

Revised Proposal to Encode N’ko Phonetic Extensions for Malian Languages

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Changes from previous proposal titled *Preliminary Proposal to Encode N’ko IPA*:

- N’ko renamed N’ko Phonetic Extensions
- Repertoire limited to just the characters required for Malian languages and French loan words with full system in appendix
- Characters renamed from phoneme-based nomenclature to form-based nomenclature
- Updated app install data and current student enrollment numbers
- Updated list of source materials
- Marks previously used for adverb marking now are used for verb marking
- Addition of new tone marks along with combining classes
- Added Unicode Character Properties
- Added all possible mark combinations
- Code chart updated to roadmap codepoints 1E960-1E9CF

I. Introduction

N’ko Phonetic Extensions, as its name indicates, are an extension of the N’ko script, encoded in 2006 ([L2/04-172](#)), which adds original characters to satisfy the need of other African languages throughout West Africa and the continent.

In 1949, Solomana Kanté finalized the N’ko writing system to write all Manding languages, in particular, Maninka, Bambara, Dioula, and Mandinka. These languages are generally mutually intelligible with differences in structure and pronunciation. Kanté’s solution to these differences was to develop a literary language register called Kangbe that borrows from all the languages but is heavily influenced by Maninka or the Maninkamory dialect of Guinea. As a result, certain letters of the N’ko alphabet stand in for multiple phonemes. While N’ko has been widely adopted by the Manding community, the writing system does not accurately represent the phonetic variation of mutually understandable languages like Bambara, Khassonke, Mandinka, etc. This makes it difficult to utilize it for other Mande languages such as Soninke, Dogoso and Senufo, etc.

The N’ko Phonetic Extensions remedy this problem by expanding the character repertoire to cover all specific phonemes and improving upon the tonal marking system. Dr. Boubacar Diakite developed the system to make N’ko readily capable of writing all African languages without recourse to devising a new script for each language. For the remainder of this document N’ko, as developed by Kanté will be referred to as N’ko-Maninkamory to distinguish it from the N’ko Phonetic Extensions.

II. The Case for N'ko Phonetic Extensions

The N'ko Phonetic Extensions were initially conceived of by Dr. Diakite in 2015 as means to bolster African cultures and languages. Dr. Diakite elaborates on motivation to expand N'ko script:

1- Need for expansion

In Mali, as national scripts, we have Tifinagh, Massaba and N'ko. The latter is by far the most widely used script. Despite this comfortable position, it is still seen in Mali as a script for Maninka dialect; nevertheless, it has the potential to be accepted by all the other Mande dialect speakers and beyond if necessary, adaptations are made in that sense. For example, the most widely used language in Mali is Bambara. Some of its characteristic sounds are missing in the N'ko script such as the (g, ŋ, ʃ, z, d͡ʒ etc.). likewise, N'ko falls short in writing some of the most prominent sounds in the other national languages of Mali such as (ʔ, ə, χ etc.). To generalize the script, there was a need to expand the scope of its coverage.

2- Need for adaptation

The original N'ko script does not have means to differentiate Proper nouns from common nouns, it does not mark neuter nouns which are the basis (radical) for definite or indefinite nouns, and finally, it does not differentiate between vowel lengtheners and the tones. These gaps are closed with the expansion.

3- Need for national or transnational scripts

The vivacity of the N'ko script in West Africa has intrigued the other African nations and sharpened their need for an African script that befits their different languages. Most African countries have several, if not scores of, languages. It is important for all these nations to have a limited number of scripts to facilitate communications between communities and the nation and between nations of the regions and even the continent. It is imperative at this crucial moment of accrued demand for more sovereignty and African integration to have a script that can satisfy the needs of their languages. In 2015, the Council of Pan African Leaders and Traditional Authorities sent a delegation, strong of over ten kings, from different African countries to Mali and Guinea to push the authorities in these two countries to make a proposal to the African Union (AU) to adopt N'ko script as a continental script. From that time to now the question of making adaptations to the N'ko script like the one done to the Latin script to fit most of the world languages has been considered. N'ko leaders in conjunction with Harvard African Language Program (ALP) made a trip to some African countries to probe the matter. It resulted from that trip that African nations are pretty much interested in a unifying script such as N'ko that has the capacity of expansion to befit, if not all, most of the African languages. (See Figures 1- 4) The continent is undergoing tremendous changes in the domains of culture, economics, and politics. That is why there is a rising demand for officialization of national languages and the standardization of the national and transnational scripts.

These motivations played a large role during the National Conference held in Bamako in December 2021, where Mali took the initial steps to elevate its 13 national languages. In the final report, the Malians concluded the following actions are necessary:

French:

- *faire adopter la loi portant officialisation des langues nationales conformément à l'esprit du document de politique linguistique et modifier conséquemment l'article 25 de la Constitution 1992;*

- *concevoir et mettre en oeuvre un plan quinquennal d'éradication de l'analphabétisme au Mali en utilisant toutes les formes d'écriture des langues nationales (Tifinagh, N'Ko, Massaba, etc.) ;*
- *valoriser les systèmes d'écritures endogènes qui font partie de notre patrimoine culturel (Tifinagh, N'Ko, Massaba, Idéogrammes, etc.).*

English:

- *pass a law formalizing national languages, in line with the spirit of the language policy document, and amend article 25 of the 1992 Constitution accordingly;*
- *design and implement a five-year plan to eradicate illiteracy in Mali, using all forms of writing in national languages (Tifinagh, N'Ko, Massaba, etc.);*
- *promote indigenous writing systems that are part of our cultural heritage (Tifinagh, N'Ko, Massaba, Ideograms, etc.).*

In response to these recommendations, the new constitution of Mali which was ratified in June 2023 codified that the national languages of Mali are the official languages in article 31.

French:

Article 31:

Les langues nationales sont les langues officielles du Mali.

Une loi organique détermine les conditions et les modalités de leur emploi.

Le français est la langue de travail.

L'Etat peut adopter toute autre langue comme langue de travail.

English:

Article 31:

The national languages are the official languages of Mali.

An organic law determines the terms and conditions of their use.

French is the working language.

The State may adopt any other language as a working language.

While this new language policy does not address the matter of writing systems commission is expected to be formed to investigate the topic after elections are held in 2024. Policy makers will need to determine whether public education and documentation should occur in all existing writings systems (N'ko, Adlam, Tifinagh, Masaba, etc) or if they should focus on one single writing system. A point of concern will be the interoperability that would be required to utilize multiple writing systems to transcribe all 13 national languages. As not all the existing writing systems are capable of this task a certain amount of script reform would need to be undertaken. Another consideration is the overhead associated with government offices needing personnel with expertise in all writing systems to produce official documents. Finally, legal documents require precision to minimize ambiguity. Currently none of the existing writing systems provide this level of precision particularly with regards to the tonal languages. As a result, it appears crucial for policy makers to group all the languages into the fewest number of scripts. Adapting the N'ko script to support the national languages of Mali provides a solution to these concerns, making the N'ko Phonetic Extensions a strong candidate for a national writing system.

III. Development

Development of a working N’ko Phonetic Extensions typeface started in spring 2019 with the first iteration completed by the fall of the same year. This initial iteration was taught at the University of Bamako and in villages throughout 2019-2020. Modifications were made throughout 2020 to 2024, to refine the tonal marking system and refine glyph design and language coverage.

The font was distributed alongside desktop and mobile keyboards for all national Malian languages. Analytics provided by the keyboard app “Clavier Malien,” available for Android, provides insight into the user base and adoption. The chart below shows the app installs in orange/brown tones along the monthly average users in blue. The data shows that while the user base is modest there has been a marked increase in installs since the beginning of 2022. While modest, the user base has been steadily increasing since 2022 with about 800 active users each month. Seventy percent of the user base is in Mali with the remainder in the countries of Guinea, Côte D’Ivoire and France. Given that the number monthly active users track closely to installed user base in Mali it is assumed the users outside of the country are either diaspora or users who have installed the app out of curiosity.

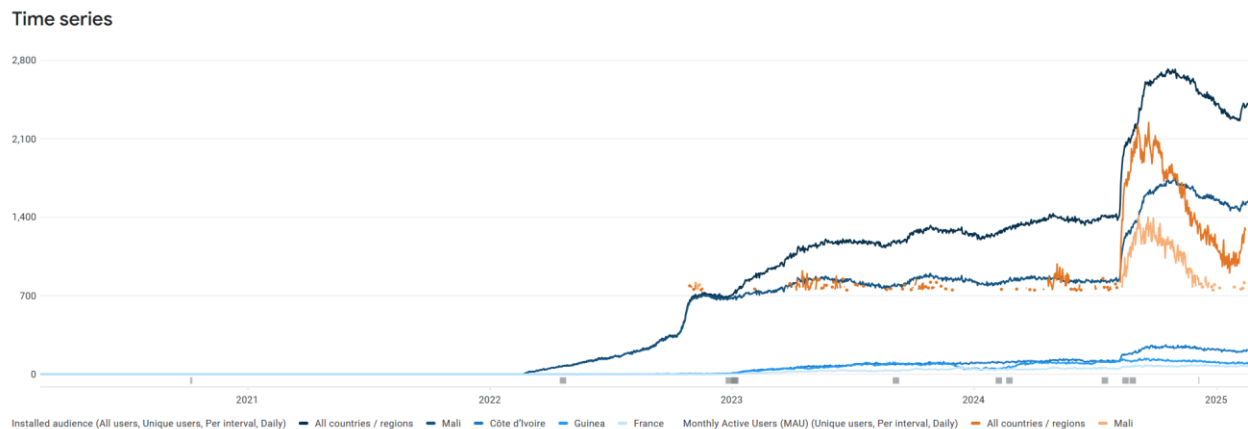


Figure 1: Installation base and monthly active users of the N’ko Phonetic Extensions keyboard application since its release.

IV. Usage

Since the public introduction of the N’ko Phonetic Extensions in 2019 more than 600 students have been trained in use of the script in public universities in Bamako for different Malian languages. In the fall semester of 2023 approximately 100 students were enrolled in language classes that utilize the N’ko Phonetic Extensions. (See Figure 5) As of 2025, the script is being taught at three additional universities University of Administrative and Political Sciences (FSAP), National Engineering Higher Education (ENI) and African Franco-Arab University (UPAFA). There are also 4 online classes outside of the university system. Currently, there 450 students enrolled in university classes and 226 students in the online program.

The N’ko Phonetic Extensions has been used for a variety of purposes in Mali as described below:

- *Educational Materials* A number of education materials have been published by various authors. These include:
 - Primary Education
 - *Bamanankan San Folo* [Reference 1]
 - *Bamanankan San Filanan* [Reference 2]
 - *Language 1er Annee* [Reference 3]
 - *Language 2eme Annee* [Reference 4]
 - *Math Kakura* [Reference 6]
 - *N'ko Bambara Writing* [Reference 7]
 - *N'ko Lakalanni* [Reference 8]
 - *Tamachek en Nko* [Figure 25]
 - *Soninke Lesson Samples*, [Figure 24]
 - *Sonraye Lesson Samples*, [Figure 22]
 - *The Body_Nyesson* (Human body functions), [Reference 22]
 - College Level Education
 - *Le 1er Module de l'enseignement du Nko-Bambara à l'université* [Reference 9]
 - *Le 1er Module de l'enseignement du Nko-Bobo à l'université* [Reference 10]
 - *Le 1er Module de l'enseignement du Nko-Bozo à l'université* [Reference 11]
 - *Le 1er Module de l'enseignement du Nko-Songhai à l'université* [Reference 12]
 - *Le 1er Module de l'enseignement du Nko-Miyanka à l'université* [Reference 13]
 - *Le 1er Module de l'enseignement du Nko-Bomu à l'université* [Reference 15]
 - *Le 1er Module de l'enseignement du Nko-Fulfulde à l'université* [Figure 23/Reference 17]
 - *Assike Kakura1* (Advanced Nko): [Reference 20]
 - *Bassiya Nyafoli* (Traditional medicine explained) [Reference 21]
 - ***Working groups formed to make editions for remaining Malian languages.***
- *Health Bulletins* The script has been used by the Institut National de Sante Publique in Mali to publish and distribute bulletins on the prevention COVID-19 infections. (Figure 17)
- *Ephemera* The N'ko Phonetic Extensions are featured in a 2021 calendar published by the Ministère de la Refondation de l'Etat. (Figure 18)
- *Governmental Records* The newly ratified constitution of Mali (2023) has been translated into Bambara using the N'ko Phonetic Extensions. In addition, documents to define governmental roles have been published for the Ministère de la Refondation de l'Etat.
 - *Projet de Constitution (Constitution Project)*, Adama Coulibaly, translation to Bambara using N'ko Phonetic Extensions by Dr. Boubacar Diakite (Figure 19).

