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

Doc Type:Working Group DocumentTitle:Proposal to encode four N'Ko characters in the BMP of the UCSSource:UC Berkeley Script Encoding Initiative (Universal Scripts Project)Author:Michael EversonStatus:Liaison ContributionAction:For consideration by JTC1/SC2/WG2 and UTCDate:2015-12-19

1. Character additions. This document requests the addition of four new N'Ko characters to the UCS. One of these letters is a punctuation character, one is a combining mark, and two are currency signs. If this proposal is accepted, the following characters will be encoded:

07FB	_	NKO TE-KERENDE
07FD	្ត	NKO DANTAYALAN
07FE	ф	NKO DOROME SIGN
07FF	ъ	NKO TAMAN SIGN

2. TE-KERENDE. The TE-KERENDE _ is a character used to link compounds together. It rests on the baseline like U+07F8 $\stackrel{<}{_{\sim}}$ NKO COMMA and like that it functions as a shaping boundary. N'Ko orthography makes use of the usual non-baseline hyphen for word-breaking, and so TE-KERENDE cannot be unified with HYPHEN-MINUS. A line can break after but not before a TE-KERENDE. The usage of the TE-KERENDE is quite common. (See Figure 5.)

፝ዸ፝፞፞ዾ_ኇ_፝ዸ፟፟፟ዾ <i> mɔ-ɔ-mɔ</i> 'everyone'	፝፼_ያ_ዩ bɔ-ɔ-bɔ 'every outing'
ב_ב_ב_ <i>ko-o-ko</i> 'each thing'	آY_Y <i>si-i-si</i> 'anyone'
da-a-da 'each price' طا_ا_ سا	u_u_u su-u-su 'every night'
o_o_o <i>ce-e-ce</i> 'each work'	$\overline{Ab}_A \underline{Ab} t\varepsilon \overline{\varepsilon} \overline{\varepsilon} \overline{\varepsilon}$ 'every space'

3. DANTAYALAN. The DANTAYALAN is used with individual letters to abbreviate units of measure. This character is a combining mark which fuses with the base-line of the letter in question. It does not interfere with shaping behaviour; one appropriate font mechanism for handling this might be to use four precomposed shaping glyphs for each letter with the DANTAYALAN fused to it. Andrij Rovenchak proposed this character in L2/14-126 "Proposal to encode an additional Nko character". The use of this character is productive, and can appear with many (and in principle all) N'Ko letters. For instace, it is used with $\dashv ka$ as \dashv to abbreviate \land with $\lor fa$ as \dashv to abbreviate \land megametre', with $\lor fa$ as \dashv to abbreviate \land megametre', with $\lor fa$ as \dashv to abbreviate \land megametre', gram', and with $\flat ta$ as ⊣ to abbreviate \land gbaa. 'mm.' and ⊣ 𝔅 gbach. 'cm.'. (See Figures 1, 2, 3.)

4. Currency signs. Two currency signs based on N'Ko letters exist, for the *dorome* and for the *taman*. These precede the figures which run from right to left, so 00.19 is d15,00 (cf. \$15.00), 99 is d99. Another form is 195.19 (~ \$5.¢95 for \$5.95), or 195 00.19 d5.00 t95 (\$5.00 ϕ 95). (See Fig. 4.)

5. Unicode Character Properties. Character properties are proposed here.

```
07FB;NKO TE-KERENDE;Po;0;ON;;;;N;;;;
07FD;NKO DANTAYALAN;Mn;1;R;;;;N;;;;
07FE;NKO DOROME SIGN;Sc;0;R;;;;N;;;;
07FF;NKO TAMAN SIGN;Sc;0;R;;;;N;;;;
```

The Dantalayan is listed as an overlay, because it "fuses" with the baseline, but UTC should check that this is right.

