Title
Proposal for encoding additional Sundanese characters for Old Sundanese in the UCS

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Universal Multiple-Octet Coded Character Set
International Organization for Standardization
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Международная организация по стандартизации

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Title: Proposal for encoding additional Sundanese characters for Old Sundanese in the UCS
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Sundanese has been written in a number of scripts. *Pallawa* or *Pra-Nagari* was first used in West Java to write Sanskrit from the fifth to eighth centuries CE, and from Pallawa was derived *Sunda Kuna* or *Old Sundanese* which was used in the Sunda Kingdom from the 14th to 18th centuries. Both Javanese and Arabic script were used from the 17th to 19th centuries and the 17th to the mid-20th centuries respectively. Latin script has had currency since the 20th century. The modern Sundanese script, called *Sunda Baku* or *Official Sundanese*, was made official in 1996. The modern script itself was derived from Old Sundanese, the earliest example of which is the Prasasti Kawali stone (see Figure 1).

The Sundanese script was originally more similar to other scripts of the Brahmic type, in that it made use of conjunct characters. Consonant conjuncts are not formed productively in the modern script, which uses the explicit SUNDANESE SIGN PAMAAEH character to show indicate the absence of the inherent vowel; PAMAAEH does not cause Brahmic conjunct formation. (Some consonant clusters are represented in the modern script with the encoded medial signs *-ya*, *-ra*, and *-la*, but these are not *conjuncts*.) In order to support older orthography, the "Myanmar model" as opposed to the "Devanagari model" is used. An explicit SUNDANESE SIGN VIRAMA is proposed here to cause true Brahmic consonant clustering. Since PAMAAEH does not cause conjunct formation, and is always visible, and since modern users do not want conjuncts to be formed, the Myanmar model, which has an explicit ASAT alongside a conjunct-forming VIRAMA, is the model used here. Analogous is the modern Meetei Mayek script, which has its explicit KILLER, alongside the older Meetei Mayek orthography, which uses a conjunct-forming VIRAMA.

This proposal also supports some additional characters used in Sanskrit.

1BAB   SUNDANESE SIGN VIRAMA

This character forms conjuncts in older orthography. This causes no interference with the modern orthography, though care should be taken because three explictly encoded consonant signs, *-ya*, *-ra*, and *-la* have been encoded for modern orthography. If virama were to precede *ya*, *ra*, or *la*, a conjunct is formed, but it would look different from the modern subjoined consonants. This is a matter of orthography. Note that in modern orthography, the explicit killer U+1BAA ◌ SUNDANESE SIGN PAMAAEH is regularly used; it does not cause conjunct formation. Some conjuncts have an archaic glyph style and a modern glyph style but *neither the VIRAMA nor any of the conjuncts are used in modern standard orthography*.

ꦗ	*jya* (*ja* ꦗ + *-ya* ◌)		ꦗ	*jya* (*ja* ꦗ + *virama* ◌ + *ya* �ꦗ)
ꦲ	*hra* (*ha* ꦲ + *-ra* ◌)		ꦲ	*hra* (*ha* ꦲ + *virama* ◌ + *ra* ꦫ)
ꦏ	*kla* (*ka* ꦏ + *-la* ◌.)		ꦏ	*kla* (*ka* ꦏ + *virama* ◌ + *la* ꦭ)

The following conjuncts (all formed with VIRAMA) are known to occur:

𖫆	*ska*	𖫆	*lka*	𖫆	*lga*	𖫆	*kṅa*	𖫆	*nca*
𖫆	*ñja*	𖫆	*nja*	𖫆	*kta*	𖫆	*pta*	𖫆	*nta*
𖫆	*nda*	𖫆	*hda*	𖫆	*tna*	𖫆	*sna*	𖫆	*mpa*
𖫆	*mba*	𖫆	*dma*	𖫆	*jya*	𖫆	*hra*	𖫆	*dwa*
𖫆	*ksa*	𖫆	*lsa*	𖫆	*tha*	𖫆	*mha*		

Note the difference between 𖫆 SUNDANESE LETTER KHA and 𖫆 the conjunct of *ka* and *ha*, as well as 𖫆 SUNDANESE LETTER SYA and 𖫆 the conjunct of *sa* and *ya*. The archaic shapes in 𖫆 *kta* (modern style 𖫆) and 𖫆 *mpa* (modern style 𖫆) are a matter of font choice. (Such a choice would be made only for "historical" fonts; modern readers do not know or expect the archaic shapes.)

1BAC   SUNDANESE CONSONANT SIGN PASANGAN MA

Like the explictly encoded consonant signs, *-ya*, *-ra*, and *-la*, a subjoined spiral-shaped *ma* is found in historical texts. This contrasts with the conjunct form of *ma* as formed regularly by VIRAMA: compare 𖫆 *padma* and 𖫆 *padma*. A similar explicit subjoined *ma* is found in Burmese (U+105F ◌ MYANMAR CONSONANT SIGN MON MEDIAL MA). In the modern script the shape of the explicit consonant sign ◌ is unknown.