- *Dictionnaire des mots administratifs*, Mohamed S. Coulibaly, Former State Refoundation Minister (Figure 20)
- *Lexique de travail* (Work Wordlist), Mohamed S. Coulibaly, Former State Refoundation Minister (Figure 21)

V. Structure

The N’ko Phonetic Extensions follow the same conventions of the N’ko-Maninkamory letters. Letters run right-to-left and are connected while allowing for an unconnected version to be used. The system utilizes all existing N’ko letters with some exceptions plus the additions shown in subsections 1 through 8. The N’ko Maninkamory letters that are no longer used with the N’ko Phonetic Extension system are as follows: **T** NKO LETTER NA WOLOS0 (07E0), **Ɔ** NKO LETTER NYA WOLOS0 (07E7), **ɛ** NKO LETTER JONA JA (07E8), **ɛ** NKO LETTER JONA CHA (07E9) AND **ɛ** NKO LETTER JONA RA (07EA).

Below is an excerpt from the Malian constitution written in Bambara with the N’ko Phonetic Extensions. The features highlighted with boxes show new glyphs that are part of the system. In addition to samples provided in the body of the proposal, further examples of glyphs in use are in section XI: Supplementary Figures.

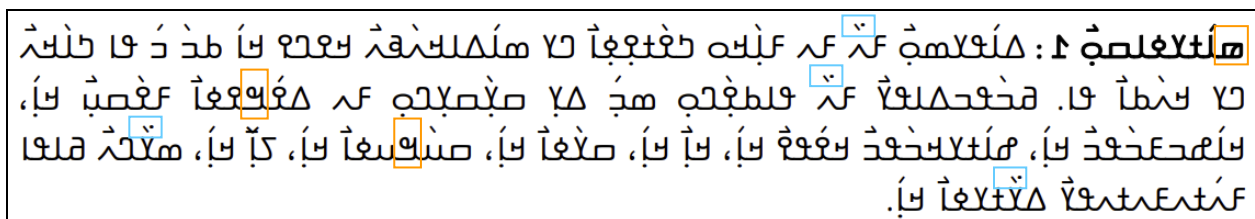


Figure 2: Excerpt from Malian constitution showing Bambara written using the N’ko Phonetic Extensions. Orange boxes highlight new letters, and blue boxes indicate new diacritics.

1. Consonants

The N’ko Phonetic Extension system has been developed to enable transcription of any African language. The repertoire below represents the new consonants that are required for Malian languages and French loan words.

ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ
g	q	tʃ	dʒ	ŋ	v	z	ʃ
ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ
ʒ	ɛ	ɔ	x	ɔ	h	ɔ	ɔ
ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ
b	ɔ	dʔ	gʔ	dʃ	sʃ	tʃ	zʃ

<i>Glyph</i>	<i>Code</i>	<i>Proposed Character Name</i>	<i>Phoneme</i>
ᑭ		NKO LETTER KA WITH LOOPED FLAG	g
ᑮ		NKO LETTER LOOPED KA WITH DOCKED FLAG	q
ᑯ		NKO LETTER TA SA DIGRAPH	tʃ
ᑰ		NKO LETTER DA WITH LEFT FLUE	dʒ
ᑱ		NKO LETTER LOOPED NA	ŋ
ᑲ		NKO LETTER REVERSED FA	v
ᑳ		NKO LETTER SA BAR	z
ᑴ		NKO LETTER SA WITH BOTTOM RIGHT EYELET	ʃ
ᑵ		NKO LETTER SA WITH BOTTOM LEFT EYELET	ʒ
ᑶ		NKO LETTER VOICED UVULAR FRICATIVE	ʁ
ᑷ		NKO LETTER REVERSED SWOOPED CHA	ʝ
ᑸ		NKO LETTER REVERSED KA	x
ᑹ		NKO LETTER REVERSED KA WITH LOOPED FLAG	ɣ
ᑺ		NKO LETTER REVERSED KA WITH DOCKED FLAG	ħ
ᑻ		NKO LETTER KA WITH DOCKED FLAG	ç
ᑼ		NKO LETTER LOW LA WITH DOCKED FLAG	ɬ
ᑽ		NKO LETTER CROOK-SHAPED FA	ʙ
ᑾ		NKO LETTER BENT A	ʔ
ᑿ		NKO LETTER DA WITH HOOK	dʔ
᐀		NKO LETTER KA WITH LOOPED FLAG AND HOOK	ɡʔ
ᐁ		NKO LETTER DA WITH HORN	d ^h
ᐂ		NKO LETTER SA WITH HORN	s ^h
ᐃ		NKO LETTER TA WITH HORN	t ^h
ᐄ		NKO LETTER SA BAR WITH HORN	z ^h

2. Clicks

While click sounds are not typically considered to be part of Malian languages they do occur colloquially. The N'ko Phonetic Extension system includes a repertoire click sounds for this purpose.

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>	<i>Phoneme</i>
◌̣		NKO LETTER LINE WITH DOT	◌̣
◌̥		NKO LETTER LINE WITH TWO DOTS VERTICALLY	◌̥
◌̦		NKO LETTER LINE WITH TWO DOTS HORIZONTALLY	◌̦
◌̧		NKO LETTER LINE WITH THREE DOTS DOWNWARD	◌̧
◌̨		NKO LETTER WITH THREE DOTS UPWARD	◌̨

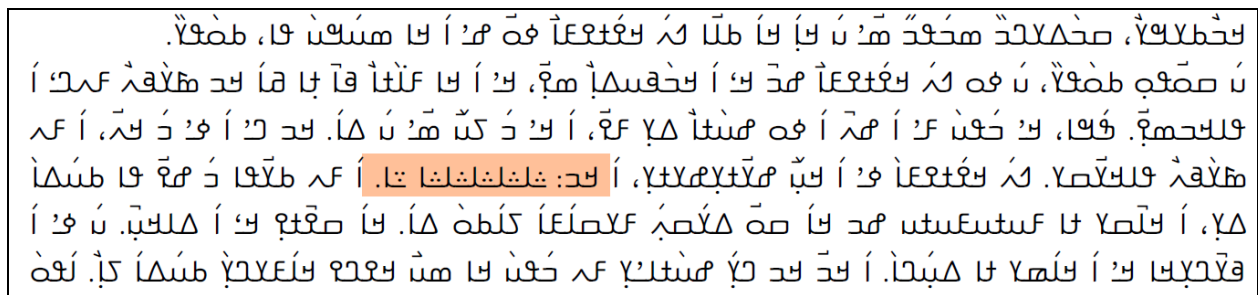


Figure 3: Excerpt of Bambara language text showing of two of the click sounds used (highlighted in orange) in a quotation.

3. Vowels

The N'ko Phonetic Extension system does include a broad range of vowels but the repertoire below represents only the new vowels that are required for Malian languages and for French loan words.

Ÿ	Θ	Ξ	Ϡ	Ϻ
y	ø	ε	œ	æ

<i>Glyph</i>	<i>Code</i>	<i>Proposed Character Name</i>	<i>Phoneme</i>
Ƴ		NKO LETTER I WITH LEFT HOOK	ɣ
Ɛ		NKO LETTER EE WITH HORIZONTAL BAR	ø
Ɯ		NKO LETTER OO BAR	ə
Ɔ		NKO LETTER EE OO DIGRAPH	œ
Ǝ		NKO LETTER EE E DIGRAPH	æ

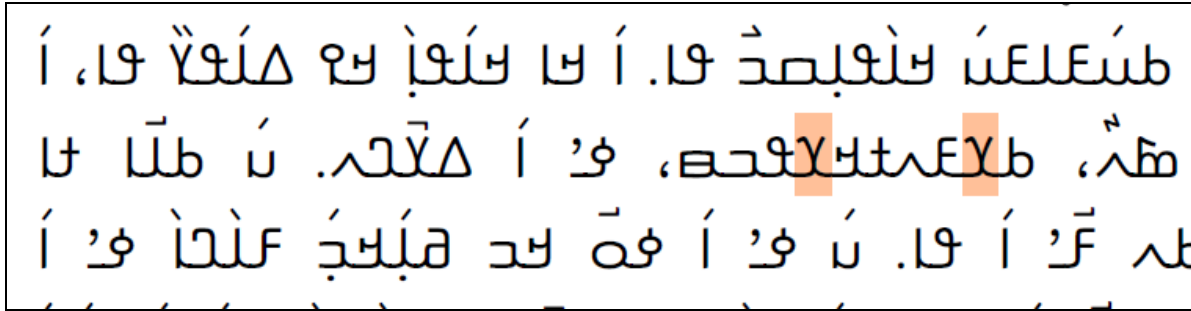
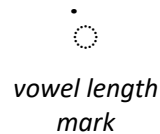


Figure 4: Excerpt of Bambara language text with transliteration of the French word “tuberculose” with French vowel y highlighted.

4. Vowel Length Mark



Glyph	Code	Character Name	Combining Class
◌̤	07ED	NKO COMBINING SHORT RISING TONE (VOWEL LENGTH MARK)	230

This mark works to indicate a change in the length of a vowel. It can either indicate a vowel’s length is shortened or lengthened. The precise change depends on the language. In a language with three vowel lengths like Bambara, this mark indicates that the length of the vowel is halved. Whereas in a language with only two vowel lengths like Fulah this mark indicates the vowel is lengthened. This is demonstrated in the following table.

	Fulah		Bambara	
Vowel Length	N’ko Phonetic Ext	Latin	N’ko Phonetic Ext	Latin
Short	---	---	◌̤	f̤e
Regular	◌̤	dewgal	◌̤	ni
Long	◌̤	a:da:ji	◌̤	jòròba:tó

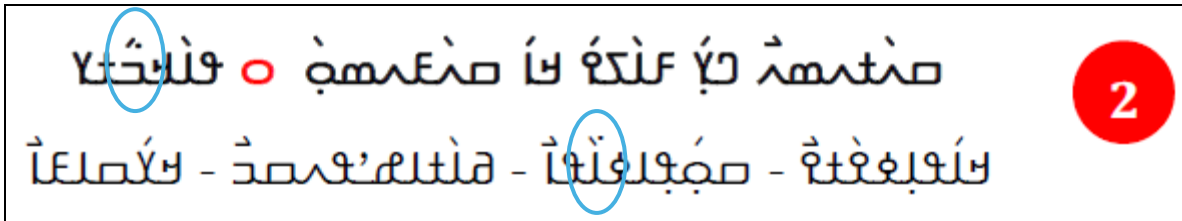


Figure 7: Sample of vowel mark combined with low and high tone marks (blue circles)

Since the vowel length mark has the same appearance and character properties as the existing NKO COMBINING SHORT RISING TONE (07ED) a separate codepoint is not required.

5. Elision

,	‘	’
high tone vowel syncope	low tone vowel syncope	toneless vowel syncope

Glyph	Code	Character Name	Phoneme
,		NKO HIGH TONE VOWEL SYNCOPE SYMBOL	’
‘	07D1	NKO LETTER DAGBASINNA (LOW TONE VOWEL SYNCOPE SYMBOL)	’
’		NKO APOSTROPHE	’

The N’ko Phonetic Extensions includes three elision symbols. The first two are used when vowels are elided in tonal languages. During this process the omitted vowel is replaced with the appropriate symbol to indicate the tone of the omitted vowel. The HIGH TONE VOWEL SYNCOPE SYMBOL and LOW TONE VOWEL SYNCOPE SYMBOL are the like the NKO HIGH TONE APOSTROPHE (07F4) and NKO LOW TONE APOSTROPHE (07F5), however when used with the N’ko Phonetic Extensions these symbols have joining behavior. See part 11. In unconnected text, the apostrophes in N’ko Maninkamory and the syncope symbols in N’ko Phonetic Extension system are indistinguishable.

