

**To : WG2 and Unicode Technical Committee**

**Title: Summary of Ad Hoc Meeting on Two Historical Scripts from Mongolia (Tokyo, Japan)**

**From: Deborah Anderson, SEI, UC Berkeley**

**Date: 17 October 2015**




The meeting on two historical scripts of Mongolia took place on 16-17 October 2015 at the Hiroshima University office in Tokyo.

Attendees included: Peter Constable (chair), Deborah Anderson (meeting organizer), Byambaa Ragchaa, Agata Bareja-Starzyńska, Takashi Matsukawa, Demberel Sukhbaatar, Otgonbaatar Rinchinsambuu, Sukhbaatar Bolorchimeg, Biligsaikhan Batjargal, Michel Suignard, Anshuman Pandey, Toshiya Suzuki (local organizer), and Taichi Kawabata.



Attendees of the meeting agreed to the points listed below.

(Note: The reference to “slide” below refers to slides by Dr. R. Otgonbaatar posted at: <http://www.unicode.org/L2/L2015/15248-soyombo-cmt.pdf>)

### Zanabazar Square

- The ad hoc did not have consensus to recommend a change of name for the Zanabazar Square script.
- The ad hoc did not have consensus to recommend any changes related to characters   and ; there were differences of opinion on the preferred names for these characters and on whether an additional character should be added in this set.
- Make the following changes to the proposal document for Zanabazar Square (L2/14-024):
  - Add a paragraph in section §4.4.3. that says when VOWEL SIGN AI occurs with the letters TSA and TSHA it can have a loop shape
  - Add a footnote to §4.7.3. stating that NYA and NNA may occur in Mongolian text
  - Add a comment in §4.12 (Punctuation) that 0F1C TIBETAN SIGN RDEL DKAR GSUM and 0F1A TIBETAN SIGN RDEL DKAR GCIG are used in Zanabazar Square
  - Add 0F1A TIBETAN SIGN RDEL DKAR GCIG and 0F1C TIBETAN SIGN RDEL DKAR GSUM to a new ScriptExtensions section, identifying these two characters as being used in Soyombo and Zanabazar Square, as well as Tibetan
  - Change the representative glyph for 11A33 ZANABAZAR SQUARE FINAL CONSONANT MARK from a circle to diamond shape
  - In §4.4.3, add a variant for VOWEL LENGTH MARK, showing a diagonal slanting down from middle of the dotted circle
  - Add a note in the code chart that 11A29 ZANABAZAR SQUARE LETTER -A is also used for aang
- Investigate whether a mark of repetition (“X”) is used in Zanabazar Square (see slide 30, where it appears in Soyombo)

## Soyombo

- The repertoire as shown in L2/15-004 with revisions noted below can progress on to the next ballot in ISO.
- Make the following name changes to the Soyombo proposal (L2/15-04):
  - 11A9B SOYOMBO HEAD MARK WITH TRIPLE FLAME **CHANGE TO:** SOYOMBO HEAD MARK WITH MOON AND SUN AND TRIPLE FLAME, with annotation “National symbol of Mongolia”
  - 11A9C SOYOMBO HEAD MARK WITH SINGLE FLAME **CHANGE TO:** SOYOMBO HEAD MARK WITH MOON AND SUN AND FLAME, with annotation mentioning there are variants attested in the sources
  - 11A9D SOYOMBO HEAD MARK WITH CANDRABINDU **CHANGE TO:** SOYOMBO HEAD MARK WITH MOON AND SUN
  - Correct the names in the code chart for 11A84..11A87 to:
    - 11A84 SOYOMBO CLUSTER-INITIAL LETTER RA
    - 11A85 SOYOMBO CLUSTER-INITIAL LETTER LA
    - 11A86 SOYOMBO CLUSTER-INITIAL LETTER SHA
    - 11A87 SOYOMBO CLUSTER-INITIAL LETTER SA
  - Add a footnote to §4.4.2 (Phonetic values of consonant letters) stating that NYA, NNA, CA, CHA, JA and ZA may occur in Mongolian text.
  - Remove TERMINAL MARK-3, change the representative glyph of TERMINAL MARK-2 to resemble a flower, and add an annotation “cintamani=candamani”
  - Add a note in the code chart that 11A93 SOYOMBO FINAL CONSONANT SIGN -A is also used for aang.
  - Add a comment in §4.8 (Punctuation) that 0F1C TIBETAN SIGN RDEL DKAR GSUM and 0F1A TIBETAN SIGN RDEL DKAR GCIG are used in Soyombo
  - Reserve two spaces in the code chart after SOYOMBO LETTER KSSA and one space after SOYOMBO DOUBLE SHAD for future additions, moving code points down as necessary.
- Additional characters for Soyombo will be proposed in a later document by Anshuman Pandey, with information and attestation to be provided by Dr. R. Otgonbaatar. These include:
  - jihvamuliya and upadhmaniya (which could be located in the code chart after SOYOMBO LETTER KSSA) (see slide 23)
  - an elongation mark (pluta, which could be located in the code chart after DOUBLE SHAD) (see slide 23)
- Dr. R. Otgonbaatar will provide several examples of the following to Anshuman Pandey for further study and to verify their eligibility for encoding:
  - snake section mark (cf. 0F08 TIBETAN MARK SBRUL SHAD) (see slide 28)  

  - e vam (see slide 29)  

  - a mark of repetition (“X”), which may also appear in Zanabazar Square (see slide 30)

- insertion mark (small circle) and dots (see slide 31)



- shad with tooth (see slide 32)



- shad-like symbol with macron (how often does it occur after OM?) (see slide 34)



- Dr. R. Otgonbaatar will send images of glyphic variants of CLUSTER-INITIAL SA, RA and LA as shown on slide 35 to be documented in the proposal.

The organizers and attendees would like to thank the Luce Foundation which provided funding that made this meeting possible. We also wish to convey our thanks to the Toshiko Kimura, Toshiya Suzuki, Hiroshima University Tokyo Office, and the Unicode Consortium. Work on the two historic scripts of Mongolia is also supported through the Universal Scripts project, funded through the National Endowment for the Humanities grant PR-50205-15.

(Photo of attendees)



# Revised code chart and names list for Zanabazar Square

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October 20, 2015

## 1 Introduction


The code chart and names list for Zanabazar Square (N4541 L2/14-024) have been revised as a result of a meeting with experts of Mongolian scripts in Tokyo, October 15–16, 2015. Changes are as follows:


1. Changed glyph for FINAL CONSONANT MARK from circle to diamond shape.
2. Included "Mongolian aang" as an annotation for LETTER -A.

















































































The following points were discussed informally between various participants, but they were not formally documented:

1. Add annotation for VOWEL LENGTH MARK regarding its additional usage for representing Tibetan 'a-chung.
2. Change the glyph for CLUSTER INITIAL RA from  $\text{ᠷ}$  to  $\text{ᠷ}$  in order to indicate its special rendering properties. This aligns with the use of a dashed box around glyphs for cluster-initial letters in the Soyombo block.
3. Allocate spaces for the future encoding of  $\text{ᠠ}$  \*ALTERNATE VOWEL SIGN AI and  $\text{ᠠ}$  \*ALTERNATE VOWEL SIGN AU. These two characters are required because contextual alternates for the diphthongs *ai* and *au* are based upon their glyph shapes.
4. Open new spaces at U+11A43 and U+11A45 for the future encoding of  $\text{ᠰ}$  \*INITIAL DOUBLE HEAD MARK and  $\text{ᠰ}$  \*CLOSING DOUBLE HEAD MARK. The proposal specifies that these are glyphic variants of INITIAL HEAD MARK and CLOSING HEAD MARK, respectively. They should be encoded as distinctive characters.
5. Consider renaming the *candrabindu* ornament signs to align with the revised names of these elements in the Soyombo head marks. However, it is more sensible to retain *candrabindu* in the Zanabazar Square names (as is also the case for Soyombo).

