

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

**Doc Type:** Working Group Document  
**Title:** Proposal to add the Vai script to the BMP of the UCS  
**Source:** Michael Everson, Charles Riley, and José Rivera  
**Status:** Individual contribution  
**Date:** 2005-08-01

## Introduction

While there are divergent opinions on the ultimate origins of the Vai script and early influences on its development, there is general agreement that its beginnings as an actively used script are appropriately traced to Momolu Duwalu Bukele of Jondu, in what is now Grand Cape Mount County, Liberia. He is regarded within the Vai community, as well as by most scholars, as the script's inventor and chief promoter when it was first documented in the 1830s.

One of Bukele's cousins, Kaali Bala Ndole Wano, took as his "book-name" the *nom de plume* Rora, and produced a manuscript text of about 50 pages, *The Book of Ndole* (henceforth *Ndole*, also known as *The Book of Rora*), translated and analyzed at different times by Sigismund Koelle, Heymann Steinthal, and Gail Stewart. Other texts were written in the Vai script continuously during each decade of the 19th century, but the archives held at Jondu and Bandakoro were destroyed in warfare with the neighboring Gola tribe. Those texts still extant from this period are of much shorter length than *Ndole*, including sample manuscripts obtained separately by the American missionaries J. L. Wilson and S. R. Wynkoop in 1834, and by F. E. Forbes in 1849.

Koelle's pioneering work on Vai began with a trip into Vai country to meet Bukele in 1849. He compiled an inventory of the characters, including several logograms then in use, and translated three Vai books. He continued referring to his work on Vai into his later years, including notes and comments published in 1884 and 1889. Other researchers who took a particular interest in Vai, following Koelle, included Maurice Delafosse, F. W. Migeod, George Washington Ellis, and August Klinghenben; and in its more recent period (post-1962), P. E. H. Hair, David Dalby, Svend Holsoe, Sylvia Scribner, Michael Cole, John Singler, and Konrad Tuchscherer.

At the beginning of the 20th century, Momolu Massaquoi had undertaken efforts to translate gospel and Qur'anic materials into Vai, proposing modifications of characters for use in representing foreign sounds. Becoming Consul to Hamburg and beginning a teaching post at the University of Hamburg, he was able to continue this work in close collaboration with Klinghenben through the 1920s and 1930s. Klinghenben's involvement culminated with a conference held at the University of Liberia in 1962 to standardize the script for modern usage; the team of Vai scholars he worked with included Fatima Massaquoi Fahnbulleh, Zuke Kandakai, S. Jangaba Johnson, and Bai Tamia Moore, among others.

Texts produced over the course of the 20th century included a manuscript of 180 pages in length in diary form, containing a number of clan histories, translations of selections from the gospels and the Qur'an, folktales and short stories, and page-long summaries included in local newsletters. This script remains in use today, particularly among Vai merchants and traders. In addition to its presence in commerce, there is a growing body of literature published in Vai. The

Bible Society in Liberia has recently published a New Testament and the Institute of Liberian Languages has published several compilations of folktales and history.

## Sources

The primary sources for the Vai characters in the character set proposed are the 1962 Vai Standard Syllabary (which was a distillation of many sources specifying characters for modern use), modern primers and texts which use the Standard Syllabary (and a few glyph modifications reflecting modern preferences), the 1911 additions of Momolu Massaquoi, and the characters found in *The Book of Ndole*. Secondary sources, such as Johnston 1906 and Dalby 1967, are used as supplementary material and as checks for some of the archaic characters. Both of those sources make some unifications and some distinctions which we have not considered authoritative in terms of the proposed character set. Only those characters in Dalby's "unidentified" column which are circled in Figure 8 do we consider to be safely identified by us. Many of the characters on Dalby's charts are not proposed for encoding.

## Structure

In Figure 1 the syllabary as proposed here is given in its standard presentation. Vai is a simple syllabic script written from left to right. (Strictly speaking, the writing system is based on the mora, a unit of duration [or weight] such that a short syllable has one mora and a long syllable has two. A syllable is long if it contains a long vowel or ends with a consonant) The Vai language has seven oral vowels [e i a o u ɔ ɛ] and five nasal vowels [ĩ ã ũ õ ẽ]. Vai has 31 consonants [ŋ h w p b ɓ mb kp mgb gb f v t d l r ɖ nd s ʃ z tʃ dʒ ndʒ j k ŋg g m n ɲ] of which [r] and [ʃ] are recent imports into the language. The original Vai script accounted for only the original 29 consonants, but by 1911 Massaquoi's charts give an extended set of characters, including [r ʃ] and also giving series for [ɹ θ ð ʒ]. All six of these extensions were modifications of the base glyphs for [l s w t d z]. Massaquoi's charts also fill in some of the "gaps" for syllables with forms for nasal close vowels [ẽ õ]. His series for [ɹ] was taken over in modern times to represent the nasal [w] series, and his series for [r] has been adopted as part of the Standard syllabary. Massaquoi's other additions for non-Vai sounds have been shown there in red in order to highlight them to the Vai-speaking reviewer of this document who may not be familiar with them. Massaquoi's charts are given in Figure 4.

## Diacritical marks

Vai does not make use of a productive system of diacritical marks. Although the glyphs for some characters are certainly related to those of other characters, no systematic application of diacritization is found in Vai, and each character is encoded uniquely.

## Vowel length

Modern Vai marks vowel length in three traditional ways. The most common orthographic practice is to write the length by echoing the vowel of the syllable with a syllable in the ʘ<sub>HEE</sub> series; so for ɛ<sub>FA</sub> with a long vowel, ɛʘ<sub>FAHA</sub> *faa* is written; for ɛ̃<sub>NI</sub> with a long vowel, ɛ̃ʘ<sub>NIHI</sub> *nii* is written. Alternatively, but rarely, the =<sub>SYLLABLE LENGTHENER</sub> can be used: ɛ=<sub>FA</sub>: *faa*, ɛ̃=<sub>NI</sub>: *nii*. For the third method, namely, the "inherent vowel length" found in some Vai symbols, see the section "Logograms" below.

## Punctuation

Vai makes use of European punctuation, though a small number of script-specific punctuation marks occur commonly. The ^<sub>COMMA</sub> rests on or slightly below the baseline; the \*<sub>FULL STOP</sub> rests on the baseline and can be \*\* doubled for use as an exclamation mark. The ʘ<sub>QUESTION</sub>

MARK also rests on the baseline; it is rather rarely used. Some modern primers prefer Vai punctuation; some prefer European. Vai punctuation was used in the 1962 Standard.

## Digits

In the 1920s ten decimal digits were devised for Vai; these were “Vai-style” glyph variants of European digits (see Figure 11). They were not popular with Vai people and are not proposed for encoding here, even for historical purposes, as we have seen no examples of them in use. All the modern literature uses European digits.

## Syllables unique to *The Book of Ndole*

In some of the older Vai texts more than one character may be used to represent a pronounced syllable; where these coexist beside another attested character, a disunification is warranted. We mention glyph choices in the discussion below because this is the first time many of these symbols have been given modern typographic form. To design modern typographic forms for such characters, we have looked first at characters in Ndole which resemble them, and then at how those glyphs compare to their modern counterparts; glyphs for the archaic characters were designed on the same principles. The same is true for the design of the logograms discussed below.

𐌪/𐌪 In *Ndole* the character 𐌪 is read as a logogram KAI ‘man’, but this is the same character as the modern 𐌪 SYLLABLE KA, and in *Ndole* 𐌪 and 𐌪 SYLLABLE NDOLE KA are distinct; compare the related 𐌪 SYLLABLE GA. Dalby does not give the 𐌪 shape.

𐌪/𐌪 In *Ndole* 𐌪 SYLLABLE SOO is distinct from the 𐌪 SYLLABLE NDOLE SOO (Stewart suggested that the former was originally \*SOONG). The glyph we give for the latter reflects the same glyph changes as shown in Dalby’s 1849 and 1961 glyphs for 𐌪 SYLLABLE PE, namely reversal and sharpening of the centre curve into a zigzag.

𐌪 Stewart says that there are four “variant” characters used only in names in *The Book of Ndole*. Of these, the 𐌪 SYLLABLE NDOLE FA is certainly a candidate for encoding, distinct from both 𐌪 SYLLABLE FA and 𐌪 SYMBOL FAA ‘die, kill’. For the modern glyph we have used the shapes of 𐌪 SYMBOL FAA to give it typographic form, based on the relationship of the Ndole FA and FAA glyphs; another choice might be to use a permutation of 𐌪 SYLLABLE MBA, which also has similar shapes. Of the other “variant” characters, two of them are already encoded for other uses: 𐌪 SYLLABLE SHA and 𐌪 SYLLABLE WOON are available to represent the *Ndole* “variants” SA and WO respectively. Further research into the “variant” MA Stewart describes will be required to see if it really should be disunified from 𐌪 SYLLABLE MA; to us, it seems like a unifiable glyph variant. It could be added at a later date.

## Logograms

In the oldest Vai texts, a set of symbols called in the literature “logograms” occurs, representing individual syllables with inherent vowel length or with an inherent final nasal. Two of these logograms are known to enjoy some contemporary use. Of these, the character 𐌪 SYMBOL FAA, has an inherent long vowel. It represents the word meaning ‘die, kill’ and is used alongside the date of death, as the † DAGGER is in some European practices (the glyph is said to represent a wilting tree). The word meaning ‘thing’ is represented by 𐌪 SYMBOL FEENG. A list of the logograms occurring in *Ndole* is given in Figure 6; a number of these are also represented by Dalby in Figure 8. Examination of these repertoires shows that some of the logograms were absorbed as ordinary syllables in the modern syllabary; others we judge to be distinct and have proposed here.

- 𐄂 In *Ndole* 𐄂 SYMBOL BANG, 𐄃 SYLLABLE BA, and 𐄄 SYLLABLE BHA are distinct. Dalby seems to mistakenly identify 𐄂 SYMBOL BANG with 𐄄 SYLLABLE BHA, listing both under **ba** (BHA). The glyph we give for 𐄂 SYMBOL BANG reflects the same glyph changes as shown in Dalby's 1849 and 1961 glyphs for both 𐄅 SYLLABLE DEE and 𐄆 SYLLABLE SU, namely rotation and sharpening of the hooks into points.
- 𐄇 Both *Ndole* and Dalby give 𐄇 SYMBOL DANG 'hear, understand'. For the glyph shape we give, compare Dalby's 1849 and 1961 𐄈 SYLLABLE MI.
- 𐄉 Although the glyph Dalby gives for 1841 𐄉 SYLLABLE DEE has dots or rings, and *Ndole* SYMBOL DEENG 'child, small' has not, we believe these characters should be unified. *Ndole* gives no distinct SYLLABLE DEE, and rotation and sharpening of the hooks gives the modern glyph shape 𐄉; compare Dalby's 1849 and 1961 glyphs for 𐄆 SYLLABLE SU. Johnston 1906 also gives the character, with dots or rings, with the reading *de* (see Figure 17).
- 𐄊 We consider it possible but not necessarily probable that Dalby's 1849 **dòn** (DHOONG) is the same character as the *Ndole* 𐄊 SYMBOL DOONG 'enter'. If a \*SYMBOL DHOONG exists, we do not know it apart from Dalby's suggestion, and have not encoded it separately here. In any case for the glyph for SYMBOL DOONG we have followed that for 𐄋 SYLLABLE NYA in modernizing it from the *Ndole* manuscript.
- 𐄌 *Ndole* gives 𐄌 as a logogram for SYMBOL DO-O 'be small' [dɔ:] (not DOO [dɔ]), although Dalby suggests that it is an 1849 glyph variant of modern 𐄍 SYLLABLE NDOO; we note that Dalby gives another SYMBOL DHUNG which looks similar to NDOO, and we note the general similarity of 𐄎 SYLLABLE LOO, not to mention Massaquoi's 𐄏 SYLLABLE THO. We think on balance Dalby's unification is unsafe, and consider it wiser not to try to unify SYMBOL DO-O 'be small' with SYLLABLE NDOO. *Ndole* does not otherwise give a SYLLABLE NDOO, but both its SYLLABLE LOO and SYLLABLE DOO have the three branches at the top and a loop below. Johnston 1906 also gives the character with the reading *dō* (dɔ/dɔ). See Figure 17.
- 𐄐 Both *Ndole* and Dalby give 𐄐 SYMBOL FAA 'die, kill', though Dalby gives it as a glyph variant of 𐄑 SYLLABLE FA. The glyph shape we give conforms to modern practice.
- 𐄒 Both *Ndole* and Dalby give 𐄒 SYMBOL FEENG 'thing'. The glyph shape we give conforms to both older and modern practice.
- 𐄓 Both *Ndole* and Dalby give 𐄓 SYMBOL JONG 'slave'. The glyph shape follows *Ndole*, with influence from 𐄔 SYLLABLE JEE.
- 𐄕 Dalby reads 𐄕 as 𐄖 SYLLABLE GI but marks his reading as doubtful. We share that doubt and propose to encode *Ndole*'s 𐄕 SYMBOL KEENG 'foot' as a unique character. Johnston 1906 also gives this character with the reading *keñ* (KEENG). See Figure 18.
- 𐄗 In *Ndole* 𐄗 SYMBOL NII 'cow' is given, alongside a second reading KPE KOWU 'case of gin'. Johnston 1906 also gives this character with the reading *ni* (see Figure 19). We find Dalby's unification of this character with 𐄘 SYLLABLE NYU to be doubtful in this context, and prefer to encode the symbol on its own. Neither *Ndole* nor Johnston 1906 give a syllable NYU, as it happens, but even so, since [n] and [ɲ] are different phonemes and the internal structure for the script shows no relation between glyphs of those two phonemes, we think it unlikely that the characters are related. Other early box-like glyphs retain a box-shape and do not take on a U-shape; Massaquoi's glyph for NYU has but a single dot (see Figure 4).
- 𐄙 Both *Ndole* and Dalby give 𐄙 SYMBOL KUNG 'head, be able'. The glyph shape follows Dalby, as this harmonizes better with modern 𐄚 SYLLABLE KPA than a tilted triangle would.