1BAD   SUNDANESE CONSONANT SIGN PASANGAN WA

This contrasts with the conjunct form of *wa* as formed regularly by VIRAMA: compare 𖫆 *bwana* and 𖫆 *bwana*. In the modern script the shape of the explicit consonant sign ◌ is unknown.

1BBA   SUNDANESE AVAGRAHA

Historically the avagraha deleted an initial vowel, but in older Sundanese orthography it came to have a different function: it kills the vowel of a preceding consonant but introduces a hiatus before an initial *a-*. An example is the word 𖫆 *alun-agung* 'tidal wave'; this could also be written as two words 𖫆 𖫆 *alun agung*; 𖫆 reads *alungung*.

1BBB   SUNDANESE LETTER REU

The letter 𖫆 is the historic descendent of the Brahmi letter 𑀋 (Devanagari ऋ) and is found on ancient inscriptions. Although the modern orthography writes this syllable 𖫆 *ra* + ◌ *eu*, the modern spelling is historically a character sequence which differs from the Brahmic antecedent. For its form, compare the related U+1B0B ᬋ BALINESE LETTER RA REPA with U+1B27 ᬧ BALINESE LETTER PA, as well as U+1B95 𖫆 SUNDANESE LETTER PA.

1BBC   SUNDANESE LETTER LEU

The letter 𖫆 is the historic descendent of the Brahmi letter 𑀍 (Devanagari ऌ) and is found on ancient inscriptions. Although the modern orthography writes this syllable 𖫆 *la* + ◌ *eu*, the modern spelling is historically a character sequence which differs from the Brahmic antecedent.

1BBD   SUNDANESE LETTER BHA
Found on the Prasasta Kawali.

1BBE   SUNDANESE LETTER FINAL K
Now written with the sequence 𖫆 SUNDANESE LETTER FINAL K is found in palm leaf manuscripts. Note that the explicit killer U+1BAA ◌, can be used to produce a phonetic final *-k*, as in 𖫆. The letter 𖫆, however, is not a presentation form of 𖫆 KA + ◌ PAMAAEH. Although the archaic glyph

shape of conjunct *-ka* (modern 〼 *kta*, archaic 〼 *kta*) is similar to this, there is no corresponding modern form of the character FINAL K.

〼 1BBF SUNDANESE LETTER FINAL M

The letter 〼 is found in palm leaf manuscripts. Note that the explicit killer U+1BAA ◌ SUNDANESE SIGN PAMAAEH, can be used to produce a phonetic final *-m*, as in 〼. The letter 〼, however, is not a presentation form of 〼 MA + ◌ PAMAAEH. Although the archaic glyph shape of conjunct *-ma* (modern 〼 *mpa*, archaic 〼 *mpa*) is similar to this, there is no corresponding modern form of the character FINAL M.

◈ 1CC0 SUNDANESE PUNCTUATION BINDU SURYA

'Sun dot'; when used in the sequence 〼◈〼, this punctuation character helps to indicate that the content of a manuscript is religious. When 1C80 ◈ BINDU SURYA is used as a closing bindu (final punctuation), 1C82 ⊖ BINDU PURNAMA is used as a comma.

⊗ 1CC1 SUNDANESE PUNCTUATION BINDU PANGLONG

'Half moon dot'; when used in the sequence 〼⊗ this punctuation character helps to indicate that the content of a manuscript is religious. See Figure 7.

⊖ 1CC2 SUNDANESE PUNCTUATION BINDU PURNAMA

'Full moon dot'; when used in the sequence 〼⊖〼, this punctuation character helps to indicate that the content of a manuscript is historical. When 1C80 ◈ BINDU SURYA is used as a closing bindu (final punctuation), 1C82 ⊖ BINDU PURNAMA is used as a comma.

○ 1CC3 SUNDANESE PUNCTUATION BINDU CAKRA

'Wheel dot'; used generally as a punctuation comma.

〼 1CC4 SUNDANESE PUNCTUATION BINDU LEU SATANGA

The semantic domain indicated by this punctuation character is unclear, but it occurs in manuscripts as do the following three. It is in origin a "decorated" version of U+1BBC 〼 SUNDANESE LETTER LEU but it is not a *leu*, in the same way that ® is not an *R* and © is not a *C*.

〼 1CC5 SUNDANESE PUNCTUATION BINDU KA SATANGA

When used in the sequence 〼⊖〼, this punctuation character helps to indicate that the content of a manuscript is historical. It is in origin a "decorated" version of "half" a U+1B8A 〼 SUNDANESE LETTER KA.

〼 1CC6 SUNDANESE PUNCTUATION BINDU DA SATANGA

When used in the sequence 〼◈〼, this punctuation character helps to indicate that the content of a manuscript is religious. It is in origin a "decorated" version of U+1B93 〼 SUNDANESE LETTER DA.

〼 1CC7 SUNDANESE PUNCTUATION BINDU BA SATANGA

When used in the sequence 〼〼, this punctuation character helps to indicate that the content of a manuscript is religious. It is in origin a "decorated" version of U+1B98 〼 SUNDANESE LETTER BA. See Figure 8 for an example of contrastive use.