With the required shaping behavior, the LOW TONE SYNCOPE SYMBOL appears and shapes exactly as the 𞤎 NKO LETTER DAGBASINNA (07D1). This symbol is used in N’ko Maninkamory to indicate a consonant cluster in loan words. Since this notation is not used with the N’ko Phonetic Extension system the NKO LETTER DAGBASINNA (07D1) can be used for the LOW TONE SYNCOPE SYMBOL.

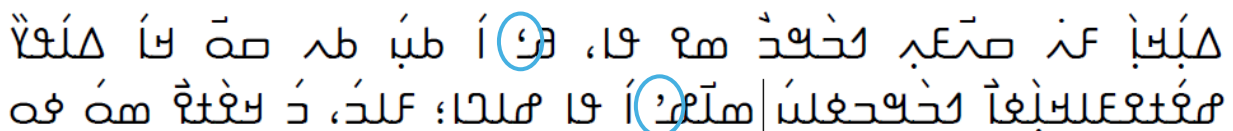


Figure 8: Sample of syncope marks in Bambara language text (blue circles)

The third symbol NKO APOSTROPHE is used for omitting consonants or vowels where tone is not a factor. Although this resembles and functions much like the APOSTROPHE (0027), this symbol has joining behavior which requires separate encoding. See part 11. The following example shows the NKO APOSTROPHE being used to replace the consonant ɲ.

ɲɲ ← ɲ
 ɲɲ ← ɲ

6. Tonal Marks

high tone	low tone	mid tone	consonant gemination	low-high tone	high-low tone	high-mid tone	mid-low tone
low-mid tone	low-low tone	high-high tone	low-low- high tone	low-low- high-mid tone	low-high- mid tone	low-low- mid tone	high-high- mid tone
high-high- low tone	high-high- low-mid tone	high-low- mid tone	mid-low- low tone	high-high down step tone	high-high down step high tone	high-high down step mid tone	convert low tone
convert high tone							

Tone marking in N'ko Phonetic Extensions differs from Nko Maninkamory in two ways. The first is the separation of vowel length and tone in the diacritics. The purpose of this change is to make it easier to transcribe tonal languages other than Manding. As a result, certain diacritics from N'ko Maninkamory have been repurposed for the Phonetic Extensions. These marks do not require new code points and are as follows:

- NKO COMBINING SHORT HIGH TONE (07EB) is used to indicate a mid-tone in N'ko Phonetic Extensions.
- NKO COMBINING LONG DESCENDING TONE (07EE) is used to indicate a high-low tone in N'ko Phonetic Extensions.
- NKO COMBINING SHORT LOW TONE (07EC) is used to indicate consonant gemination in N'ko Phonetic Extensions



○ NKO COMBINING LONG HIGH TONE (07EF) is used to indicate a high-mid tone in N’ko Phonetic Extensions.



○ NKO COMBINING LONG RISING TONE (07F1) is used to indicate a mid-low tone in N’ko Phonetic Extension.

The second difference is that the repertoire of tone marks has been expanded to more accurately represent the tonal possibilities as well as provide better clarity when handling the complex tonal modulation that occurs in Bambara.

The tones marks can be broken down into two categories: basic tone marks and compound tone marks.

Basic Tone Marks

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>	<i>Combining Class</i>
◌̣		NKO COMBINING HIGH TONE	230
◌̤		NKO COMBINING LOW TONE	230
◌̥	07EB	NKO COMBINING SHORT HIGH TONE (<i>MID TONE</i>)	230

These function in accordance with their names and identify lexical differences in words that are spelled the same but have different inflections in tone. For example:

Ḳ - river

Ḳ - goat

Compound tone marks represent a sequence of tones that are conjoined and are used to indicate grammatical differences. These predominately are used for Bambara where the tone of a word modulates for a variety of reasons: noun class, compound nouns, substantives, etc.

Compound Tone Marks

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>	<i>Combining Class</i>
◌̃	07EC	NKO COMBINING SHORT LOW TONE (<i>GEMINATION MARK</i>)	230
◌̂		NKO COMBINING LOW HIGH TONE	230
◌̇	07EE	NKO COMBINING LONG DESCENDING TONE (<i>HIGH LOW TONE</i>)	230
◌̣̣	07EF	NKO COMBINING LONG HIGH TONE (<i>HIGH MID TONE</i>)	230
◌̤̣	07F1	NKO COMBINING LONG RISING TONE (<i>MID LOW TONE</i>)	230

When the same common nouns above are changed into proper nouns the tones shift accordingly.

Proper Nouns in N'ko Maninkamory			Proper Nouns using N'ko Phonetic Extensions		
Indefinite	Definite	Neuter	Indefinite	Definite	Neuter
Ḳ	Ḳ	Ḳ	Ḳ	Ḳ	Ḳ
Ḳ̃	Ḳ̃	Ḳ̃	Ḳ̃	Ḳ̃	Ḳ̃
Ḳ̄	Ḳ̄	Ḳ̄	Ḳ̄	Ḳ̄	Ḳ̄
Ḳ̅	Ḳ̅	Ḳ̅	Ḳ̅	Ḳ̅	Ḳ̅
Ḳ̆	Ḳ̆	Ḳ̆	Ḳ̆	Ḳ̆	Ḳ̆

It is worth noting that in N'ko Maninkamory if two syllables use the same vowel/tone combination the first vowel is omitted (see bottom two rows in table above). In other words, for a word structured in the following way, $C_1V_1C_2V_2$ where V_1 equals V_2 , the word is written as $C_1V_2V_1$. This rule is not used when writing with N'ko Phonetic Extensions. Without this rule there is no need to make a notation for loan words that have intentional consonant clusters using the NKO LETTER DAGBASINNA (07D1).

Tone marks only appear above vowels and are always centered above. For a complete demonstration of grammar rules for all tone marks see Figure 37.



Figure 9: Example of how tone marks vary with noun class.

7. Assimilation

Glyph	Code	Character Name	Combining Class
◌̃	07F2	NKO COMBINING NASALISATION MARK	220

N’ko Maninkamory only allows for two specific cases of assimilation to be indicated. This is achieved by replacing 𞤣 NKO LETTER LA and 𞤤 NKO LETTER YA with 𞤥 NKO LETTER NA WOLOSO and 𞤦 NKO LETTER NYA WOLOSO, respectively, when they follow 𞤡 NKO LETTER NA or a nasalized vowel.

The N’ko Phonetic Extension system allows for assimilation to be indicated by expanding the role of the NKO COMBINING NASALIZATION MARK (07F2). When placed below a vowel, the mark indicates that the vowel is post-nasalized just as it does in N’ko Maninkamory. While this mark is never placed under a consonant in N’ko Maninkamory, in N’ko it can be placed under a consonant to indicate it has assimilated a neighboring sound. The following sample words show this usage.

Example:

𞤡𞤢𞤣𞤤𞤥 – kumunya 𞤡𞤢𞤣𞤤𞤥𞤦 – kumunɲa
 𞤡𞤢𞤣𞤤𞤥𞤦 – kendeɲa 𞤡𞤢𞤣𞤤𞤥𞤦𞤦 – kenndeɲa

With this expanded use of the NKO COMBINING NASALIZATION MARK, NKO LETTER NA WOLOSO and NKO LETTER NYA WOLOSO are no longer used with this system.

𞤡𞤢𞤣𞤤𞤥 𞤡𞤢𞤣𞤤𞤥 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦
 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦 𞤡𞤢𞤣𞤤𞤥𞤦
 𞤡𞤢𞤣𞤤𞤥𞤦

Figure 10: Sample of assimilation occurring between a 𞤡 and 𞤣 (blue) and nasalization of o (red).

የክ	ጋክ	ሠክ	ሐክ	ሂክ	ዐክ	ቤክ	ክ
የክ	ጋክ	ሠክ	ሐክ	ሂክ	ዐክ	ቤክ	
የክ	ጋክ	ሠክ	ሐክ	ሂክ	ዐክ	ቤክ	
የክ	ጋክ	ሠክ	ሐክ	ሂክ	ዐክ	ቤክ	
የየክ	ጋጋክ	ሠሠክ	ሐሐክ	ሂሂክ	ዐዐክ	ቤቤክ	
የየክ	ጋጋክ	ሠሠክ	ሐሐክ	ሂሂክ	ዐዐክ	ቤቤክ	*
የየክ	ጋጋክ	ሠሠክ	ሐሐክ	ሂሂክ	ዐዐክ	ቤቤክ	
የየክ	ጋጋክ	ሠሠክ	ሐሐክ	ሂሂክ	ዐዐክ	ቤቤክ	*

Figure 11: Excerpt of educational materials showing proper application of nasalization on doubled vowels (green) and nasalization used in combination with vowel length mark (blue box)

8. Modifier Marks

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>	<i>Combining Class</i>
◌̵		NKO COMBINING LOW VERB MARK	230
◌̶		NKO COMBINING HIGH VERB MARK	230

These marks are used to identify verbs and are always attached to the first vowel of a word. The correct mark is chosen based on the underlying tonality of the first syllable of a verb.

Example:

၂၄၆၇၈၉၀၁၂၃
၂၄၆၇၈၉၀၁

ነፃ ለመረዳት ለማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።
 ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።
 ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።
 ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።
 ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።
 ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።
 ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።

ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።
 ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው። ማለት ማለት ነው።

Figure 12: Highlighted verbs (in order): *fāmu* – to understand, *sében* – to write both using the COMBINING VERB LOW MARK to indicate it's a verb with a low tone on the first syllable. The verb *kàlan* – to study using the COMBINING VERB HIGH MARK to indicate its is verb with a high tone.

9. Mark Combinations

This table shows the equivalent compound marks which would be formed if a mark from the first column were followed by one of the marks in the top row. This would not be the preferred method to type compound marks. However, this breakdown can be used to normalize marks if they are typed piecemeal.

	◌\	◌/	◌-	◌v	◌^	◌>	◌<	◌/	◌//	◌\	◌v	◌>	◌/	◌//	◌>	◌^	◌^	◌^	◌^	
◌\	◌\	◌/	◌-		◌^	◌>		◌/										◌^		
◌/	◌/	◌//	◌/	◌v		◌>		◌//					◌v							
◌-		◌/							◌^											
◌v			◌v																	
◌^			◌^																	
◌>																				
◌<		◌/																		
◌/																				
◌//	◌v		◌/			◌>														
◌\		◌^	◌>					◌^												
◌v			◌v																	
◌>																				
◌/																				
◌//																				
◌>																				
◌^			◌^																	
◌^																				
◌^																				
◌^																				

The table below shows all the possible mark combinations. Marks are added in the following sequence:

vowel length mark (◌̄) + tone mark (◌̂, etc) + assimilation/nasalization mark (◌̃)

Tone	Vowel Length	Assimilation/Nasalization	Vowel Length + Assimilation/Nasalization
	◌̄	◌̄̃	◌̄̃̃
---	ī	ī̃	ī̃̃
◌̇	ï	ï̃	ï̃̃
◌̈	î	î̃	î̃̃
◌̉	ĩ	ĩ̃	ĩ̃̃
◌̊	î	î̃	î̃̃
◌̋	ï	ï̃	ï̃̃
◌̌	î	î̃	î̃̃
◌̍	ĩ	ĩ̃	ĩ̃̃
◌̎	î	î̃	î̃̃
◌̏	ĩ	ĩ̃	ĩ̃̃
◌̐	î	î̃	î̃̃
◌̑	ĩ	ĩ̃	ĩ̃̃
◌̒	î	î̃	î̃̃
◌̓	ĩ	ĩ̃	ĩ̃̃

10. Modifiers

Glyph	Code	Character Name
ᵀ		NKO SUPERSCRIPT BENT A

The ejective modifier can be applied to the following letters to modify the sound accordingly. Ejectives occur with a low frequency in Tamachek.