- 𐌹 The glyph Dalby gives for 1849 𐌹 SYLLABLE DO is the modern glyph turned on its side; we believe that *Ndole* SYMBOL LO ‘in’ is the same character and the two should be unified. *Ndole* seems to have some confusion using 𐌸 SYLLABLE LO for LO as well as DO and NDO; it also uses 𐌺 for LA, DA, NDA; 𐌻 for LA, DA; 𐌽 for LU, DU; 𐌾 for LE, DE; and 𐌿 for LOO, DOO. Johnston 1906 likewise shows early confusion in the representation of these phonemes: 𐌺 for RA, DA, NDA; 𐌾 for RI, DI; 𐌸 for ROO, DOO; 𐌹 and 𐌹𐌺 for RO, DO (Johnston does not use L- in transcription).
- 𐌺 Both *Ndole* and Dalby give 𐌺 SYMBOL TAA ‘go, carry, journey’. The glyph shape we give conforms to both older and modern practice.
- 𐌾 Both *Ndole* and Dalby give 𐌾 SYMBOL TING ‘island’. The glyph shape we give conforms to both older and modern practice.
- 𐌿 Both *Ndole* and Dalby give 𐌿 SYMBOL TONG ‘be named’. The glyph shape we give conforms to both older and modern practice.

## Character names

Transliteration into ASCII-based character names follows the usual UCS conventions. The vowels are EE I A OO U O E, doubling the close vowels [e o] and leaving single the open vowels [ɔ ɛ]. Nasality is marked with -N. Because the implosive consonants are far more frequent than the non-implosive ones, Vai are [b d] conventionally transliterated <b d> and [ɓ ɗ] are conventionally written <bh dh>; accordingly [ð], a modification of <dh> is written <dhh> here. Figure 1 gives both phonetic values and UCS character name values.

## Ordering

There is no evidence of traditional conventions on ordering *per se* apart from conventions found in syllabary charts. The ordering proposed here is that agreed upon by an experts working group, based on current practices in chart presentation. Our analysis of Vai recognizes that structurally, the “inherent” order is based first on the rhyme, and then on the consonant-groupings within each rhyme, themselves in a standard order which shows a high degree of linguistic sophistication on the part of the script’s creator, Mómolu Duwalu Bukele.

[illegible]

**Vowels.** The relative order of the vowel series in Vai seems to be based on the names of the corresponding transliteration vowel in English; compare [e i a o u ɔ ɛ] with [eɪ iː aɪ ʊʊ ju] + [ɔ ɛ]. This order is sung in alphabet chants in Liberia, which is why we have chosen it in the absence of a “standard” Vai ordering. Other ordering systems exist. A “row-based” order based on the

Latin transliteration of Vai characters is found; others are “column-based” as though with the vowel orders sorted as in Latin [a e i o u] or [a e i o u]; a “linguists’ order” [i a u e o o] is sometimes found, as in Dalby 1967.

**Logograms.** The NDOLE SYLLABLES 𐒀 FA, 𐒁 KA, and 𐒂 SOO are sorted as equivalent to the SYLLABLES 𐒃 FA, 𐒄 KA, and 𐒅 SOO. The SYMBOLS 𐒆 FEENG, 𐒇 KEENG, 𐒈 TING, 𐒉 BANG, 𐒊 DANG, 𐒋 DOONG, 𐒌 KUNG, 𐒍 TONG, and 𐒎 JONG are sorted as equivalent to the SYLLABLES 𐒏 FEE+NG, 𐒐 KEE+NG, 𐒑 TI-NG, 𐒒 BA-NG, 𐒓 DA-NG, 𐒔 DOO-NG, 𐒕 KU-NG, 𐒖 TO-NG, and 𐒗 JO-NG respectively. The SYMBOLS 𐒘 NII, 𐒙 FAA, 𐒚 TAA, and 𐒛 DO-O are sorted as equivalent to the SYLLABLES 𐒜 NI+LENGTHENER, 𐒝 FA+LENGTHENER, 𐒞 TA+LENGTHENER, and 𐒟 DO+LENGTHENER. We do not recommend that these be treated as equivalent to the SYLLABLES 𐒠 NI+HI, 𐒡 FA+HA, 𐒢 TA+HA, and 𐒣 DO+HO, even though the readings are the same.

## Line breaking

An opportunity for line breaking within a word can occur *after* any character, but not *before* U+A606 𐒏 SYLLABLE NG or U+A607 𐒜 SYLLABLE LENGTHENER which should not begin a line in hyphenation since they are syllable finals. (𐒏 SYLLABLE NG can begin a line when it is the first-person singular pronoun, but then it does not follow another character.) The “logogram” symbols should be treated as any other character. In words where length is indicated by a 𐒏 HEE series character echoing the vowel of the preceding syllable, the long syllable should not be broken. While VA + I = 𐒏 VAI can be broken, VA + HA 𐒏 VAA should not be broken. The punctuation marks U+A608 𐒐 VAI COMMA, U+A609 𐒑 VAI FULL STOP, and U+A60A 𐒒 VAI QUESTION MARK can only have a break after (but when VAI FULL STOP is used twice as an exclamation mark the pair should not be broken).

## Unicode Character Properties

All Vai syllables and symbols have the same properties except for the three punctuation characters:

```
A500;VAI SYLLABLE EE;Lo;0;L;;;;N;;;;;
..
A605;VAI SYLLABLE NYE;Lo;0;L;;;;N;;;;;
A606;VAI SYLLABLE NG;Lo;0;L;;;;N;;;;;
A607;VAI SYLLABLE LENGTHENER;Lo;0;L;;;;N;;;;;
A608;VAI COMMA;Po;0;CS;;;;N;;;;;
A609;VAI FULL STOP;Po;0;CS;;;;N;;;;;
A60A;VAI QUESTION MARK;Po;0;ON;;;;N;;;;;
A60E;VAI SYMBOL FENG;Lo;0;L;;;;N;;;;;
A60F;VAI SYMBOL FAA;Lo;0;L;;;;N;;;;;
```

## Bibliography

- Dalby, David. 1967. “A survey of the indigenous scripts of Liberia and Sierra Leone: Vai, Mende, Loma, Kpelle and Bassa”, in *African Language Studies* 8:1–51.
- Kandakai, C. K., and Charles Hutchison. 1975. 𐒏 𐒏 𐒏 (Vái kpòlò sénjé-nà). Monrovia: Institute for Liberian Languages.
- Jensen, Hans. 1969. *Die Schrift in Vergangenheit und Gegenwart*. 3., neubearbeitete und erweiterte Auflage. Berlin: VEB Deutscher Verlag der Wissenschaften.
- Johnson, S. Jangaba M. [s.d.] *Traditional History, Customary Laws, Mores, Folkways, and Legends of the Vai Tribe*. Monrovia: Department of the Interior.
- Johnston, H. 1906. *Liberia*. London: [s.n.].
- Kandakai, Zuke, et al. 1962. 𐒏 𐒏 𐒏 𐒏 (Vai kpolo saikilamaa me) = *The Standard Vai script*. Monrovia: University of Liberia African Studies Program.
- Kante, Solomana. [s.d.]. 𐒏 𐒏 𐒏 (Manden kurufaba). Edited by Baba Mamady Diane. [s.l.]: [s.n.].

- Massaquoi, Momolu. 1911. "The Vai people and their syllabic writing", in *Journal of the Royal African Society* 10.40, July, pp. 459-466.
- Nyei, M. B., and H. Getaweh. 1976. 𞤎𞤍𞤏𞤢 𞤢𞤏𞤢 𞤏𞤢 𞤢𞤏𞤢 𞤢𞤏𞤢 𞤢𞤏𞤢 𞤢𞤏𞤢 𞤢𞤏𞤢 (Wodu Vai kpolo e pohā kpolo e senje-na ā). [s.l.]: [s.n.].
- Scribner, Sylvia, and Michael Cole. 1981. *The Psychology of Literacy*. New York: [s.n.].
- Stewart, Gail, and P. E. H. Hair. 1969. "A Bibliography of the Vai Language and Script", in *Journal of West African Languages*, volume VI, number 2, p. 124.
- Tucker, S. Lamii. 1999. 𞤢𞤏𞤢 𞤏𞤢 𞤏𞤢 𞤏𞤢 𞤏𞤢 𞤏𞤢 𞤏𞤢 𞤏𞤢 𞤏𞤢 𞤏𞤢 (Vai kpolo lō kowae gbu kpaha sō kpoloe fōlanaā mē) = *Vai script primer 2*. Monrovia: Libtralō.
- Tuchscherer, Konrad, and P.E.H. Hair, "Cherokee and West Africa: Examining the Origins of the Vai Script", in *History in Africa*, 29, 427-486.
- [s.n.]. [s.d.]. 𞤎𞤍𞤏𞤢 𞤢𞤏𞤢 𞤢𞤏𞤢 𞤢𞤏𞤢 𞤢𞤏𞤢 𞤢𞤏𞤢 (Iwanga kaha Vai wo e la) = *Teach Yourself Vae: Book One*. [s.l.]: [s.n.].

## Acknowledgements

This project was made possible in part by a grant from the U.S. National Endowment for the Humanities, which funded the Universal Scripts Project (part of the Script Encoding Initiative at UC Berkeley).