Linebreaking

The letters, avagraha, and virama behave as in Devanagari. The bindu symbols can occur in initial position in a paragraph, or in final position at the end of a clause, sentence, or paragraph. Since half of the bindus are derived from letters, and since sequences like ᮜᮢ◌ᮜᮢ should not be broken, linebreaking properties for all of these should be the same as those for letters. A space should be used if a user wishes to cause a linebreak before or after any of the bindu symbols.

Ordering

The arrangement of characters in the code table here follows the Brahmic ordering, for transparency to implementors of ISO/IEC 10646 and Unicode. The *ha-na-ca-ra-ka* order found in Javanese and Balinese does not seem to have currency in Sundanese. Two Brahmic orderings do have some currency, however. One of these inserts modern additions to the character set into the order according to place of articulation and lettershape. The principle followed here is the same principle that was applied in the ordering of Balinese; it also follows the way the characters are taught (as in the children's primer *Ngalagena*, 2002).

ᮃ *a* >> ᮄ *a* > ᮄ *i* > ᮅ *u* > ᮃ *ae* > ᮇ *o* > ᮈ *e* > ᮉ *eu* >
ᮊ *ka* >> ᮊ *k* > ᮋ *kha* > ᮌ *ga* > ᮌ *nga* > ᮎ *ca* > ᮏ *ja* > ᮑ *nya* >
ᮒ *ta* > ᮓ *da* > ᮔ *na* > ᮕ *pa* > ᮘ *ba* > ᮘ *bha* > ᮙ *ma* >> ᮙ *m* >
ᮚ *ya* > ᮛ *ra* > ᮠ *reu* > ᮜ *la* > ᮜ *leu* > ᮝ *wa* > ᮞ *sa* > ᮠ *ha* >
ᮟ *qa* > ᮖ *fa* > ᮗ *va* > ᮝ *xa* > ᮞ *sya* > ᮐ *za* >

Font

The Sundanese community has developed a new, modern font which is used in the code chart below, which they released on CD with their publication on Unicode implementation for Sundanese (Baidillah 2008). They have requested that this font should replace the font currently used in the standard. A comparison of the glyphs used in each; the letters are given above, the matras and digits is given below. The new font is used in top row, the old font in the bottom row:

a	i	u	ae	o	e	eu	ka	qa	ga	nga	ca	ja	za	nya	ta	da	na	pa	fa	va	ba	ma	ya	ra	la	wa	sa	xa	ha	kha	sya

kaṁ	kar	kaḥ	kya	kra	kla	ki	ku	kae	ko	ke	keu	k	0	1	2	3	4	5	6	7	8	9

Unicode Character Properties

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1BAB;SUNDANESE SIGN VIRAMA;Mn;9;NSM;;;;;N;;;;;
1BAC;SUNDANESE CONSONANT SIGN PASANGAN MA;Mc;0;L;;;;;N;;;;;
1BAD;SUNDANESE CONSONANT SIGN PASANGAN WA;Mc;0;L;;;;;N;;;;;
1BBA;SUNDANESE AVAGRAHA;Lo;0;L;;;;;N;;;;;
1BBB;SUNDANESE LETTER REU;Lo;0;L;;;;;N;;;;;
1BBC;SUNDANESE LETTER LEU;Lo;0;L;;;;;N;;;;;
1BBD;SUNDANESE LETTER BHA;Lo;0;L;;;;;N;;;;;
1BBE;SUNDANESE LETTER FINAL K;Lo;0;L;;;;;N;;;;;
1BBF;SUNDANESE LETTER FINAL M;Lo;0;L;;;;;N;;;;;
1CC0;SUNDANESE PUNCTUATION BINDU SURYA;Po;0;L;;;;;N;;;;;
1CC1;SUNDANESE PUNCTUATION BINDU PANGLONG;Po;0;L;;;;;N;;;;;
1CC2;SUNDANESE PUNCTUATION BINDU PURNAMA;Po;0;L;;;;;N;;;;;
1CC3;SUNDANESE PUNCTUATION BINDU CAKRA;Po;0;L;;;;;N;;;;;
1CC4;SUNDANESE PUNCTUATION BINDU LEU SATANGA;Po;0;L;;;;;N;;;;;
1CC5;SUNDANESE PUNCTUATION BINDU KA SATANGA;Po;0;L;;;;;N;;;;;
1CC6;SUNDANESE PUNCTUATION BINDU DA SATANGA;Po;0;L;;;;;N;;;;;
1CC7;SUNDANESE PUNCTUATION BINDU BA SATANGA;Po;0;L;;;;;N;;;;;
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Bibliography

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Suryani NS, Elis. 2008. *Merumat warisan karuhun rang Sunda yang terpendam dalam naskah dan prasasti*. Sumedang: Alqapring & Dinas Pendidikan Kota Tasikmalaya. ISBN 979-9462-82-7

Acknowledgements.