IPA Equivalent	Letter + Ejective Modifier	IPA Equivalent	Letter
tʼ	ᵀᵇ	t	ᵇ
pʼ	ᵀᶑ	p	ᶑ
kʼ	ᵀᶕ	g	ᶕ
sʼ	ᵀᵋ	s	ᵋ

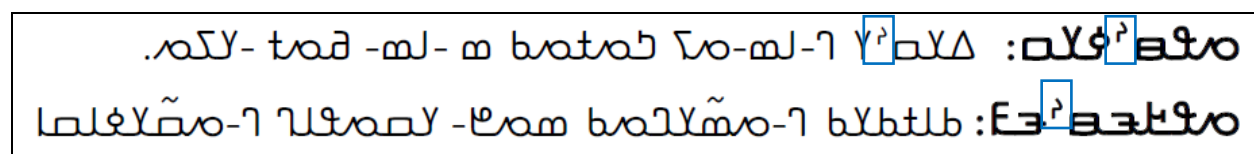


Figure 13: Excerpt of Tamachek document showing ejective modifier marks (blue boxes)

11. Script Connections

The N'ko Phonetic Extensions run right-to-left and connected. The table below shows the isolated, initial, medial and final forms for each of the additions except for the marks and modifiers.

Consonants

ᵀᵇᵇᵇ ᵇ	dʼ	ᵀᶑᶑ ᶑ	ᵇ	ᵀᶕᶕᶕ ᶕ	z	ᵀᵋᵋᵋ ᵋ	g
ᵀᶑᶑᶑ ᶑ	gʼ	ᵀᶕᶕᶕ ᶕ	ᶑ	ᵀᵋᵋᵋ ᵋ	ʃ	ᵀᵇᵇᵇ ᵇ	q
ᵀᶕᶕᶕ ᶕ	dᶑ	ᵀᵋᵋᵋ ᵋ	ᶕ	ᵀᵇᵇᵇ ᵇ	ʒ	ᵀᶑᶑᶑ ᶑ	tʃ
ᵀᵋᵋᵋ ᵋ	sᶑ	ᵀᵇᵇᵇ ᵇ	ᶑ	ᵀᶕᶕᶕ ᶕ	j	ᵀᶕᶕᶕ ᶕ	dʒ
ᵀᵇᵇᵇ ᵇ	tᶑ	ᵀᶑᶑᶑ ᶑ	ᵇ	ᵀᵋᵋᵋ ᵋ	x	ᵀᵇᵇᵇ ᵇ	ŋ
ᵀᶑᶑᶑ ᶑ	zᶑ	ᵀᶕᶕᶕ ᶕ	ᶕ	ᵀᵋᵋᵋ ᵋ	ɣ	ᵀᶑᶑᶑ ᶑ	v

Vowels

ɒɒɒ ɒ ɒ ɜɜɜ ɜ ɜ ɵɵɵ ɵ ɵ ʏʏʏ ʏ ʏ
 ɹɹɹ ɹ ɹ ʌʌʌ ʌ ʌ

Tones and Clicks

[illegible]

VI. Orthographies for Malian Languages

The N'ko Phonetic Extension orthographies for the Malian languages are shown below with new letters highlighted in yellow. For easy comparison these are not presented in the alphabetic sequence for each language.

Bambara/Maninka/Xasonke/Jula

ሀገራችን የፍትሕ ጥያቄዎችን በጥንቃቄ ያስተካከልና በፍትሕ ይፈታል።

Fulfulde

ካተተ ላለው የፍትሕ ሥርዓት ላይ ለሚከተሉት ምክር ቤቶች ማስቀመጥ ይቻላል፡

Songhai

[illegible]

Soninke

[illegible]

Bozo

ፖ ካተ 1 ፀ ፑ ሳገ ዙ ኘ ል ሰ ሃ ሊ ሀ ኃ ደ ሐ ሄ ሞ ል ዳ ዩ ሄ ሳ ን ፋ ሃ ም ሐ ሃ ሰ

Bomu

ሥነተጾፍ ቅጥር የሚጠቀሙት ምልክቶች

Dogoso

Mamara/Syenara

Tamachek

ʈ ɽ ɣ t l ʙ ɓ f ɗ ŋ ʁ ɔ y ɜ u w ɬ ɮ ɰ Δ ɳ ɶ ɷ b p ɸ ɹ ʂ ʃ ʄ ɺ ɻ ɼ ɽ ɾ ɿ ʀ ʁ ʊ ʌ

VII. Proposed Unicode Repertoire

<i>Glyph</i>	<i>Code</i>	<i>Proposed Character Name</i>	<i>Phoneme</i>
ᑭ		NKO LETTER KA WITH LOOPED FLAG	g
ᑮ		NKO LETTER LOOPED KA WITH DOCKED FLAG	q
ᑯ		NKO LETTER TA SA DIGRAPH	tʃ
ᑰ		NKO LETTER DA WITH LEFT FLUE	dʒ
ᑱ		NKO LETTER LOOPED NA	ŋ
ᑲ		NKO LETTER REVERSED FA	v
ᑳ		NKO LETTER SA BAR	z
ᑴ		NKO LETTER SA WITH BOTTOM RIGHT EYELET	ʃ
ᑵ		NKO LETTER SA WITH BOTTOM LEFT EYELET	ʒ
ᑶ		NKO LETTER HA WITH DOCKED FLAG	ɸ
ᑷ		NKO LETTER REVERSED SWOOPED CHA	ɟ
ᑸ		NKO LETTER REVERSED KA	x
ᑹ		NKO LETTER REVERSED KA WITH LOOPED FLAG	ɣ
ᑺ		NKO LETTER REVERSED KA WITH DOCKED FLAG	ħ
ᑻ		NKO LETTER KA WITH DOCKED FLAG	ç
ᑼ		NKO LETTER LOW LA WITH DOCKED FLAG	ɬ
ᑽ		NKO LETTER CROOK-SHAPED FA	ɓ
ᑾ		NKO LETTER BENT A	ʔ
ᑿ		NKO LETTER DA WITH HOOK	dʔ
᐀		NKO LETTER KA WITH LOOPED FLAG AND HOOK	gʔ
ᐁ		NKO LETTER DA WITH HORN	d ^h
ᐂ		NKO LETTER SA WITH HORN	s ^h
ᐃ		NKO LETTER TA WITH HORN	t ^h
ᐄ		NKO LETTER SA BAR WITH HORN	z ^h
ᐅ		NKO LETTER I WITH LEFT HOOK	y

⊖		NKO LETTER EE WITH HORIZONTAL BAR	ø
⊕		NKO LETTER OO BAR	ə
⊖⊕		NKO LETTER EE OO DIGRAPH	œ
⊖⊕		NKO LETTER EE E DIGRAPH	æ
⋮		NKO LETTER LINE WITH DOT	θ
⋮		NKO LETTER LINE WITH TWO DOTS VERTICALLY	
⋮		NKO LETTER LINE WITH TWO DOTS HORIZONTALLY	!
⋮		NKO LETTER LINE WITH THREE DOTS DOWNWARD	‡
⋮		NKO LETTER WITH THREE DOTS UPWARD	
ˊ		NKO HIGH TONE VOWEL SYNCOPE SYMBOL	ˊ
ˋ		NKO APOSTROPHE	ˋ
ᵀ		NKO SUPERSCRIPT BENT A	
ˊ◌		NKO COMBINING HIGH TONE	
ˋ◌		NKO COMBINING LOW TONE	
ˊˋ◌		NKO COMBINING LOW HIGH TONE	
ˊˋˋ◌		NKO COMBINING LOW MID TONE	
ˊˊ◌		NKO COMBINING LOW LOW TONE	
ˊˊˊ◌		NKO COMBINING HIGH HIGH TONE	
ˊˊˋ◌		NKO COMBINING LOW LOW HIGH TONE	
ˊˊˋˋ◌		NKO COMBINING LOW LOW HIGH MID TONE	
ˊˋˋˋ◌		NKO COMBINING LOW HIGH MID TONE	
ˊˊˋˋ◌		NKO COMBINING LOW LOW MID TONE	
ˊˋˋˋˋ◌		NKO COMBINING HIGH HIGH MID TONE	
ˊˋˋˋ◌		NKO COMBINING HIGH HIGH LOW TONE	
ˊˋˋˋˋ◌		NKO COMBINING HIGH HIGH LOW MID TONE	
ˊˋˋˋ◌		NKO COMBINING HIGH LOW MID TONE	
ˊˋˋˋˋ◌		NKO COMBINING MID LOW LOW TONE	

1 ○		NKO COMBINING HIGH HIGH DOWN STEP TONE	
2 ○		NKO COMBINING HIGH HIGH DOWN STEP HIGH TONE	
3 ○		NKO COMBINING HIGH HIGH DOWN STEP HIGH MID TONE	
4 ○		NKO COMBINING CONVERT TO LOW TONE	
5 ○		NKO COMBINING CONVERT TO HIGH TONE	
6 ○		NKO COMBINING LOW VERB MARK	
7 ○		NKO COMBINING HIGH VERB MARK	

VIII. Draft Chart Showing Proposed N’ko Extended Block

	1E96	1E97	1E98	1E99
0	Ꞑ	ꞑ	Ꞓ	ꞓ
1	ꞔ	ꞕ	Ꞗ	ꞗ
2	Ꞙ	ꞙ	Ꞛ	ꞛ
3	Ꞝ	ꞝ	Ꞟ	ꞟ
4	Ꞡ	ꞡ	Ꞣ	ꞣ
5	Ꞥ	ꞥ	Ꞧ	ꞧ
6	Ꞩ	ꞩ	Ɦ	Ɜ
7	Ɡ	Ɬ	Ɪ	ꞯ
8	Ʞ	Ʇ	Ʝ	Ꭓ
9	Ꞵ	ꞵ	Ꞷ	ꞷ
A	Ꞹ	ꞹ	Ꞻ	ꞻ
B	Ꞽ	ꞽ	Ꞿ	
C	ꞿ	ꠀ	ꠁ	
D	ꠂ	ꠃ	ꠄ	
E	ꠅ	꠆	ꠇ	
F	ꠈ	ꠉ	ꠊ	

	1E9A	1E9B	1E9C
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
A			
B			
C			
D			
E			
F			

IX. Arabic Shaping Text

NKO LETTER KA WITH LOOPED FLAG; D; No_Joining_Group
NKO LETTER LOOPED KA WITH DOCKED FLAG; D; No_Joining_Group
NKO LETTER TA SA DIGRAPH; D; No_Joining_Group
NKO LETTER DA WITH LEFT FLUE; D; No_Joining_Group
NKO LETTER LOOPED NA; D; No_Joining_Group
NKO LETTER REVERSED FA; D; No_Joining_Group
NKO LETTER SA BAR; D; No_Joining_Group
NKO LETTER SA WITH BOTTOM RIGHT EYELET; D; No_Joining_Group
NKO LETTER SA WITH BOTTOM LEFT EYELET; D; No_Joining_Group
NKO LETTER HA WITH DOCKED FLAG; D; No_Joining_Group
NKO LETTER REVERSED SWOOPED CHA; D; No_Joining_Group
NKO LETTER REVERSED KA; D; No_Joining_Group
NKO LETTER REVERSED KA WITH LOOPED FLAG; D; No_Joining_Group
NKO LETTER REVERSED KA WITH DOCKED FLAG; D; No_Joining_Group
NKO LETTER KA WITH DOCKED FLAG; D; No_Joining_Group
NKO LETTER LOW LA WITH DOCKED FLAG; D; No_Joining_Group
NKO LETTER CROOK-SHAPED FA; D; No_Joining_Group
NKO LETTER BENT A; D; No_Joining_Group
NKO LETTER DA WITH HOOK; D; No_Joining_Group
NKO LETTER KA WITH LOOPED FLAG AND HOOK; D; No_Joining_Group
NKO LETTER DA WITH HORN; D; No_Joining_Group
NKO LETTER SA WITH HORN; D; No_Joining_Group
NKO LETTER TA WITH HORN; D; No_Joining_Group
NKO LETTER SA BAR WITH HORN; D; No_Joining_Group
NKO LETTER I WITH LEFT HOOK; D; No_Joining_Group
NKO LETTER EE WITH HORIZONTAL BAR; D; No_Joining_Group
NKO LETTER OO BAR; D; No_Joining_Group
NKO LETTER EE OO DIGRAPH; D; No_Joining_Group
NKO LETTER EE E DIGRAPH; D; No_Joining_Group
NKO LETTER LINE WITH DOT; D; No_Joining_Group
NKO LETTER LINE WITH TWO DOTS VERTICALLY; D; No_Joining_Group
NKO LETTER LINE WITH THREE DOTS DOWNWARD; D; No_Joining_Group
NKO LETTER WITH THREE DOTS UPWARD; D; No_Joining_Group
NKO LETTER LINE WITH TWO DOTS HORIZONTALLY; D; No_Joining_Group
NKO HIGH TONE VOWEL SYNCOPE SYMBOL; D; No_Joining_Group
NKO APOSTROPHE; D; No_Joining_Group