# Figures

-	-e	-i	-a	-o	-u	-ɔ	-ɛ	-
~	Ɑ	Ɱ	Ɐ	Ɒ	ⱱ	Ⱳ	ⱳ	-N
ŋ~	ⱴ	Ⱶ	ⱶ	ⱷ	ⱸ	ⱹ	ⱺ	NG-N
h-	ⱼ	ⱋ	ⱌ	ⱍ	ⱎ	ⱏ	ⱐ	H-
h~	ⱒ	ⱓ	ⱔ	ⱕ	ⱖ	ⱗ	ⱘ	H-N
w-	ⱙ	ⱚ	ⱛ	ⱜ	ⱝ	ⱞ	ⱟ	W-
w~	ⱡ	Ɫ	Ᵽ	Ɽ	ⱥ	ⱦ	Ⱨ	H-N
p-	ⱨ	Ⱪ	ⱪ	ⱬ	Ɑ	Ɱ	Ɐ	P-
b-	ⱱ	Ⱳ	ⱳ	Ⱶ	ⱶ	ⱷ	ⱸ	BH-
b-	ⱹ	ⱺ	ⱻ	ⱼ	ⱋ	ⱌ	ⱍ	B-
mb-	ⱎ	ⱏ	ⱐ	ⱑ	ⱒ	ⱓ	ⱔ	MB-
kp-	ⱕ	ⱖ	ⱗ	ⱘ	ⱙ	ⱚ	ⱛ	KP-
kp~	ⱜ	ⱝ	ⱞ	ⱟ	Ⱡ	ⱡ	Ɫ	KP-N
mgb-	Ᵽ	Ɽ	ⱥ	ⱦ	Ⱨ	ⱨ	Ⱪ	MGB-
gb-	Ɒ	ⱱ	Ⱳ	ⱳ	ⱴ	Ⱶ	ⱶ	GB-
gb~	ⱷ	ⱸ	ⱹ	ⱺ	ⱻ	ⱼ	ⱋ	GB-N
f-	ⱌ	ⱍ	ⱎ	ⱏ	ⱐ	ⱑ	ⱒ	F-
v-	ⱓ	ⱔ	ⱕ	ⱖ	ⱗ	ⱘ	ⱙ	V-
t-	ⱚ	ⱛ	ⱜ	ⱝ	ⱞ	ⱟ	Ⱡ	T-
θ-	ⱡ	Ɫ	Ᵽ	Ɽ	ⱥ	ⱦ	Ⱨ	TH-
d-	ⱨ	Ⱪ	ⱪ	ⱬ	Ɑ	Ɱ	Ɐ	DH-
ð-	ⱱ	Ⱳ	ⱳ	Ⱶ	ⱶ	ⱷ	ⱸ	DHH-
l-	ⱹ	ⱺ	ⱻ	ⱼ	ⱋ	ⱌ	ⱍ	L-
r-	ⱎ	ⱏ	ⱐ	ⱑ	ⱒ	ⱓ	ⱔ	R-
d-	ⱕ	ⱖ	ⱗ	ⱘ	ⱙ	ⱚ	ⱛ	D-
nd-	ⱜ	ⱝ	ⱞ	ⱟ	Ⱡ	ⱡ	Ɫ	ND-
s-	Ᵽ	Ɽ	ⱥ	ⱦ	Ⱨ	ⱨ	Ⱪ	S-
ʃ-	Ɒ	ⱱ	Ⱳ	ⱳ	ⱴ	Ⱶ	ⱶ	SH-
z-	ⱷ	ⱸ	ⱹ	ⱺ	ⱻ	ⱼ	ⱋ	Z-
ʒ-	ⱡ	Ɫ	Ᵽ	Ɽ	ⱥ	ⱦ	Ⱨ	ZH-
tʃ-	ⱨ	Ⱪ	ⱪ	ⱬ	Ɑ	Ɱ	Ɐ	C-
dʒ-	ⱱ	Ⱳ	ⱳ	Ⱶ	ⱶ	ⱷ	ⱸ	J-
ndʒ-	ⱹ	ⱺ	ⱻ	ⱼ	ⱋ	ⱌ	ⱍ	NJ-
j-	ⱎ	ⱏ	ⱐ	ⱑ	ⱒ	ⱓ	ⱔ	Y-
k-	ⱕ	ⱖ	ⱗ	ⱘ	ⱙ	ⱚ	ⱛ	K-
k~	ⱜ	ⱝ	ⱞ	ⱟ	Ⱡ	ⱡ	Ɫ	K-N
ŋg-	Ᵽ	Ɽ	ⱥ	ⱦ	Ⱨ	ⱨ	Ⱪ	NGG-
ŋg~	Ɒ	ⱱ	Ⱳ	ⱳ	ⱴ	Ⱶ	ⱶ	NGG-N
g-	ⱷ	ⱸ	ⱹ	ⱺ	ⱻ	ⱼ	ⱋ	G-
g~	ⱡ	Ɫ	Ᵽ	Ɽ	ⱥ	ⱦ	Ⱨ	G-N
m~	ⱨ	Ⱪ	ⱪ	ⱬ	Ɑ	Ɱ	Ɐ	M-
n~	ⱱ	Ⱳ	ⱳ	Ⱶ	ⱶ	ⱷ	ⱸ	N-
n~	ⱹ	ⱺ	ⱻ	ⱼ	ⱋ	ⱌ	ⱍ	NY-
	-EE	-I	-A	-OO	-U	-O	-E	
	Ɱ	Ɐ	Ɒ	ⱱ	Ⱳ	ⱳ	ⱴ	
ŋ	:	:	:	:	:	:	:	
NG	NG	NG	NG	NG	NG	NG	NG	

**Figure 1.** Vai character repertoire as conventionally presented in tabular form. The characters in red are Massaquoi's additions (apart from his *wh-* and *r-* series) as well as the syllable 2<sub>O</sub> KAN from *The Book of Ndole*. On the left are phonetic values; in blue are the UCS name transcriptions.



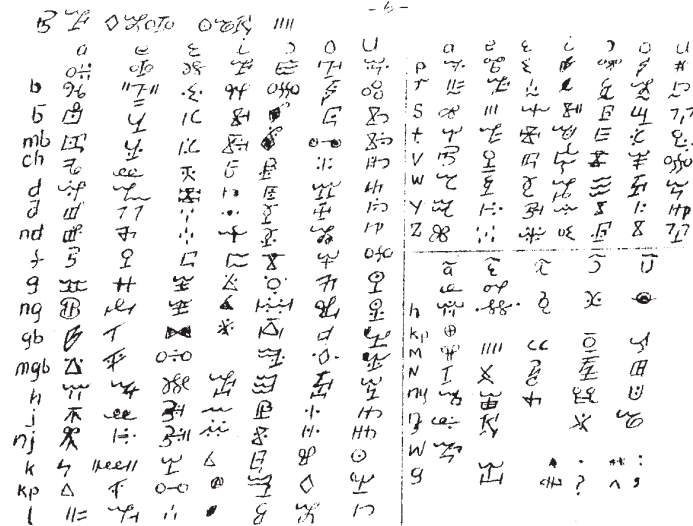


Figure 2. Handwritten syllabary from a teach-yourself book.

ᐃᐅ ᐅᐅᐅᐅ ᐅ ᐅᐅ ᐅᐅᐅ ᐅᐅ ᐅᐅ

	a	e	e	i	o	o	u	nasal
-	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
~	ᐅ		ᐅ	ᐅ		ᐅ		
p	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
bh	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
b	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
mb	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
kp	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ
mgb	ᐅ	ᐅ	ᐅ		ᐅ	ᐅ		
gb	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
f	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
v	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
t	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
d	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
l	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
dl	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
nd	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
s	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
z	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
ch	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
j	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
nj	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
y	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅᐅᐅ
k	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ
ᐅᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ
ᐅᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ
h	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
h~	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
w	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ
m	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅᐅ
n	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ
ny	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	ᐅ	
ᐅ			ᐅ					ᐅ

Figure 3. Vai syllabary chart from Tucker 1999.

# PHONETIC CHART OF VAI CHARACTERS.

[illegible]

These vowels have the sounds o/—e as in they, ē as in net, ī as in pin, ō as in old, ō as in not, ē as in tube.

[We print this chart as received, but we suspect that the sound denoted by  $q$  is really the  $u$  in "rule"—not that usually heard in "tube," which is a combination of  $y$  and  $u$ .—Ed.]

**Figure 4.** Syllabary chart from Massaquoi 1911. The logogram FAA occurs in his “Miscellaneous” section; of his “Punctuation and other signs”, only COMMA, QUESTION MARK, and FULL STOP have been proposed for encoding. As noted, the exclamation mark is simply two FULL STOPS.

	i	a	u	e	ɛ	ɔ	ɒ	nasal vowels
p		ᵐᵒ			ᵐᵒ		ᵐᵒ	
b	ᵐᵒ	ᵐᵒ	ᵐᵒ					
ɓ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	
mɓ		ᵐᵒ		ᵐᵒ			ᵐᵒ	
kp		ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ/ᵐᵒ kpā
gb	ᵐᵒ	ᵐᵒ		ᵐᵒ	ᵐᵒ		ᵐᵒ	
f	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	
v		ᵐᵒ						
t	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	
d	ᵐᵒ	ᵐᵒ	ᵐᵒ					
l	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	
ɖ	ᵐᵒ	ᵐᵒ	ᵐᵒ		ᵐᵒ	ᵐᵒ	ᵐᵒ	
nɖ		ᵐᵒ		ᵐᵒ		ᵐᵒ	ᵐᵒ	
s	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	
z	ᵐᵒ	ᵐᵒ					ᵐᵒ	
j	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ		
nj		ᵐᵒ			ᵐᵒ			
y		ᵐᵒ		ᵐᵒ	ᵐᵒ		ᵐᵒ	
k	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ kā
ŋg		ᵐᵒ						
g		ᵐᵒ				ᵐᵒ	ᵐᵒ	
h				ᵐᵒ	ᵐᵒ			
w	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ wā
-	ᵐᵒ	ᵐᵒ						

Nasal syllables

	ɪ	ã	ũ	ẽ	ĩ	syllabic nasal
ᵐᵒ	ᵐᵒ					
ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ	
n	ᵐᵒ	ᵐᵒ	ᵐᵒ	ᵐᵒ		
ny	ᵐᵒ	ᵐᵒ		ᵐᵒ	ᵐᵒ	
ŋ		ᵐᵒ		ᵐᵒ	ᵐᵒ	ᵐᵒ

Figure 5. The “Ndole Syllabary”, that is, the repertoire of character in *The Book of Ndole*. Circled is ᵐᵒ NDOLE SYLLABLE KA, not found in later syllable charts; note its similarity to ᵐᵒ SYLLABLE GA. Also circled is 2ᵒ SYLLABLE KAN.

𐌲𐌹	ḡaŋ	(finished)	𐌲	kai	(man)
(((	ḡaŋ	(hear, understand)	𐌹	keŋ	(foot)
𐌲	ḡeŋ	(child, small)	𐌹	nii <u>or</u>	(cow) <u>or</u>
𐌹	ḡoŋ	(enter)	𐌹	kpe kɔwu	(case of gin)
𐌹	ḡɔɔ	(be small)	𐌹	kuŋ	(head, be able)
𐌹	faa	(die, kill)	𐌹	lɔ	(in)
𐌹	feŋ	(thing)	𐌹	taa	(go, carry, journey)
𐌹	joŋ	(slave)	𐌹	tiŋ	(island)
			𐌹	toŋ	(be named)

#### NOTES



1. An additional character, 𐌹/𐌹 so(ŋ), occupies an ambiguous position in the syllabary.  
𐌹/𐌹 is differentiated from 𐌹 in that a final ŋ seems always to be either included or actually added, and yet the character has no fixed meaning which would indicate it as a logogram. (An exception to this phonetic identification appears to be the use of 𐌹 in sowolu, 'five', but there seems to be an implied ŋ in sowolu which makes its appearance in the word for 'six', a combination of the root word 'five' with 'one': songɔɔɔɔɔ.)
2. Seldom-used variant characters, or variants used only in names, include the following: 𐌹 fa, 𐌹 ma, 𐌹 sa, 𐌹 wo.

**Figure 6.** Logograms from *The Book of Ndole*. All but \*SYMBOL DEENG, \*SYMBOL KAI, \*SYMBOL LO, and \*SYLLABLE NDOLE MA are proposed for encoding, as they are considered to be unified with 𐌹 SYLLABLE DEE, 𐌹 SYLLABLE KA, 𐌹 SYLLABLE DO, and 𐌹 SYLLABLE MA.

[1965]	𐌹 𐌹 𐌹 𐌹 𐌹 𐌹 𐌹 𐌹 =	wo mu va i kpo lo e ka :
1967	𐌹 𐌹 𐌹 𐌹 𐌹 𐌹 𐌹 𐌹 =	lu ki la kpo lo e fe la na ā

**Figure 7.** An example from Stewart and Hair 1969. showing the = SYLLABLE LENGTHENER in use in a book title.



Table I The Vai Syllabary									
	i	a	u	e	ɛ	o	ɔ	NASAL VOWELS	UNIDENTIFIED (1849)
<b>p</b>	1962								'bai' (  )
	1849								
<b>b</b>	1962								
	1849								
<b>ɸ</b>	1962								
	1849								
<b>mɸ</b>	1962								
	1849								
<b>kp</b>	1962							kpā (⊕)	
	1849							⊕ (⊗)	
<b>mgb</b>	1962								
	1849								
<b>gb</b>	1962								'gbon' (  )
	1849								

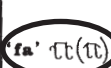

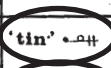
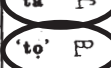
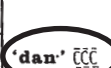
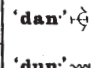
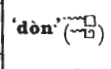
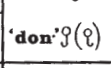
<b>f</b>	1962								'fa' 
	1849								
<b>v</b>	1962								'fen' 
	1849								
<b>t</b>	1962								'tin' 
	1849								
<b>d</b>	1962								'to' 
	1849								
<b>l(r)</b>	1962								'dan' 
	1849								
<b>ɖ</b>	1962								'dun' 
	1849								
<b>nd</b>	1962								'don' 
	1849								
<b>s</b>	1962								'so' 
	1849								
<b>z</b>	1962								
	1849								

Figure 8a. Syllabary chart (here and on the next page) from Dalby 1967 showing old (1849) and contemporary (1961) syllable shapes. Circled here are 𐎶 SYMBOL BANG, 𐎷 SYMBOL FAA, 𐎸 SYLLABLE NDOLE FA, 𐎹 SYMBOL FEENG, 𐎺 SYMBOL TING, 𐎻 SYMBOL TA, 𐎼 SYMBOL TONG, 𐎽 SYMBOL DANG, 𐎾 SYMBOL DEE (used in *The Book of Ndole* for \*SYMBOL DEENG), 𐎿 SYMBOL DO (used for \*SYMBOL LO), and 𐏀 SYLLABLE NDOLE SOO.



