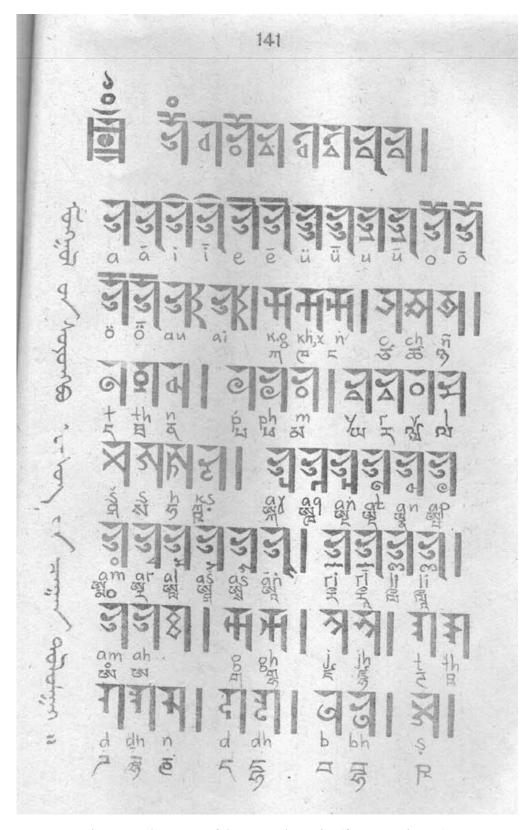


Figure 7: Characters of the Soyombo script (from Kapaj 2002).

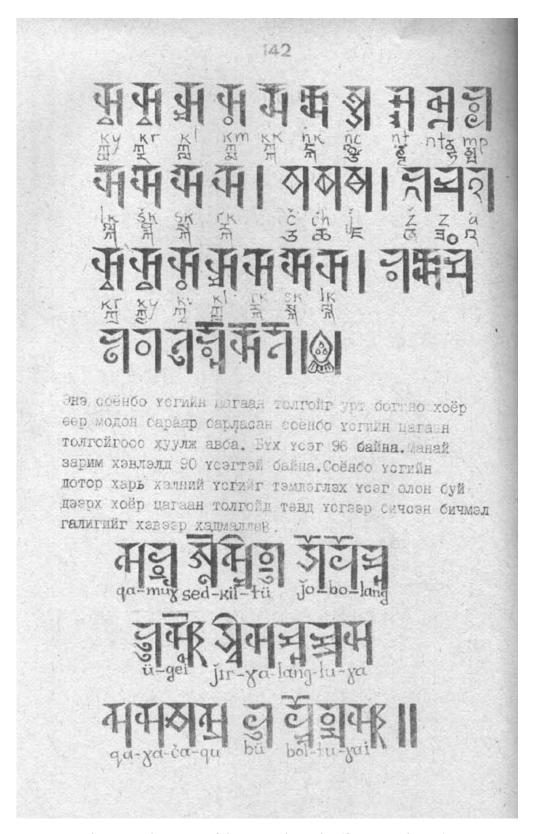


Figure 8: Characters of the Soyombo script (from Kapaj 2002).



Figure 9: Traditional chart of Soyombo (from Shagdarsürüng 2001: 152).



Хуудас эхлэсний тэмдэг. Номд бярга буюу эгчим (№)-тэй адил үүрэгтэй. Соёмбо бичгийн энэ тэмдэг монголчуудын хувьд тусгаар тогтнолын бэлгэдэл болжээ.

Figure 10: Description of Soyombo vowels (from Shagdarsürüng 2001: 133).

3

tl. A; **tc.** mong., tib., sans. a Энэ хэлбэр нь a эгшигийн бие даасан (IF) буюу үгийн (зарим тохиолдолд уеийн) эхинд тохиолдоно. Жишээлбэл:



tl. A-li₁; tc. a-li.

(Ø) tl. a_o; tc. a. Энэ нь а эгшигийн гол хэлбэр (МF) буюу үгийн (зарим тохиолдолд үеийн) дунд болоод адагт тохиолдох нууц буюу тэг (Ø) хэлбэр. Жишээлбэл:



tl. Ga_o-Ja_or; tc. ga-jar

1.a. **tl.** ā; **tc**. ā. Урт а эгшигийн бие даасан буюу (IF) хэлбэр. Жишээ нь:



tl. A-Da₀r; tc. ā-dar.

