Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation Internationale de Normalisation
Международная организация по стандартизации

Doc Type: Working Group Document
Title: Preliminary proposal for encoding the Balinese script in the UCS
Source: Michael Everson
Status: Individual Contribution
Action: For consideration by JTC1/SC2/WG2 and UTC
Date: 2004-10-04

This is a preliminary proposal to encode the Balinese script in the BMP of the UCS.

The Balinese script is used for writing the Balinese language, the native language of the people of Bali. It is a descendent of the ancient Brahmic script from India; therefore it has some notable similarities with modern scripts of South Asia and Southeast Asia that also are descendent of the Brahmic script. The Balinese script is also used for writing Kawi, or Old Javanese, which had a heavy influence to Balinese language in the 11th century CE. Some Balinese words are also borrowed from Sanskrit, thus Balinese script is also used to write words from Sanskrit.

Structure
Vowel signs are used in a manner similar to that employed by other Brahmi-derived scripts. Consonants have an inherent /a/ vowel sound.

Ordering
An ordering based on the traditional order of the Javanese script: *ha na ca ra ka da ta sa wa la pa ja ya ma ga ba nga* has some currency. (The Javanese order is *hana caraka, data sawala, padha jayanya, maga bathanga*, a sentence which means 'There were (two) emissaries, they began to fight, their valour was equal, they both fell dead'.) This proposed encoding maps directly to the Devanagari block, however, for clarity at this stage of discussion..

A. Administrative
1. Title
Proposal for encoding the Balinese script in the UCS.
2. Requester's name
Michael Everson
3. Requester type (Member body/Liaison/Individual contribution)
Individual contribution.
4. Submission date
2004-10-04
5. Requester's reference (if applicable)
6. Choose one of the following:
6a. This is a complete proposal
No.
6b. More information will be provided later
Yes.

B. Technical – General

1. Choose one of the following:
1a. This proposal is for a new script (set of characters)
Yes.
Proposed name of script
Balinese.
1b. The proposal is for addition of character(s) to an existing block
No.
1c. Name of the existing block
2. Number of characters in proposal
91
3. Proposed category (see section II, Character Categories)
Category B.1.
4a. Proposed Level of Implementation (1, 2 or 3) (see clause 14, ISO/IEC 10646-1: 2000)
Level 2
4b. Is a rationale provided for the choice?
Yes.
4c. If YES, reference
Balinese requires Level 2 implementation as other Brahmic scripts do.
5a. Is a repertoire including character names provided?
Yes.
5b. If YES, are the names in accordance with the character naming guidelines in Annex L of ISO/IEC 10646-1: 2000?
Yes.
5c. Are the character shapes attached in a legible form suitable for review?
Yes.
6a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?
Michael Everson.
6b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:
Michael Everson, Fontographer.
7a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?
No.
7b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?
No.
8. 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)?
No.
9. Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at http://www.unicode.org for such information on other scripts. Also see Unicode Character Database http://www.unicode.org/Public/UNIDATA/ UnicodeCharacterDatabase.html and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.
To be done.

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?
Ida Bagus Adi Sudewa.
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?

Balinese is used on the island of Bali in Indonesia.

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

Used to write the Balinese language.

4b. Reference

5a. Are the proposed characters in current use by the user community?

Yes.

5b. If YES, where?

In Bali.

6a. After giving due considerations to the principles in Principles and Procedures document (a WG 2 standing document) must the proposed characters be entirely in the BMP?

Yes. Positions 1B00-1B7F are proposed.

6b. If YES, is a rationale provided?

Yes.

6c. If YES, reference

Contemporary use and accordance with the Roadmap.

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?

Yes.

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?

Yes. The "nuktated" extensions for Arabic can all be composed of base characters and the proposed BALINESE SIGN NUKTA.

9b. If YES, is a rationale for its inclusion provided?

No. This is a preliminary proposal. One question which would need to be dealt with is the interaction of the nukta with the other vowel matras. Another is the repertoire: Balinese seems to have six nuktated consonants for Arabic, but Javanese appears to have a repertoire of eight.