Figures

	X _n	$\mathbf{L}^{\mathrm{X}_{\mathrm{r}}}$	X _m	X _l
А	I	L	T	J
EE	о Ү	e Y	Q	٩
Ι	Y	Ľ	Ŷ	Y
Е	^	\wedge	$\mathbf{\Lambda}$	~
U	L	Ц	ш	Ц
00	٦	ב	ユ	ב
0	ያ	ይ	오	2
DAGBASINNA	□ □ ♀ ↓ ♂ F 〒 b	╲ ц д ц д , ц д ц д , ц д ц д , ц д ц д , ц д , ц д , ц д , ц д , ц д , ц д , ц	x ^m אשר איד האין שאר שר שר של של האד האיד שאר איד שר אישר איד של איד שר שר של שר של שר של שר של איד של איד של איד ש	x'
Ν	Ч	ᠳ	<u><u><u></u></u></u>	<u>д</u>
BA	F	E	£	F
PA	F	1	E	E
ТА	Ь	b	Ь	Ь
JA	7	٢	ב	2
CHA	1	1	1	1
DA	ഥ †	ഥ t tt	m	n
RA	†	t	Ŧ	t
RRA	Ц	tt.	Ħ	tt.
SA		α.	Д	Б
GBA	⊽ ₽	ロ マ ピ ዛ	∇	오 육 푀 舟 ㄱ ㅅ ◈ ㄱ
FA		£	டீ	ተ
KA	Ч	ጚ	브	머
LA	ዓ	ይ	ዋ	٩
NA WOLOSO	T ∆ ⋧	L	I	J
MA	Δ	Δ.	Δ	Δ
NYA	ን	ፒ 쇼 ፻ ጊ	<u>ک</u>	و
NA	٦	l		
НА	ካ	ኒ	ካ	٢
WA	6 4	a	А	E
YA	\$	ቧ & ፩	고 교 호	ч С С С С С
NYA WOLOSO	ኝ	হ	<u>ठ</u>	و
OLD JA	1	Ŀ	+	ブ
OLD CHA	1 1 1	ľ	ナ オ +	ヹ゚゚゚゚゚゚゚゚゚゚゚゚
OLD RA	+	<i>•</i>	<i>•</i> +	+
			-	-

Figure 1. Chart showing the N'Ko repertoire with its ordinary shaping forms.

	X _n	X _r	X _m	X ₁
А	Ţ	Ţ	۲.	Ţ
EE	ዾ		A	А Х
Ι	ጟ	여×< < цлм, िर्याभ्रम् विभम्म प्रतिभूम् भूभ्रम्	여뇟 ╲ ┧ ᇿᅅᆞ ᇉᆒᇺᆔᆆᇧᇧ ᇉᅕᅻ ᅕ ᅷ ᄽ	Ľ
E	$\boldsymbol{\wedge}$	$\boldsymbol{\wedge}$	$\mathbf{\Lambda}$	\wedge
U	Щ	Щ	Щ	Щ
00	д	Д	д	д
0	ደ	ደ	ዳ	ደ
DAGBASINNA	ć	, ,	, L	, L
Ν	Å	L	م ل	ጟ
BA	ደ	£	ደ	ደ
PA	Ę	Ę	Ę	Ę
TA	Ь	Ъ	Ъ	Ь
JA	Ž	Ž	7	╲ 芄 ╷╲╷╢┙┙┙┙┙┙┙┙┙┙┙┙┙┙┙┙┙┙┙┙┙
CHA	ረ	ኋ	ቧ	ቧ
DA	<u>щ</u>	ų	щ	щ
RA	<u>+</u>	<u>ب</u>	<u></u>	<u></u>
RRA	щ	Щ	Щ	д
SA	д	д	д	д
GBA	ጂ	ጂ	<u>д</u>	ጂ
FA	ቷ	டீ	டீ	டீ
KA	ਸ਼ੁ	ਸ਼ੁ	거	ਸ਼ੁ
LA	ጟ	ጟ	ጟ	ጟ
NA WOLOSO	Ţ	Ţ	Ţ	Д
MA	Ą	Д	Д	Д
NYA	ዿ	ዿ	┥ ĹҬ┫┥┥	ዾ
NA	J	Д	д	д
HA	ጟ	ጟ	ጟ	ጟ
WA	д	д	д	д
YA	ዾ	ዾ	ዾ	ዳ
YA WOLOSO	ቒ፝፝፝፝፝፝ጚጚጚኇ፝ጚጚጚጟጚጚጚጚጚጚጚጚጚጚጚፙፙ ጞጞጚጚጚጚጚጚጚጚጚጚጚጚጚጚጚጚጚጚጚጚ	ूर्य प्र प्र प्र प्र र र र र र र र र र र र र	ጁ	ዾ
OLD JA	ケ		ケ	
OLD CHA	לב	ድ ድ ተ	ድ ድ ተ	ゲ ゲ 十
OLD RA	ť	+	+	$\tilde{+}$
	-	-	-	-