7

tl. \bar{a}_o ; tc. \bar{a} . Энэ нь угтаа эгшигийн уртын тэмдэг. а эгшигтэй тохиолдвол, тэрхүү а эгшиг нь нууц буюу "тэг" (Ø) хэлбэртэй байдаг. Жишээлбэл:



tl. Kā₀n;

tc. kān.

2.

tl. l; tc. mong, tib., sans: i. Энэ нь і эгшигийн (IF) хэлбэр. Жишээлбэл:



tl. I-Te-Gel; tc. i-te-gel.



 $tl.\ i_{i_{1}}$; $tc.\ i_{2}$. Энэ нь і эгшигийн гол хэлбэрийн нэг буюу (М F_{1}) хэлбэр. Зевхен гийгүүлэгч (С)-ийн дараа буюу (С + i_{1}) нехцелд л тохиолдоно. Жишээлбэл:



tl. A-Ci₁-tu₁; tc. a-či-tu.

 $tl.\ i_2;\ tc.\ i.\$ Энэ нь і эгшигийн гол хэлбэрийн нэг буюу (MF $_2$) хэлбэр. Зөвхөн эгшиг (V)-ийн дараа буюу (V + i_2) нөхцөлд тохиолдолдоно. Жишээлбэл:



tl. Bol-Tu₁-Ga₀i₂; tc. bol-tu-gai.

2.a. 😴

tl. l; tc. mong., sans: ī. Урт і эгшигийн бие даасан (IF) хэлбэр. Жишээлбэл:



tl. Ī-Me; tc. ī-me.

Figure 11: Description of Soyombo vowels (from Shagdarsürüng 2001: 134).

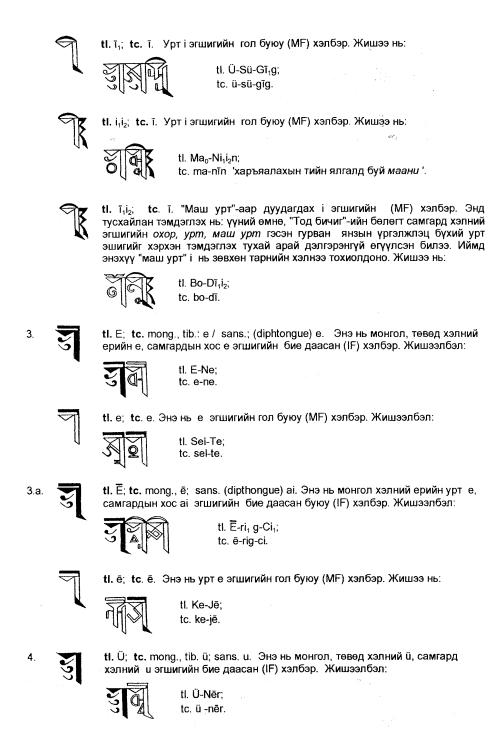


Figure 12: Description of Soyombo vowels (from Shagdarsürüng 2001: 135).

tl. Ün-Dü-Sü: tc. ün-dü-sü. tl. \tilde{U} ; tc. mong. \tilde{u} , sans. u. Монгол хэлний урт \tilde{u} , самгардын урт u эгшигийн бие даасан буюу (IF) хэлбэр. Жишээ нь: tl. Ür; tc. ür. tl. ü; tc. ü. Монгол хэлний урт ü, самгардын урт ū эгшигийн гол буюу (MF) хэлбэр. Жишээ нь: tl. Ü-Jü-Lüg-Sen; tc. ü-jü-lüg-sen. tl. U; tc. mong. u. Монгол хэлний u эгшигийн бие даасан буюу (IF) хэлбэр. жишээ нь: tl. U-sun; tc. u-sun. Энэ нь и эгшигийн гол буюу (МF) хэлбэрийн нэг. Зөвхөн гийгүүлэгчийн дараа буюу (C + u_i) нөхцөлд тохиолдоно. Жишээ нь: tl. Ya₀-Bu₁-Da₀l; tc. ya-bu-dal tl. u₂; tc. u. Энэ нь u эгшигийн гол буюу (MF) хэлбэрийн нэг. Зөвхөн эгшигийн дараа буюу (V + u₂) нөхцөлд тохиолдоно. Жишээ нь: tl. Jo-Ri₁u₂l-Ji₁u₂; tc. jo-riul-ju. tl. Ya₀-Ga₀u₂l; tc. ya-gaul 'шалтгаан, үндэс '15 $ti.~ar{u};~tc.~mong.,~sans.~ar{u}.~$ Энэ нь монгол болон самгардын урт $ar{u}$ эгшигийн

tl. ü; tc. ü. Энэ нь ü эгшигийн гол буюу (MF) хэлбэр. Жишээ нь:

бие даасан буюу (IF) хэлбэр. Жишээ нь:

Figure 13: Description of Soyombo vowels (from Shagdarsürüng 2001: 136).