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 (see clauses 4.12 and 4.14 in ISO/IEC 10646-1: 2000)?

Yes.

11b. If YES, is a rationale for such use provided?

Yes.

11c. If YES, reference

Brahmic vowels.

12a. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?

No.

12b. If YES, reference

13a. Does the proposal contain characters with any special properties such as control function or similar semantics?

No.

13b. If YES, describe in detail (include attachment if necessary)

14a. Does the proposal contain any Ideographic compatibility character(s)?

No.

14b. If YES, is the equivalent corresponding unified ideographic character(s) identified?

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TABLE XX - Row 1B: BALINESE DRAFT

	E70	E71	E72	E73	E74	135	136	137
0	◌	ᬓ		ᬓ	◌		ᬀ	०
1	◌				◌		ᬓ	ᰀ
2	◌			ᬓ	◌		ᬓ	ᬓ
3	◌	ᬓ	ᬓ		◌		ᬓ	ᬓ
4		ᬓ	ᬓ		◌		︺	
5	ᬅ	ᬓ	ᬓ	ᬓ		◌	︷	
6	ᬆ	ᬓ	ᬓ	ᬓ	◌	◌	०	
7	ᬓ	ᬓ	ᬓ	ᬓ	◌	◌	ᬓ	︺
8	ᬓ	ᬓ	ᬓ	ᬓ	◌	◌	ᬓ	ᰀ
9	ᬓ	ᬓ		ᬓ			ᬓ	ᬓ
A	ᬓ	ᬓ	ᬓ		◌	◌	ᰀ	ᰀ
B	ᬓ	ᬓ	ᬓ		◌	◌	ᬓ	ᰀ
C	ᬓ	ᬓ	ᬓ	◌	◌		ᰀ	
D			ᬓ		◌		ᬓ	
E		ᬓ	ᬓ	◌			ᬓ	
F	ᰀ	ᬓ	ᬓ	◌			ᬓ	