Table I The Vai Syllabary (continued)									
	i	a	u	e	ɛ	ɔ	o	NASAL VOWELS	UNIDENTIFIED (1849)
<b>c</b>	1962 ᵿ	ᵿ	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ	ᵿ		
	1849 ᵿ	[= ja ʔ]	[= ju ʔ]	[= je ʔ]	[= jɛ ʔ]	[= jo ʔ]	[= jo ʔ]		
<b>j</b>	1962 ᵿ	ᵿ	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ (ᵿ)		'dʒon' ᵿ
	1849 ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ		
<b>nj</b>	1962 ᵿ (ᵿ)	ᵿ	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ (ᵿ)		
	1849 [= ji ʔ]	ᵿ	ᵿ	ᵿ	[= jɛ ʔ]	[= jo ʔ]	[= jo ʔ]		
<b>y</b>	1962 ᵿ	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ		
	1849 [= ji ʔ]	ᵿ (ᵿ)	[= ju ʔ]	[= nje ]	[= jɛ ]	[= jo ʔ]	[= jo ʔ]		
<b>k</b>	1962 ᵿ	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ		'ka' 20
	1849 ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ (ᵿ)		'kā' (ᵿ)
<b>ŋg</b>	1962 ᵿ (ᵿ)	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ		'kə' ᵿ
	1849 [= ki ʔ]	ᵿ	[= ku/gu ʔ]	ᵿ	[= ke/ge ʔ]	ᵿ (ᵿ)	ᵿ (ᵿ)		'kun' ᵿ
<b>g</b>	1962 ᵿ (ᵿ)	ᵿ	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ		
	1849 ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ	ᵿ	ᵿ (ᵿ)		'ge' ᵿ

<b>h</b>	1962 ᵿ (ᵿ)	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)		'hā' ᵿ
	1849 ᵿ	ᵿ (ᵿ)	[= wu ʔ]	ᵿ (ᵿ)	ᵿ	[= wo ʔ]	ᵿ (ᵿ)		'hā' ᵿ
<b>w</b>	1962 ᵿ	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ (ᵿ)	ᵿ	wā (ᵿ)	
	1849 ᵿ (ᵿ)	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ	ᵿ (ᵿ)	ᵿ (ᵿ)		'wə' ᵿ
<b>-</b>	1962 ᵿ	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ [of. wo]	ᵿ		
	1849 ᵿ (ᵿ)	ᵿ	[= wu ]	ᵿ	[= hɛ ʔ]	[= wo ʔ]	ᵿ		
<b>NASAL SYLLABLES</b>								<b>SYLLABIC NASAL</b>	
<b>ĩ</b>	1962 ᵿ	(ᵿ)	ᵿ		ᵿ	(ᵿ)			
	1849 ᵿ (ᵿ)	ᵿ	[ʔ]		ᵿ	[= ɲɔ ʔ]			'hn' ᵿ
<b>m</b>	1962 ᵿ	ᵿ	ᵿ		ᵿ	ᵿ (ᵿ)			
	1849 ᵿ	ᵿ (ᵿ)	ᵿ		ᵿ	ᵿ (ᵿ)			
<b>n</b>	1962 ᵿ (ᵿ)	ᵿ	ᵿ		ᵿ (ᵿ)	ᵿ (ᵿ)			
	1849 ᵿ (ᵿ)	ᵿ	ᵿ (ᵿ)		ᵿ	ᵿ (ᵿ)			
<b>ny</b>	1962 ᵿ	ᵿ	ᵿ		ᵿ	ᵿ (ᵿ)			
	1849 ᵿ (ᵿ)	ᵿ (ᵿ)	ᵿ (ᵿ)		ᵿ (ᵿ)	ᵿ (ᵿ)			
<b>ɲ</b>	1962 ᵿ	ᵿ (ᵿ)			ᵿ	ᵿ (ᵿ)		ᵿ (ᵿ)	
	1849 ᵿ	ᵿ (ᵿ)			ᵿ	ᵿ		ᵿ (ᵿ)	
<b>-</b>	1962 ᵿ	(ᵿ)			(ᵿ)				
	1849 ᵿ	[= ɲɔ ʔ]			[= hɛ ʔ]				

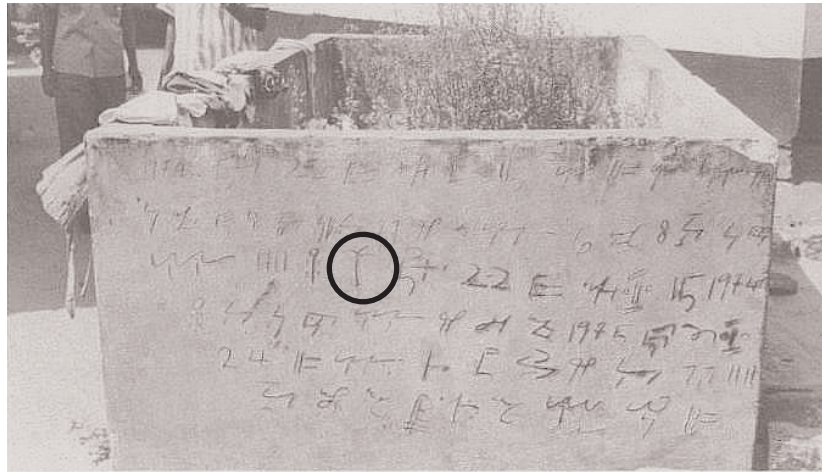
Figure 8b. Circled here are ᵿ SYMBOL JONG, ᵿ SYLLABLE NDOLE KA, and ᵿ SYMBOL KUNG. Also circled is ᵿ SYLLABLE MA, showing its glyph variant. Compare Stewart's mention of this in Figure 6 below.

\_\_\_\_\_

५६७८९१०१११२१३१४१५१६१७१८१९२०२१२२२३२४२५२६२७२८२९३०३१३२३३३४३५३६३७३८३९४०४१४२४३४४४५४६४७४८४९५०५१५२५३५४५५५६५७५८५९६०६१६२६३६४६५६६६७६८६९७०७१७२७३७४७५७६७७७८७९८०८१८२८३८४८५८६८७८८८९९०९१९२९३९४९५९६९७९८९९१०००॥= \*

V = Vokal,  $\bar{V}$  = nasaliertes Vokal.

15



**Figure 10.** A tombstone in a Vai community in Monrovia, from Scribner and Cole 1981. The symbol 𐎊 FAA 'died' can be seen in the second line of the inscription.

**FIGURES**  
(Probably introduced in the 1920's)

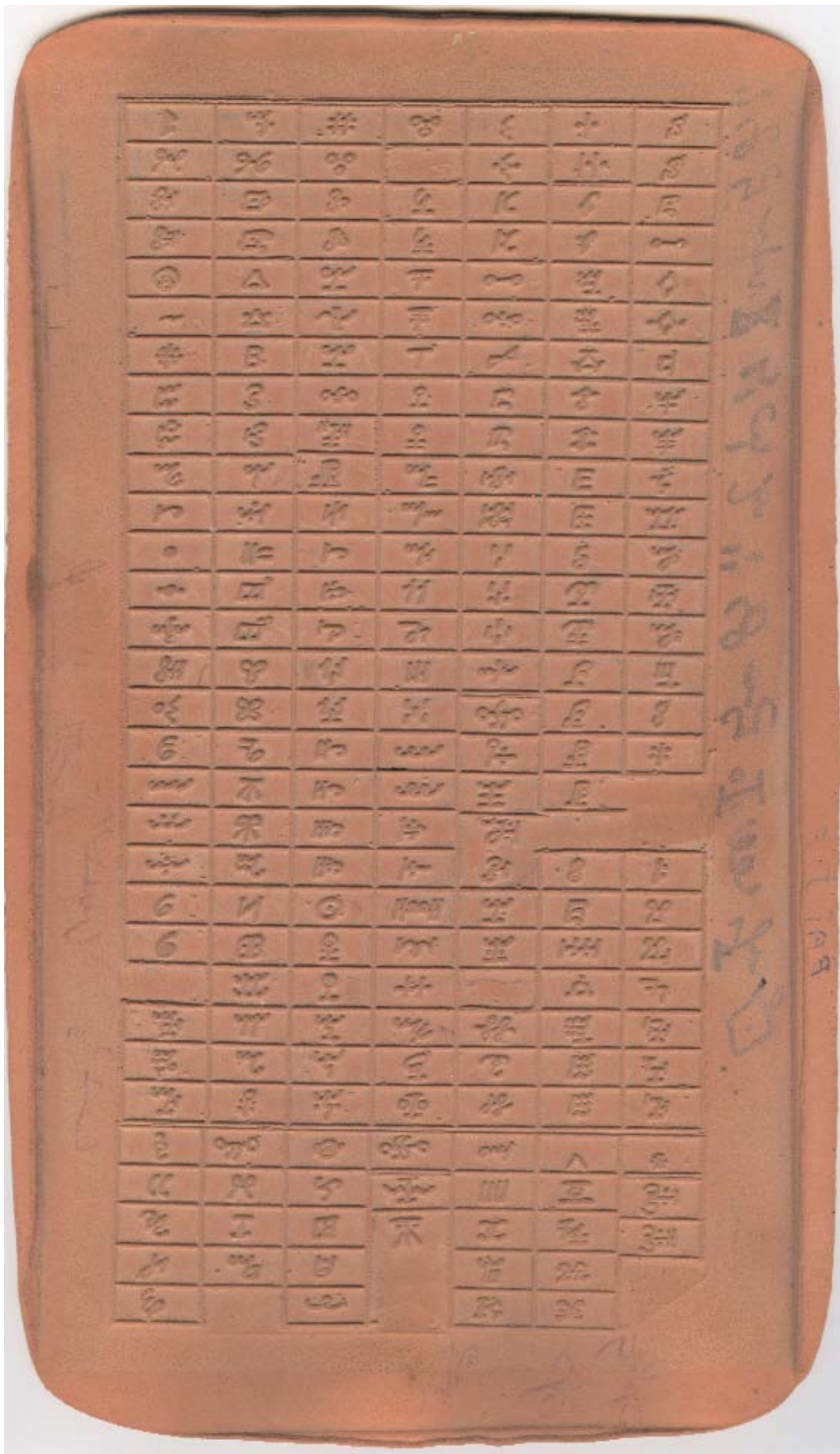
ENGLISH (Arabic)	1	2	3	4	5	6	7	8	9	10
VAI	/	𐎊	𐎋	𐎌	𐎍	𐎎	𐎏	𐎐	𐎑	𐎒

These figures are not very popular among the Vai people.

**Figure 11.** Vai digits, from S. Jangaba M. Johnson [s.d]. To date, this chart is the only representation of the Vai digits we have seen. They are not proposed for encoding because they are poorly attested; should they be needed in future, they can be encoded at that time.



**Figure 12.** From Nyei and Getawek's 1976 schoolbook.



**Figure 13.** A rubber plate used to print the syllabary.  
 The image has been digitally reversed to show the characters as they would be printed.  
 The plate was produced by Scribner and Cole's 1981 project



۱- «تعلیم و تربیت»

[illegible]