¹⁵ Соёмбо бичгийн "Итеэл"-д төвөд хэлний tib. rgyu гэдэг үгийг уа-gaul (<Mo. *yaγaγul) хэмээн орчуулсан нь буй. Энэ үгийг Ойродын Зая Бандидын орчуулсан тод "Итеэл"-д ündüsün гэж, буриад бичмэлд siltaγan хэмээн орчуулжээ. Энэ тухай G. Kara, Un texte mongol en écriture soyombo, - AOH, Tomus. IX, Fasc. 1, Budapest, 1959, pp. 1-38 болон Chagdarsureng, Sur quelques traductions mongoles du "Natha", - Studia Mongolica, Tom. 2 (10), Fasc. 11, Ulan-Bator, 1975, p. 183 (N. 86) -д үзмүү.

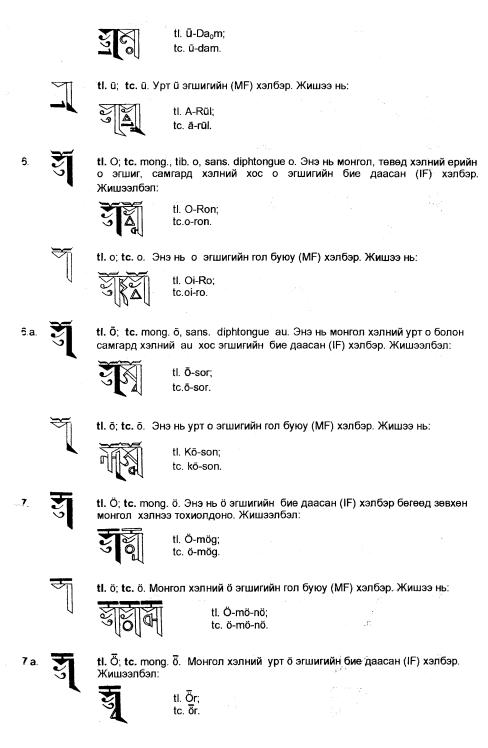


Figure 14: Description of Soyombo vowels (from Shagdarsürüng 2001: 137).

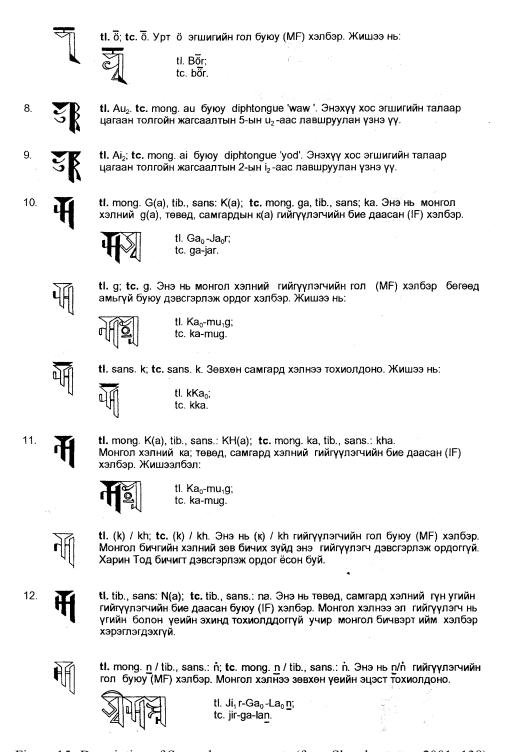


Figure 15: Description of Soyombo consonants (from Shagdarsürüng 2001: 138).