Current name	Revised name
SIGN CANDRABINDU WITH ORNAMENT	SIGN CANDRABINDU WITH FLAME
SIGN CANDRA WITH ORNAMENT	SIGN CANDRA WITH FLAME

6. Move SIGN ANUSVARA and SIGN VISARGA to after VOWEL LENGTH MARK, under a new subheading ‘Vowel modifiers’. This has the benefit of keeping all vowel-related signs together.
7. Move the LONG TSHEG to after TSHEG.
8. Change the control character used for producing conjunct stacks. Reintroduce the  \*SUBJOINER proposed in earlier versions (see N4471 L2/13-198). Rename SIGN VIRAMA to SIGN HALANTA and remove its conjunct-forming function. The SIGN HALANTA will only represent silencing of the inherent vowel.

Zanabazar Square does not have a native *halanta*. Apart from the FINAL CONSONANT MARK there is no means for indicating a bare consonant. The *halanta*, however, appears in a few sources and it was necessary to encode it. Earlier versions of the encoding model relied upon a  SUBJOINER for controlling conjunct formation. When the *halanta* was identified, it seemed practical to follow the Indic model and to unite its function with that of the SUBJOINER into the single character VIRAMA. As a result, the SUBJOINER was removed from the final proposal. It now seems more prudent to revert to the previous model so that it aligns with Soyombo.

	11A0	11A1	11A2	11A3	11A4
0	 11A00	 11A10	 11A20	 11A30	 11A40
1	 11A01	 11A11	 11A21	 11A31	 11A41
2	 11A02	 11A12	 11A22	 11A32	 11A42
3	 11A03	 11A13	 11A23	 11A33	 11A43
4	 11A04	 11A14	 11A24	 11A34	 11A44
5	 11A05	 11A15	 11A25	 11A35	
6	 11A06	 11A16	 11A26	 11A36	
7	 11A07	 11A17	 11A27	 11A37	
8	 11A08	 11A18	 11A28	 11A38	
9	 11A09	 11A19	 11A29	 11A39	
A	 11A0A	 11A1A	 11A2A	 11A3A	
B	 11A0B	 11A1B	 11A2B	 11A3B	
C	 11A0C	 11A1C	 11A2C	 11A3C	
D	 11A0D	 11A1D	 11A2D	 11A3D	
E	 11A0E	 11A1E	 11A2E	 11A3E	
F	 11A0F	 11A1F	 11A2F	 11A3F	

*Known in Mongolian as Xewtee Dörböljin Bicig or the Horizontal Square Script. Also called Zanabazarin Dörböljin Useg or Zanabazar Square Script.*

### Vowel letter

11A00 𐎀 ZANABAZAR SQUARE LETTER A

### Vowel signs

11A01 𐎁 ZANABAZAR SQUARE VOWEL SIGN I  
 11A02 𐎂 ZANABAZAR SQUARE VOWEL SIGN UE  
 11A03 𐎃 ZANABAZAR SQUARE VOWEL SIGN U  
 11A04 𐎄 ZANABAZAR SQUARE VOWEL SIGN E  
 11A05 𐎅 ZANABAZAR SQUARE VOWEL SIGN OE  
 11A06 𐎆 ZANABAZAR SQUARE VOWEL SIGN O  
 11A07 𐎇 ZANABAZAR SQUARE VOWEL SIGN AI  
 • also represents secondary vowel i  
 11A08 𐎈 ZANABAZAR SQUARE VOWEL SIGN AU  
 • also represents secondary vowel u

### Reversed vowel sign

11A09 𐎉 ZANABAZAR SQUARE REVERSED VOWEL SIGN I  
 • used for Sanskrit vocalic sounds

### Vowel length mark

11A0A 𐎊 ZANABAZAR SQUARE VOWEL LENGTH MARK

### Consonants

11A0B 𐎋 ZANABAZAR SQUARE LETTER KA  
 • Mongolian ga, gamma  
 11A0C 𐎌 ZANABAZAR SQUARE LETTER KHA  
 • Mongolian ka, qa, xa  
 11A0D 𐎍 ZANABAZAR SQUARE LETTER GA  
 11A0E 𐎎 ZANABAZAR SQUARE LETTER GHA  
 11A0F 𐎏 ZANABAZAR SQUARE LETTER NGA  
 11A10 𐎐 ZANABAZAR SQUARE LETTER CA  
 11A11 𐎑 ZANABAZAR SQUARE LETTER CHA  
 11A12 𐎒 ZANABAZAR SQUARE LETTER JA  
 11A13 𐎓 ZANABAZAR SQUARE LETTER NYA  
 11A14 𐎔 ZANABAZAR SQUARE LETTER TTA  
 11A15 𐎕 ZANABAZAR SQUARE LETTER TTHA  
 11A16 𐎖 ZANABAZAR SQUARE LETTER DDA  
 11A17 𐎗 ZANABAZAR SQUARE LETTER DDHA  
 11A18 𐎘 ZANABAZAR SQUARE LETTER NNA  
 11A19 𐎙 ZANABAZAR SQUARE LETTER TA  
 • Mongolian da  
 11A1A 𐎚 ZANABAZAR SQUARE LETTER THA  
 • Mongolian ta  
 11A1B 𐎛 ZANABAZAR SQUARE LETTER DA  
 11A1C 𐎜 ZANABAZAR SQUARE LETTER DHA  
 11A1D 𐎝 ZANABAZAR SQUARE LETTER NA  
 11A1E 𐎞 ZANABAZAR SQUARE LETTER PA  
 • Mongolian ba  
 11A1F 𐎟 ZANABAZAR SQUARE LETTER PHA  
 • Mongolian pa  
 11A20 𐎠 ZANABAZAR SQUARE LETTER BA  
 • Mongolian va  
 • also used instead of non-initial 11A2D 𐎠 in conjuncts  
 11A21 𐎡 ZANABAZAR SQUARE LETTER BHA  
 11A22 𐎢 ZANABAZAR SQUARE LETTER MA  
 11A23 𐎣 ZANABAZAR SQUARE LETTER TSA  
 • Mongolian ja, Sanskrit ca  
 11A24 𐎤 ZANABAZAR SQUARE LETTER TSHA  
 • Mongolian ca, Sanskrit cha

11A25 𐎥 ZANABAZAR SQUARE LETTER DZA  
 • Sanskrit ja  
 11A26 𐎦 ZANABAZAR SQUARE LETTER DZHA  
 • Sanskrit jha  
 11A27 𐎧 ZANABAZAR SQUARE LETTER ZHA  
 11A28 𐎨 ZANABAZAR SQUARE LETTER ZA  
 11A29 𐎩 ZANABAZAR SQUARE LETTER -A  
 • Mongolian aang  
 • Tibetan a-chung  
 → 0F60 𐎩 tibetan letter -a

11A2A 𐎪 ZANABAZAR SQUARE LETTER YA  
 11A2B 𐎫 ZANABAZAR SQUARE LETTER RA  
 11A2C 𐎬 ZANABAZAR SQUARE LETTER LA  
 11A2D 𐎭 ZANABAZAR SQUARE LETTER VA  
 11A2E 𐎮 ZANABAZAR SQUARE LETTER SHA  
 11A2F 𐎯 ZANABAZAR SQUARE LETTER SSA  
 • created by reversal of 11A2E 𐎮  
 11A30 𐎰 ZANABAZAR SQUARE LETTER SA  
 11A31 𐎱 ZANABAZAR SQUARE LETTER HA  
 11A32 𐎲 ZANABAZAR SQUARE LETTER KSSA

### Final consonant mark

11A33 𐎳 ZANABAZAR SQUARE FINAL CONSONANT MARK  
 • used for marking a syllable-final consonant in Mongolian  
 • indicates a syllabic boundary in Mongolian

### Virama

11A34 𐎴 ZANABAZAR SQUARE SIGN VIRAMA  
 → 0F84 𐎴 tibetan mark halanta  
 • indicates a bare consonant in Sanskrit and Tibetan  
 • used for producing subjoining conjuncts

### Candra ornaments

11A35 𐎵 ZANABAZAR SQUARE SIGN CANDRABINDU  
 • indicates nasalization  
 → 0F83 𐎵 tibetan sign sna ldan  
 → 1880 𐎵 mongolian letter ali gali anusvara one  
 11A36 𐎶 ZANABAZAR SQUARE SIGN CANDRABINDU WITH ORNAMENT  
 • used primarily with 11A3F 𐎶  
 11A37 𐎷 ZANABAZAR SQUARE SIGN CANDRA WITH ORNAMENT  
 • used primarily with 11A3F 𐎶  
 → 0F82 𐎷 tibetan sign nyi zla naa da