	1B8	1B9	1BA	1BB
0	○̊ 1B80	⫧ 1B90	⫨ 1BA0	○ 1BB0
1	○̌ 1B81	⫩ 1B91	⫪ 1BA1	⫫ 1BB1
2	○ˎ 1B82	⫬ 1B92	○̰ 1BA2	⫭ 1BB2
3	⫮ 1B83	⫯ 1B93	○̤ 1BA3	⫰ 1BB3
4	⫱ 1B84	⫲ 1B94	○̚ 1BA4	⫳ 1BB4
5	⫴ 1B85	⫵ 1B95	○̦ 1BA5	⫶ 1BB5
6	⫷ 1B86	⫸ 1B96	z̦○ 1BA6	⫹ 1BB6
7	⫺ 1B87	⫻ 1B97	○̧z 1BA7	⫼ 1BB7
8	⫽ 1B88	⫾ 1B98	○̌ 1BA8	⫿ 1BB8
9	⬀ 1B89	⬁ 1B99	○̆ 1BA9	⬂ 1BB9
A	⬃ 1B8A	⬄ 1B9A	○̧ 1BAA	⬅ 1BBA
B	⬆ 1B8B	⬇ 1B9B	⬈ 1BAB	⬉ 1BBB
C	⬊ 1B8C	⬋ 1B9C	○̧ 1BAC	⬌ 1BBC
D	⬍ 1B8D	⬎ 1B9D	○̰̰ 1BAD	⬏ 1BBD
E	⬐ 1B8E	⬑ 1B9E	⬒ 1BAE	⬓ 1BBE
F	⬔ 1B8F	⬕ 1B9F	⬖ 1BAF	⬗ 1BBF

Various signs

1B80 ˚○ SUNDANESE SIGN PANYECEK
= anusvara
1B81 ˇ○ SUNDANESE SIGN PANGLAYAR
= repha
1B82 ○ᷤ SUNDANESE SIGN PANGWISAD
= visarga

Vowels

1B83 Ꮆ SUNDANESE LETTER A
1B84 ∟ SUNDANESE LETTER I
1B85 Ꮓ SUNDANESE LETTER U
1B86 Ꮆ SUNDANESE LETTER AE
1B87 Ꮓ SUNDANESE LETTER O
1B88 Ꮥ SUNDANESE LETTER E
1B89 Ꮆ SUNDANESE LETTER EU

Consonants

1B8A 77 SUNDANESE LETTER KA
1B8B 𝘔 SUNDANESE LETTER QA
1B8C Ꮓ SUNDANESE LETTER GA
1B8D Ꮓ SUNDANESE LETTER NGA
1B8E 𝘜 SUNDANESE LETTER CA
1B8F Ꮓ SUNDANESE LETTER JA
1B90 Ꮓ SUNDANESE LETTER ZA
1B91 𝘡𝘡 SUNDANESE LETTER NYA
1B92 𝘶𝘩 SUNDANESE LETTER TA
1B93 Ꮬ SUNDANESE LETTER DA
1B94 Ꮓ SUNDANESE LETTER NA
1B95 𝘡𝘡 SUNDANESE LETTER PA
1B96 𝘜 SUNDANESE LETTER FA
1B97 𝘓𝘐 SUNDANESE LETTER VA
1B98 𝘓𝘡 SUNDANESE LETTER BA
1B99 𝘡 SUNDANESE LETTER MA
1B9A 𝘻𝘯 SUNDANESE LETTER YA
1B9B Ꮓ SUNDANESE LETTER RA
1B9C 𝘕𝘜 SUNDANESE LETTER LA
1B9D Ꮹ SUNDANESE LETTER WA
1B9E 77 SUNDANESE LETTER SA
1B9F 77 SUNDANESE LETTER XA
1BA0 𝘶𝘓 SUNDANESE LETTER HA

Consonant signs

1BA1 ○ᷨ SUNDANESE CONSONANT SIGN
PAMINGKAL
= subjoined ya
1BA2 ○̰ SUNDANESE CONSONANT SIGN
PANYAKRA
= subjoined ra
1BA3 ○ SUNDANESE CONSONANT SIGN PANYIKU
= subjoined la

Vowel signs

1BA4 ˇ○ SUNDANESE VOWEL SIGN PANGHULU
= i
1BA5 ○ SUNDANESE VOWEL SIGN PANYUKU
= u
1BA6 ᷞ○ SUNDANESE VOWEL SIGN PANAELAENG
= ae
1BA7 ○ᷞ SUNDANESE VOWEL SIGN PANOLONG
= o

1BA8 ˘○ SUNDANESE VOWEL SIGN PAMEPET
= e
1BA9 ˇ○ SUNDANESE VOWEL SIGN PANEULEUNG
= eu

Virama

1BAA ○ᷨ SUNDANESE SIGN PAMAAEH
= virama
• does not form conjuncts
1BAB ⬚ SUNDANESE SIGN VIRAMA
• forms conjuncts in older orthography

Consonant signs

1BAC ○ SUNDANESE CONSONANT SIGN
PASANGAN MA
= subjoined ma
1BAD ○ SUNDANESE CONSONANT SIGN
PASANGAN WA
= subjoined wa