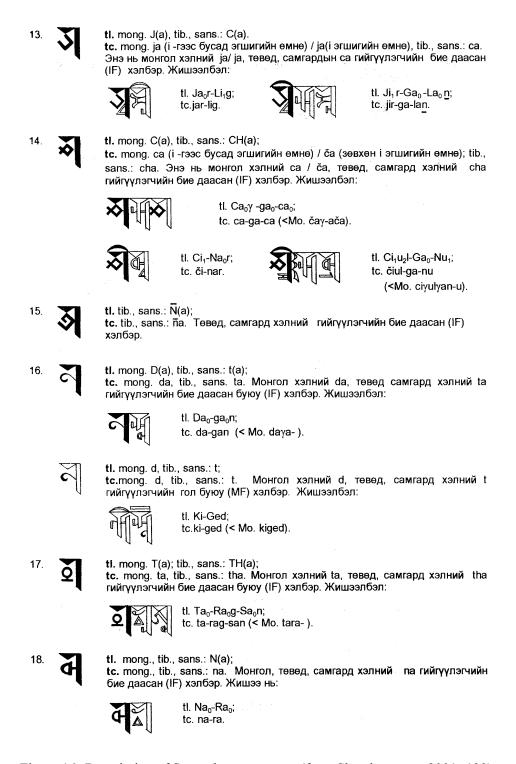


Figure 16: Description of Soyombo consonants (from Shagdarsürüng 2001: 139).

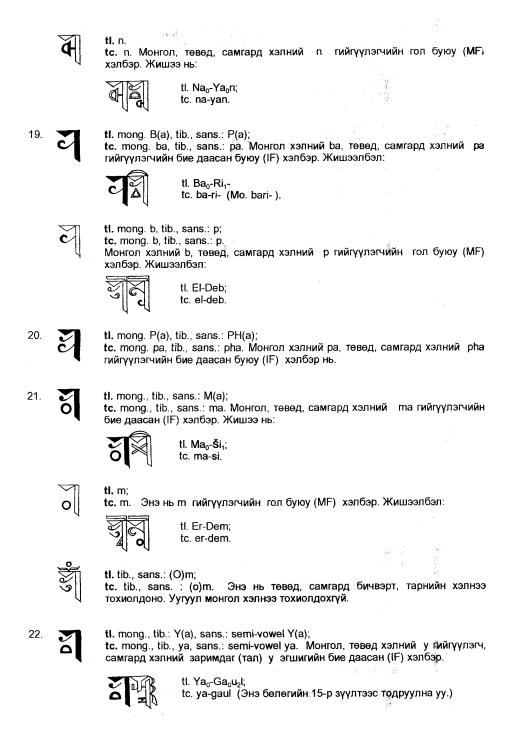


Figure 17: Description of Soyombo consonants (from Shagdarsürüng 2001: 140).

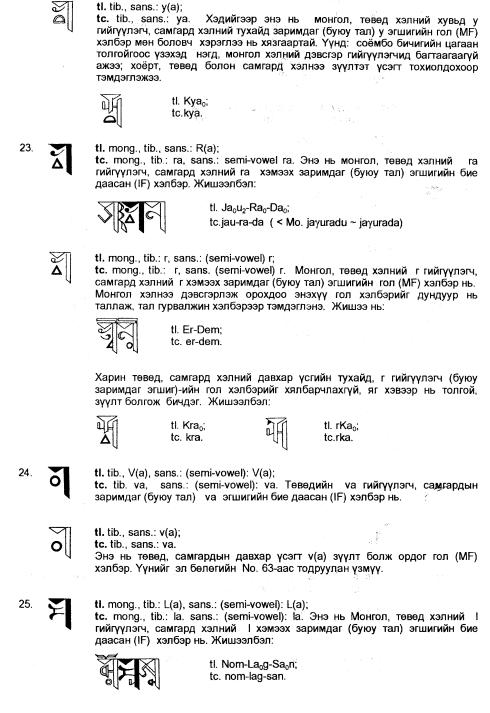


Figure 18: Description of Soyombo consonants (from Shagdarsürüng 2001: 141).

tl. mong., tib.: I, sans.: (semi-vowel): I; tc. mong., tib.: I, sans.: (semi-vowel): I. Энэ нь монгол, төвөд хэлний 1 гийгүүлэгч, самгардын заримдаг (буюу тал) 1 эгшигийн гол (МF) хэлбэр. Жишээлбэл: ti. Bel-ge; tc. bel-ge. Харин энэхүү (МF) хэлбэр нь төвөд, самгардийн давхар үсэгт толгой болж орохдоо ганц хөндлөн зураас болж ордог. Тухайлбал: tl. IKao; tc. lka. tl. mong. Š(a), tib., sans. Ç(a) / Ś(a). tc. mong. ša, tib., sans.: ça / śa. Энэ нь монгол хэлний ša, төвөд, самгард хэлний ça буюу śа гийгүүлэгийн бие даасан (IF) хэлбэр. Жишээлбэл: tl. Teg-še; tc. teg-še. tc. mong. š. Энэ нь š гийгүүлэгчийн монгол хэлэнд тохиолдох гол буюу (MF) хэлбэр. Соёмбо бичигийн цагаан толгойноос үзэхэд үүнийг монгол хэлний дэвсгэр үсэгт багтаажээ (Тод бичигт ч бас ийм буй). Тухайлбал: tl. Aš; tc. aš. Самгард хэлнээ, давхар үсэгт энэ гийгүүлэгчийг толгой болгож залгахдаа (МF) хэлбэрийг таллаж арай хялбарчлан тэмдэглэдэг бөлгөө. tl. çKa_o; tc. çka. tl. mong., tib., sans. S(a); tc. mong., tib., sans. sa. Sa гийгүүлэгчийн бие даасан (IF) хэлбэр. tl. Sa₀-Ra₀; tc. sa-ra.