### Vowel modifiers

11A38 𐎸 ZANABAZAR SQUARE SIGN ANUSVARA  
 • indicates nasalization  
 → 0F7E 𐎸 tibetan sign rjes su nga ro  
 11A39 𐎹 ZANABAZAR SQUARE SIGN VISARGA  
 • indicates post-vocalic aspiration  
 → 0F7F 𐎹 tibetan sign rnam bead

**Cluster-initial consonant**

- 11A3A 𑠎 ZANABAZAR SQUARE LETTER CLUSTER  
INITIAL RA
- initial form of 11A2B 𑠎 in Tibetan conjuncts

**Cluster-final consonants**

- 11A3B 𑠏 ZANABAZAR SQUARE LETTER CLUSTER  
FINAL YA
- final form of 11A2A 𑠏 in Tibetan conjuncts
- 11A3C 𑠐 ZANABAZAR SQUARE LETTER CLUSTER  
FINAL RA
- final form of 11A2B 𑠎 in Tibetan conjuncts
- 11A3D 𑠑 ZANABAZAR SQUARE LETTER CLUSTER  
FINAL LA
- final form of 11A2C 𑠑 in Tibetan conjuncts
- 11A3E 𑠒 ZANABAZAR SQUARE LETTER CLUSTER  
FINAL VA
- final form of 11A20 𑠒 in Tibetan conjuncts

**Head marks**

- 11A3F 𑠓 ZANABAZAR SQUARE INITIAL HEAD MARK
- 0FD3 𑠓 tibetan mark initial brda rmying yig mgo mdun ma
  - 0F04 𑠓 tibetan mark initial yig mgo mdun ma
  - 1800 𑠓 mongolian birga
- 11A40 𑠔 ZANABAZAR SQUARE CLOSING HEAD MARK
- 0FD4 𑠔 tibetan mark closing brda rmying yig mgo sgab ma
  - 0F05 𑠔 tibetan mark closing yig mgo sgab ma

**Punctuation**

- 11A41 𑠕 ZANABAZAR SQUARE TSHEG
- 0F0B 𑠕 tibetan mark intersyllabic tsheg
- 11A42 𑠖 ZANABAZAR SQUARE SHAD
- 0F0D 𑠖 tibetan mark shad
- 11A43 𑠗 ZANABAZAR SQUARE DOUBLE SHAD
- 0F0E 𑠗 tibetan mark nyis shad
- 11A44 𑠘 ZANABAZAR SQUARE LONG TSHEG
- 0F14 𑠘 tibetan mark gter tsheg



# Revised code chart and names list for Soyombo

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October 20, 2015

## 1 Introduction

The code chart and names list for Soyombo (N4655 L2/15-004) have been revised as a result of a meeting with experts of Mongolian scripts in Tokyo, October 15–16, 2015. Changes are as follows:

































































































1. Renamed the following characters (prefixed with ‘SOYOMBO’):

Current name	Revised name
CLUSTER-INITIAL LETTER LA	CLUSTER-INITIAL LETTER RA
CLUSTER-INITIAL LETTER SHA	CLUSTER-INITIAL LETTER LA
CLUSTER-INITIAL LETTER SA	CLUSTER-INITIAL LETTER SHA
CLUSTER-INITIAL LETTER RA	CLUSTER-INITIAL LETTER SA
HEAD MARK WITH TRIPLE FLAME	HEAD MARK WITH MOON AND SUN AND TRIPLE FLAME
HEAD MARK WITH SINGLE FLAME	HEAD MARK WITH MOON AND SUN AND FLAME
HEAD MARK WITH CANDRABINDU	HEAD MARK WITH MOON AND SUN

2. Removed TERMINAL MARK-3 and reanalyzed its glyph as a variant of SOYOMBO TERMINAL MARK-2. A new representative glyph will be designed for TERMINAL MARK-2, which will have the features of a flower.
3. Opened the spaces at U+11A84 and U+11A85 for the future encoding of ☒ \*JIHVAMULIYA and ☑ \*UPADHMANIYA for Soyombo. Characters currently at U+11A84 and after have been shifted.
4. Opened the space at U+11A9D for the future encoding of ☛ \*PALUTA for Soyombo. Characters currently at this position and after have been shifted.


Although the following points were not raised during the formal meeting, they were discussed with attendees informally and should be considered:








































- Move VOWEL SIGN VOCALIC R and VOWEL SIGN VOCALIC L to in between VOWEL SIGN U and VOWEL SIGN E. This ordering of vowel signs follows the Brahmi pattern more closely and is attested in sources showing consonant-vowel combinations.
- Move SIGN ANUSVARA and SIGN VISARGA to after VOWEL LENGTH MARK. This has the benefit of keeping all vowel-related signs together. Currently the SIGN ANUSVARA and SIGN VISARGA are allocated in the midst of characters related to consonants.
- Retain ‘candrabindu’ in the names for the head marks: ‘head mark with candrabindu and triple flame’, ‘head mark with candrabindu and flame’, ‘head mark with candrabindu’. The use of ‘candrabindu’ aligns with names for characters in related scripts, such as Zanabazar Square, that contain similar elements in their representative glyphs. The descriptors “moon and sun ...” in the proposed name revisions can be preserved as annotations.
- Possibly reanalyze the head marks as base + combining sign instead of as atomic characters. The result would be 1 head-mark base and 3 combining ‘ornament’ signs. This aligns with the model for head marks in Zanabazar Square.

	11A5	11A6	11A7	11A8	11A9	11AA
0	 11A50	 11A60	 11A70	 11A80	 11A90	 11AA0
1	 11A51	 11A61	 11A71	 11A81	 11A91	 11AA1
2	 11A52	 11A62	 11A72	 11A82	 11A92	 11AA2
3	 11A53	 11A63	 11A73	 11A83	 11A93	
4	 11A54	 11A64	 11A74		 11A94	
5	 11A55	 11A65	 11A75		 11A95	
6	 11A56	 11A66	 11A76	 11A86	 11A96	
7	 11A57	 11A67	 11A77	 11A87	 11A97	
8	 11A58	 11A68	 11A78	 11A88	 11A98	
9	 11A59	 11A69	 11A79	 11A89	 11A99	
A	 11A5A	 11A6A	 11A7A	 11A8A	 11A9A	
B	 11A5B	 11A6B	 11A7B	 11A8B	 11A9B	
C	 11A5C	 11A6C	 11A7C	 11A8C	 11A9C	
D	 11A5D	 11A6D	 11A7D	 11A8D		
E	 11A5E	 11A6E	 11A7E	 11A8E	 11A9E	
F	 11A5F	 11A6F	 11A7F	 11A8F	 11A9F	




**Vowel carrier**11A50  SOYOMBO LETTER A**Vowel signs**

11A51  SOYOMBO VOWEL SIGN I  
 11A52  SOYOMBO VOWEL SIGN UE  
 11A53  SOYOMBO VOWEL SIGN U  
 11A54  SOYOMBO VOWEL SIGN E  
 11A55  SOYOMBO VOWEL SIGN O  
 11A56  SOYOMBO VOWEL SIGN OE  
 11A57  SOYOMBO VOWEL SIGN AI  
 11A58  SOYOMBO VOWEL SIGN AU  
 11A59  SOYOMBO VOWEL SIGN VOCALIC R  
 11A5A  SOYOMBO VOWEL SIGN VOCALIC L