Figure 2. Chart showing the N'Ko repertoire with shaping forms combined with DANTAYALAN.

t.i t.i t.i t.i t.i t.i t.i t.i	is.used.with. is.used.with. is.used.with. is.used.with. is.used.with. is.used.with. is.used.with. is.used.with.	в С С С С С С С С С С	to become to become to become to become to become	ь Б Б	To.abbreviate To.abbreviate To.abbreviate To.abbreviate	ትቶo ዞኒመነ ወኒመያ	fele : <u>Megametre</u> kida sido	kg
It.i It.i	.is.used.with. .is.used.with. .is.used.with. .is.used.with. .is.used.with. .is.used.with.	0 60 10	to become to become	д	To.abbreviate			
t.i t.i t.i t.i t.i t.i t.i t.i t.i t.i	.is.used.with. .is.used.with. .is.used.with. .is.used.with. .is.used.with.	60 10	to become			የመጀם	sido	1
t.i t.i t.i t.i t.i t.i t.i t.i t.i	is.used.with. is.used.with. is.used.with. is.used.with.	10		Д	To.abbreviate			g
t.i t.i t.i t.i t.i t.i t.i t.i	.is.used.with. .is.used.with. .is.used.with.	—	to become			ضياويسي⊡	sídɔtanden	dg
t.i t.i t.i t.i t.i t.i t.i t.i	.is.used.with. .is.used.with.	30	1	םב,	To.abbreviate	تس√۲۱۶سک	sídɔcɛmɛden	cg
t.i t.i t.i t.i t.i t.i t.i	.is.used.with.		to become	مھ	To.abbreviate	تر سرعين المراجع	sídowaaden	mg
It.i It.i It.i It.i It.i It.i		۲A	to become	고머	To.abbreviate	لبيسه	kúdε	km
It.i It.i It.i It.i It.i It.i		V	to become	д	To.abbreviate	٦₽ٳٞڲٵ	gàlàgala	m
It.i It.i It.i It.i It.i	.is.used.with.	ЬӮ	to become	ЪЪ	To.abbreviate	كطيطيت	gàlàtanden	dm
lt.i lt.i lt.i lt.i	.is.used.with.	17	to become	ער	To.abbreviate	ڰڟۜڷڵؗؗڡ؉ڡڣ	gàlàcɛmɛden	cm
lt.i lt.i lt.i	.is.used.with.	ΣE	to become	ھے	To.abbreviate	كعيلون	gàlàwaaden: Millim	etre (mm)