Additional consonants

1BAE 𝘛𝘩𝘐 SUNDANESE LETTER KHA
1BAF 𝘍𝘯𝘕 SUNDANESE LETTER SYA

Digits

1BB0 O SUNDANESE DIGIT ZERO
1BB1 Ꮓ SUNDANESE DIGIT ONE
1BB2 Ꮓ SUNDANESE DIGIT TWO
1BB3 Ꮓ SUNDANESE DIGIT THREE
1BB4 𝟳 SUNDANESE DIGIT FOUR
1BB5 𝘡𝘡 SUNDANESE DIGIT FIVE
1BB6 Ꮆ SUNDANESE DIGIT SIX
1BB7 𝘕𝘕 SUNDANESE DIGIT SEVEN
1BB8 𝘜 SUNDANESE DIGIT EIGHT
1BB9 Ꮓ SUNDANESE DIGIT NINE

Sign

1BBA 𝟷 SUNDANESE AVAGRAHA

Historic letters

1BBB 𝘡𝘡 SUNDANESE LETTER REU
• vocalic r
1BBC 𝘓𝘡 SUNDANESE LETTER LEU
• vocalic l
1BBD 𝘘𝘓𝘗 SUNDANESE LETTER BHA
1BBE 𝟳𝟳 SUNDANESE LETTER FINAL K
1BBF 𝟹 SUNDANESE LETTER FINAL M

	1CC
0	⊕ 1CC0
1	⊗ 1CC1
2	⊖ 1CC2
3	◯ 1CC3
4	1CC4
5	1CC5
6	1CC6
7	1CC7
8	
9	
A	
B	
C	
D	
E	
F	

Punctuation

1CC0	⊕	SUNDANESE PUNCTUATION BINDU SURYA
		• sun
1CC1	⊗	SUNDANESE PUNCTUATION BINDU PANGLONG
		• half moon
1CC2	⊖	SUNDANESE PUNCTUATION BINDU PURNAMA
		• full moon
1CC3	◯	SUNDANESE PUNCTUATION BINDU CAKRA
		• wheel
1CC4		SUNDANESE PUNCTUATION BINDU LEU SATANGA
1CC5		SUNDANESE PUNCTUATION BINDU KA SATANGA
1CC6		SUNDANESE PUNCTUATION BINDU DA SATANGA
1CC7		SUNDANESE PUNCTUATION BINDU BA SATANGA

Figures

Figure 1. The Prasasti Kawali 1 stone.

2.2.1.1 AKSARA *SWARA* 'Vokal Mandiri'

2.2.1.2 Aksara *Ngalagena* 'Konsonan'

Figure 2a. The alphabet in a modern font from Suryani 2008.

Lambang angka-angka yang dimaksud adalah:

Figure 2b. The digits in a modern font from Suryani 2008.

Figure 3a. Black and white photo of the Prasasti Kawali 1 stone.
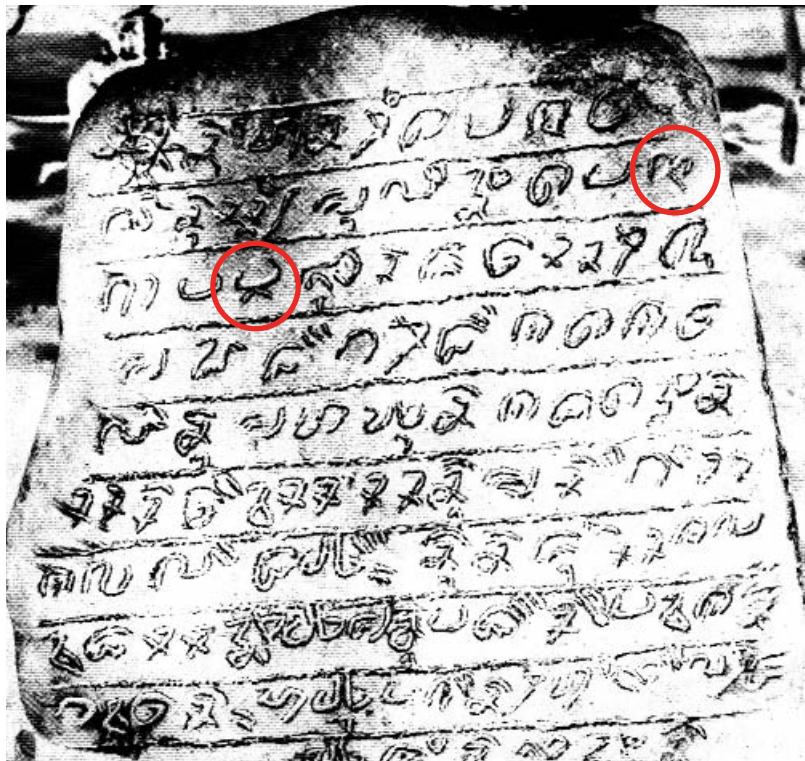
Figure 3b. Inverse black and white photo of the Prasasti Kawali 1 stone. Circled are ꤰ LETTER BHA and ꤞ LETTER REU.