**Vowel length mark**11A5B  SOYOMBO VOWEL LENGTH MARK**Consonants**

11A5C  SOYOMBO LETTER KA  
 • Mongolian g  
 11A5D  SOYOMBO LETTER KHA  
 • Mongolian k  
 11A5E  SOYOMBO LETTER GA  
 11A5F  SOYOMBO LETTER GHA  
 11A60  SOYOMBO LETTER NGA  
 11A61  SOYOMBO LETTER CA  
 • Mongolian j  
 11A62  SOYOMBO LETTER CHA  
 • Mongolian c  
 11A63  SOYOMBO LETTER JA  
 11A64  SOYOMBO LETTER JHA  
 11A65  SOYOMBO LETTER NYA  
 11A66  SOYOMBO LETTER TTA  
 11A67  SOYOMBO LETTER TTHA  
 11A68  SOYOMBO LETTER DDA  
 11A69  SOYOMBO LETTER DDHA  
 11A6A  SOYOMBO LETTER NNA  
 11A6B  SOYOMBO LETTER TA  
 • Mongolian d  
 11A6C  SOYOMBO LETTER THA  
 • Mongolian t  
 11A6D  SOYOMBO LETTER DA  
 11A6E  SOYOMBO LETTER DHA  
 11A6F  SOYOMBO LETTER NA  
 11A70  SOYOMBO LETTER PA  
 • Mongolian b  
 11A71  SOYOMBO LETTER PHA  
 • Mongolian p  
 11A72  SOYOMBO LETTER BA  
 11A73  SOYOMBO LETTER BHA  
 11A74  SOYOMBO LETTER MA  
 11A75  SOYOMBO LETTER TSA  
 11A76  SOYOMBO LETTER TSHA  
 11A77  SOYOMBO LETTER DZA  
 11A78  SOYOMBO LETTER ZHA  
 11A79  SOYOMBO LETTER ZA  
 11A7A  SOYOMBO LETTER -A  
 11A7B  SOYOMBO LETTER YA  
 11A7C  SOYOMBO LETTER RA  
 11A7D  SOYOMBO LETTER LA  
 11A7E  SOYOMBO LETTER VA  
 11A7F  SOYOMBO LETTER SHA  
 11A80  SOYOMBO LETTER SSA  
 11A81  SOYOMBO LETTER SA  
 11A82  SOYOMBO LETTER HA



11A83  SOYOMBO LETTER KSSA**Cluster-initial letters**


11A86  SOYOMBO CLUSTER-INITIAL LETTER RA  
 11A87  SOYOMBO CLUSTER-INITIAL LETTER LA  
 11A88  SOYOMBO CLUSTER-INITIAL LETTER SHA  
 11A89  SOYOMBO CLUSTER-INITIAL LETTER SA


**Final consonant signs**

11A8A  SOYOMBO FINAL CONSONANT SIGN G  
 11A8B  SOYOMBO FINAL CONSONANT SIGN K  
 11A8C  SOYOMBO FINAL CONSONANT SIGN NG  
 11A8D  SOYOMBO FINAL CONSONANT SIGN D  
 11A8E  SOYOMBO FINAL CONSONANT SIGN N  
 11A8F  SOYOMBO FINAL CONSONANT SIGN B  
 11A90  SOYOMBO FINAL CONSONANT SIGN M  
 11A91  SOYOMBO FINAL CONSONANT SIGN R  
 11A92  SOYOMBO FINAL CONSONANT SIGN L  
 11A93  SOYOMBO FINAL CONSONANT SIGN SH  
 11A94  SOYOMBO FINAL CONSONANT SIGN S  
 11A95  SOYOMBO FINAL CONSONANT SIGN -A  
 • Mongolian aang  
 • Tibetan a-chung  
 → 0F60  tibetan letter -a




**Various signs**

11A96  SOYOMBO SIGN ANUSVARA  
 11A97  SOYOMBO SIGN VISARGA




**Gemination mark**11A98  SOYOMBO GEMINATION MARK**Subjoiner**

11A99  SOYOMBO SUBJOINER  
 • used for producing conjunct stacks



**Punctuation**

11A9A  SOYOMBO TSHEG  
 11A9B  SOYOMBO SHAD  
 11A9C  SOYOMBO DOUBLE SHAD

**Head marks**

11A9E  SOYOMBO HEAD MARK WITH MOON AND SUN AND TRIPLE FLAME  
 • used for the national symbol of Mongolia  
 11A9F  SOYOMBO HEAD MARK WITH MOON AND SUN AND FLAME  
 11AA0  SOYOMBO HEAD MARK WITH MOON AND SUN

**Terminal Marks**

11AA1  SOYOMBO TERMINAL MARK-1  
 11AA2  SOYOMBO TERMINAL MARK-2  
 = cintamani, candamani

**Хэнд : WG2 ажлын хэсэг болон Юникодын Техникийн Хороонд**

**Гарчиг: Монголын хоёр түүхэн бичгийн талаарх төлөвлөгөөт бус уулзалтын үр дүнгийн тухай (Токио хот, Япон улс)**

**Хэнээс: Дэбэрон Андэрсон, SEI (Бичиг үсгийг кодчилох санаачилга), Калифорнын Их Сургууль, Бэрклэй**

**Огноо: 2015 оны 10-р сарын 17 өдөр**

Монголын хоёр түүхэн бичгийн талаарх уулзалт 2015 оны 10-р сарын 16-17-ний өдрүүдэд Хирошима Их Сургуулийн Токио дахь салбарт болсон.

**Оролцогчид:** Питэр Констабл (хурлын дарга) Дэбэрон Андэрсон (хурлыг зохион байгуулагч), Рагчаагийн Бямбаа, Агата Барэжа-Старзинска, Такаши Мацүкава, Сүхбаатарын Дэмбэрэл, Ринчинсамбуугийн Отгонбаатар, Сүхбаатарын Болорчимэг, Батжаргалын Билигсайхан, Мишэл Сүйгнард, , Ашуман Пандэй, Тошияа Сүзүки (Япон дахь зохион байгуулагч), Таичи Кавата.

Уулзалтанд оролцогчид доорх зүйлсийг хэлэлцэн шийдвэрлэлээ.

(Жич: Др. Отгонбаатарын саналуудыг <http://www.unicode.org/L2/L2015/15248-soyombo-cmt.pdf> хаягаас татаж авах боломжтой)

#### **Занабазарын дөрвөлжин бичиг**

- Занабазарын дөрвөлжин бичиг гэх нэршилийг өөрчлүүлэх санал оруулах талаар энэхүү төлөвлөгөөт бус уулзалтанд оролцогчид санал нэгдсэнгүй, зөвшилцөлд хүрч чадсангүй.
- **□**, **▣** болон **▤** үсгүүдийн кодчилолд өөрчлөлт оруулах талаар мөн санал нэгдсэнгүй, зөвшилцөлд хүрч чадсангүй. Талууд уг үсгүүдийн нэршил, мөн нэмэлт үсэг хэлбэрээр жагсаалтад оруулах талаар өөр өөр саналтай байв.
- Занабазарын дөрвөлжин бичгийн кодчилолын төсөлд (L2/14-024) дараах өөрчлөлтүүдийг оруулахаар шийдвэрлэлээ. Үүнд:
  - §4.4.3. бүлэгт, хэрвээ VOWEL SIGN AI нь Ц/TSA/ болон TSHA үсгүүдтэй хамт орвол навчин дугуйтай байна гэсэн тайлбар нэмэх.
  - НЯ/NYA/ болон НН/NNA/ үсгүүд нь Монгол сурвалжуудад хэрэглэгдэж болно гэсэн нэмэлт зүйлт тайлбарыг §4.7.3 бүлэгт оруулах.
  - 0F1C TIBETAN SIGN RDEL DKAR GSUM ба 0F1A TIBETAN SIGN RDEL DKAR GCIG үсгүүд “Занабазарын дөрвөлжин бичиг”-т хэрэглэгддэг гэсэн тайлбарыг §4.12 (Punctuation) бүлэгт оруулах.
  - 0F1A TIBETAN SIGN RDEL DKAR GCIG ба 0F1C TIBETAN SIGN RDEL DKAR GSUM үсгүүдийг “Script Extensions” хэмээх шинэ бүлэгт нэмж оруулан, энэ хоёр үсэг нь Соёмбо бичиг, “Занабазарын дөрвөлжин бичиг” мөн Төвд бичгэнд хэрэглэгдэж байсан талаар гэрчилсэн тайлбар бичих.
  - 11A33 ZANABAZAR SQUARE FINAL CONSONANT MARK үсгийн төлөөлүүлсэн дүрсийн дугуй хэлбэрийг очир (ромбо) хэлбэрээр солих.
  - Бүлэг §4.4.3-т VOWEL LENGTH MARK-ын хувилбар болох “Удаат тэмдэг” дүрсийг нэмэх.
  - 11A29 ZANABAZAR SQUARE LETTER -A нь мөн “aang”-д ордог гэсэн тайлбарыг кодын хүснэгтэд оруулах.
- Дахилт, давталтын тэмдэглэгээ “X” “Занабазарын дөрвөлжин бичиг”-т хэрэглэгдсэн эсэх талаар дахин нягталж шалгах хэрэгтэй (Соёмбо бичигт хэрэглэгдсэн байдлаар нь 30-р хуудаснаас харна уу)