tl. s; tc. s. Энэ нь sa гийгүүлэгчийн гол буюу (MF) хэлбэр. Монгол хэлний тухайд дэвсгэрлэж орох хэлбэр гэсэн үг. Жишээлбэл:

tl. Te-güs; tc. te-güs.

Төвөд, самгард хэлний давхар үсэгт за толгойг бичихдээ бяцхан гурвалжин болгож доорхи байдлаар тэмдэглэнэ.

Figure 19: Description of Soyombo consonants (from Shagdarsürüng 2001: 142).

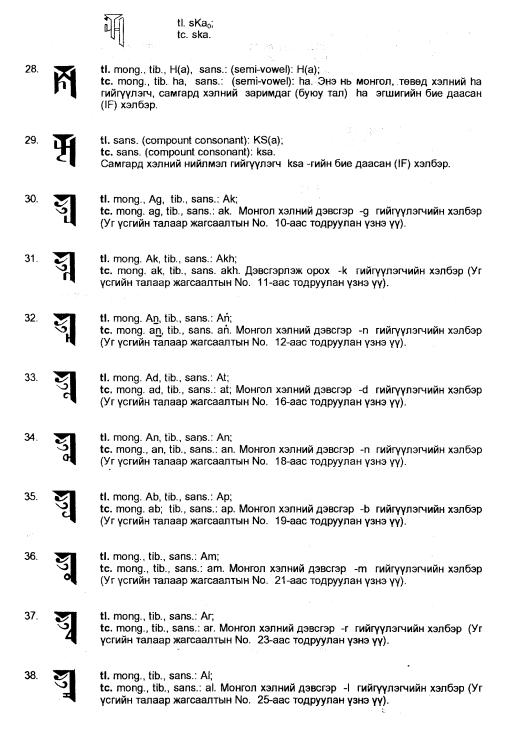


Figure 20: Description of Soyombo consonants (from Shagdarsurung 2001: 143).

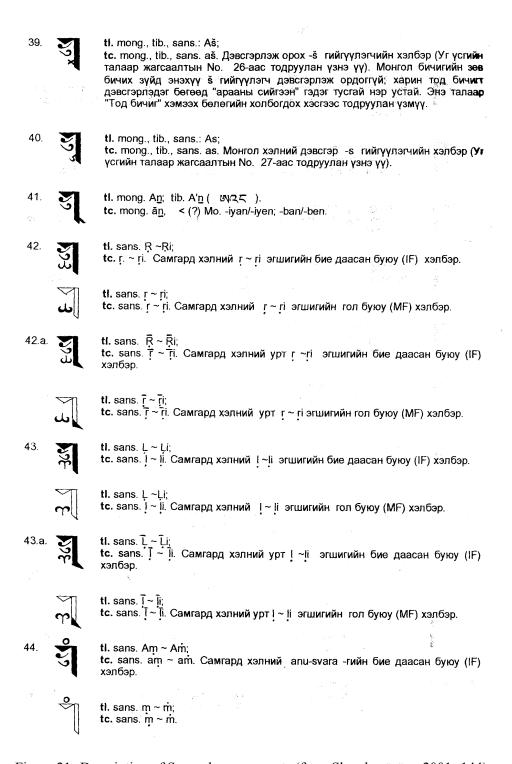


Figure 21: Description of Soyombo consonants (from Shagdarsürüng 2001: 144).