Figure 4. The Old Sundanese Prasasti Kawali 3 inscription showing ❖ PUNCTUATION BINDU SURYA
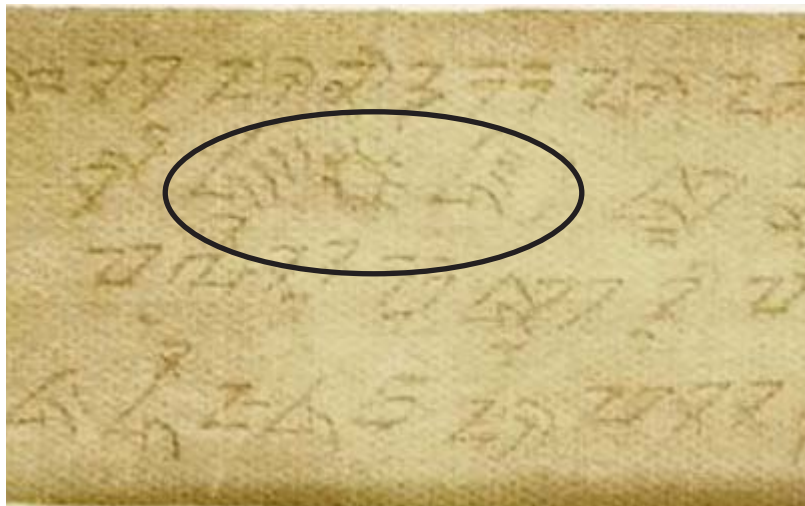
Figure 5. Old Sundanese manuscript showing ⟆ PUNCTUATION BINDU DA SATANGA
and ❖ PUNCTUATION BINDU SURYA
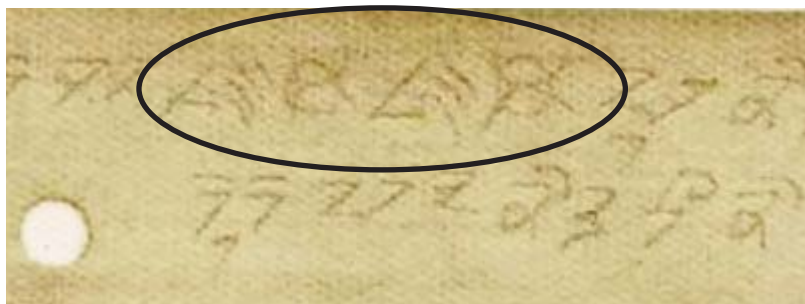
Figure 6. The same Old Sundanese manuscript showing ⟆ PUNCTUATION BINDU DA SATANGA
and ❖ PUNCTUATION BINDU PURNAMA
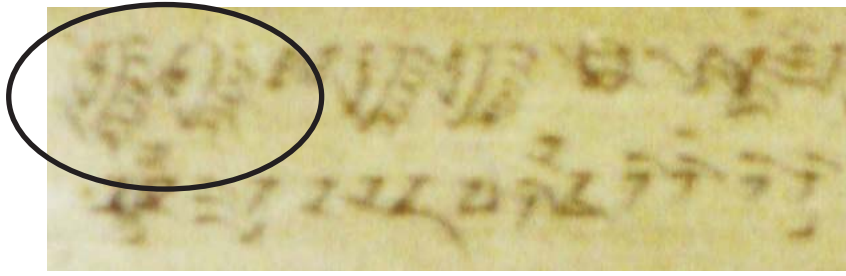
Figure 7. Old Sundanese manuscript showing ᰛᰈ PUNCTUATION BINDU LEU SATANGA
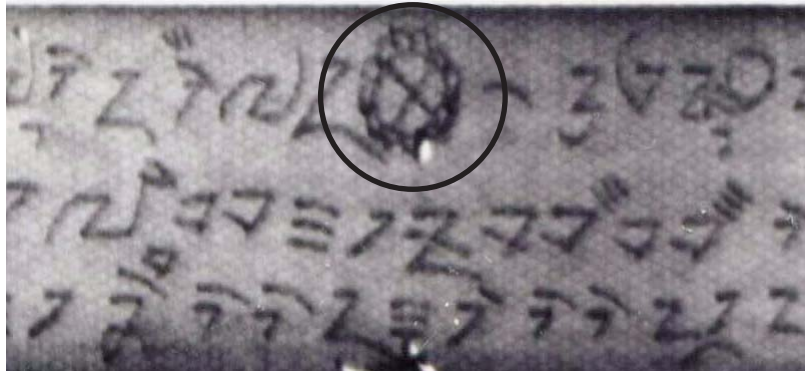
Figure 8. Old Sundanese manuscript showing ⊗ PUNCTUATION BINDU PANGLONG
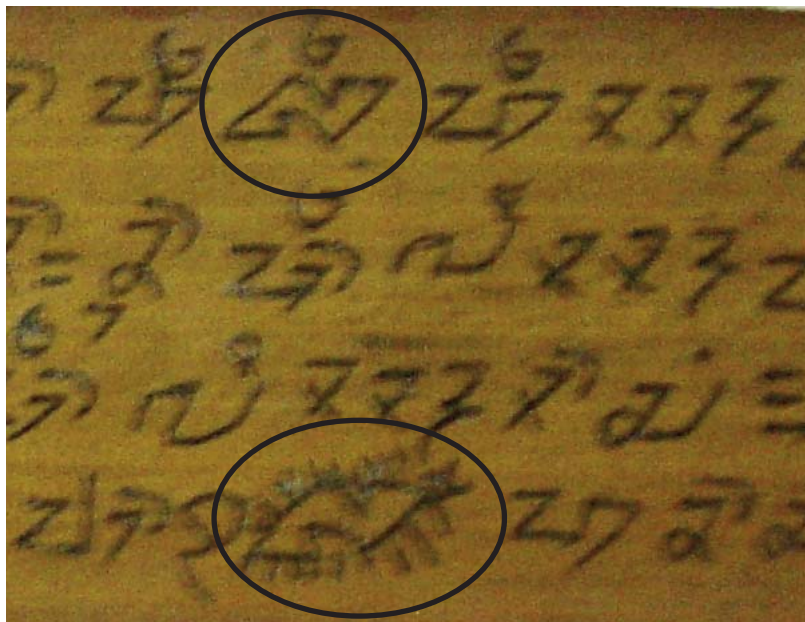
Figure 9. Old Sundanese manuscript showing ᰛᰍᰛ PUNCTUATION BINDU BA SATANGA looking like a furry caterpillar. ᰍ LETTER BA is seen in the top line.
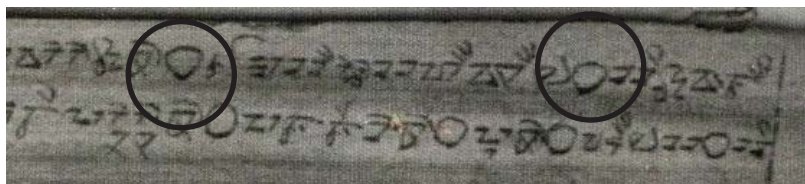
Figure 10. Old Sundanese manuscript showing a number of examples of ○ PUNCTUATION BINDU CAKRA