## Соёмбо бичиг

- L2/15-004 төсөлд байгаа үсэг тэмдэгтүүдийн жагсаалтад доорх нэмэлт өөрчлөлтүүдийг оруулан ОУСБ-ын санал авах дараагын хуралд оруулахаар төслийг урагшлуулах боломжтой.
- Соёмбо бичгийг кодчилох төсөлд (L2/15-04) нэршлүүдийг доорх байдлаар өөрчлөлт оруулах. Үүнд:
  - 11A9B “SOYOMBO HEAD MARK WITH TRIPLE FLAME”-г “SOYOMBO HEAD MARK WITH MOON AND SUN AND TRIPLE FLAME” гэж өөрчлөн, “Монгол улсын үндэсний бэлгэ тэмдэг” гэсэн тайлбар зүйлт оруулах.  
11A9C “SOYOMBO HEAD MARK WITH SINGLE FLAME”-г “SOYOMBO HEAD MARK WITH MOON AND SUN AND FLAME” гэж өөрчлөн, эх сурвалжаар баталгаажсан хувилбарууд гэсэн зүйлт тайлбар оруулах.  
11A9D SOYOMBO HEAD MARK WITH CANDRABINDU”-г “SOYOMBO HEAD MARK WITH MOON AND SUN” гэж өөрчлөх.
  - Кодын хүснэгтийн 11A84–11A87-д буй нэршлийн алдааг доорх байдлаар засах. Үүнд:  
11A84 SOYOMBO CLUSTER-INITIAL LETTER RA  
11A85 SOYOMBO CLUSTER-INITIAL LETTER LA  
11A86 SOYOMBO CLUSTER-INITIAL LETTER SHA  
11A87 SOYOMBO CLUSTER-INITIAL LETTER SA
  - НЯ/NYA/, НН/NNA/, Ц/CA/, Ч/CHA/, Ж/JA/ болон З/ZA/ үсгүүд нь Монгол сурвалжуудад хэрэглэгдэж болно гэсэн нэмэлт зүйлт тайлбарыг §4.4.2 (Phonetic values of consonant letters) бүлэгт оруулах.
  - TERMINAL MARK-3-г устган, TERMINAL MARK-2-н төлөөлүүлсэн дүрсийг Чандмань тамгатайгаар солин, “cintamani=candamani” гэсэн зүйлт тэмдэглэгээ нэмэх.
  - 11A93 SOYOMBO FINAL CONSONANT SIGN -A нь мөн “aang”-д ордог гэсэн тайлбарыг кодын хүснэгтэд оруулах.
  - 0F1C TIBETAN SIGN RDEL DKAR GSUM ба 0F1A TIBETAN SIGN RDEL DKAR GCIG үсгүүд нь Соёмбо бичигт хэрэглэгддэг гэсэн тайлбар §4.8 (Punctuation) бүлэгт нэмэх.
  - Кодын хүснэгтэд SOYOMBO LETTER KSSA үсгийн дараа хоёр тэмдэгтийн зай, SOYOMBO DOUBLE SHAD үсгийн дараа нэг тэмдэгтийн зайг тус тус ирээдүйн нэмэлтэд зориулан нөөцөлж, шаардлагатай үед кодын дарааллыг хойш нь шилжүүлэх.
- Ашуман Пандэй нь Соёмбо бичгийн доорх нэмэлт үсгүүдийг агуулсан төслийн бичиг баримтийг Др. Отгонбаатарын хангаж өгөх мэдээлэл болон нотолгоонд үндэслэн боловсруулна. Үүнд:
  - jihvamuliya болон upadhmaniya (кодын хүснэгтэд SOYOMBO LETTER KSSA-ын дараа байрлуулж болох юм) (23-р хуудас)
  - уртасгаж сунгах тэмдэг /an elongation mark/ (pluta, кодын хүснэгтэд DOUBLE SHAD /давхар шад/-ын дараа байрлуулж болох юм) (23-р хуудас)
- Доорх үсэг тэмдэгтүүдийг кодчилох шаардлагатай эсэх талаар нэмэлт судалгаа хийхийн тулд хэрэг болох хэд хэдэн жишээг Др. Отгонбаатар Ашуман Пандэйд өгнө. Үүнд:
  - могой шад - бүлэг, сэдэв тусгаарлагч тэмдэг (0F08 TIBETAN MARK SBRUL SHAD-той харьцуулах) (28-р хуудас)



- e vam (29-р хуудас)



- дахилт, давталтын тэмдэглэгээ “Х”. Энэ тэмдэг бас “Занабазарын дөрвөлжин бичиг”-т гарч ирж магадгүй (30-р хуудас)
- оруулга тэмдэгтүүд: дусал тиг, цуваа цэг (31-р хуудас)



- шүдтэй шад (32-р хуудас)



- Чандмань бадам шад (ОМ дараа бичигдэх тохиолдол аль зэрэг олон бэ?) (34-р хуудас)



- Др. Отгонбаатарын саналын 35-р хуудсанд үзүүлсэн CLUSTER-INITIAL SA, RA болон LA үсгүүдийн эхэнд орох хэлбэрийн хувилбаруудыг кодчилох төслийн бичиг баримтанд оруулахын тулд уг хэлбэрүүдийг агуулсан эх сурвалжийн зургийг Др. Отгонбаатар илгээнэ.

Эцэст нь Тошико Кимура, Тошияа Сүзүки, Хирошима Их Сургуулийн Токио дахь салбар, Лүсэ Сан (Luce Foundation) болон Юникод Консерцумт талархлаа илэрхийлье.

Оролцогчид:



## Занабазарын дөрвөлжин бичгийн засаж өөрчилсөн кодын хүснэгт болон нэршлийн жагсаалт

Ашуман Пандэй  
Хэл шинжлэлийн тэнхим  
Калифорнын Их Сургууль, Бэрклэй  
Бэрклэй, Калифорни, АНУ  
anshuman.pandey@berkeley.edu







2015 оны 10-р сарын 20

### 1 Танилцуулга

2015 оны 10-р сарын 15–16 өдрүүдэд Токио хотноо Монголын шинжээч, судлаач нартай хийсэн уулзалтын үр дүнд Занабазарын дөрвөлжин бичгийн кодын хүснэгт болон нэршлийн жагсаалтад (N4541 L2/14-024) дараах өөрчлөлт шинэчлэлт орохоор боллоо. Үүнд:

1. FINAL CONSONANT MARK-ын төлөөлүүлсэн дүрсийн дугуй хэлбэрийг очир (ромбо) хэлбэрээр сольсон.
2. LETTER -А нь Монгол “aang” гэсэн тайлбарыг оруулсан.







































































Доорх асуудлууд оролцогчдын хооронд албан бусаар хэлэлцэгдэж байсан боловч албан ёсоор баримтжуулагдаагүй болно. Үүнд:

1. Удаат тэмдэг /VOWEL LENGTH MARK/ нь бас Төвд 'a- chung-г илэрхийлэхэд хэрэглэгдэж байсан гэсэн зүйлт тайлбар нэмэх.
2. CLUSTER INITIAL RA-ийн онцлог хувирах нөхцлийг нь харгалзан түүний төлөөлүүлсэн зурлага -г -аар солих. Ингэснээр Соёмбо бичгийн кодын хүснэгтэнд байгаа шиг үеийн эхний /cluster-initial/ үсгүүдийг тасархай зураас бүхий дөрвөлжин дотор дүрсэлсэн хэлбэртэй дүүцэх юм.
3. ALTERNATE VOWEL SIGN AI  болон ALTERNATE VOWEL SIGN AU -г кодлохоор зай гаргах. Яагаад гэвэл, үгийн утгаас хамааран хувирах ай, ау хос эгшгийн хувилбар хэлбэр нь дээрх хоёр үсгийн хэлбэр дээр суурилсан тул энэ хоёр үсэг зайлшгүй шаардлагатай.
4. INITIAL DOUBLE HEAD MARK  болон CLOSING DOUBLE HEAD MARK -г кодлохоор U+11A43 ба U+11A45-д тус тус нэг нэг код нөөцлөх. Кодчилох төсөлд энэ хоёр үсгийг INITIAL HEAD MARK ба CLOSING HEAD MARK-ийн хувилбар дүрс гэж үзсэн байна. Харин эдгээр нь тусдаа үсгүүд гэж кодчилогдох ёстой.
5. Нар сартай сүлдний *candrabindu* гэх нэршлийг Соёмбо тэмдгийн нэршилтэй адилаар солих эсэх. Гэвч Занабазарын дөрвөлжин үсгийн нэршилд *candrabindu* хэрэглэх нь илүү зохистой байж магад (Соёмбод ч мөн адил).