X. Unicode Character Properties

1E960;NKO LETTER KA WITH LOOPED FLAG;Lo;0;R;;;;N;;;;;
1E961;NKO LETTER LOOPED KA WITH DOCKED FLAG;Lo;0;R;;;;N;;;;;
1E962;NKO LETTER TA SA DIGRAPH;Lo;0;R;;;;N;;;;;
1E963;NKO LETTER DA WITH LEFT FLUE;Lo;0;R;;;;N;;;;;
1E964;NKO LETTER LOOPED NA;Lo;0;R;;;;N;;;;;
1E965;NKO LETTER REVERSED FA;Lo;0;R;;;;N;;;;;
1E966;NKO LETTER SA BAR;Lo;0;R;;;;N;;;;;
1E967;NKO LETTER SA WITH BOTTOM RIGHT EYELET;Lo;0;R;;;;N;;;;;
1E968;NKO LETTER SA WITH BOTTOM LEFT EYELET;Lo;0;R;;;;N;;;;;
1E969;NKO LETTER HA WITH DOCKED FLAG;Lo;0;R;;;;N;;;;;
1E96A;NKO LETTER REVERSED SWOOPED CHA;Lo;0;R;;;;N;;;;;
1E96B;NKO LETTER REVERSED KA;Lo;0;R;;;;N;;;;;
1E96C;NKO LETTER REVERSED KA WITH LOOPED FLAG;Lo;0;R;;;;N;;;;;
1E96D;NKO LETTER REVERSED KA WITH DOCKED FLAG;Lo;0;R;;;;N;;;;;
1E96E;NKO LETTER KA WITH DOCKED FLAG;Lo;0;R;;;;N;;;;;
1E96F;NKO LETTER LOW LA WITH DOCKED FLAG;Lo;0;R;;;;N;;;;;
1E970;NKO LETTER CROOK-SHAPED FA;Lo;0;R;;;;N;;;;;
1E971;NKO LETTER BENT A;Lo;0;R;;;;N;;;;;
1E972;NKO LETTER DA WITH HOOK;Lo;0;R;;;;N;;;;;
1E973;NKO LETTER KA WITH LOOPED FLAG AND HOOK;Lo;0;R;;;;N;;;;;
1E974;NKO LETTER DA WITH HORN;Lo;0;R;;;;N;;;;;
1E975;NKO LETTER SA WITH HORN;Lo;0;R;;;;N;;;;;
1E976;NKO LETTER TA WITH HORN;Lo;0;R;;;;N;;;;;
1E977;NKO LETTER SA BAR WITH HORN;Lo;0;R;;;;N;;;;;
1E978;NKO LETTER I WITH LEFT HOOK;Lo;0;R;;;;N;;;;;
1E979;NKO LETTER EE WITH HORIZONTAL BAR;Lo;0;R;;;;N;;;;;
1E97A;NKO LETTER OO BAR;Lo;0;R;;;;N;;;;;
1E97B;NKO LETTER EE OO DIGRAPH;Lo;0;R;;;;N;;;;;
1E97C;NKO LETTER EE E DIGRAPH;Lo;0;R;;;;N;;;;;
1E97D;NKO LETTER LINE WITH DOT;Lo;0;R;;;;N;;;;;
1E97E;NKO LETTER LINE WITH TWO DOTS VERTICALLY;Lo;0;R;;;;N;;;;;
1E97F;NKO LETTER LINE WITH THREE DOTS DOWNWARD;Lo;0;R;;;;N;;;;;
1E980;NKO LETTER WITH THREE DOTS UPWARD;Lo;0;R;;;;N;;;;;
1E981;NKO LETTER LINE WITH TWO DOTS HORIZONTALLY;Lo;0;R;;;;N;;;;;
1E982;NKO HIGH TONE VOWEL SYNCOPE SYMBOL;Lo;0;R;;;;N;;;;;
1E983;NKO APOSTROPHE;Lo;0;R;;;;N;;;;;
1E984;NKO SUPERSCRIPT BENT A;Lm;0;L;<super> 0068;;;N;;;;;
1E985;NKO COMBINING HIGH TONE;Mn;230;NSM;;;;N;;;;;
1E986;NKO COMBINING LOW TONE;Mn;230;NSM;;;;N;;;;;
1E987;NKO COMBINING LOW HIGH TONE;Mn;230;NSM;;;;N;;;;;
1E988;NKO COMBINING LOW MID TONE;Mn;230;NSM;;;;N;;;;;
1E989;NKO COMBINING LOW LOW TONE;Mn;230;NSM;;;;N;;;;;
1E98A;NKO COMBINING HIGH HIGH TONE;Mn;230;NSM;;;;N;;;;;
1E98B;NKO COMBINING LOW LOW HIGH TONE;Mn;230;NSM;;;;N;;;;;
1E98C;NKO COMBINING LOW LOW HIGH MID TONE;Mn;230;NSM;;;;N;;;;;
1E98D;NKO COMBINING LOW HIGH MID TONE;Mn;230;NSM;;;;N;;;;;
1E98E;NKO COMBINING LOW LOW MID TONE;Mn;230;NSM;;;;N;;;;;
1E98F;NKO COMBINING HIGH HIGH MID TONE;Mn;230;NSM;;;;N;;;;;
1E990;NKO COMBINING HIGH HIGH LOW TONE;Mn;230;NSM;;;;N;;;;;
1E991;NKO COMBINING HIGH HIGH LOW MID TONE;Mn;230;NSM;;;;N;;;;;
1E992;NKO COMBINING HIGH LOW MID TONE;Mn;230;NSM;;;;N;;;;;
1E993;NKO COMBINING MID LOW LOW TONE;Mn;230;NSM;;;;N;;;;;
1E994;NKO COMBINING HIGH HIGH DOWN STEP TONE;Mn;230;NSM;;;;N;;;;;
1E995;NKO COMBINING HIGH HIGH DOWN STEP HIGH TONE;Mn;230;NSM;;;;N;;;;;
1E996;NKO COMBINING HIGH HIGH DOWN STEP HIGH MID TONE;Mn;230;NSM;;;;N;;;;;
1E997;NKO COMBINING CONVERT TO LOW TONE;Mn;230;NSM;;;;N;;;;;
1E998;NKO COMBINING CONVERT TO HIGH TONE;Mn;230;NSM;;;;N;;;;;
1E999;NKO COMBINING LOW VERB MARK;Mn;230;NSM;;;;N;;;;;
1E99A;NKO COMBINING HIGH VERB MARK;Mn;230;NSM;;;;N;;;;;

XI. Supplementary Figures



Figure 14: Sample page from primary education book on language, “Bamanankan San Folo” – Language: Bambara (Blue Arrow: KA WITH LOOPED FLAG)

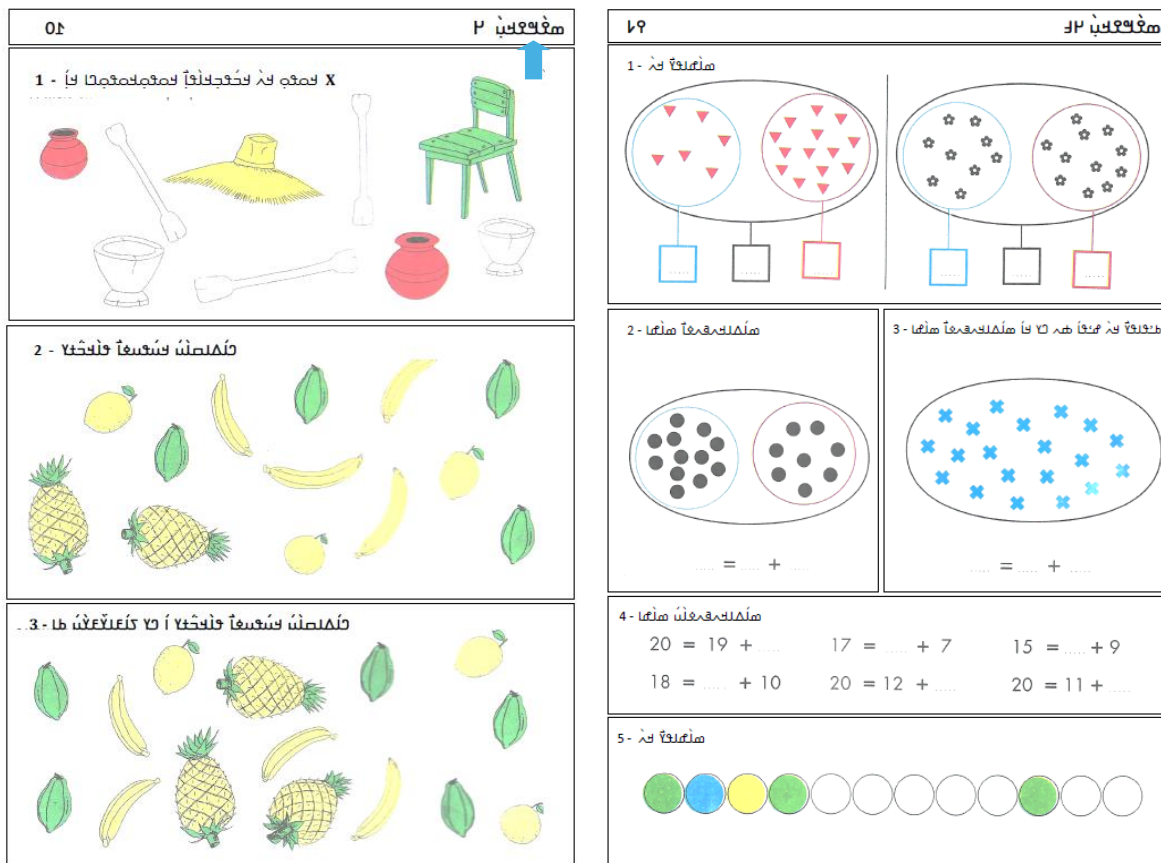
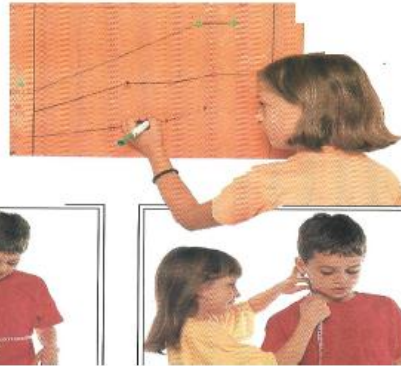


Figure 15: Sample page from primary education book on mathematics, “Math Kakura” – Language: Bambara (Blue Arrow: KA WITH LOOPED FLAG)

فَبِئْسَ

[illegible]

ቀረጽ ሆኖ ለሰላም ማግኘት
 ማዘጋጀት ይገባል። ለዚህም
 ማሳሰቢያ ማድረግ ይገባል።
 ለዚህም ማሳሰቢያ ማድረግ
 ይገባል። ለዚህም ማሳሰቢያ
 ማድረግ ይገባል። ለዚህም
 ማሳሰቢያ ማድረግ ይገባል።



٢- مَحْدُودٌ مَسْلُومٌ كَلِيلٌ
مَلَأَ قُتُوبَهُ يَأْمُ

[illegible]

32



#STOPCOVID-19

لِيُبَيِّنَ لَهُ مَا يَكُفِّرُ بَعْدَ

#



- ከሆኖ ለሕይወት ይህ ልማት ማለፍ ይቻላል።
- ከሆኖ ለሕይወት ይህ ልማት ማለፍ ይቻላል።

- لَمْ يَكُنْ فِي الْبَيْتِ وَهُوَ فِي الْمَدِينَةِ كَمَا تَبَيَّنَ لِلْمُتَّبِعِينَ
هَذَا.