lt.i lt.i lt.i	.is.used.with.	ЧӮ	to become	۲ <u>۲</u>	To.abbreviate	۲۹آلاحه	gàlàkoe	μm
lt.i lt.i	.is.used.with.	۶Z	to become	₽ ₽	To.abbreviate	৸োঁর্য়েন∆	gàlàŋánta	nm
lt.i	.is.used.with.	[⊬] ⊿	to become	₽₽₽	To.abbreviate	ݯݕݾݮ ۲ىسە ئورىم	kúdɛfúdúbɛn	Km ²
	.is.used.with.	Δ^{H}	to become	۲, ^۲	To.abbreviate	∆£آٹھیتاب	gàlàfúdúbɛn	m ²
lt.i	.is.used.with.	[⊬] ЬӮ	to become	۲дд	To.abbreviate	كطيطيتهم	gàlàtanfúdúbɛn	dm ²
	.is.used.with.	₽1⊅	to become	₽₽₽	To.abbreviate	<u>کو</u> آل۷۷یستغ ^۲	gàlàcɛmɛfúdúbɛn	cm ²
lt.i	.is.used.with.	₽₽₽	to become	₽₽	To.abbreviate	كطآلآلهميتان	gàlàwááfúdúbɛn	mm ²
	.is.used.with.	₽F	to become	Σt	To.abbreviate	<u>کای</u> سیان	gàlàfɛdɛbɛn	m ³
	.is.used.with.	αt	to become	Ę.	To.abbreviate	أطق	sènkan	
lt.i	.is.used.with.	₫ЬӮ	to become	ЪЪЪ	To.abbreviate	كويطيعت	gàlàfɛdɛbɛn	dm ³
lt.i	.is.used.with.	[⊴] 1⊽	to become	۲ ۲	To.abbreviate	<u>۲</u> ۹ڷ۱۵۸۳۳۳۷	gàlàtanfɛdɛbɛn	cm ³
lt.i	.is.used.with.	ZΕ	to become	עָבּיּ	To.abbreviate	∆€ڸٵۣڸڛ؆ۼ؇	gàlàcɛmɛfɛdɛbɛn	mm ³
lt.i	.is.used.with.	ΔӮ	to become	۷م	To.abbreviate	୵୳ୗ୕୵୲୵	gàlàmɔnɔ	MI
lt.i	.is.used.with.	DD	to become	لاہم	To.abbreviate	۲۴۵۵۵۶	gàlàszeyi	KI
lt.i	.is.used.with.	ዊወ	to become	ل ٹے	To.abbreviate	كطآلمون	gàlàfele	hl
lt.i	.is.used.with.	Ь	to become	Ъ	To.abbreviate	الحكا	tónga	1
lt.i	.is.used.with.	ЬЬ	to become	طط	To.abbreviate	وهتم	tóngatanden	dl
lt.i		1Ь	to become	ЦĻ	To.abbreviate	طخ∆ا۲۷√سڼ	tóngacɛmɛden	cl
lt.i	.is.used.with.		1					
lt.i		аь	to become	<u>مبہ</u> طبھ	To.abbreviate	٩ڂؚڰڶڡؖڷڡڹ	tóngawaaden	ml