Одоогын нэршил	Өөрчилсөн нэршил
SIGN CANDRABINDU WITH ORNAMENT	SIGN CANDRABINDU WITH
FLAME SIGN CANDRA WITH ORNAMENT	SIGN CANDRA WITH FLAME

6. SIGN ANUSVARA болон SIGN VISARGA-г VOWEL LENGTH MARK-ын дараа оруулан, ‘эгшиг хувиргагч’ гэсэн шинэ дэд гарчиг өгөх. Ингэснээр эгшигтэй холбогдолтой бүх тэмдэгтүүд нэг дор байрлах давуу талтай юм.
7. LONG TSHEG-г TSHEG-ын ард байрлуулах.
8. Нийлмэл үсэг бүтээхэд хэрэглэгдэх хяналтын тусгай тэмдэгтийг солих эсэх. Өмнөх хувилбарт (N4471 L2/13-198-г харна уу) ашигласан SUBJOINER-оо эргээд хэрэглэх. SIGN VIRAMA-г SIGN HALANTA гэж өөрчлөн түүний нийлмэл үг бүтээхэд хэрэглэгддэг үүргийг нь болиулах. SIGN HALANTA нь зөвхөн эгшиггүй гийгүүлэгч гаргахын тулд ардаа эгшигтэй үеийн эгшигийг балархай болгоход хэрэглэнэ.
9. Занабазарын дөрвөлжин бичигт цаанаасаа зориулагдсан *halanta* байдаггүй. Үгийн адагт дэвсгэрлэсэн гийгүүлэгчийг FINAL CONSONANT MARK аар дүрслэхээс өөрөөр бусад дан гийгүүлэгчийг илэрхийлэх арга алга. Гэтэл *halanta* зарим нэгэн сурвалжуудад тэмдэглэгдсэн байдаг тул кодчилох шаардлагатай. Анх санал болгож байсан кодчиллын загваруудад SUBJOINER ашиглан нийлмэл үсэг үүсгэж байсан. Харин зарим сурвалжид *halanta* хэрэглэгдсэн гэдэг нь тодорхой болсноор, SUBJOINER-ын гүйцэтгэж байсан үүргийг VIRAMA гэх ганц тэмдэгтэд нэмж оноогоод магадгүй Indic загварыг дагасан нь илүү хэрэглэхүйц болж магадгүй гэж үзсэн. Үүний үр дүнд, SUBJOINER-г сүүлд танилцуулсан хувилбараас хассан байсан. Харин одоо буцаад өмнөх загвар буюу Соёмбо бичгийн кодчиллын загварт хэрэглэгдэж буй загвараа хэрэглэсэн нь оновтой юм биш үү?

	11A0	11A1	11A2	11A3	11A4
0	 11A00	 11A10	 11A20	 11A30	 11A40
1	 11A01	 11A11	 11A21	 11A31	 11A41
2	 11A02	 11A12	 11A22	 11A32	 11A42
3	 11A03	 11A13	 11A23	 11A33	 11A43
4	 11A04	 11A14	 11A24	 11A34	 11A44
5	 11A05	 11A15	 11A25	 11A35	
6	 11A06	 11A16	 11A26	 11A36	
7	 11A07	 11A17	 11A27	 11A37	
8	 11A08	 11A18	 11A28	 11A38	
9	 11A09	 11A19	 11A29	 11A39	
A	 11A0A	 11A1A	 11A2A	 11A3A	
B	 11A0B	 11A1B	 11A2B	 11A3B	
C	 11A0C	 11A1C	 11A2C	 11A3C	
D	 11A0D	 11A1D	 11A2D	 11A3D	
E	 11A0E	 11A1E	 11A2E	 11A3E	
F	 11A0F	 11A1F	 11A2F	 11A3F	

*Known in Mongolian as Xewtee Dörböljin Bicig or the Horizontal Square Script. Also called Zanabazarin Dörböljin Useg or Zanabazar Square Script.*

### Vowel letter

11A00 𐎀 ZANABAZAR SQUARE LETTER A

### Vowel signs

11A01 𐎁 ZANABAZAR SQUARE VOWEL SIGN I  
 11A02 𐎂 ZANABAZAR SQUARE VOWEL SIGN UE  
 11A03 𐎃 ZANABAZAR SQUARE VOWEL SIGN U  
 11A04 𐎄 ZANABAZAR SQUARE VOWEL SIGN E  
 11A05 𐎅 ZANABAZAR SQUARE VOWEL SIGN OE  
 11A06 𐎆 ZANABAZAR SQUARE VOWEL SIGN O  
 11A07 𐎇 ZANABAZAR SQUARE VOWEL SIGN AI  
 • also represents secondary vowel i  
 11A08 𐎈 ZANABAZAR SQUARE VOWEL SIGN AU  
 • also represents secondary vowel u

### Reversed vowel sign

11A09 𐎉 ZANABAZAR SQUARE REVERSED VOWEL SIGN I  
 • used for Sanskrit vocalic sounds

### Vowel length mark

11A0A 𐎊 ZANABAZAR SQUARE VOWEL LENGTH MARK

### Consonants

11A0B 𐎋 ZANABAZAR SQUARE LETTER KA  
 • Mongolian ga, gamma  
 11A0C 𐎌 ZANABAZAR SQUARE LETTER KHA  
 • Mongolian ka, qa, xa  
 11A0D 𐎍 ZANABAZAR SQUARE LETTER GA  
 11A0E 𐎎 ZANABAZAR SQUARE LETTER GHA  
 11A0F 𐎏 ZANABAZAR SQUARE LETTER NGA  
 11A10 𐎐 ZANABAZAR SQUARE LETTER CA  
 11A11 𐎑 ZANABAZAR SQUARE LETTER CHA  
 11A12 𐎒 ZANABAZAR SQUARE LETTER JA  
 11A13 𐎓 ZANABAZAR SQUARE LETTER NYA  
 11A14 𐎔 ZANABAZAR SQUARE LETTER TTA  
 11A15 𐎕 ZANABAZAR SQUARE LETTER TTHA  
 11A16 𐎖 ZANABAZAR SQUARE LETTER DDA  
 11A17 𐎗 ZANABAZAR SQUARE LETTER DDHA  
 11A18 𐎘 ZANABAZAR SQUARE LETTER NNA  
 11A19 𐎙 ZANABAZAR SQUARE LETTER TA  
 • Mongolian da  
 11A1A 𐎚 ZANABAZAR SQUARE LETTER THA  
 • Mongolian ta  
 11A1B 𐎛 ZANABAZAR SQUARE LETTER DA  
 11A1C 𐎜 ZANABAZAR SQUARE LETTER DHA  
 11A1D 𐎝 ZANABAZAR SQUARE LETTER NA  
 11A1E 𐎞 ZANABAZAR SQUARE LETTER PA  
 • Mongolian ba  
 11A1F 𐎟 ZANABAZAR SQUARE LETTER PHA  
 • Mongolian pa  
 11A20 𐎠 ZANABAZAR SQUARE LETTER BA  
 • Mongolian va  
 • also used instead of non-initial 11A2D 𐎠 in conjuncts  
 11A21 𐎡 ZANABAZAR SQUARE LETTER BHA  
 11A22 𐎢 ZANABAZAR SQUARE LETTER MA  
 11A23 𐎣 ZANABAZAR SQUARE LETTER TSA  
 • Mongolian ja, Sanskrit ca  
 11A24 𐎤 ZANABAZAR SQUARE LETTER TSHA  
 • Mongolian ca, Sanskrit cha