Самгард хэлний anu-svara -гийн гол буюу (MF) хэлбэр. Жишээлбэл: tl. Sva₀-ya₀m-bhü; tc. sva-yam-bhü. tl. sans. AH; tc. sans. ah. Самгард хэлний vi-sarga гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. tl. tib., sans.: G(a); tc. tib., sans. ga. Төвөд, самгард хэлний ga гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. ti. sans. GH(a); tc. sans. gha. Самгард хэлний gha гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. tl. tib., sans.: J(a); tc. tib., sans.: ja. Самгард хэлний ja гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. 49. tl. sans. JH(a); tc. sans. jha. Самгард хэлний jha гийгүүлэгчийн бие даасан буюу (IF) 50. tl. sans. T(a); tc. sans. ta. Самгард хэлний ta гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. 51. tl. sans. TH(a); tc. sans. tha. Самгард хэлний tha гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. 52. tl. sans. D(a); tc. sans. da. Самгард хэлний da гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. 53. ti. sans. DH(a): tc. sans. dha. Самгард хэлний dha гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. tl. sans. N(a); tc. sans. na. Самгард хэлний па гийгүүлэгчийн бие даасан буюу (IF) хэлбэр. 55. tl. tib., sans.: D(a); tc. tib., sans.. da. Төвөд, самгард хэлний da гийгүүлэгчийн бие даасан буюу (IF) хэлбэр.

Figure 22: Description of Soyombo consonants (from Shagdarsürüng 2001: 145).

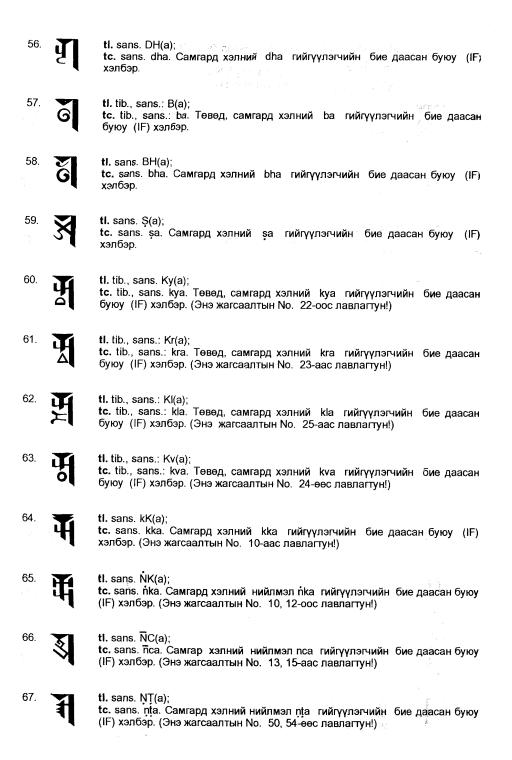


Figure 23: Description of Soyombo consonants (from Shagdarsürüng 2001: 146).

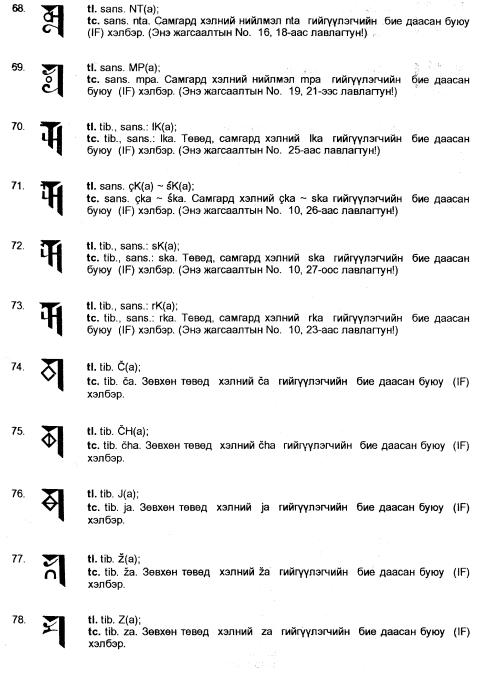


Figure 24: Description of Soyombo consonants (from Shagdarsürüng 2001: 147).

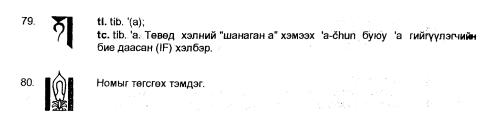


Figure 25: Description of Soyombo consonants (from Shagdarsurung 2001: 148).



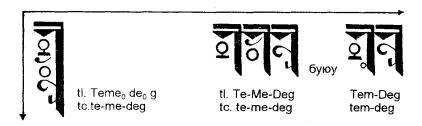
Figure 26: Character elements used in Soyombo characters (from Shagdarsürüng 2001: 153).



Энэхүү тамгын дардас дээрхи бичвэрийг латин галигаар сэргээн үзүүлбэл доорхи мэт болно.