Figure 3. Chart showing the DANTAYALAN in use in various N'Ko abbreviations

1.	07FE	φ	NKo DOROME TOOSE	RE			
	lt.is.used.with.	Nombres	\$15.00 = 00.F1P	\$45.00 = 00.129	\$75.00 = 00. + <i>V</i> P	\$99.00 = 00 .99 P	
			\$15 = ⊦t₽	\$45 = ⊦2₽	\$75 = ⊦⊮₽	\$99 = የየዋ	
2.	07FF	ħ	NKo TAMAN TOOSERE	E			
	It.is.used.with.	Nombres	¢0.15 = ⊦1.0\$	¢0.45 = ⊦2.0₺	¢0.75 = 11.0 b	¢ 0.99 = የየ. 0ቴ	
			¢15 = ⊦1₽	¢45 = ⊦215	¢75 = ŀ/ħ	¢99 = ११ ४	

Figure 4. Chart showing the DOROME SIGN and TOMAN SIGN in various usage configurations.

104. فَلْقا لَعْنَ فَرَّا ثُلَّ مَةً مَا تَعْنَقِنَ قَا تَعْمَدُ فَتَتَقَا اللَّهُ عَدَيَدُوْ الْحُمَّ فَتَتَقَا اللَّهُ عَدَيَدُوْ الْحُمَّ فَتَتَقَا اللَّهُ عَدَيَدُوْ الْحُمَّ فَتَتَقَا اللَّهُ اللَّهُ عَدَيَدُوْ الْحُمَّ فَقَا اللَّهُ الْعُلَى اللَّهُ اللَّ مَكْذَلُكُمُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ عَدَا اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّ مَكْ الْحَدَيْقَا اللَّهُ اللَّ مَكْ الْحَدَيْقَا اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّةُ اللَّهُ الْحُلَيْ اللَّهُ اللَّهُ اللَّهُ الْحُدَالَةُ اللَّهُ الْحُلَيْ اللَّهُ الْحُلَيْ الْحُلَيْ اللَّهُ الْحُلُولَةُ الْحُولَ الْحُالَةُ اللَّهُ اللَّهُ اللَّهُ اللَّةُ اللَّةُ الْحُلُولُ الْحُورَ الْحُولَةُ الْحُلُولُ الْحُلُولُ الْحُالَةُ اللَّهُ اللَّهُ اللَّهُ الْحُلَيْ الْحُلَى الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَى الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْلَةُ اللَّالَةُ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْ الا اللَّذَا اللَّالَةُ اللَّالَةُ اللَّالَةُ اللَّا اللَّهُ اللَّهُ اللَّهُ اللَّالَ الْحُلَيْ اللَّالَةُ الْحُلُولُ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْ الْحُلَيْحُالَ لَالَ الْحُلَيْحُ الْحُلَيْ الْحُلَيْ الْحُلَيْ الَ

Figure 5. Example showing the TE-KERENDE in use.

NKo

07FF

	07C	07D	07E	07F
0	0	9	Τ	े
	07C0	07D0	07E0	07F0
4	Γ	6	Λ	្
1	07C1	07D1	07E1	07F1
2	۲	٩J	?	਼
	07C2	07D2	07E2	07F2
3	F	F	٦	ਂ
	07C3	07D3	07E3	07F3
4	2	F	ካ	,
	07C4	07D4	07E4	07F4
5	ŀ	Ь	6	6
	07C5	07D5	07E5	07F5
6	Ц 07С6	7 07D6	\$ 07E6	2 07F6
		0100		
7	07C7	1 07D7	7	07F7
8	b 07C8	07D8	1 07E8	• 07F8
	_	0700	0720	0/10
9	Ŷ	†	1	:
	07C9	07D9	07E9	07F9
А	1	Ħ	+	_
	07CA	07DA	07EA	07FA
в	0		ੋ	-
	07CB	07DB	07EB	07FB
с	Y	∇	ं	\mathbb{N}
	07CC	07DC	07EC	\sum
D	~	Ъ	ਂ	្ត
	07CD	07DD	07ED	07FD
Е	L	Н	ੇ	φ
	07CE	07DE	07EE	07FE
F	J	٩	े	Ъ
	07CF	07DF	07EF	07FF

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Date: 2015-12-29

07C0

NKo

07F3

07F4

07F5 6

07F8

07F9

Symbol

Punctuation

:

ਂ

Digits

07C0	0	NKO DIGIT ZERO
07C1	1	NKO DIGIT ONE
07C2	۲	NKO DIGIT TWO
07C3	ł	NKO DIGIT THREE
07C4	2	NKO DIGIT FOUR
07C5	ŀ	NKO DIGIT FIVE
07C6	4	NKO DIGIT SIX
07C7	V	NKO DIGIT SEVEN
07C8	4	NKO DIGIT EIGHT