11A25 𐎥 ZANABAZAR SQUARE LETTER DZA  
 • Sanskrit ja  
 11A26 𐎦 ZANABAZAR SQUARE LETTER DZHA  
 • Sanskrit jha  
 11A27 𐎧 ZANABAZAR SQUARE LETTER ZHA  
 11A28 𐎨 ZANABAZAR SQUARE LETTER ZA  
 11A29 𐎩 ZANABAZAR SQUARE LETTER -A  
 • Mongolian aang  
 • Tibetan a-chung  
 → 0F60 𐎩 tibetan letter -a

11A2A 𐎪 ZANABAZAR SQUARE LETTER YA  
 11A2B 𐎫 ZANABAZAR SQUARE LETTER RA  
 11A2C 𐎬 ZANABAZAR SQUARE LETTER LA  
 11A2D 𐎭 ZANABAZAR SQUARE LETTER VA  
 11A2E 𐎮 ZANABAZAR SQUARE LETTER SHA  
 11A2F 𐎯 ZANABAZAR SQUARE LETTER SSA  
 • created by reversal of 11A2E 𐎮  
 11A30 𐎰 ZANABAZAR SQUARE LETTER SA  
 11A31 𐎱 ZANABAZAR SQUARE LETTER HA  
 11A32 𐎲 ZANABAZAR SQUARE LETTER KSSA

### Final consonant mark

11A33 𐎳 ZANABAZAR SQUARE FINAL CONSONANT MARK  
 • used for marking a syllable-final consonant in Mongolian  
 • indicates a syllabic boundary in Mongolian

### Virama

11A34 𐎴 ZANABAZAR SQUARE SIGN VIRAMA  
 → 0F84 𐎴 tibetan mark halanta  
 • indicates a bare consonant in Sanskrit and Tibetan  
 • used for producing subjoining conjuncts

### Candra ornaments

11A35 𐎵 ZANABAZAR SQUARE SIGN CANDRABINDU  
 • indicates nasalization  
 → 0F83 𐎵 tibetan sign sna ldan  
 → 1880 𐎵 mongolian letter ali gali anusvara one  
 11A36 𐎶 ZANABAZAR SQUARE SIGN CANDRABINDU WITH ORNAMENT  
 • used primarily with 11A3F 𐎶  
 11A37 𐎷 ZANABAZAR SQUARE SIGN CANDRA WITH ORNAMENT  
 • used primarily with 11A3F 𐎶  
 → 0F82 𐎷 tibetan sign nyi zla naa da

### Vowel modifiers

11A38 𐎸 ZANABAZAR SQUARE SIGN ANUSVARA  
 • indicates nasalization  
 → 0F7E 𐎸 tibetan sign rjes su nga ro  
 11A39 𐎹 ZANABAZAR SQUARE SIGN VISARGA  
 • indicates post-vocalic aspiration  
 → 0F7F 𐎹 tibetan sign rnam bead

**Cluster-initial consonant**

- 11A3A 𑀓 ZANABAZAR SQUARE LETTER CLUSTER  
INITIAL RA
- initial form of 11A2B 𑀓 in Tibetan conjuncts

**Cluster-final consonants**

- 11A3B 𑀔 ZANABAZAR SQUARE LETTER CLUSTER  
FINAL YA
- final form of 11A2A 𑀔 in Tibetan conjuncts
- 11A3C 𑀕 ZANABAZAR SQUARE LETTER CLUSTER  
FINAL RA
- final form of 11A2B 𑀓 in Tibetan conjuncts
- 11A3D 𑀖 ZANABAZAR SQUARE LETTER CLUSTER  
FINAL LA
- final form of 11A2C 𑀖 in Tibetan conjuncts
- 11A3E 𑀗 ZANABAZAR SQUARE LETTER CLUSTER  
FINAL VA
- final form of 11A20 𑀗 in Tibetan conjuncts

**Head marks**

- 11A3F 𑀘 ZANABAZAR SQUARE INITIAL HEAD MARK
- 0FD3 𑀘 tibetan mark initial brda rmying yig mgo mdun ma
  - 0F04 𑀘 tibetan mark initial yig mgo mdun ma
  - 1800 𑀘 mongolian birga
- 11A40 𑀙 ZANABAZAR SQUARE CLOSING HEAD MARK
- 0FD4 𑀙 tibetan mark closing brda rmying yig mgo sgab ma
  - 0F05 𑀙 tibetan mark closing yig mgo sgab ma

**Punctuation**

- 11A41 𑀚 ZANABAZAR SQUARE TSHEG
- 0F0B 𑀚 tibetan mark intersyllabic tsheg
- 11A42 𑀛 ZANABAZAR SQUARE SHAD
- 0F0D 𑀛 tibetan mark shad
- 11A43 𑀜 ZANABAZAR SQUARE DOUBLE SHAD
- 0F0E 𑀜 tibetan mark nyis shad
- 11A44 𑀝 ZANABAZAR SQUARE LONG TSHEG
- 0F14 𑀝 tibetan mark gter tsheg

## Соёмбо бичгийн засаж өөрчилсөн кодын хүснэгт болон нэршлийн жагсаалт

Ашуман Пандэй  
Хэл шинжлэлийн тэнхим  
Калифорнын Их Сургууль, Бэрклэй  
Бэрклэй, Калифорни, АНУ  
anshuman.pandey@berkeley.edu




2015 оны 10-р сарын 20

### 1 Танилцуулга

2015 оны 10-р сарын 15–16 өдрүүдэд Токио хотноо Монголын шинжээч, судлаач нартай хийсэн уулзалтын үр дүнд Соёмбо бичгийн кодын хүснэгт болон нэршлийн жагсаалтад (N4655 L2/15-004) дараах өөрчлөлт орохоор боллоо. Үүнд:

































































































1. Дараах үсгүүдийн нэршлийг доорх байдлаар Соёмбо гэсэн угтвар авснаар өөрчлөв.

Одоогын нэршил	Өөрчилсөн нэршил
CLUSTER-INITIAL LETTER LA	CLUSTER-INITIAL LETTER RA
CLUSTER-INITIAL LETTER SHA	CLUSTER-INITIAL LETTER LA
CLUSTER-INITIAL LETTER SA	CLUSTER-INITIAL LETTER SHA
CLUSTER-INITIAL LETTER RA	CLUSTER-INITIAL LETTER SA
HEAD MARK WITH TRIPLE FLAME	HEAD MARK WITH MOON AND SUN AND TRIPLE FLAME
HEAD MARK WITH SINGLE FLAME	HEAD MARK WITH MOON AND SUN AND FLAME
HEAD MARK WITH CANDRABINDU	HEAD MARK WITH MOON AND SUN

2. TERMINAL MARK-3-г хасав. SOYOMBO TERMINAL MARK-2-н төлөөлүүлсэн дүрсийг дахин судаллаа. Чандмань тамга бүхий үсгийн загварыг бүтээх болно.
3. JHVAMULIYA  болон UPADHMANIYA  –г ирээдүйд кодлох зорилгоор кодын хүснэгтэд U+11A84 болон U+11A85 зайг нөөцөлсөн. U+11A84 болон дараах үсгүүдийг хойш нь шилжүүллээ.
4. PALUTA  –г ирээдүйд кодлох зорилгоор кодын хүснэгтэд U+11A9D кодыг нөөцөлсөн. Одоо энэ байрлалд байгаа үсэг болон дараах үсгүүдийг хойш нь шилжүүллээ.