ᐃ ᐅ ᐇ ᐈ ᐉ ᐊ ᐋ	ᐅ ᐇ ᐈ ᐉ ᐊ ᐋ ᐌ
ᐃ ᐅ ᐇ ᐈ ᐉ ᐊ ᐋ	ᐅ ᐇ ᐈ ᐉ ᐊ ᐋ ᐌ
ᐇ ᐈ ᐉ ᐊ ᐋ ᐌ ᐍ	ᐇ ᐈ ᐉ ᐊ ᐋ ᐌ ᐍ
ᐇ ᐈ ᐉ ᐊ ᐋ ᐌ ᐍ	ᐇ ᐈ ᐉ ᐊ ᐋ ᐌ ᐍ
ᐈ ᐉ ᐊ ᐋ ᐌ ᐍ ᐎ	ᐈ ᐉ ᐊ ᐋ ᐌ ᐍ ᐎ
ᐈ ᐉ ᐊ ᐋ ᐌ ᐍ ᐎ	ᐈ ᐉ ᐊ ᐋ ᐌ ᐍ ᐎ
ᐉ ᐊ ᐋ ᐌ ᐍ ᐎ ᐏ	ᐉ ᐊ ᐋ ᐌ ᐍ ᐎ ᐏ
ᐉ ᐊ ᐋ ᐌ ᐍ ᐎ ᐏ	ᐉ ᐊ ᐋ ᐌ ᐍ ᐎ ᐏ
ᐊ ᐋ ᐌ ᐍ ᐎ ᐏ ᐑ	ᐊ ᐋ ᐌ ᐍ ᐎ ᐏ ᐑ
ᐊ ᐋ ᐌ ᐍ ᐎ ᐏ ᐑ	ᐊ ᐋ ᐌ ᐍ ᐎ ᐏ ᐑ
ᐋ ᐌ ᐍ ᐎ ᐏ ᐑ ᐒ	ᐋ ᐌ ᐍ ᐎ ᐏ ᐑ ᐒ
ᐋ ᐌ ᐍ ᐎ ᐏ ᐑ ᐒ	ᐋ ᐌ ᐍ ᐎ ᐏ ᐑ ᐒ
ᐌ ᐍ ᐎ ᐏ ᐑ ᐒ ᐓ	ᐌ ᐍ ᐎ ᐏ ᐑ ᐒ ᐓ
ᐌ ᐍ ᐎ ᐏ ᐑ ᐒ ᐓ	ᐌ ᐍ ᐎ ᐏ ᐑ ᐒ ᐓ
ᐍ ᐎ ᐏ ᐑ ᐒ ᐓ ᐔ	ᐍ ᐎ ᐏ ᐑ ᐒ ᐓ ᐔ
ᐍ ᐎ ᐏ ᐑ ᐒ ᐓ ᐔ	ᐍ ᐎ ᐏ ᐑ ᐒ ᐓ ᐔ
ᐎ ᐏ ᐑ ᐒ ᐓ ᐔ ᐕ	ᐎ ᐏ ᐑ ᐒ ᐓ ᐔ ᐕ
ᐎ ᐏ ᐑ ᐒ ᐓ ᐔ ᐕ	ᐎ ᐏ ᐑ ᐒ ᐓ ᐔ ᐕ
ᐏ ᐑ ᐒ ᐓ ᐔ ᐕ ᐙ	ᐏ ᐑ ᐒ ᐓ ᐔ ᐕ ᐙ
ᐏ ᐑ ᐒ ᐓ ᐔ ᐕ ᐙ	ᐏ ᐑ ᐒ ᐓ ᐔ ᐕ ᐙ
ᐑ ᐒ ᐓ ᐔ ᐕ ᐙ ᐚ	ᐑ ᐒ ᐓ ᐔ ᐕ ᐙ ᐚ
ᐑ ᐒ ᐓ ᐔ ᐕ ᐙ ᐚ	ᐑ ᐒ ᐓ ᐔ ᐕ ᐙ ᐚ
ᐒ ᐓ ᐔ ᐕ ᐙ ᐚ ᐛ	ᐒ ᐓ ᐔ ᐕ ᐙ ᐚ ᐛ
ᐒ ᐓ ᐔ ᐕ ᐙ ᐚ ᐛ	ᐒ ᐓ ᐔ ᐕ ᐙ ᐚ ᐛ
ᐓ ᐔ ᐕ ᐙ ᐚ ᐛ ᐜ	ᐓ ᐔ ᐕ ᐙ ᐚ ᐛ ᐜ
ᐓ ᐔ ᐕ ᐙ ᐚ ᐛ ᐜ	ᐓ ᐔ ᐕ ᐙ ᐚ ᐛ ᐜ
ᐔ ᐕ ᐙ ᐚ ᐛ ᐜ ᐝ	ᐔ ᐕ ᐙ ᐚ ᐛ ᐜ ᐝ
ᐔ ᐕ ᐙ ᐚ ᐛ ᐜ ᐝ	ᐔ ᐕ ᐙ ᐚ ᐛ ᐜ ᐝ
ᐕ ᐙ ᐚ ᐛ ᐜ ᐝ ᐞ	ᐕ ᐙ ᐚ ᐛ ᐜ ᐝ ᐞ
ᐕ ᐙ ᐚ ᐛ ᐜ ᐝ ᐞ	ᐕ ᐙ ᐚ ᐛ ᐜ ᐝ ᐞ
ᐙ ᐚ ᐛ ᐜ ᐝ ᐞ ᐟ	ᐙ ᐚ ᐛ ᐜ ᐝ ᐞ ᐟ
ᐙ ᐚ ᐛ ᐜ ᐝ ᐞ ᐟ	ᐙ ᐚ ᐛ ᐜ ᐝ ᐞ ᐟ
ᐚ ᐛ ᐜ ᐝ ᐞ ᐟ ᐠ	ᐚ ᐛ ᐜ ᐝ ᐞ ᐟ ᐠ
ᐚ ᐛ ᐜ ᐝ ᐞ ᐟ ᐠ	ᐚ ᐛ ᐜ ᐝ ᐞ ᐟ ᐠ
ᐛ ᐜ ᐝ ᐞ ᐟ ᐠ ᐡ	ᐛ ᐜ ᐝ ᐞ ᐟ ᐠ ᐡ
ᐛ ᐜ ᐝ ᐞ ᐟ ᐠ ᐡ	ᐛ ᐜ ᐝ ᐞ ᐟ ᐠ ᐡ
ᐜ ᐝ ᐞ ᐟ ᐠ ᐡ ᐢ	ᐜ ᐝ ᐞ ᐟ ᐠ ᐡ ᐢ
ᐜ ᐝ ᐞ ᐟ ᐠ ᐡ ᐢ	ᐜ ᐝ ᐞ ᐟ ᐠ ᐡ ᐢ
ᐝ ᐞ ᐟ ᐠ ᐡ ᐢ ᐣ	ᐝ ᐞ ᐟ ᐠ ᐡ ᐢ ᐣ
ᐝ ᐞ ᐟ ᐠ ᐡ ᐢ ᐣ	ᐝ ᐞ ᐟ ᐠ ᐡ ᐢ ᐣ
ᐞ ᐟ ᐠ ᐡ ᐢ ᐣ ᐤ	ᐞ ᐟ ᐠ ᐡ ᐢ ᐣ ᐤ
ᐞ ᐟ ᐠ ᐡ ᐢ ᐣ ᐤ	ᐞ ᐟ ᐠ ᐡ ᐢ ᐣ ᐤ
ᐟ ᐠ ᐡ ᐢ ᐣ ᐤ ᐥ	ᐟ ᐠ ᐡ ᐢ ᐣ ᐤ ᐥ
ᐟ ᐠ ᐡ ᐢ ᐣ ᐤ ᐥ	ᐟ ᐠ ᐡ ᐢ ᐣ ᐤ ᐥ
ᐠ ᐡ ᐢ ᐣ ᐤ ᐥ ᐦ	ᐠ ᐡ ᐢ ᐣ ᐤ ᐥ ᐦ
ᐠ ᐡ ᐢ ᐣ ᐤ ᐥ ᐦ	ᐠ ᐡ ᐢ ᐣ ᐤ ᐥ ᐦ
ᐡ ᐢ ᐣ ᐤ ᐥ ᐦ ᐧ	ᐡ ᐢ ᐣ ᐤ ᐥ ᐦ ᐧ
ᐡ ᐢ ᐣ ᐤ ᐥ ᐦ ᐧ	ᐡ ᐢ ᐣ ᐤ ᐥ ᐦ ᐧ
ᐢ ᐣ ᐤ ᐥ ᐦ ᐧ ᐨ	ᐢ ᐣ ᐤ ᐥ ᐦ ᐧ ᐨ
ᐢ ᐣ ᐤ ᐥ ᐦ ᐧ ᐨ	ᐢ ᐣ ᐤ ᐥ ᐦ ᐧ ᐨ
ᐣ ᐤ ᐥ ᐦ ᐧ ᐨ ᐩ	ᐣ ᐤ ᐥ ᐦ ᐧ ᐨ ᐩ
ᐣ ᐤ ᐥ ᐦ ᐧ ᐨ ᐩ	ᐣ ᐤ ᐥ ᐦ ᐧ ᐨ ᐩ
ᐤ ᐥ ᐦ ᐧ ᐨ ᐩ ᐪ	ᐤ ᐥ ᐦ ᐧ ᐨ ᐩ ᐪ
ᐤ ᐥ ᐦ ᐧ ᐨ ᐩ ᐪ	ᐤ ᐥ ᐦ ᐧ ᐨ ᐩ ᐪ
ᐥ ᐦ ᐧ ᐨ ᐩ ᐪ ᐫ	ᐥ ᐦ ᐧ ᐨ ᐩ ᐪ ᐫ
ᐥ ᐦ ᐧ ᐨ ᐩ ᐪ ᐫ	ᐥ ᐦ ᐧ ᐨ ᐩ ᐪ ᐫ
ᐦ ᐧ ᐨ ᐩ ᐪ ᐫ ᐬ	ᐦ ᐧ ᐨ ᐩ ᐪ ᐫ ᐬ
ᐦ ᐧ ᐨ ᐩ ᐪ ᐫ ᐬ	ᐦ ᐧ ᐨ ᐩ ᐪ ᐫ ᐬ
ᐧ ᐨ ᐩ ᐪ ᐫ ᐬ ᐭ	ᐧ ᐨ ᐩ ᐪ ᐫ ᐬ ᐭ
ᐧ ᐨ ᐩ ᐪ ᐫ ᐬ ᐭ	ᐧ ᐨ ᐩ ᐪ ᐫ ᐬ ᐭ
ᐨ ᐩ ᐪ ᐫ ᐬ ᐭ ᐮ	ᐨ ᐩ ᐪ ᐫ ᐬ ᐭ ᐮ
ᐨ ᐩ ᐪ ᐫ ᐬ ᐭ ᐮ	ᐨ ᐩ ᐪ ᐫ ᐬ ᐭ ᐮ
ᐩ ᐪ ᐫ ᐬ ᐭ ᐮ ᐯ	ᐩ ᐪ ᐫ ᐬ ᐭ ᐮ ᐯ
ᐩ ᐪ ᐫ ᐬ ᐭ ᐮ ᐯ	ᐩ ᐪ ᐫ ᐬ ᐭ ᐮ ᐯ
ᐪ ᐫ ᐬ ᐭ ᐮ ᐯ ᐰ	ᐪ ᐫ ᐬ ᐭ ᐮ ᐯ ᐰ
ᐪ ᐫ ᐬ ᐭ ᐮ ᐯ ᐰ	ᐪ ᐫ ᐬ ᐭ ᐮ ᐯ ᐰ
ᐫ ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ	ᐫ ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ
ᐫ ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ	ᐫ ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ
ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ	ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ
ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ	ᐬ ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ
ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ	ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ
ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ	ᐭ ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ
ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ	ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ
ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ	ᐮ ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ
ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ	ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ
ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ	ᐯ ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ
ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ	ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ
ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ	ᐰ ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ
ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ	ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ
ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ	ᐱ ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ
ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ	ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ
ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ	ᐲ ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ
ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ	ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ
ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ	ᐳ ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ
ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ ᐺ	ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ ᐺ
ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ ᐺ	ᐴ ᐵ ᐶ ᐷ ᐸ ᐹ ᐺ
ᐵ ᐶ ᐷ ᐸ ᐹ ᐺ ᐻ	ᐵ ᐶ ᐷ ᐸ ᐹ ᐺ ᐻ
ᐵ ᐶ ᐷ ᐸ ᐹ ᐺ ᐻ	ᐵ ᐶ ᐷ ᐸ ᐹ ᐺ ᐻ
ᐶ ᐷ ᐸ ᐹ ᐺ ᐻ ᐼ	ᐶ ᐷ ᐸ ᐹ ᐺ ᐻ ᐼ
ᐶ ᐷ ᐸ ᐹ ᐺ ᐻ ᐼ	ᐶ ᐷ ᐸ ᐹ ᐺ ᐻ ᐼ
ᐷ ᐸ ᐹ ᐺ ᐻ ᐼ ᐽ	ᐷ ᐸ ᐹ ᐺ ᐻ ᐼ ᐽ
ᐷ ᐸ ᐹ ᐺ ᐻ ᐼ ᐽ	ᐷ ᐸ ᐹ ᐺ ᐻ ᐼ ᐽ
ᐸ ᐹ ᐺ ᐻ ᐼ ᐽ ᐾ	ᐸ ᐹ ᐺ ᐻ ᐼ ᐽ ᐾ
ᐸ ᐹ ᐺ ᐻ ᐼ ᐽ ᐾ	ᐸ ᐹ ᐺ ᐻ ᐼ ᐽ ᐾ
ᐹ ᐺ ᐻ ᐼ ᐽ ᐾ ᐿ	ᐹ ᐺ ᐻ ᐼ ᐽ ᐾ ᐿ
ᐹ ᐺ ᐻ ᐼ ᐽ ᐾ ᐿ	ᐹ ᐺ ᐻ ᐼ ᐽ ᐾ ᐿ
ᐺ ᐻ ᐼ ᐽ ᐾ ᐿ ᑀ	ᐺ ᐻ ᐼ ᐽ ᐾ ᐿ ᑀ
ᐺ ᐻ ᐼ ᐽ ᐾ ᐿ ᑀ	ᐺ ᐻ ᐼ ᐽ ᐾ ᐿ ᑀ
ᐻ ᐼ ᐽ ᐾ ᐿ ᑀ ᑁ	ᐻ ᐼ ᐽ ᐾ ᐿ ᑀ ᑁ
ᐻ ᐼ ᐽ ᐾ ᐿ ᑀ ᑁ	ᐻ ᐼ ᐽ ᐾ ᐿ ᑀ ᑁ
ᐼ ᐽ ᐾ ᐿ ᑀ ᑁ ᑂ	ᐼ ᐽ ᐾ ᐿ ᑀ ᑁ ᑂ
ᐼ ᐽ ᐾ ᐿ ᑀ ᑁ ᑂ	ᐼ ᐽ ᐾ ᐿ ᑀ ᑁ ᑂ
ᑀ ᑁ ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ	ᑀ ᑁ ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ
ᑀ ᑁ ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ	ᑀ ᑁ ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ
ᑁ ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ	ᑁ ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ
ᑁ ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ	ᑁ ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ
ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ	ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ
ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ	ᑂ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ
ᑃ ᑄ ᑅ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ	ᑃ ᑄ ᑅ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ
ᑃ ᑄ ᑅ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ	ᑃ ᑄ ᑅ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ
ᑄ ᑅ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ	ᑄ ᑅ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ
ᑄ ᑅ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ	ᑄ ᑅ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ
ᑅ ᑆ ᑇ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ	ᑅ ᑆ ᑇ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ
ᑅ ᑆ ᑇ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ	ᑅ ᑆ ᑇ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ
ᑆ ᑇ ᑈ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ	ᑆ ᑇ ᑈ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ
ᑆ ᑇ ᑈ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ	ᑆ ᑇ ᑈ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ
ᑇ ᑈ ᑉ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ	ᑇ ᑈ ᑉ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ
ᑇ ᑈ ᑉ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ	ᑇ ᑈ ᑉ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ
ᑈ ᑉ ᑊ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ	ᑈ ᑉ ᑊ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ
ᑈ ᑉ ᑊ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ	ᑈ ᑉ ᑊ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ
ᑉ ᑊ ᑋ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ	ᑉ ᑊ ᑋ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ
ᑉ ᑊ ᑋ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ	ᑉ ᑊ ᑋ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ
ᑊ ᑋ ᑌ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ	ᑊ ᑋ ᑌ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ
ᑊ ᑋ ᑌ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ	ᑊ ᑋ ᑌ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ
ᑋ ᑌ ᑍ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ	ᑋ ᑌ ᑍ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ
ᑋ ᑌ ᑍ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ	ᑋ ᑌ ᑍ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ
ᑌ ᑍ ᑎ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ	ᑌ ᑍ ᑎ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ
ᑌ ᑍ ᑎ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ	ᑌ ᑍ ᑎ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ
ᑍ ᑎ ᑏ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ	ᑍ ᑎ ᑏ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ
ᑍ ᑎ ᑏ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ	ᑍ ᑎ ᑏ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ
ᑎ ᑏ ᑐ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ	ᑎ ᑏ ᑐ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ
ᑎ ᑏ ᑐ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ	ᑎ ᑏ ᑐ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ
ᑏ ᑐ ᑑ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ	ᑏ ᑐ ᑑ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ
ᑏ ᑐ ᑑ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ	ᑏ ᑐ ᑑ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ
ᑑ ᑒ ᑓ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ	ᑑ ᑒ ᑓ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ
ᑑ ᑒ ᑓ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ	ᑑ ᑒ ᑓ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ
ᑒ ᑓ ᑔ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ	ᑒ ᑓ ᑔ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ
ᑒ ᑓ ᑔ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ	ᑒ ᑓ ᑔ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ
ᑓ ᑔ ᑕ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ	ᑓ ᑔ ᑕ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ
ᑓ ᑔ ᑕ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ	ᑓ ᑔ ᑕ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ
ᑔ ᑕ ᑖ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ	ᑔ ᑕ ᑖ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ
ᑔ ᑕ ᑖ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ	ᑔ ᑕ ᑖ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ
ᑕ ᑖ ᑗ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ	ᑕ ᑖ ᑗ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ
ᑕ ᑖ ᑗ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ	ᑕ ᑖ ᑗ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ
ᑖ ᑗ ᑘ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ	ᑖ ᑗ ᑘ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ
ᑖ ᑗ ᑘ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ	ᑖ ᑗ ᑘ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ
ᑗ ᑘ ᑙ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ	ᑗ ᑘ ᑙ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ
ᑗ ᑘ ᑙ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ	ᑗ ᑘ ᑙ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ
ᑘ ᑙ ᑚ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ ᑚ	ᑘ ᑙ ᑚ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ ᑚ
ᑘ ᑙ ᑚ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ ᑚ	ᑘ ᑙ ᑚ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ ᑚ
ᑙ ᑚ ᑛ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ ᑚ ᑛ	ᑙ ᑚ ᑛ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ ᑚ ᑛ
ᑙ ᑚ ᑛ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ ᑚ ᑛ	ᑙ ᑚ ᑛ ᐿ ᑀ ᑁ ᑂ ᑃ ᑄ ᑅ ᑆ ᑇ ᑈ ᑉ ᑊ ᑋ ᑌ ᑍ ᑎ ᑏ ᑐ ᑑ ᑒ ᑓ ᑔ ᑕ ᑖ ᑗ ᑘ ᑙ ᑚ ᑛ
ᑚ ᑛ ᑜ ᐿ	