07C9 9 NKO DIGIT NINE

Letters

Leu	ers	
07CA	1	NKO LETTER A
07CB	0	NKO LETTER EE
07CC	Y	NKO LETTER I
07CD	^	NKO LETTER E
07CE	Ц	NKO LETTER U
07CF	J	NKO LETTER OO
07D0	ያ	NKO LETTER O
07D1	<u>-</u>	NKO LETTER DAGBASINNA
07D2	٦	NKO LETTER N
07D3	F	NKO LETTER BA
07D4	1	NKO LETTER PA
07D5	Ь	NKO LETTER TA
07D6	7	NKO LETTER JA
07D7	1	NKO LETTER CHA
07D8	ш	NKO LETTER DA
07D9	t	NKO LETTER RA
07DA	Ħ	NKO LETTER RRA
07DB		NKO LETTER SA
07DC	A	NKO LETTER GBA
07DD	ď	NKO LETTER FA
07DE	Н	NKO LETTER KA
07DF	٩	NKO LETTER LA
07E0	Т	NKO LETTER NA WOLOSO
07E1	Δ	NKO LETTER MA
07E2	ቅ	NKO LETTER NYA
07E3	٦	NKO LETTER NA
07E4	ካ	NKO LETTER HA
07E5	а	NKO LETTER WA
07E6	\$	NKO LETTER YA
07E7	ş	NKO LETTER NYA WOLOSO

Archaic letters

07E8 07E9 07EA	NKO LETTER JONA JA NKO LETTER JONA CHA NKO LETTER JONA RA \rightarrow 07D9 † nko letter ra	
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Tone marks

07EB ONKO COMBINING SHORT HIGH TONE \rightarrow 0304 combining macron 07EC NKO COMBINING SHORT LOW TONE $\rightarrow 030\tilde{3}$ combining tilde 07ED . NKO COMBINING SHORT RISING TONE \rightarrow 0307 combining dot above 07EE NKO COMBINING LONG DESCENDING TONE \rightarrow 0302° combining circumflex accent د د NKO COMBINING LONG HIGH TONE 07EF 07F0 NKO COMBINING LONG LOW TONE ୂ 07F1 NKO COMBINING LONG RISING TONE 07F2 ਼ NKO COMBINING NASALIZATION MARK \rightarrow 0323 combining dot below

Date: 2015-12-29

Letter	extender
07FA _	
	$\rightarrow 005F _$ low line
	\rightarrow 0640 - arabic tatweel
Punct	uation
07FB _	NKO TE-KERENDE
	\rightarrow 002D - hyphen-minu
Abbre	viation sign

07F6 2 NKO SYMBOL OO DEENE

NKO COMMA

07F7 👶 NKO SYMBOL GBAKURUNEN

: NKO EXCLAMATION MARK

Appreviation sign NIKO DANITAVALAN

JIFD	Ľ,	NKO DANTAYALAN
		• used to abbreviate units of measure

NKO COMBINING DOUBLE DOT ABOVE

 \rightarrow 02BB modifier letter turned comma

 \rightarrow 0308° combining diaeresis

NKO HIGH TONE APOSTROPHE \rightarrow 02BC modifier letter apostrophe

NKO LOW TONE APOSTROPHE

Currency signs

07FE	φ	NKO DOROME SIGN
		$\rightarrow 07D8 \text{m}$ nko letter da

- 07FF **b** NKO TAMAN SIGN
 - \rightarrow 07D5 b nko letter ta

A. Administrative

1. Title Proposal to encode four N'Ko characters in the BMP of the UCS

- 2. Requester's name
- Script Encoding Initiative (author: Michael Everson)
- 3. Requester type (Member body/Liaison/Individual contribution)
- Liaison contribution.

4. Submission date

2015-12-29

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.

1b. Proposed name of script

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

Yes.

1d. Name of the existing block

Nko.

2. Number of characters in proposal

4.

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.

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

Michael Everson. Fontlab.

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. 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. 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.

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?

Mamady Doumbouya, Baba Mamadi Diane.

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?

Users of N'Ko.

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

Common.

4b. Reference

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

Yes.

5b. If YES, where?

The Manden-speaking community.

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 N'Ko 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

One of the characters is a combining character.

11d. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?

Yes.

11e. If YES, reference

See Figures 1, 2, 4.

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?