Доорх асуудлууд уулзалт дээр хөндөгдөөгүй боловч оролцогчидтой албан бусаар хэлэлцсэн бөгөөд анхаарч үзэх зүйлс болно. Үүнд:








































- VOWEL SIGN VOCALIC R болон VOWEL SIGN VOCALIC L-г VOWEL SIGN U ба VOWEL SIGN E-ийн дунд оруулах. Эгшигийн тэмдэгийн энэхүү байрлал, дараалал нь Брахми хэв маягыг илүү дагасан бөгөөд сурвалжуудад гийгүүлэгч-эгшиг гэсэн нийлэмж хэлбэрээр хэрэглэсэн байдаг.
- SIGN ANUSVARA болон SIGN VISARGA-г VOWEL LENGTH MARK-ийн дараа оруулах. Ингэснээр эгшигт холбогдолтой бүх тэмдэгтүүд нэг дор байрлах давуу талтай юм. Одоогын хүснэгтэнд SIGN ANUSVARA болон SIGN VISARGA нь гийгүүлэгчтэй холбоотой тэмдэгтүүд дунд холилдсон байгаа.
- Эхлэл тэмдэгийн нэршилд ‘candrabindu’ гэсэн нэрийг үлдээх: ‘head mark with candrabindu and triple flame’, ‘head mark with candrabindu and flame’, ‘head mark with candrabindu’ гэх мэтээр. ‘candrabindu’-г хэрэглэснээр, Соёмбо бичигтэй холбоотой Занабазарын дөрвөлжин бичгийн зарим нэгэн зурлаганд адил төстэй мах бодь ашигласан үсгийн нэршилтэй зохицох юм. Өөрчлөн засах төсөлд “сар ба нар ...” бүхий нэршилтийг нэмэлт зүйлт тайлбар байдлаар хэрэглэх эсэх.
- Эхлэл тэмдэг нь бүтэн нэг үсэг гэхээс илүүтэйгээр үндсэн дүрс болон нэмэлт бусад тэмдэгтүүдээс бүрдсэн гэж үзэн дахин нягталж үзэж болох юм. Ингэвэл эхлэл тэмдэг нь нэг үндсэн дүрс, дээр нь нэмэгдэх гурван нэмэлт “хээ” тэмдгээс бүрдэж болох юм. Энэ нь Занабазарын дөрвөлжин бичигт хэрэглэсэн эхлэл тэмдэгийн загвартай адил болох юм.

	11A5	11A6	11A7	11A8	11A9	11AA
0	 11A50	 11A60	 11A70	 11A80	 11A90	 11AA0
1	 11A51	 11A61	 11A71	 11A81	 11A91	 11AA1
2	 11A52	 11A62	 11A72	 11A82	 11A92	 11AA2
3	 11A53	 11A63	 11A73	 11A83	 11A93	
4	 11A54	 11A64	 11A74		 11A94	
5	 11A55	 11A65	 11A75		 11A95	
6	 11A56	 11A66	 11A76	 11A86	 11A96	
7	 11A57	 11A67	 11A77	 11A87	 11A97	
8	 11A58	 11A68	 11A78	 11A88	 11A98	
9	 11A59	 11A69	 11A79	 11A89	 11A99	
A	 11A5A	 11A6A	 11A7A	 11A8A	 11A9A	
B	 11A5B	 11A6B	 11A7B	 11A8B	 11A9B	
C	 11A5C	 11A6C	 11A7C	 11A8C	 11A9C	
D	 11A5D	 11A6D	 11A7D	 11A8D		
E	 11A5E	 11A6E	 11A7E	 11A8E	 11A9E	
F	 11A5F	 11A6F	 11A7F	 11A8F	 11A9F	

**Vowel carrier**11A50  SOYOMBO LETTER A**Vowel signs**

11A51  SOYOMBO VOWEL SIGN I  
 11A52  SOYOMBO VOWEL SIGN UE  
 11A53  SOYOMBO VOWEL SIGN U  
 11A54  SOYOMBO VOWEL SIGN E  
 11A55  SOYOMBO VOWEL SIGN O  
 11A56  SOYOMBO VOWEL SIGN OE  
 11A57  SOYOMBO VOWEL SIGN AI  
 11A58  SOYOMBO VOWEL SIGN AU  
 11A59  SOYOMBO VOWEL SIGN VOCALIC R  
 11A5A  SOYOMBO VOWEL SIGN VOCALIC L














**Vowel length mark**11A5B  SOYOMBO VOWEL LENGTH MARK**Consonants**

11A5C  SOYOMBO LETTER KA  
 • Mongolian g  
 11A5D  SOYOMBO LETTER KHA  
 • Mongolian k  
 11A5E  SOYOMBO LETTER GA  
 11A5F  SOYOMBO LETTER GHA  
 11A60  SOYOMBO LETTER NGA  
 11A61  SOYOMBO LETTER CA  
 • Mongolian j  
 11A62  SOYOMBO LETTER CHA  
 • Mongolian c  
 11A63  SOYOMBO LETTER JA  
 11A64  SOYOMBO LETTER JHA  
 11A65  SOYOMBO LETTER NYA  
 11A66  SOYOMBO LETTER TTA  
 11A67  SOYOMBO LETTER TTHA  
 11A68  SOYOMBO LETTER DDA  
 11A69  SOYOMBO LETTER DDHA  
 11A6A  SOYOMBO LETTER NNA  
 11A6B  SOYOMBO LETTER TA  
 • Mongolian d  
 11A6C  SOYOMBO LETTER THA  
 • Mongolian t  
 11A6D  SOYOMBO LETTER DA  
 11A6E  SOYOMBO LETTER DHA  
 11A6F  SOYOMBO LETTER NA  
 11A70  SOYOMBO LETTER PA  
 • Mongolian b  
 11A71  SOYOMBO LETTER PHA  
 • Mongolian p  
 11A72  SOYOMBO LETTER BA  
 11A73  SOYOMBO LETTER BHA  
 11A74  SOYOMBO LETTER MA  
 11A75  SOYOMBO LETTER TSA  
 11A76  SOYOMBO LETTER TSHA  
 11A77  SOYOMBO LETTER DZA  
 11A78  SOYOMBO LETTER ZHA  
 11A79  SOYOMBO LETTER ZA  
 11A7A  SOYOMBO LETTER -A  
 11A7B  SOYOMBO LETTER YA  
 11A7C  SOYOMBO LETTER RA  
 11A7D  SOYOMBO LETTER LA  
 11A7E  SOYOMBO LETTER VA  
 11A7F  SOYOMBO LETTER SHA  
 11A80  SOYOMBO LETTER SSA  
 11A81  SOYOMBO LETTER SA  
 11A82  SOYOMBO LETTER HA



11A83  SOYOMBO LETTER KSSA**Cluster-initial letters**


11A86  SOYOMBO CLUSTER-INITIAL LETTER RA  
 11A87  SOYOMBO CLUSTER-INITIAL LETTER LA  
 11A88  SOYOMBO CLUSTER-INITIAL LETTER SHA  
 11A89  SOYOMBO CLUSTER-INITIAL LETTER SA


**Final consonant signs**

11A8A  SOYOMBO FINAL CONSONANT SIGN G  
 11A8B  SOYOMBO FINAL CONSONANT SIGN K  
 11A8C  SOYOMBO FINAL CONSONANT SIGN NG  
 11A8D  SOYOMBO FINAL CONSONANT SIGN D  
 11A8E  SOYOMBO FINAL CONSONANT SIGN N  
 11A8F  SOYOMBO FINAL CONSONANT SIGN B  
 11A90  SOYOMBO FINAL CONSONANT SIGN M  
 11A91  SOYOMBO FINAL CONSONANT SIGN R  
 11A92  SOYOMBO FINAL CONSONANT SIGN L  
 11A93  SOYOMBO FINAL CONSONANT SIGN SH  
 11A94  SOYOMBO FINAL CONSONANT SIGN S  
 11A95  SOYOMBO FINAL CONSONANT SIGN -A  
 • Mongolian aang  
 • Tibetan a-chung  
 → 0F60  tibetan letter -a




**Various signs**

11A96  SOYOMBO SIGN ANUSVARA  
 11A97  SOYOMBO SIGN VISARGA




**Gemination mark**11A98  SOYOMBO GEMINATION MARK**Subjoiner**

11A99  SOYOMBO SUBJOINER  
 • used for producing conjunct stacks



**Punctuation**

11A9A  SOYOMBO TSHEG  
 11A9B  SOYOMBO SHAD  
 11A9C  SOYOMBO DOUBLE SHAD

**Head marks**

11A9E  SOYOMBO HEAD MARK WITH MOON AND SUN AND TRIPLE FLAME  
 • used for the national symbol of Mongolia  
 11A9F  SOYOMBO HEAD MARK WITH MOON AND SUN AND FLAME  
 11AA0  SOYOMBO HEAD MARK WITH MOON AND SUN

**Terminal Marks**

11AA1  SOYOMBO TERMINAL MARK-1  
 11AA2  SOYOMBO TERMINAL MARK-2  
 = cintamani, candamani