5) ⬚ꦵ = *patén (pamaéh)* berfungsi menghilangkan
bunyi vokal pada aksara dasar yang mendahuluinya.

�꧀꧀ = *ka* → ꦏ꧀ = *k*.

Contoh: = *awak* 'badan'.

Disamping itu, ada 2 cara penanda *patén* khusus, yaitu
(a) ꦏꦏ berfungsi untuk menambah bunyi konsonan /*k*/
pada akhir aksara yang didahuluinya, contoh: ꦄꦤꦏ =
anak 'anak'; dan (b) ꦩ berfungsi untuk menambah bunyi
konsonan /*m*/ pada akhir aksara yang didahuluinya, contoh:
ꦧꦤꦩ = *banem* 'hutan'.

6) ꦒ = pemisah bunyi konsonan dan vokal dalam satu silabis.

Contoh: ꦄꦭꦸꦤꦒꦲꦒꦸꦁ = *alun-agung* 'gelombang pasang'.

Figure 11. Discussion of FINAL K, FINAL M, and AVAGRAHA.

No	Pasangan Khusus				Pasangan Umum	
	Bentuk Horizontal	Nilai	Bentuk Vertikal	Nilai	Bentuk	Nilai
1.	ꦏ꧀ꦠ	- kta -	ꦲ꧀ꦢ	- hda -	ꦩ	- ma-
2.	ꦤ꧀ꦕ	- nca -	ꦲ꧀ꦫ	- hra -	ꦫ	- ra -
3.	ꦤ꧀ꦢ	- nda -	ꦗ꧀ꦤ	- jna -	ꦮ	- wa -
4.	ꦤ꧀ꦠ	- nta -	ꦩ꧀ꦥ	- mpa -	ꦪ	- ya -
5.	ꦚ꧀ꦗ	- nyja -				
6.	ꦠ꧀ꦤ	- tna -				

Figure 12. Discussion of archaic horizontal and vertical conjuncts,
and of CONSONANT SIGN PASANGAN MA and CONSONANT SIGN PASANGAN WA,
alongside the already-encoded CONSONANT SIGN PASANGAN RA and CONSONANT SIGN PASANGAN YA.

sa = ꦱ raksa = ꦫꦏ꧀ꦱ

ꦫꦏ꧀ꦱ

palsu = ꦥꦭ꧀ꦱꦸ

ꦥꦭ꧀ꦱꦸ

Figure 13. Examples of two words written with a conjunct and written with the explicit killer.

Figure 14. Sample text from Suryani 2008.

3. Perpindahan posisi.

Sebuah *rarangkén* harus dapat berpindah posisinya ketika diikuti oleh *rarangkén* lainnya. Misalnya, posisi *panghulu* harus simetris terhadap aksara *ngalagena*, tetapi ketika datang *panyecek* posisinya harus bergeser ke sebelah kiri.

pi   ping   pya   pyu

Gambar 4.8. Perpindahan posisi rarangkén ketika diikuti rarangkén lainnya

Figure 15. Discussion of diacritic placement in Baidillah *et al*. 2008

B. Desain Font Aksara Sunda

Font adalah bagian yang penting dalam dunia tifografi. Bentuk font bukan hanya menjadi *wakil sora* aksara Sunda, tetapi juga sebaiknya memiliki nilai artistik yang menawan. Oleh karena itu, diharapkan para desainer dari Tatar Sunda menyumbangkan karyanya untuk membuat bentuk aksara Sunda yang lebih variatif.