[illegible]

آ صلاصلا نأ ءمف تآ صلاصلا ٥٠٢٢ تآ صلاصلا هأ فا صلاصلا هآ . آ صلاصلا ٢٠٢١ . آ ط٥ ٢٠٢٢  
 طآ هأ صلاصلا فا ، صلاصلا صلاصلا تآ صلاصلا صلاصلا هأ فا صلاصلا صلاصلا هأ فا صلاصلا صلاصلا هأ  
 صلاصلا . آ صلاصلا صلاصلا هأ ، صلاصلا صلاصلا هأ فا صلاصلا هأ فا صلاصلا هأ . آ صلاصلا  
 هأ نأ صلاصلا صلاصلا صلاصلا ، صلاصلا صلاصلا هأ فا صلاصلا هأ فا صلاصلا هأ . آ صلاصلا  
 صلاصلا ، صلاصلا هأ . (١) تآ (٢) صلاصلا هأ فا صلاصلا هأ فا صلاصلا هأ . آ صلاصلا هأ فا صلاصلا هأ .

<p>)( 5 4 3 2 1</p> <p>4 3 2 1 0 9 8 7 6 5 4 3 2 1 0</p> <p>5 4 3 2 1 0 9 8 7 6 5 4 3 2 1 0</p> <p>4 3 2 1 0 9 8 7 6 5 4 3 2 1 0</p>	<p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p>
<p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p>	<p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p> <p>1 2 3 4 5 6 7 8 9 0</p>

**Figure 14.** Description of the Vai syllabary in N'Ko. by Solomana Kante.



o	ɔ	ɛ	e	u	a	i	k	ng	g	h	ʒ	ɸ	m	n	ny	ŋ
𐎐	𐎑	𐎒	𐎓	𐎔	𐎕	𐎖	𐎗	𐎘	𐎙	𐎚	𐎛	𐎜	𐎝	𐎞	𐎟	𐎠
𐎡	𐎢	𐎣	𐎤	𐎥	𐎦	𐎧	𐎨	𐎩	𐎪	𐎫	𐎬	𐎭	𐎮	𐎯	𐎰	𐎱
𐎲	𐎳	𐎴	𐎵	𐎶	𐎷	𐎸	𐎹	𐎺	𐎻	𐎼	𐎽	𐎾	𐎿	𐏀	𐏁	𐏂
𐏃	𐏄	𐏅	𐏆	𐏇	𐏈	𐏉	𐏊	𐏋	𐏌	𐏍	𐏎	𐏏	𐏐	𐏑	𐏒	𐏓

o	ɔ	ɛ	e	u	a	i	t	p	ɾ	ɸ	s	z	c	j	ny	ɣ
𐎐	𐎑	𐎒	𐎓	𐎔	𐎕	𐎖	𐎗	𐎘	𐎙	𐎚	𐎛	𐎜	𐎝	𐎞	𐎟	𐎠
𐎡	𐎢	𐎣	𐎤	𐎥	𐎦	𐎧	𐎨	𐎩	𐎪	𐎫	𐎬	𐎭	𐎮	𐎯	𐎰	𐎱
𐎲	𐎳	𐎴	𐎵	𐎶	𐎷	𐎸	𐎹	𐎺	𐎻	𐎼	𐎽	𐎾	𐎿	𐏀	𐏁	𐏂
𐏃	𐏄	𐏅	𐏆	𐏇	𐏈	𐏉	𐏊	𐏋	𐏌	𐏍	𐏎	𐏏	𐏐	𐏑	𐏒	𐏓

TABLE OF CORRESPONDENCE  
VAI ALPHABET TO SYLLABARY

o	ɔ	ɛ	e	u	a	i	ɾ	ɸ	s	z	c	j	ny	ɣ
𐎐	𐎑	𐎒	𐎓	𐎔	𐎕	𐎖	𐎗	𐎘	𐎙	𐎚	𐎛	𐎜	𐎝	𐎞
𐎡	𐎢	𐎣	𐎤	𐎥	𐎦	𐎧	𐎨	𐎩	𐎪	𐎫	𐎬	𐎭	𐎮	𐎯
𐎲	𐎳	𐎴	𐎵	𐎶	𐎷	𐎸	𐎹	𐎺	𐎻	𐎼	𐎽	𐎾	𐎿	𐏀
𐏃	𐏄	𐏅	𐏆	𐏇	𐏈	𐏉	𐏊	𐏋	𐏌	𐏍	𐏎	𐏏	𐏐	𐏑

Figure 15. Vai syllabary chart from Kandakai and Hutchison 1975.

ᠳᠤ ᠰᠣᠨ ᠶ᠋ᠢᠨ ᠵᠡᠭᠦᠷᠪᠡᠬᠡ ᠲᠤᠨ

ጸጴ. የ ት ሰ ል ጽ ህይወት ያያ ት ሁሉን ይሁኑ.

$\frac{1}{2} \Delta F_{\text{N}} : S : S : T B \cdot 0$

||| 田田 乙 8\*7 77 乙. 0'1'88 田 11 22 33 44 55 66 77 88 99

1. 八二九 I 74 57. 0118 895 N\* 2 2X

ሄድኩት ምን ዓይነት ቅጽ ነው?

5. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 8

\* 2 B H S S 9 L O B H

2.\* : I Y H Z. O' JH Heen C F H P \*

3.\*\* : I ZT OXFHHI K B I H O I I u l F \*

4.74 9: I 7 4 9 8 T 0 ' 1 m 11 #

5. = ∴ I IF O ' S 8 8 7 7 2 m IF \*

6:.. :I IF 470 07116 4: E8, IX 2 :I:

Heel 4 4 1,18 2 2 11 \*

7. ~ ሥ ፐ ይ ሃፐ ዕክ 116 ቱ ዩፍፍፍ ህፐ

Handwritten: 8675 \* 2708

15 K.

8. ፡ I ይ ነገሩ በዓለማዊ ቅርንጫፍ ፡

የፍልጋቱ ዕድል ማሳተፍና የጥያቄው ቅጽ ማሙላት

218 07116 77.01.18 8\*645 8 K881C\*

**Figure 16.** Discussion of Vai punctuation in Kandakai, et al., 1962. Items 1, 2, 3, 4, and 5 can be represented with the encoding proposed here. The second part of Item 2 is superseded by Massaquoi’s series for [θ ð]. Items 6 and 8 do not seem to have ever been implemented at all (though item 6 first could have some utility, in keyboarding specifications); item 7 is not productive, and the *re*-series is fully encoded. This translation is by Mohamed Nyei:

This is information about reading the book

When you are writing and you want your ideas to be clear and precise, you should place these marks between your expressions.