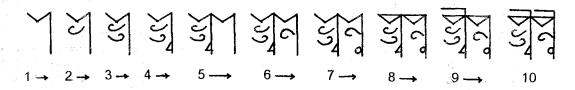
I. naya - selelII. kör - yenu jür - kaIII. grva - chanun temedeg

Үүнээс харахул, "босоо" соёмбоор бичихэд монгол хэлний эгшиг зохицох ёсыг ашиглаж өгүүлэх эрхтэний ойр төстэй оролцоогоор нь нэгэн толгойд бөлөглөж бичдэг зарчим байсан нь харагдана. Тухайлбал: So. temedeg (<Мо. temdeg) гэдэг үгийг "босоо* болон "хэвтээ"-гээр хэрхэн бичих байдлыг харьцуулан үзүүлэе.



Соёмбо бичгээр хичээнгүйлэн дармаллаж бичихийн хажуугаар ер энгийн байдлаар татлан бичдэг бөгөөд аливаа бичиг үсэгт хэрхэн бичдэг *Үсэгийн дурэм* байдагчилан соёмбо бичигт ч тусгайлан баримтлах тогтсон журам буй. Үүнийг "er-dem" гэдэг үгээр жишээлэн үзүүлсүгэй.

er-dem:



Соёмбоор буй монгол хэлний дурсгалын зүйлийг хэлний талаас авч үзэхүл соёмбо бичгээр монгол үгийг бичихдээ тухайн цагийн монгол хэлний аман дуудалгын байдал

Figure 27: Method of writing Soyombo vertically (from Shagdarsürüng 2001: 150). The specimen at top is a seal containing vertical text in which the syllables of words are written as conjuncts.

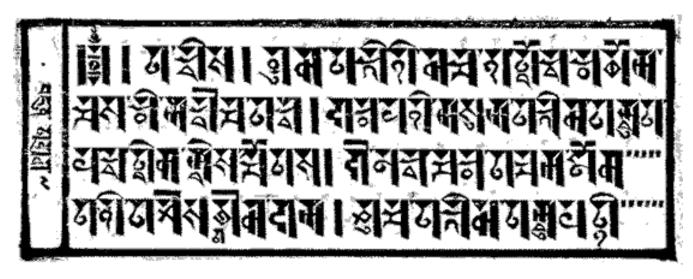


Figure 28: A folio from a Soyombo manuscript (from Mongolwiki 2008).

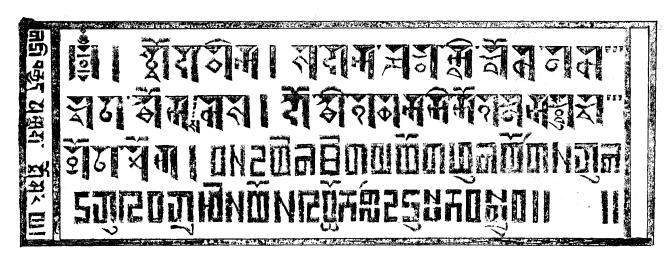


Figure 29: A manuscript containing text in Soyombo and Mongolian Square (from Shagdarsürüng 2001: 173).

🕯 | निज्ञ जनिज्ञ सुन्।

૱૾ૢૢૢૢૢૢૢૢૢૢૢૢૹ૽૽૱૱ૡઌૣઌ૱૱ૹૢૣૢૢૢૼઌ૱૱ૡૡૢઌ૱ઌ૽ૣૼૢૺ ૱ૢૢૢૢૢૢૢૢૢૢૢઌ૽ૹ૽૽૱ઌ૽૽૱ઌ૽ૺૢ

। | ব্যাদ্র স্থানীর ক্রিয়ার দক্ষ্ণের স্বাদ্র স্থানীর নদিন। ব্যাদ্র প্রদান ব্যাদ্র স্থানীর সহা দ্রাদ্র দ্রাদ্র স্থানার নদিন। ব্যাদ্র নিটি সূত্র ব্যাদ্র ক্রিয় ক্রিয় ব্যাদ্র স্থানার নিদ্যা। ব্যাদ্র প্রতার দিয়ের ব্যাদ্র স্থানার ব্যাদ্র স্থানার

त्सु अञ्च अञ्च अप्यति त्सु प्र अस्य अनिश्च युवि। त्र अशेष्ट्र अप्यति अस्य अस्य अस्य अस्य युवि।

প্রসন্ম র্যুদ্ধ স্থাদ ধ্র দ্বিগ্র প্র অগ্ন মুদ্ধ প্র প্রাথম মুদ্ধ প্রগ্রাম্ব স্থাদ্ধ স্থাদ প্র শ্লম্ব প্র স্থাদ্ধ স্থাদ্ধ স্থাদ্ধ স্থাদ্ধ স্থাদ্ধ স্থাদ্ধ স্থাদ্ধ স্থাদ্ধ স্থাদ্ধ

Figure 30: Poem for the Green Tara typeset in a digitized Soyombo font (from Wikimedia 2009b).