Meski kita bisa membuat bermacam-macam font, tetapi mesti ada satu font yang dianggap standar. Font standar aksara Sunda adalah font yang bentuknya mengikuti aturan penulisan aksara Sunda, seperti tinggi, lebar, dan kemiringannya. Adapun karakteristik font standar aksara Sunda adalah sebagai berikut:

- Memiliki kemiringan antara $45^0 - 75^o$
- Tipe *sans-serif,* memiliki ketebalan yang sama.
- Mudah ditiru ketika ditulis tidak menggunakan komputer.
- Perbandingan lebar dan tinggi seperti yang dibahas pada BAB III.2.
- Pungtuasi (tanda baca) mengadopsi semua tanda baca yang berlaku pada sistem tata tulis huruf Latin.
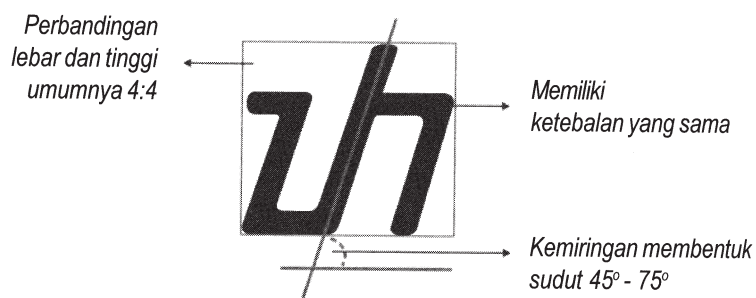
Gambar 4.8 Karakteristik aksara Sunda standar

Bentuk font aksara Sunda dapat didesain secara manual pada kertas, dan kemudian dipindai ke komputer. Bisa juga menggunakan *software* pengolah citra berbasis vektor. Alangkah baiknya jika pada tahap ini, ada kerjasama antara desainer dengan mereka yang mahir menggunakan komputer.
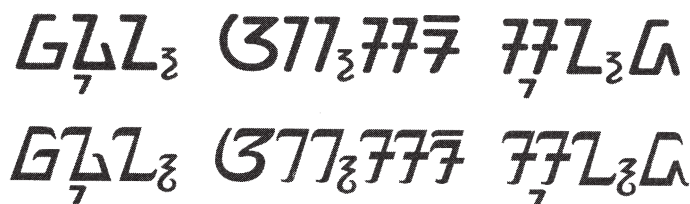
Figure 16. Discussion of font design and example of sans-serif and serif fonts in the modern style.

A. Administrative

1. Title

Proposal for encoding additional Sundanese characters for Old Sundanese in the UCS.

2. Requester's name

UC Berkeley Script Encoding Initiative (Universal Scripts Project)

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

Liaison contribution.

4. Submission date

2009-09-05

5. Requester's reference (if applicable)

6. Choose one of the following:

6a. This is a complete proposal

Yes.

6b. More information will be provided later

No.

B. Technical – General

1. Choose one of the following:

1a. This proposal is for a new script (set of characters)

No.

Proposed name of script

1b. The proposal is for addition of character(s) to an existing block

Yes.

1c. Name of the existing block

**Sundanese, Sundanese Supplement.**

2. Number of characters in proposal

17.

3. Proposed category (A-Contemporary; B.1-Specialized (small collection); B.2-Specialized (large collection); C-Major extinct; D-Attested extinct; E-Minor extinct; F-Archaic Hieroglyphic or Ideographic; G-Obscure or questionable usage symbols)

Category A.

4a. Is a repertoire including character names provided?

Yes.

4b. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?

Yes.

4c. Are the character shapes attached in a legible form suitable for review?

Yes.

5a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?

Michael Everson and "Tim Unicode Aksara Sunda".

5b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:

Michael Everson, Fontographer.

6a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

No.

6b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?

Yes.

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

Yes.

8. Additional Information: Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script.

See above.

C. Technical – Justification

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

No.

2a. 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.

2b. If YES, with whom?

Sai Zin Di Di Zone, Khwaan Tai, Sai Murngzuen Hengtai.

2c. If YES, available relevant documents

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

People in West Java, Indonesia.

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

Rare.

4b. Reference

5a. Are the proposed characters in current use by the user community?
Yes.
5b. If YES, where?
In Indonesia.
6a. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?
Yes.
6b. If YES, is a rationale provided?
Yes.
6c. If YES, reference
Keep with other Sundanese characters.
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?
No.
8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?
No.
8b. If YES, is a rationale for its inclusion provided?
8c. If YES, reference
9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?
No.
9b. If YES, is a rationale for its inclusion provided?
9c. If YES, reference
10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?
No.
10b. If YES, is a rationale for its inclusion provided?
10c. If YES, reference
11a. Does the proposal include use of combining characters and/or use of composite sequences?
Yes.
11b. If YES, is a rationale for such use provided?
Yes.
11c. If YES, reference
Brahmic vowel and consonant signs.
11d. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?
No.
11e. If YES, reference
12a. Does the proposal contain characters with any special properties such as control function or similar semantics?
No.
12b. If YES, describe in detail (include attachment if necessary)
13a. Does the proposal contain any Ideographic compatibility character(s)?
No.
13b. If YES, is the equivalent corresponding unified ideographic character(s) identified?