G = 00
P = 00

TABLE XX - Row 1B: BALINESE DRAFT

hex	Name	hex	Name
00	BALINESE SIGN ARDHACANDRA (ulu ricem)	59	(This position shall not be used)
01	BALINESE SIGN CANDRABINDU (ulu candra)	5A	BALINESE LETTER GHHA
02	BALINESE SIGN ANUSVARA (cecek)	5B	BALINESE LETTER ZA
03	BALINESE SIGN VISARGA (bisah)	5C	(This position shall not be used)
04	(This position shall not be used)	5D	(This position shall not be used)
05	BALINESE LETTER A (a kara)	5E	(This position shall not be used)
06	BALINESE LETTER AA (a kara tedong)	5F	(This position shall not be used)
07	BALINESE LETTER I (i kara)	60	BALINESE LETTER VOCALIC RR (ra repa tedong)
08	BALINESE LETTER II (i kara tedong)	61	BALINESE LETTER VOCALIC LL (la lenga tedong)
09	BALINESE LETTER U (u kara)	62	BALINESE VOWEL SIGN VOCALIC L (la lenga)
0A	BALINESE LETTER UU (u kara tedong)	63	BALINESE VOWEL SIGN VOCALIC LL (la lenga tedong)
0B	BALINESE LETTER VOCALIC R (ra repa)	64	BALINESE DANDA (carik)
0C	BALINESE LETTER VOCALIC L (la lenga)	65	BALINESE DOUBLE DANDA (carik pareren)
0D	(This position shall not be used)	66	BALINESE DIGIT ZERO
0E	(This position shall not be used)	67	BALINESE DIGIT ONE
0F	BALINESE LETTER E (e kara)	68	BALINESE DIGIT TWO
10	BALINESE LETTER AI (airsania)	69	BALINESE DIGIT THREE
11	(This position shall not be used)	6A	BALINESE DIGIT FOUR
12	(This position shall not be used)	6B	BALINESE DIGIT FIVE
13	BALINESE LETTER O (o kara)	6C	BALINESE DIGIT SIX
14	BALINESE LETTER AU (o kara tedong)	6D	BALINESE DIGIT SEVEN
15	BALINESE LETTER KA	6E	BALINESE DIGIT EIGHT
16	BALINESE LETTER KHA	6F	BALINESE DIGIT NINE
17	BALINESE LETTER GA	70	BALINESE PUNCTUATION RING
18	BALINESE LETTER GHA (ga gora)	71	BALINESE COLON (carik pamungkah)
19	BALINESE LETTER NGA	72	BALINESE SECTION (panten)
1A	BALINESE LETTER CA	73	BALINESE HONORIFIC SECTION (pamada)
1B	BALINESE LETTER CHA	74	(This position shall not be used)
1C	BALINESE LETTER JA	75	(This position shall not be used)
1D	(This position shall not be used)	76	(This position shall not be used)
1E	BALINESE LETTER NYA	77	BALINESE MUSICAL SIGN NDANG
1F	BALINESE LETTER TTA (ta latik)	78	BALINESE MUSICAL SIGN NDING
20	(This position shall not be used)	79	BALINESE MUSICAL SIGN NDUNG
21	(This position shall not be used)	7A	BALINESE MUSICAL SIGN NDENG
22	(This position shall not be used)	7B	BALINESE MUSICAL SIGN NDONG
23	BALINESE LETTER NNA (na rambat)	7C	(This position shall not be used)
24	BALINESE LETTER TA	7D	(This position shall not be used)
25	BALINESE LETTER THA (ta tawa)	7E	(This position shall not be used)
26	BALINESE LETTER DA	7F	(This position shall not be used)
27	BALINESE LETTER DHA (da madu)		
28	BALINESE LETTER NA		
29	(This position shall not be used)		
2A	BALINESE LETTER PA		
2B	BALINESE LETTER PHA (pa kapal)		
2C	BALINESE LETTER BA		
2D	BALINESE LETTER BHA (ba kembang)		
2E	BALINESE LETTER MA		
2F	BALINESE LETTER YA		
30	BALINESE LETTER RA		
31	(This position shall not be used)		
32	BALINESE LETTER LA		
33	(This position shall not be used)		
34	(This position shall not be used)		
35	BALINESE LETTER WA		
36	BALINESE LETTER SHA (sa saga)		
37	BALINESE LETTER SSA (sa sapa)		
38	BALINESE LETTER SA		
39	BALINESE LETTER HA		
3A	(This position shall not be used)		
3B	(This position shall not be used)		
3C	BALINESE SIGN NUKTA		
3D	(This position shall not be used)		
3E	BALINESE VOWEL SIGN AA (tedong)		
3F	BALINESE VOWEL SIGN I (ulu)		
40	BALINESE VOWEL SIGN II (ulu sari)		
41	BALINESE VOWEL SIGN U (suku)		
42	BALINESE VOWEL SIGN UU (suku ilut)		
43	BALINESE VOWEL SIGN VOCALIC R (ra repa)		
44	BALINESE VOWEL SIGN VOCALIC RR (ra repa tedong)		
45	(This position shall not be used)		
46	BALINESE VOWEL SIGN AE (pepet)		
47	BALINESE VOWEL SIGN E (taleng)		
48	BALINESE VOWEL SIGN AI (taleng repa)		
49	(This position shall not be used)		
4A	BALINESE VOWEL SIGN OE (pepet tedong)		
4B	BALINESE VOWEL SIGN O (taleng tedong)		
4C	BALINESE VOWEL SIGN AU (taleng repa tedong)		
4D	BALINESE VIRAMA (adegadeg)		
4E	(This position shall not be used)		
4F	(This position shall not be used)		
50	(This position shall not be used)		
51	(This position shall not be used)		
52	(This position shall not be used)		
53	(This position shall not be used)		
54	(This position shall not be used)		
55	BALINESE LETTER AIN		
56	BALINESE LETTER FA		
57	BALINESE LETTER HHA		
58	BALINESE LETTER KHHA		