Figure 31: Xylograph (block print) of a book cover in Soyombo, Mongolian Square, Mongolian, and Cyrillic (from Boldsaikhan 2005: 330). The title is Sanskrit written in Soyombo: *Mongolian svayambhu-jyoti-varṇa-lipiḥ*. The Mongolian Square represents Tibetan, the Mongolian represents Mongolian, and the Cyrillic represents Modern (Khalkha) Mongolian.



Figure 32: Folios of a Soyombo manuscript (from Boldsaikhan 2005: 378).



Figure 33: Folios of a Soyombo manuscript (from Boldsaikhan 2005: 378).

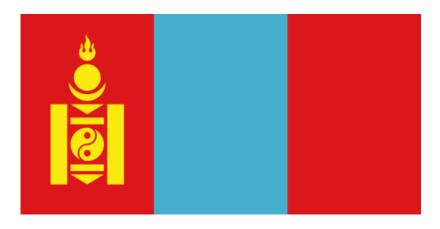


Figure 34: The flag of Mongolia showing the SVAYAMBHU symbol (from Wikimedia 2008).



Figure 35: The coat of arms of Mongolia showing the SVAYAMBHU symbol (from Wikimedia 2009a).



Figure 36: An imprint of the SVAYAMBHU symbol in the center on the recto face of a 1,000 Mongolian tögrög (tugrik) note (from Wikimedia 2006).

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.

^	$\Lambda \alpha$	m	ın	101	rat	IVΩ

1. Title: Proposal to Encode the Soyombo Script in ISO/IEC						
2. Requester's name: Script Encoding Initiative (SEI) / Anshuman Pandey (pandey)	@umich.edu)					
Requester type (Member body/Liaison/Individual contribution): Liaison contribution: Liaison contribution: 2011-10-	10ution -25					
5. Requester's reference (if applicable):	-20					
6. Choose one of the following:						
This is a complete proposal:	Yes					
(or) More information will be provided later:						
B. Technical – General						
Choose one of the following:						
a. This proposal is for a new script (set of characters):	Yes					
Proposed name of script: b. The proposal is for addition of character(s) to an existing block: Soyombo						
Name of the existing block:						
2. Number of characters in proposal:	113					
Proposed category (select one from below - see section 2.2 of P&P document):						
A-Contemporary B.1-Specialized (small collection) B.2-Specialized (large	collection) X					
C-Major extinct D-Attested extinct E-Minor extinct	,					
F-Archaic Hieroglyphic or Ideographic G-Obscure or questionable us	age 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 pu	uhlishing the					
standard?	iblishing the					
Anshuman Pandey						
b. Identify the party granting a license for use of the font by the editors (include address, e	e-mail, ftp-site, etc.):					
Anshuman Pandey (pandey @umich.edu)						
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 of proposed characters attached? Yes	er sources)					
or proposed characters attached? 7. Special encoding issues:	· · · · · · · · · · · · · · · · · · ·					
Does the proposal address other aspects of character data processing (if applicable) such	h as input.					
presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose inform						
8. Additional Information:						
Submitters are invited to provide any additional information about Properties of the proposed Cl						
that will assist in correct understanding of and correct linguistic processing of the proposed cha						
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 Unicod						
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.	de Technical Reports					
for information needed for consideration by the Unicode Technical Committee for inclusion in the	e 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

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? György Kara <gkara@indiana.edu></gkara@indiana.edu>	
If YES, available relevant documents: See 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: Size of user community is unknown. Script is used in print and digital public	cations.
4. The context of use for the proposed characters (type of use; common or rare)	Common
Reference: The script is used for writing Mongolian, Sanskrit, and Tibeta	
5. Are the proposed characters in current use by the user community?	Yes
If YES, where? Reference: Mongolia. See text of proposal for details	
6. After giving due considerations to the principles in the P&P document must the proposed characteristics.	
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 scatte	red)? 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: Combining vowel and final-consonant sign	าร
Is a list of composite sequences and their corresponding glyph images (graphic symbols) pro-	vided?
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:	