1. ^ This is what separates expressions. When one sees it written like this ↑ the associated character should be pronounced with the tongue between the teeth, as in English.
2. \* This is what ends an expression or sentence.
3. \*\* This is used in commands to do something and denotes a statement of surprise.
4. ༄ This denotes a question.
5. ≡ This signifies a long sound.
6. .. When this is placed below a character, one should utter a nasal sound.
7. ~ When this is placed under a character, one should say it with a trilling tongue; like “�ླ” *ra*.
8. // When this is placed beside a character to the right, it puts stress on the character; like in “ལྷ” *sa* and “ལྷ” *za*.

|            |            |           |
|------------|------------|-----------|
| de . . . . | ḅḅ, ḅḅ     | ḅḅ        |
| di . . . . | ḅḅ, ḅḅ, ■  | ḅḅ, ḅḅ, ■ |
| du . . . . | ḅḅ, ḅḅ     | ḅḅ, ḅḅ    |
| dō . . . . | ḅḅ         | ḅḅ; ḅḅ    |
| dō . . . . | ḅḅ, ḅḅ, ḅḅ | ḅḅ        |

**Figure 17.** “Original” symbols on the left and “modern” symbols on the right in Johnston 1906. In the first line, Johnston shows *de* which corresponds to modern ḅḅ SYLLABLE DEE, though it has a ring shape or dot element. On the right the modern ḅḅ SYLLABLE DHE is shown; Johnston did not distinguish [d] from [d̥] or [e] from [e̥]. In the fourth line, Johnston shows *dō* with three glyphs, corresponding to what Dalby identifies as 1849 **ndō** (NDOO), **dō** (DO), and **ndō** (NDOO) respectively. We identify these instead as logogram ḅḅ \***dō** (SYMBOL DO-O), ḅḅ **dō** (DO), and ḅḅ **ndō** (NDOO). On the right he shows the modern ḅḅ SYLLABLE DHO.

|             |            |
|-------------|------------|
| keñ . . . . | ḅḅ         |
| gi . . . .  | ḅḅ, ḅḅ, ḅḅ |

**Figure 18.** The syllable KEENG compared with the syllable GI from Johnston 1906. Dalby reads Johnston’s glyph for *keñ* as ?**gi**, and gives the first two of Johnston’s *gi* glyphs as “unidentified” **gē** and **gē** respectively. The modern glyph on the right is modern ḅḅ SYLLABLE GI. We have not found Johnston’s first GI attested other than there and in Dalby; we have not proposed its encoding.

|            |            |    |
|------------|------------|----|
| ni . . . . | ḅḅ, ḅḅ, ḅḅ | ḅḅ |
|------------|------------|----|

**Figure 19.** The syllable *ni* from Johnston 1906, showing both its ḅḅ SYLLABLE NI form and a ḅḅ SYMBOL NII form.

TABLE xx - Row A5: VAI

|   | A50 | A51 | A52 | A53 | A54 | A55 | A56 | A57 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | ᲀ   | ᲁ   | ᲂ   | ᲃ   | ᲄ   | ᲅ   | ᲆ   | ᲇ   |
| 1 | ᲈ   | Ᲊ   | ᲊ   | ᲋   | ᲌   | ᲍   | ᲎   | ᲏   |
| 2 | Ა   | Ბ   | Გ   | Დ   | Ე   | Ვ   | Ზ   | Თ   |
| 3 | Ი   | Კ   | Ლ   | Მ   | Ნ   | Ო   | Პ   | Ჟ   |
| 4 | Რ   | Ს   | Ტ   | Უ   | Ფ   | Ქ   | Ღ   | Ყ   |
| 5 | Შ   | Ჩ   | Ც   | Ძ   | Წ   | Ჭ   | Ხ   | Ჯ   |
| 6 | Ჰ   | Ჱ   | Ჲ   | Ჳ   | Ჴ   | Ჵ   | Ჶ   | Ჷ   |
| 7 | Ჸ   | Ჹ   | Ჺ   | ᲻   | ᲼   | Ჽ   | Ჾ   | Ჿ   |
| 8 | ᳀   | ᳁   | ᳂   | ᳃   | ᳄   | ᳅   | ᳆   | ᳇   |
| 9 | ᳈   | ᳉   | ᳊   | ᳋   | ᳌   | ᳍   | ᳎   | ᳏   |
| A | ᳐   | ᳑   | ᳒   | ᳓   | ᳔   | ᳕   | ᳖   | ᳗   |
| B | ᳘   | ᳙   | ᳚   | ᳛   | ᳜   | ᳝   | ᳞   | ᳟   |
| C | ᳠   | ᳡   | ᳢   | ᳣   | ᳤   | ᳥   | ᳦   | ᳧   |
| D | ᳨   | ᳩ   | ᳪ   | ᳫ   | ᳬ   | ᳭   | ᳮ   | ᳯ   |
| E | ᳱ   | ᳲ   | ᳳ   | ᳴   | ᳵ   | ᳶ   | ᳷   | ᳸   |
| F | ᳹   | ᳺ   | ᳻   | ᳼   | ᳽   | ᳾   | ᳿   | ᴀ   |

G = 00  
P = 00

TABLE XX - Row A5: VAI

| hex  | Name               | hex  | Name               |
|------|--------------------|------|--------------------|
| A500 | VAI SYLLABLE EE    | A559 | VAI SYLLABLE THA   |
| A501 | VAI SYLLABLE HEE   | A55A | VAI SYLLABLE DHA   |
| A502 | VAI SYLLABLE WEE   | A55B | VAI SYLLABLE DHHA  |
| A503 | VAI SYLLABLE WEEN  | A55C | VAI SYLLABLE LA    |
| A504 | VAI SYLLABLE PEE   | A55D | VAI SYLLABLE RA    |
| A505 | VAI SYLLABLE BHEE  | A55E | VAI SYLLABLE DA    |
| A506 | VAI SYLLABLE BEE   | A55F | VAI SYLLABLE NDA   |
| A507 | VAI SYLLABLE MBEE  | A560 | VAI SYLLABLE SA    |
| A508 | VAI SYLLABLE KPEE  | A561 | VAI SYLLABLE SHA   |
| A509 | VAI SYLLABLE MGBEE | A562 | VAI SYLLABLE ZA    |
| A50A | VAI SYLLABLE GBEE  | A563 | VAI SYLLABLE ZHA   |
| A50B | VAI SYLLABLE FEE   | A564 | VAI SYLLABLE CA    |
| A50C | VAI SYLLABLE VEE   | A565 | VAI SYLLABLE JA    |
| A50D | VAI SYLLABLE TEE   | A566 | VAI SYLLABLE NJA   |
| A50E | VAI SYLLABLE THEE  | A567 | VAI SYLLABLE YA    |
| A50F | VAI SYLLABLE DHEE  | A568 | VAI SYLLABLE KA    |
| A510 | VAI SYLLABLE DHHEE | A569 | VAI SYLLABLE KAN   |
| A511 | VAI SYLLABLE LEE   | A56A | VAI SYLLABLE NGGA  |
| A512 | VAI SYLLABLE REE   | A56B | VAI SYLLABLE GA    |
| A513 | VAI SYLLABLE DEE   | A56C | VAI SYLLABLE MA    |
| A514 | VAI SYLLABLE NDEE  | A56D | VAI SYLLABLE NA    |
| A515 | VAI SYLLABLE SEE   | A56E | VAI SYLLABLE NYA   |
| A516 | VAI SYLLABLE SHEE  | A56F | VAI SYLLABLE OO    |
| A517 | VAI SYLLABLE ZEE   | A570 | VAI SYLLABLE HOO   |
| A518 | VAI SYLLABLE ZHEE  | A571 | VAI SYLLABLE WOO   |
| A519 | VAI SYLLABLE CEE   | A572 | VAI SYLLABLE WOON  |
| A51A | VAI SYLLABLE JEE   | A573 | VAI SYLLABLE POO   |
| A51B | VAI SYLLABLE NJEE  | A574 | VAI SYLLABLE BHOO  |
| A51C | VAI SYLLABLE YEE   | A575 | VAI SYLLABLE BOO   |
| A51D | VAI SYLLABLE KEE   | A576 | VAI SYLLABLE MBOO  |
| A51E | VAI SYLLABLE NGGEE | A577 | VAI SYLLABLE KPOO  |
| A51F | VAI SYLLABLE GEE   | A578 | VAI SYLLABLE MGBOO |
| A520 | VAI SYLLABLE MEE   | A579 | VAI SYLLABLE GBOO  |
| A521 | VAI SYLLABLE NEE   | A57A | VAI SYLLABLE FOO   |
| A522 | VAI SYLLABLE NYEE  | A57B | VAI SYLLABLE VOO   |
| A523 | VAI SYLLABLE I     | A57C | VAI SYLLABLE TOO   |
| A524 | VAI SYLLABLE HI    | A57D | VAI SYLLABLE THOO  |
| A525 | VAI SYLLABLE HIN   | A57E | VAI SYLLABLE DHOO  |
| A526 | VAI SYLLABLE WI    | A57F | VAI SYLLABLE DHOO  |
| A527 | VAI SYLLABLE WIN   |      |                    |
| A528 | VAI SYLLABLE PI    |      |                    |
| A529 | VAI SYLLABLE BHI   |      |                    |
| A52A | VAI SYLLABLE BI    |      |                    |
| A52B | VAI SYLLABLE MBI   |      |                    |
| A52C | VAI SYLLABLE KPI   |      |                    |
| A52D | VAI SYLLABLE MGBI  |      |                    |
| A52E | VAI SYLLABLE GBI   |      |                    |
| A52F | VAI SYLLABLE FI    |      |                    |
| A530 | VAI SYLLABLE VI    |      |                    |
| A531 | VAI SYLLABLE TI    |      |                    |
| A532 | VAI SYLLABLE THI   |      |                    |
| A533 | VAI SYLLABLE DHI   |      |                    |
| A534 | VAI SYLLABLE DHHI  |      |                    |
| A535 | VAI SYLLABLE LI    |      |                    |
| A536 | VAI SYLLABLE RI    |      |                    |
| A537 | VAI SYLLABLE DI    |      |                    |
| A538 | VAI SYLLABLE NDI   |      |                    |
| A539 | VAI SYLLABLE SI    |      |                    |
| A53A | VAI SYLLABLE SHI   |      |                    |
| A53B | VAI SYLLABLE ZI    |      |                    |
| A53C | VAI SYLLABLE ZHI   |      |                    |
| A53D | VAI SYLLABLE CI    |      |                    |
| A53E | VAI SYLLABLE JI    |      |                    |
| A53F | VAI SYLLABLE NJI   |      |                    |
| A540 | VAI SYLLABLE YI    |      |                    |
| A541 | VAI SYLLABLE KI    |      |                    |
| A542 | VAI SYLLABLE NGGI  |      |                    |
| A543 | VAI SYLLABLE GI    |      |                    |
| A544 | VAI SYLLABLE MI    |      |                    |
| A545 | VAI SYLLABLE NI    |      |                    |
| A546 | VAI SYLLABLE NYI   |      |                    |
| A547 | VAI SYLLABLE A     |      |                    |
| A548 | VAI SYLLABLE AN    |      |                    |
| A549 | VAI SYLLABLE NGAN  |      |                    |
| A54A | VAI SYLLABLE HA    |      |                    |
| A54B | VAI SYLLABLE HAN   |      |                    |
| A54C | VAI SYLLABLE WA    |      |                    |
| A54D | VAI SYLLABLE WAN   |      |                    |
| A54E | VAI SYLLABLE PA    |      |                    |
| A54F | VAI SYLLABLE BHA   |      |                    |
| A550 | VAI SYLLABLE BA    |      |                    |
| A551 | VAI SYLLABLE MBA   |      |                    |
| A552 | VAI SYLLABLE KPA   |      |                    |
| A553 | VAI SYLLABLE KPAN  |      |                    |
| A554 | VAI SYLLABLE MGBA  |      |                    |
| A555 | VAI SYLLABLE GBA   |      |                    |
| A556 | VAI SYLLABLE FA    |      |                    |
| A557 | VAI SYLLABLE VA    |      |                    |
| A558 | VAI SYLLABLE TA    |      |                    |



TABLE xx - Row A5: VAI

|   | A58 | A59 | A5A | A5B | A5C | A5D | A5E | A5F |
|---|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 𐌵   | 𐌶   | 𐌷   | 𐌸   | 𐌹   | 𐌺   | 𐌻   | 𐌼   |
| 1 | 𐌽   | 𐌾   | 𐌿   | 𐍀   | 𐍁   | 𐍂   | 𐍃   | 𐍄   |
| 2 | 𐍅   | 𐍆   | 𐍇   | 𐍈   | 𐍉   | 𐍊   | 𐍋   | 𐍌   |
| 3 | 𐍍   | 𐍎   | 𐍏   | 𐍐   | 𐍑   | 𐍒   | 𐍓   | 𐍔   |
| 4 | 𐍕   | 𐍖   | 𐍗   | 𐍘   | 𐍙   | 𐍚   | 𐍛   | 𐍜   |
| 5 | 𐍝   | 𐍞   | 𐍟   | 𐍠   | 𐍡   | 𐍢   | 𐍣   | 𐍤   |
| 6 | 𐍥   | 𐍦   | 𐍧   | 𐍨   | 𐍩   | 𐍪   | 𐍫   | 𐍬   |
| 7 | 𐍭   | 𐍮   | 𐍯   | 𐍰   | 𐍱   | 𐍲   | 𐍳   | 𐍴   |
| 8 | 𐍵   | 𐍶   | 𐍷   | 𐍸   | 𐍹   | 𐍺   | 𐍻   | 𐍼   |
| 9 | 𐍽   | 𐍾   | 𐍿   | 𐎀   | 𐎁   | 𐎂   | 𐎃   | 𐎄   |
| A | 𐎅   | 𐎆   | 𐎇   | 𐎈   | 𐎉   | 𐎊   | 𐎋   | 𐎌   |
| B | 𐎍   | 𐎎   | 𐎏   | 𐎐   | 𐎑   | 𐎒   | 𐎓   | 𐎔   |
| C | 𐎕   | 𐎖   | 𐎗   | 𐎘   | 𐎙   | 𐎚   | 𐎛   | 𐎜   |
| D | 𐎝   | 𐎞   | 𐎟   | 𐎠   | 𐎡   | 𐎢   | 𐎣   | 𐎤   |
| E | 𐎥   | 𐎦   | 𐎧   | 𐎨   | 𐎩   | 𐎪   | 𐎫   | 𐎬   |
| F | 𐎭   | 𐎮   | 𐎯   | 𐎰   | 𐎱   | 𐎲   | 𐎳   | 𐎴   |