[illegible]

N° VERT 36061



Figure 17: Sample page from a COVID-19 Health Bulletin – Language: Bambara (Blue Arrow: TA SA DIGRAPH)



Figure 18: Calendar produced by le Ministère de la Refondation de l'Etat – Language: Bambara

..... 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	 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
---	---

Figure 19: Table of Contents and Preamble of the Malian constitution. – Language: Bambara (Blue Arrows: SA WITH BOTTOM RIGHT EYELET, DA WITH LEFT FLUE)

Dictionnaire des mots, expressions et phrases à traduire en Bamanan kan

N°	En français	Fonction	Bamanan kan
1	Certificat de vie	ᠨᠢ ᠮᠤᠶ᠋᠎ᠠ ᠵᠠᠭᠡᠶ᠋ᠠᠨ	Nimaya lajeyalan
2	Retraité	ᠪᠣᠯᠣᠪᠣᠯᠡᠨ	Bolobòlen
3	Pension et pensionné	ᠳᠡᠮᠡᠨᠳᠢᠰᠦᠨ ᠨᠢ ᠡᠮᠡᠨᠳᠢᠰᠦᠨ	Dèmèndifèn ni èmèndilen
4	Régime de retraite	ᠪᠣᠯᠣᠪᠣᠯᠢ ᠮᠠᠷᠠᠭᠠᠨ	Bolobòli mārakan
5	Versement de la pension	ᠳᠡᠮᠡᠨᠳᠢᠰᠦᠨ ᠰᠠᠷᠠᠯᠢ	Dèmèndifèn sàrālì
6	Certificat d'hébergement	ᠵᠠᠲᠢᠭᠢᠶ᠋᠎ᠠ ᠵᠠᠰᠡᠷᠡᠶ᠋ᠠᠨ	Jatigiya lasereyalan
7	Attestation sur l'honneur	ᠰᠡᠷᠡᠶ᠋ᠠ ᠬᠡᠯᠢ ᠪᠣᠩᠨᠢ ᠬᠠᠨ	Sereya keli bonnia kan
8	Preuve de domiciliation	ᠮᠠᠬᠡᠶᠣᠷᠣᠶ᠋ᠠ ᠳᠠᠯᠤ	Makeyoroya dalu
9	Justificatif de domicile	ᠮᠠᠬᠡᠶᠣᠷᠣ ᠵᠠᠭᠡᠶ᠋ᠠᠨ	Makeyoro lajeyalan
10	Démarches administratives et commerciales	ᠮᠠᠮᠠᠷᠠᠯᠢ ᠨᠢ ᠵᠤᠯᠠᠶ᠋ᠠ ᠰᠢᠷᠠᠲᠠᠭᠠᠮᠠ	Mamarali ni julaya siratagama
11	Certificat de résidence	ᠳᠠᠭᠠᠶᠣᠷᠣ ᠵᠠᠭᠡᠶ᠋ᠠᠨ	Dagayoro lajeyalan
12	Dernier avis d'imposition sur le revenu	ᠰᠣᠷᠣ ᠰᠠᠭᠠᠯᠡᠨᠨᠢᠠᠯᠢ ᠮᠢᠷᠢᠶ᠋ᠠ ᠪᠠᠪᠠᠨ	Soro sagalenniali miriya laban
13	Certificat de production	ᠪᠣᠯᠣᠨᠨᠠᠶᠠᠯᠢ ᠵᠠᠭᠡᠶ᠋ᠠᠨ	Wolonnayali lajeyalan
14	Document juridique et administratif	ᠬᠢᠷᠢ ᠨᠢ ᠮᠠᠮᠠᠷᠠᠯᠢ ᠳᠣᠰᠡᠷᠡ	Kiri ni mamarali dosere
15	Démarches et actes	ᠰᠢᠷᠠᠲᠠᠭᠠᠮᠠ ᠨᠢ ᠬᠡᠱᠠᠯᠡᠱᠤ	Siratagama ni kewalew
16	Agir sans fondement	ᠬᠠ ᠬᠣ ᠳᠠᠯᠤᠨᠲᠠᠨ ᠬᠡ	Ka ko daluntan ke
17	Circonscriit le contenu du mandat	ᠴᠢᠭᠤᠨ ᠬᠣᠨᠣ ᠬᠣ ᠵᠠᠰᠠᠷᠢᠶ᠋ᠠᠶ᠋ᠠ	Cikun kono ko lasariyaya
18	Légalisation d'un document	ᠳᠣᠰᠡᠷᠡ ᠵᠠᠰᠠᠷᠢᠶ᠋ᠠᠮᠠᠶᠠᠯᠢ	Dosere lasariyamayali
19	Autorisation parentale	ᠮᠠᠰᠠᠪ ᠬᠠ ᠶᠠᠮᠠᠷᠣᠶ᠋ᠠ	Masaw ka yamaruya
20	L'ensemble des droits et devoirs	ᠬᠠᠬᠡᠱᠤ ᠨᠢ ᠬᠡᠲᠠᠸᠠᠵᠢ ᠵᠠᠭᠡᠶ᠋ᠠᠨ	Hakew ni ketaw lajelen
21	Formulaire	ᠵᠣᠷᠣᠮᠤᠨ	Jurumun
22	Justification de l'identité	ᠪᠤᠭᠤᠨᠠᠲᠢᠭᠡ ᠵᠠᠭᠡᠳᠢᠭᠢᠶ᠋ᠠ	Bugunatige lacetigiya
23	L'ouverture d'un compte bancaire	ᠵᠠᠳᠢᠳᠠ ᠳᠠᠶᠡᠯᠡᠯᠢ ᠵᠡᠪᠣᠨ ᠨᠠ	Jatida dayeleli jebon na
24	En fin ou en cours de validité	ᠠ ᠪᠡ ᠰᠣᠩᠮᠠᠲᠠᠶ᠋ᠠ ᠲᠤᠮᠠ ᠪᠠᠪᠠᠨ ᠠ ᠬᠣᠨᠣ	A be sonmataya tuma laban walima a kono
25	Certificat de résidence	ᠳᠠᠭᠠᠶᠣᠷᠣ ᠵᠠᠭᠡᠶ᠋ᠠᠨ	Dagayoro lajeyalan
26	Commune, région et environnement	ᠬᠠᠹᠣᠳᠠ, ᠬᠠᠹᠣᠪᠣᠯᠣ, ᠰᠢᠭᠢᠳᠠ	Kafoda, kafobolo, sigida
27	Casier judiciaire	ᠬᠢᠷᠢᠶᠡᠷᠡᠯᠡᠨ	Kiriyerelen

Figure 20: Excerpt of document defining terminology for governmental functions. – Language: Bambara (Blue Arrows: SA WITH BOTTOM RIGHT EYELET, DA WITH LEFT FLUE)

Lexique de travail

Chaque semaine 10 mots clé proposés par le Ministère de la Refondation de l'Etat

Principe

Dans toute cérémonie publique sur le territoire national, où la majeure partie du public convié ne parle pas français, la langue de la population visitée, à l'accueil, ou à l'écoute, s'impose aux représentants de l'Etat et aux divers intervenants. A défaut d'être locuteur(s) de la langue usuelle de la collectivité hôte, une traduction (alternée, synthétique, ou par interprète) en français, ou langue véhiculaire, peut être assurée pour les officiels présents.

Argument

En nommant leur pays- Burkina Faso, et ses citoyens- les Burkinabés, nos frères de ce pays ont donné une clé pour la revalorisation de nos langues dans l'esprit de la souveraineté.

Le projet des 10 nouveaux mots par semaine, afin de faciliter le dialogue avec les populations, vise l'intégration et la convivialité de nos langues dans l'espace public. Le lexique proposé par le MRE en bamanankan est un appel à tous ceux qui peuvent de façon bénévole contribuer à établir les correspondances dans les autres langues du pays. Ceci nous permettra de proposer une appellation commune, familière, de certaines réalités en partage, en retenant celle qui serait la plus conforme, la plus commode, la plus adéquate, la plus vendable, la plus prometteuse.

Les mots auront trait aux concepts du discours politique, mais aussi aux faits de l'actualité nationale et internationale. Le lexique nous mettra à l'abri des traductions approximatives, désinvoltes, imagées, assez souvent incorrectes, erronées, voire préjudiciables, à l'usage de nos animateurs des médias.

Concepts en français	En bamanankan	En NKO	
		Script NKO	
République	Jamana	ᠵᠠᠨᠠᠨᠠ	Kanben
Président	Jamanatigi	ᠵᠠᠨᠠᠨᠠᠲᠢᠭᠢ	Kantigi
Gouvernement	Guwakoronama	ᠭᠤᠠᠠᠠᠵᠤᠰᠤᠨᠠᠮᠠ	Kunnasigi
Ministère	Minisiri so	ᠮᠢᠨᠢᠰᠢᠷᠢ ᠰᠤ	Kotigiyada
Ministre	Minisiri	ᠮᠢᠨᠢᠰᠢᠷᠢ	Kotigi
Refondation de l'Etat	Kafo lakurayali	ᠬᠠᠫᠤ ᠯᠠᠵᠤᠷᠠᠢᠶᠠᠯᠢ	Kafo nyekurayali
Institution	Faamaso	ᠫᠠᠮᠠᠰᠤ	Kolasigida
Justice	Kiri	ᠬᠢᠷᠢ	Tilenenya
Armée	Sorodasiw	ᠰᠣᠷᠣᠳᠠᠰᠢᠠᠠᠰᠤ	Nantigiyada
Administration	Mara	ᠮᠠᠷᠠ	Mamarada

Figure 21: Excerpt of document outlining terminology required for political and public discourse commissioned by le Ministère de la Refondation de l'Etat – Language: Bambara



Figure 22: Sample page from primary education literacy book, "Sonraye Lesson Samples" – Language: Songhai

ፊትተከሰቱና ለ ዓለም

[illegible]

பெயர் - 1

[illegible]

የሥራው ስራ - ሃ

[illegible]

Figure 23: Sample page of college level lesson guide, “Le 1er Module de l’enseignement du Nko-Fulfulde à l’université” – Language: Fulfude (Blue Arrows: SA WITH BOTTOM RIGHT EYELET, DA WITH LEFT FLUE)

[illegible]

! لا بلما دلّو فندا ا هيا لا ؟ لا ا اسيّدو فلاّبو ص صحتّلا ، ا لا
ها ي فمهملاب ص ففغلا ، ا فلا ا لا ا لا فمطب هسند فملا
فسند دسّقو ففط لا.

[illegible]

39

Figure 26: Sample page from book on Bomu. – Language: Bomu (Blue Arrows: BENT A, REVERSED FA)

[illegible]



Figure 27: Images of students learning N'ko Phonetic Extensions at the University of Bamako

Handwritten lesson on a Galaxy A13 phone screen showing a table of Georgian letters and their phonetic values.

სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ

Handwritten notes on a spiral notebook page, including a table of Georgian letters and their phonetic values.

სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ

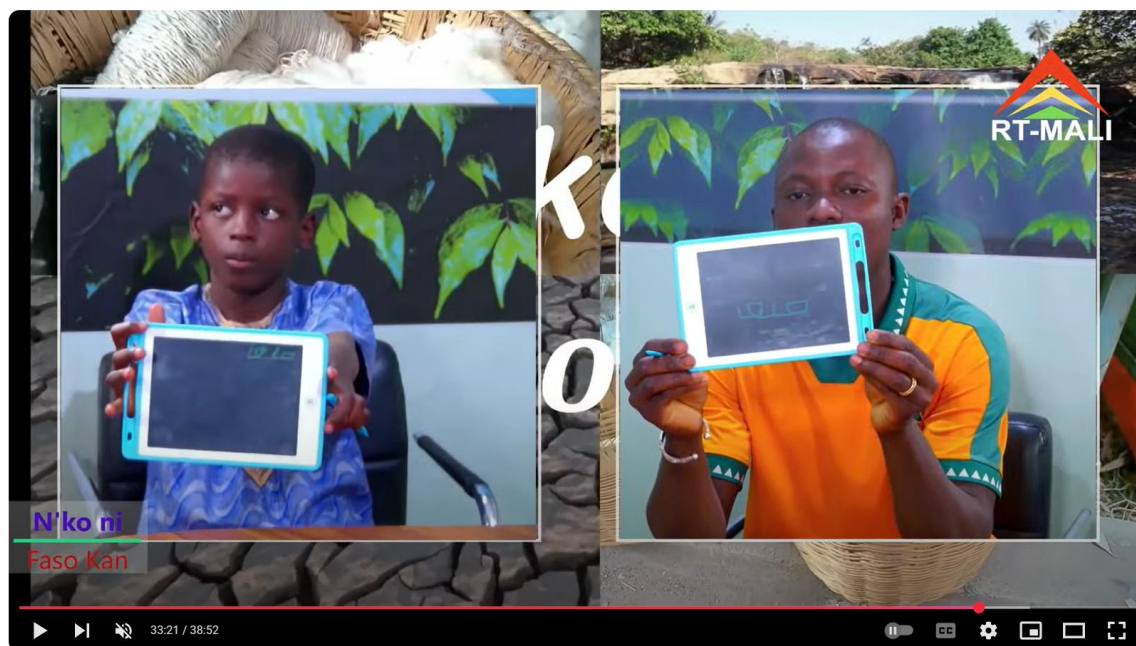
Handwritten lesson on a spiral notebook page, showing a table of Georgian letters and their phonetic values.

სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ

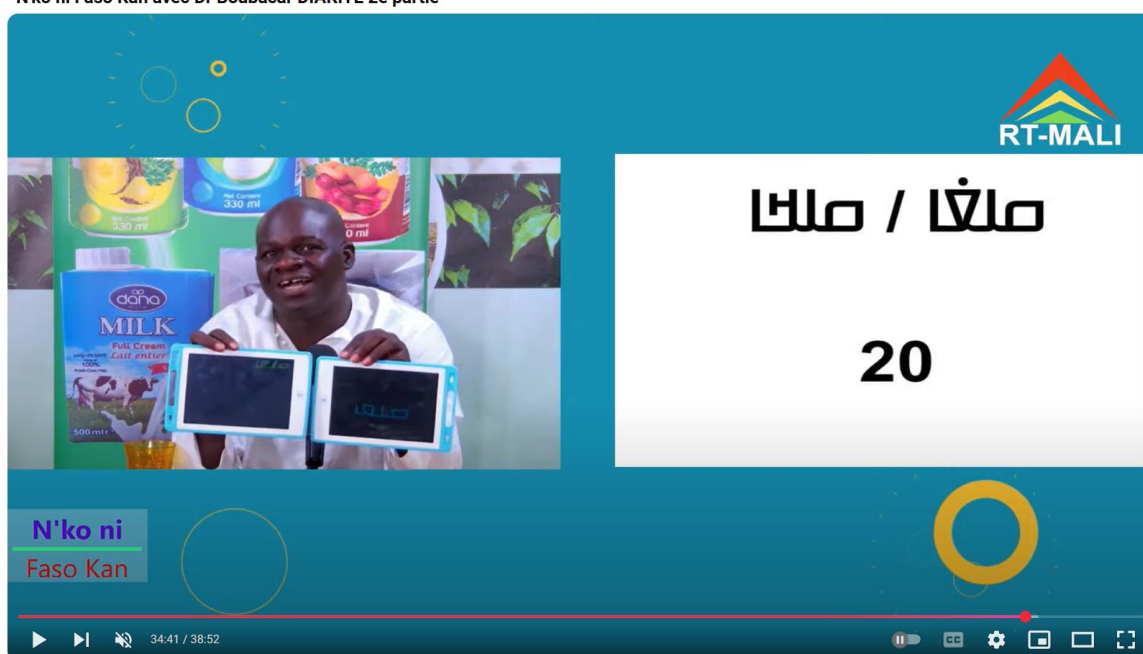
Handwritten notes on a spiral notebook page, including a table of Georgian letters and their phonetic values.

სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ
სადაც	ა	ბ	გ	დ	ე	ვ	ზ

Figure 28: Samples of handwritten lessons from students.



N'ko ni Faso Kan avec Dr Boubacar DIAKITE 2è partie



N'ko ni Faso Kan avec Dr Boubacar DIAKITE 2è partie

RT-MALI
669 subscribers

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Figure 29: Screenshots of YouTube video about N'ko Phonetic Extensions. In addition to an introduction of the writing system the video features students writing words for images they are shown.

ፊዩልዳ

ደ ሀ ለ ሃ ሰ

ካ

Orthography ➡

ወ ሰ ሻ ሐ ቅ ፍ ፍ

ፈ ዓ ካ ያ ሣ ሣ ሰ ተ ወ

ኀ ቀ ቅ ኀ ኀ ሐ ፑ

Long Vowels ↓

፬ ፭ ፮ ፯ ፰ = ይ ዘ ለ ሄ ሀ

Gemination ↓

፻ ፺ ፼ ፽ ፾ = ፳ ፳፭ ፳፱ ፳፻ ፳፻፱

Figure 32: Excerpts from Fulfulde language educational book showing orthography, marks for long vowels and gemination. N'ko Phonetic Extension letters in red boxes.

Langue Bomu (ᑭᓄᓂᐤ)

		[a]	[e]	[ɛ]	[i]	[u]	[o]			
		ᐱ	ᐅ	ᐸ	ᐺ	ᐾ	ᐽ			
[b]	[ḃ]	[d]	[c]	[g]	[ɟ]	[k]	[l]	[m]	[ʔ]	[w]
ᑭ	ᑭ̃	ᑭᐃ	ᑭᐅ	ᑭᐸ	ᑭᐺ	ᑭᐾ	ᑭᐽ	ᑭᐄ	ᑭᐅ	ᑭᐇ
[p]	[r]	[s]	[t]	[f]	[v]	[h]	[ɲ]	[n]	[z]	[j]
ᑭᐃ	ᑭᐅ	ᑭᐸ	ᑭᐺ	ᑭᐾ	ᑭᐽ	ᑭᐄ	ᑭᐅ	ᑭᐇ	ᑭᐈ	ᑭᐉ

ᑭᓄᓂᐤ

ᐽ ᐾ ᐸ ᐺ ᐅ ᐱ

ᑭᐃ ᑭᐅ ᑭᐸ ᑭᐺ ᑭᐾ ᑭᐽ ᑭᐄ ᑭᐅ ᑭᐇ ᑭᐈ ᑭᐉ

ᑭᐃ ᑭᐅ ᑭᐸ ᑭᐺ ᑭᐾ ᑭᐽ ᑭᐄ ᑭᐅ ᑭᐇ ᑭᐈ ᑭᐉ

Figure 33: Excerpt from Bomu language educational book showing orthography. N'ko Phonetic Extension letters in red boxes

SONINKE ALPHABET EN NKO INTERNATIONAL

VOYELLES

ɔ	u	ɣ	o	i
---	---	---	---	---

NEUTRE

ɲ

CONSONNES

ɬ ca	ɗ ja	b ta	ɟ pa	f ba
ɸ qa	ɣ ga	ɔ sa	t ra	ɓ da
Δ ma	ɣ la	ɬ xa	ɰ ka	ɸ fa
ɰ ʔa	ɰ ha	ɰ na	ɰ ɲa	ɰ ɲa
			ɸ ya	ɸ wa

Figure 34: Excerpt from Soninke language educational book showing orthography. N'ko Phonetic Extension letters in red boxes

.o, l, u, ^, Y, I, j










Dja Da Tia Ja Ca Ta Pa Ba









Fa Gwa Ga Sha Sa Rra Ra










Na Gna Nia Ma La Qa Ka Va





Ya Wa Ha

Figure 35: Excerpt from Songhai language educational book showing orthography. N'ko Phonetic Extension letters in red boxes

Langue Tamashk (ⵜⴰⴳⴷⵓⵜ ⵜⴰⴷⵓⴷⴰⵢⵜ)										
	[a]	[æ]	[ə]	[i]	[u]	[o]	[e/ɛ]			
	ⵏ	ⵐ	ⵑ	ⵒ	ⵓ	ⵔ	ⵖ			
[b]	[t]	[d]	[dʰ]	[ɟ]	[f]	[g]	[ɣ]	[h]	[ħ]	[dʒ]
ⵇ	ⵉ	ⵊ	ⵋ	ⵌ	ⵍ	ⵎ	ⵏ	ⵐ	ⵑ	ⵒ
[k]	[l]	[lʰ]	[m]	[n]	[ɲ]	[ŋ]	[r]	[s]	[sʰ]	
ⵓ	ⵖ	ⵗ	ⵘ	ⵙ	ⵚ	ⵛ	ⵜ	ⵝ	ⵞ	
[ʃ]	[tʰ]	[tʰʰ]	[w]	[x]	[j]	[z]	[zʰ]	[ʒ]	[ʒʰ]	
ⵟ	ⵠ	ⵡ	ⵢ	ⵣ	ⵤ	ⵥ	ⵦ	ⵧ	⵨	