G = 00  
P = 00

TABLE XX - Row A5: VAI

| hex  | Name               | hex  | Name              |
|------|--------------------|------|-------------------|
| A580 | VAI SYLLABLE LOO   | A5D9 | VAI SYLLABLE GO   |
| A581 | VAI SYLLABLE ROO   | A5DA | VAI SYLLABLE MO   |
| A582 | VAI SYLLABLE DOO   | A5DB | VAI SYLLABLE NO   |
| A583 | VAI SYLLABLE NDOO  | A5DC | VAI SYLLABLE NYO  |
| A584 | VAI SYLLABLE SOO   | A5DD | VAI SYLLABLE E    |
| A585 | VAI SYLLABLE SHOO  | A5DE | VAI SYLLABLE EN   |
| A586 | VAI SYLLABLE ZOO   | A5DF | VAI SYLLABLE NGEN |
| A587 | VAI SYLLABLE ZHOO  | A5E0 | VAI SYLLABLE HE   |
| A588 | VAI SYLLABLE COO   | A5E1 | VAI SYLLABLE HEN  |
| A589 | VAI SYLLABLE JOO   | A5E2 | VAI SYLLABLE WE   |
| A58A | VAI SYLLABLE NJOO  | A5E3 | VAI SYLLABLE WEN  |
| A58B | VAI SYLLABLE YOO   | A5E4 | VAI SYLLABLE PE   |
| A58C | VAI SYLLABLE KOO   | A5E5 | VAI SYLLABLE BHE  |
| A58D | VAI SYLLABLE NGGOO | A5E6 | VAI SYLLABLE BE   |
| A58E | VAI SYLLABLE GOO   | A5E7 | VAI SYLLABLE MBE  |
| A58F | VAI SYLLABLE MOO   | A5E8 | VAI SYLLABLE KPE  |
| A590 | VAI SYLLABLE NOO   | A5E9 | VAI SYLLABLE KPEN |
| A591 | VAI SYLLABLE NYOO  | A5EA | VAI SYLLABLE MGBE |
| A592 | VAI SYLLABLE U     | A5EB | VAI SYLLABLE GBE  |
| A593 | VAI SYLLABLE HU    | A5EC | VAI SYLLABLE GBEN |
| A594 | VAI SYLLABLE HUN   | A5ED | VAI SYLLABLE FE   |
| A595 | VAI SYLLABLE WU    | A5EE | VAI SYLLABLE VE   |
| A596 | VAI SYLLABLE WUN   | A5EF | VAI SYLLABLE TE   |
| A597 | VAI SYLLABLE PU    | A5F0 | VAI SYLLABLE THE  |
| A598 | VAI SYLLABLE BHU   | A5F1 | VAI SYLLABLE DHE  |
| A599 | VAI SYLLABLE BU    | A5F2 | VAI SYLLABLE DHHE |
| A59A | VAI SYLLABLE MBU   | A5F3 | VAI SYLLABLE LE   |
| A59B | VAI SYLLABLE KPU   | A5F4 | VAI SYLLABLE RE   |
| A59C | VAI SYLLABLE MGBU  | A5F5 | VAI SYLLABLE DE   |
| A59D | VAI SYLLABLE GBU   | A5F6 | VAI SYLLABLE NDE  |
| A59E | VAI SYLLABLE FU    | A5F7 | VAI SYLLABLE SE   |
| A59F | VAI SYLLABLE VU    | A5F8 | VAI SYLLABLE SHE  |
| A5A0 | VAI SYLLABLE TU    | A5F9 | VAI SYLLABLE ZE   |
| A5A1 | VAI SYLLABLE THU   | A5FA | VAI SYLLABLE ZHE  |
| A5A2 | VAI SYLLABLE DHU   | A5FB | VAI SYLLABLE CE   |
| A5A3 | VAI SYLLABLE DHHU  | A5FC | VAI SYLLABLE JE   |
| A5A4 | VAI SYLLABLE LU    | A5FD | VAI SYLLABLE NJE  |
| A5A5 | VAI SYLLABLE RU    | A5FE | VAI SYLLABLE YE   |
| A5A6 | VAI SYLLABLE DU    | A5FF | VAI SYLLABLE KE   |
| A5A7 | VAI SYLLABLE NDU   |      |                   |
| A5A8 | VAI SYLLABLE SU    |      |                   |
| A5A9 | VAI SYLLABLE SHU   |      |                   |
| A5AA | VAI SYLLABLE ZU    |      |                   |
| A5AB | VAI SYLLABLE ZHU   |      |                   |
| A5AC | VAI SYLLABLE CU    |      |                   |
| A5AD | VAI SYLLABLE JU    |      |                   |
| A5AE | VAI SYLLABLE NJU   |      |                   |
| A5AF | VAI SYLLABLE YU    |      |                   |
| A5B0 | VAI SYLLABLE KU    |      |                   |
| A5B1 | VAI SYLLABLE NGGU  |      |                   |
| A5B2 | VAI SYLLABLE GU    |      |                   |
| A5B3 | VAI SYLLABLE MU    |      |                   |
| A5B4 | VAI SYLLABLE NU    |      |                   |
| A5B5 | VAI SYLLABLE NYU   |      |                   |
| A5B6 | VAI SYLLABLE O     |      |                   |
| A5B7 | VAI SYLLABLE ON    |      |                   |
| A5B8 | VAI SYLLABLE NGON  |      |                   |
| A5B9 | VAI SYLLABLE HO    |      |                   |
| A5BA | VAI SYLLABLE HON   |      |                   |
| A5BB | VAI SYLLABLE WO    |      |                   |
| A5BC | VAI SYLLABLE WON   |      |                   |
| A5BD | VAI SYLLABLE PO    |      |                   |
| A5BE | VAI SYLLABLE BHO   |      |                   |
| A5BF | VAI SYLLABLE BO    |      |                   |
| A5C0 | VAI SYLLABLE MBO   |      |                   |
| A5C1 | VAI SYLLABLE KPO   |      |                   |
| A5C2 | VAI SYLLABLE MGBO  |      |                   |
| A5C3 | VAI SYLLABLE GBO   |      |                   |
| A5C4 | VAI SYLLABLE GBON  |      |                   |
| A5C5 | VAI SYLLABLE FO    |      |                   |
| A5C6 | VAI SYLLABLE VO    |      |                   |
| A5C7 | VAI SYLLABLE TO    |      |                   |
| A5C8 | VAI SYLLABLE THO   |      |                   |
| A5C9 | VAI SYLLABLE DHO   |      |                   |
| A5CA | VAI SYLLABLE DHHO  |      |                   |
| A5CB | VAI SYLLABLE LO    |      |                   |
| A5CC | VAI SYLLABLE RO    |      |                   |
| A5CD | VAI SYLLABLE DO    |      |                   |
| A5CE | VAI SYLLABLE NDO   |      |                   |
| A5CF | VAI SYLLABLE SO    |      |                   |
| A5D0 | VAI SYLLABLE SHO   |      |                   |
| A5D1 | VAI SYLLABLE ZO    |      |                   |
| A5D2 | VAI SYLLABLE ZHO   |      |                   |
| A5D3 | VAI SYLLABLE CO    |      |                   |
| A5D4 | VAI SYLLABLE JO    |      |                   |
| A5D5 | VAI SYLLABLE NJO   |      |                   |
| A5D6 | VAI SYLLABLE YO    |      |                   |
| A5D7 | VAI SYLLABLE KO    |      |                   |
| A5D8 | VAI SYLLABLE NGGO  |      |                   |

TABLE XX - Row A6: VAI

|   | A60 | A61 |                  |
|---|-----|-----|------------------|
| 0 | 𐌲   | 𐌳   |                  |
| 1 | 𐌴   | 𐌵   |                  |
| 2 | 𐌶   | 𐌷   |                  |
| 3 | 𐌸   | 𐌹   |                  |
| 4 | 𐌺   | 𐌻   |                  |
| 5 | 𐌼   | 𐌽   |                  |
| 6 | 𐌾   | 𐌿   |                  |
| 7 | 𐍀   | 𐍁   |                  |
| 8 | 𐍂   | 𐍃   | G = 00<br>P = 00 |
| 9 | 𐍄   | 𐍅   |                  |
| A | 𐍆   | 𐍇   |                  |
| B | 𐍈   | 𐍉   |                  |
| C |     | 𐍊   |                  |
| D |     | 𐍋   |                  |
| E |     | 𐍌   |                  |
| F |     | 𐍍   |                  |

TABLE XX - Row A6: VAI

| hex  | Name                                | hex | Name |
|------|-------------------------------------|-----|------|
| A600 | VAI SYLLABLE NGGE                   |     |      |
| A601 | VAI SYLLABLE NGGEN                  |     |      |
| A602 | VAI SYLLABLE GE                     |     |      |
| A603 | VAI SYLLABLE GEN                    |     |      |
| A604 | VAI SYLLABLE ME                     |     |      |
| A605 | VAI SYLLABLE NE                     |     |      |
| A606 | VAI SYLLABLE NYE                    |     |      |
| A607 | VAI SYLLABLE NG                     |     |      |
| A608 | VAI SYLLABLE LENGTHENER             |     |      |
| A609 | VAI COMMA                           |     |      |
| A60A | VAI FULL STOP                       |     |      |
| A60B | VAI QUESTION MARK                   |     |      |
| A60C | (This position shall not be used)   |     |      |
| A60D | (This position shall not be used)   |     |      |
| A60E | (This position shall not be used)   |     |      |
| A60F | (This position shall not be used)   |     |      |
| A610 | VAI SYLLABLE NDOLE FA               |     |      |
| A611 | VAI SYLLABLE NDOLE KA               |     |      |
| A612 | VAI SYLLABLE NDOLE SOO              |     |      |
| A613 | VAI SYMBOL FEENG (thing)            |     |      |
| A614 | VAI SYMBOL KEENG (foot)             |     |      |
| A615 | VAI SYMBOL TING (island)            |     |      |
| A616 | VAI SYMBOL NII (cow)                |     |      |
| A617 | VAI SYMBOL BANG (finished)          |     |      |
| A618 | VAI SYMBOL FAA (die, kill)          |     |      |
| A619 | VAI SYMBOL TAA (go, carry, journey) |     |      |
| A61A | VAI SYMBOL DANG (hear, understand)  |     |      |
| A61B | VAI SYMBOL DOONG (enter)            |     |      |
| A61C | VAI SYMBOL KUNG (head, be able)     |     |      |
| A61D | VAI SYMBOL TONG (be named)          |     |      |
| A61E | VAI SYMBOL DO-O (be small)          |     |      |
| A61F | VAI SYMBOL JONG (slave)             |     |      |

## **A. Administrative**

### **1. Title**

Proposal to add the Vai script to the BMP of the UCS.

### **2. Requester's name**

Michael Everson, Charles Riley, José Rivera

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

Individual contribution.

### **4. Submission date**

2005-08-01

### **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)**

Yes.

#### **Proposed name of script**

Vai.

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

No.

#### **1b. Name of the existing block**

### **2. Number of characters in proposal**

284.

### **3. Proposed category (see section II, Character Categories)**

Category A.

#### **4a. Proposed Level of Implementation (1, 2 or 3) (see clause 14, ISO/IEC 10646-1: 2000)**

Level 1.

#### **4b. Is a rationale provided for the choice?**

Yes.

#### **4c. If YES, reference**

No combining characters.

#### **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?**

Jason Glavy via Michael Everson. TrueType.

#### **6b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:**

Michael Everson (Everson Typography). Fontographer.

#### **7a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?**

Yes (see above).

#### **7b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?**

Yes.

#### **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)?**

Yes. See above.

#### **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.**

See above for character properties.

## **C. Technical -- Justification**

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

Yes. A preliminary discussion proposal was made in L2/05-053.



**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?**

S. Jabaru Carlon (formerly University of Liberia), Mohamed B. Nyei (New York University), John V. Singler (New York University), Tombekai Sherman (Liberia), Jim Laesch (Lutheran Bible Translators), Miata Jessica Metzger (Cape Mount), Jumah Jennifer Gray Brumskine (Cape Mount), Lorna Priest (SIL), Peter Martin (SIL)

**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?**

See above.

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

Used to write a the Mande language Vai used in Liberia.

**4b. Reference**

See above.

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

Yes.

**5b. If YES, where?**

Used in Liberia.

**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.

**6b. If YES, is a rationale provided?**

Yes.

**6c. If YES, reference**

Vai is a living script; BMP encoding is in 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?**

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

No.

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

**11c. If YES, reference**

**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?**

**14c. If YES, reference**