ⵜⴰⴳⴷⵓⵜ

Vowels ➡ ⵏ ⵓ ⵐ ⵖ ⵑ ⵒ ⵓ ⵔ ⵖ ⵉ

Consonants ➡ ⵟ ⵠ ⵡ ⵢ ⵣ ⵤ ⵥ ⵦ ⵧ ⵨ ⵩ ⵪ ⵫ ⵬ ⵭ ⵮ ⵯ ⵰ ⵱ ⵲ ⵳ ⵴ ⵵ ⵶ ⵷ ⵸ ⵹ ⵺ ⵻ ⵼ ⵽ ⵾ ⵿ ⶀ ⶁ ⶂ ⶃ ⶄ ⶅ ⶆ ⶇ ⶈ ⶉ ⶊ ⶋ ⶌ ⶍ ⶎ ⶏ ⶐ ⶑ ⶒ ⶓ ⶔ ⶕ ⶖ ⶗ ⶘ ⶙ ⶚ ⶛ ⶜ ⶝ ⶞ ⶟ ⶠ ⶡ ⶢ ⶣ ⶤ ⶥ ⶦ ⶧ ⶨ ⶩ ⶪ ⶫ ⶬ ⶭ ⶮ ⶯ ⶰ ⶱ ⶲ ⶳ ⶴ ⶵ ⶶ ⶷ ⶸ ⶹ ⶺ ⶻ ⶼ ⶽ ⶾ ⶿ ⷀ ⷁ ⷂ ⷃ ⷄ ⷅ ⷆ ⷇ ⷈ ⷉ ⷊ ⷋ ⷌ ⷍ ⷎ ⷏ ⷐ ⷑ ⷒ ⷓ ⷔ ⷕ ⷖ ⷗ ⷘ ⷙ ⷚ ⷛ ⷜ ⷝ ⷞ ⷟ ⷠ ⷡ ⷢ ⷣ ⷤ ⷥ ⷦ ⷧ ⷨ ⷩ ⷪ ⷫ ⷬ ⷭ ⷮ ⷯ ⷰ ⷱ ⷲ ⷳ ⷴ ⷵ ⷶ ⷷ ⷸ ⷹ ⷺ ⷻ ⷼ ⷽ ⷾ ⷿ ⸀ ⸁ ⸂ ⸃ ⸄ ⸅ ⸆ ⸇ ⸈ ⸉ ⸊ ⸋ ⸌ ⸍ ⸎ ⸏ ⸐ ⸑ ⸒ ⸓ ⸔ ⸕ ⸖ ⸗ ⸘ ⸙ ⸚ ⸛ ⸜ ⸝ ⸞ ⸟ ⸠ ⸡ ⸢ ⸣ ⸤ ⸥ ⸦ ⸧ ⸨ ⸩ ⸪ ⸫ ⸬ ⸭ ⸮ ⸯ ⸰ ⸱ ⸲ ⸳ ⸴ ⸵ ⸶ ⸷ ⸸ ⸹ ⸺ ⸻ ⸼ ⸽ ⸾ ⸿ ⹀ ⹁ ⹂ ⹃ ⹄ ⹅ ⹆ ⹇ ⹈ ⹉ ⹊ ⹋ ⹌ ⹍ ⹎ ⹏ ⹐ ⹑ ⹒ ⹓ ⹔ ⹕ ⹖ ⹗ ⹘ ⹙ ⹚ ⹛ ⹜ ⹝ ⹞ ⹟ ⹠ ⹡ ⹢ ⹣ ⹤ ⹥ ⹦ ⹧ ⹨ ⹩ ⹪ ⹫ ⹬ ⹭ ⹮ ⹯ ⹰ ⹱ ⹲ ⹳ ⹴ ⹵ ⹶ ⹷ ⹸ ⹹ ⹺ ⹻ ⹼ ⹾ ⹿ ⷰ ⷱ ⷲ ⷳ ⷴ ⷵ ⷶ ⷷ ⷸ ⷹ ⷺ ⷻ ⷼ ⷽ ⷾ ⷿ ⸀ ⸁ ⸂ ⸃ ⸄ ⸅ ⸆ ⸇ ⸈ ⸉ ⸊ ⸋ ⸌ ⸍ ⸎ ⸏ ⸐ ⸑ ⸒ ⸓ ⸔ ⸕ ⸖ ⸗ ⸘ ⸙ ⸚ ⸛ ⸜ ⸝ ⸞ ⸟ ⸠ ⸡ ⸢ ⸣ ⸤ ⸥ ⸦ ⸧ ⸨ ⸩ ⸪ ⸫ ⸬ ⸭ ⸮ ⸯ ⸰ ⸱ ⸲ ⸳ ⸴ ⸵ ⸶ ⸷ ⸸ ⸹ ⸺ ⸻ ⸼ ⸽ ⸾ ⸿ ⹀ ⹁ ⹂ ⹃ ⹄ ⹅ ⹆ ⹇ ⹈ ⹉ ⹊ ⹋ ⹌ ⹍ ⹎ ⹏ ⹐ ⹑ ⹒ ⹓ ⹔ ⹕ ⹖ ⹗ ⹘ ⹙ ⹚ ⹛ ⹜ ⹝ ⹞ ⹟ ⹠ ⹡ ⹢ ⹣ ⹤ ⹥ ⹦ ⹧ ⹨ ⹩ ⹪ ⹫ ⹬ ⹭ ⹮ ⹯ ⹰ ⹱ ⹲ ⹳ ⹴ ⹵ ⹶ ⹷ ⹸ ⹹ ⹺ ⹻ ⹼ ⹾ ⹿

Figure 36: Excerpt from Tamachek language educational book showing orthography. N'ko Phonetic Extension letters in red boxes

1. Nominalization:

ⵜⴰⴳⴷⵓⵜ ⵜⴰⴷⵓⴷⴰⵢⵜ + ⵜⴰⴳⴷⵓⵜ ⵜⴰⴷⵓⴷⴰⵢⵜ = ⵜⴰⴳⴷⵓⵜ ⵜⴰⴷⵓⴷⴰⵢⵜ	ⵜⴰⴳⴷⵓⵜ ⵜⴰⴷⵓⴷⴰⵢⵜ = ⵜⴰⴳⴷⵓⵜ ⵜⴰⴷⵓⴷⴰⵢⵜ
Lexical tones + high accent (for nominalization)	Lexical tones
ⵏ	ⵏ
Hair	Hair/ to put hair
ⵓ	ⵓ
Age	Age/ to pass the night
ⵖ	ⵖ
Group	Group/ to beat/ to group
ⵟⵓⵎⵓⵏⵜ* / ⵟⵓⵎⵓⵏⵜ	ⵟⵓⵎⵓⵏⵜ
Mountain	Mountain/ to bubble

Figure 37: Document demonstrating grammar rules for all tone marks

2. Simple noun forms:

$\Delta\lambda\epsilon\lambda\epsilon\lambda\Delta = (\emptyset)$ Indefinite form	$\Delta\lambda\epsilon\lambda\epsilon\lambda\Delta = (\text{ }^{\text{̀}}) + (\text{ }^{\text{̀}}) + (\text{ }^{\text{̀}})$ Definite form	$\Delta\lambda\epsilon\lambda\epsilon\lambda\Delta$ Citation form	$\Delta\lambda\epsilon\lambda\epsilon\lambda\Delta$ Lexeme
λ A hair	λ^* / λ The hair	λ Hair	λ Hair/ to put hair
$\lambda\lambda$ An age	$\lambda\lambda$ The Age	$\lambda\lambda$ Age	$\lambda\lambda$ Age/ to pass the night
$\lambda\lambda\lambda$ A group	$\lambda\lambda\lambda^* / \lambda\lambda\lambda$ The group	$\lambda\lambda\lambda$ group	$\lambda\lambda\lambda$ Group/ to beat/ to group
$\lambda\lambda\lambda$ a mountain	$\lambda\lambda\lambda^* / \lambda\lambda\lambda$ The mountain	$\lambda\lambda\lambda$ Mountain	$\lambda\lambda\lambda$ Mountain/ to bubble
$\lambda\lambda\lambda\lambda$ A seasoning	$\lambda\lambda\lambda\lambda^* / \lambda\lambda\lambda\lambda$ The seasoning	$\lambda\lambda\lambda\lambda$ seasoning	$\lambda\lambda\lambda\lambda$ Seasoning/ to season
$\lambda\lambda\lambda\lambda\lambda$ A scarf	$\lambda\lambda\lambda\lambda\lambda^* / \lambda\lambda\lambda\lambda\lambda$ The scarf	$\lambda\lambda\lambda\lambda\lambda$ Scarf	$\lambda\lambda\lambda\lambda\lambda$ Scarf/ to scarf

3. Noun complement forms:

$\Delta\lambda\epsilon\lambda\epsilon\lambda\Delta$ Indefinite noun	$\Delta\lambda\epsilon\lambda\epsilon\lambda\Delta$ Definite form	$\Delta\lambda\epsilon\lambda\epsilon\lambda\Delta$ Citation form	$\Delta\lambda\epsilon\lambda\epsilon\lambda\Delta + \Delta\lambda\epsilon\lambda\epsilon\lambda\Delta$ Noun+ noun
$\lambda\lambda\lambda$ An iron house	$\lambda\lambda\lambda$ The iron house	$\lambda\lambda\lambda$ iron house	$\lambda\lambda + \lambda\lambda$ iron + house
$\lambda\lambda\lambda$ An iron horse	$\lambda\lambda\lambda$ The iron horse	$\lambda\lambda\lambda$ iron horse	$\lambda\lambda + \lambda\lambda$ iron + horse
$\lambda\lambda\lambda$ A house iron	$\lambda\lambda\lambda$ The house iron	$\lambda\lambda\lambda$ House iron	$\lambda\lambda + \lambda\lambda$ House + iron
$\lambda\lambda\lambda$ A horse's iron	$\lambda\lambda\lambda$ The horse's iron	$\lambda\lambda\lambda$ Horse's iron	$\lambda\lambda + \lambda\lambda$ horse + iron

Figure 37 (continued): Document demonstrating grammar rules for all tone marks

4. to make verbs:

to put hair	̀̀ / ́́
to pass the night	́́* / ́́
to beat/ to group	̀̀* / ̀̀
to bubble	́́* / ́́
to season	̀̀* / ̀̀
to scarf	́́* / ́́

5. to mark proper nouns (capitalization)

Common nouns	
Mother/ river	̀̀
Mother/ river (<i>tonal variant for some Bambara speakers and Wojine dialects</i>)	́́
A mother/ a river	̀̀
Dad/ goat	́́
A goat	́́
The goat	́́
Proper nouns (with initial capitalization in English)	
-	̀̀
	̀̀
	́́
	́́
	́́
	́́
	́́
	́́

Figure 37 (continued): Document demonstrating grammar rules for all tone marks

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XIII. Appendices

A-1: The complete N’ko Phonetic Extension system including letters developed for other African languages not yet using the system.

A-2: Pictures from meetings with various African leaders to build support for N’ko Phonetic Extensions

A-3: DECISION N°02/ML/PBC/CAB/N/23 of October 10, 2023 in support of the Nko-Phonetic Extensions system Nko-IPA writing and teaching within the CPATC.

A-4: Letter from Dr. John Mugane, Director of the Harvard African Language Program (ALP) in support of N’ko Phonetic Extensions

A-5: L’enseignement Nko au Mali : Réalités, ambitions et perspectives, Dr. Boubacar Diakite, 2021

A-1 Complete N’ko Phonetic Extension System

Consonants

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>	<i>Suggested Phoneme</i>
ᄁ		NKO LETTER TA WITH TOPBAR	t
ᄂ		NKO LETTER DA WITH RIGHT FLUE	d
ᄃ		NKO LETTER KA WITH LOOPED FLAG	g
ᄄ		NKO LETTER LOOPED KA WITH DOCKED FLAG	q
ᄅ		NKO LETTER LOOPED KA	ɠ
ᄆ		NKO LETTER TA SA DIGRAPH	tʃ
ᄇ		NKO LETTER DA WITH LEFT FLUE	dʒ
ᄈ		NKO LETTER MA WITH TOPBAR	m
ᄉ		NKO LETTER NA WITH RIGHT HOOK	n̥
ᄊ		NKO LETTER LOOPED NA	ɲ
ᄋ		NKO LETTER LOOPED NA WITH FLAG	ɳ
ᄌ		NKO LETTER BA BAR	b
ᄍ		NKO LETTER NA WOLOSÓ BAR	r
ᄎ		NKO LETTER BA WITH CROSSED LOOPS	v
ᄏ		NKO LETTER A WITH RIGHT HOOK	ɾ
ᄐ		NKO LETTER A WITH LEFT HOOK	ɽ
ᄑ		NKO LETTER LOOPED BA	ɸ
ᄒ		NKO LETTER LOOPED PA	β
ᄓ		NKO LETTER REVERSED FA	v
ᄔ		NKO LETTER SA WITH TOP RIGHT EYELET	θ
ᄕ		NKO LETTER SA WITH TOP LEFT EYELET	ð
ᄖ		NKO LETTER SA BAR	z
ᄗ		NKO LETTER SA WITH BOTTOM RIGHT EYELET	ʃ
ᄘ		NKO LETTER SA WITH BOTTOM LEFT EYELET	ʒ

ᄁ	NKO LETTER SA WITH FLUE	ᄁ
ᄂ	NKO LETTER SA BAR WITH FLUE	ᄂ
ᄃ	NKO LETTER SWOOPED CHA	ᄃ
ᄄ	NKO LETTER REVERSED SWOOPED CHA	ᄄ
ᄅ	NKO LETTER REVERSED KA	x
ᄆ	NKO LETTER REVERSED KA WITH LOOPED FLAG	ᄆ
ᄇ	NKO LETTER JA WITH MANTIS HOOK	ᄇ
ᄈ	NKO LETTER REVERSED HA WITH DOCKED FLAG	ᄈ
ᄉ	NKO LETTER HA WITH DOCKED FLAG	ᄉ
ᄊ	NKO LETTER REVERSED KA WITH DOCKED FLAG	ᄊ
ᄋ	NKO LETTER KA WITH DOCKED FLAG	ᄋ
ᄌ	NKO LETTER LOW LA WITH DOCKED FLAG	ᄌ
ᄍ	NKO LETTER LOW LA WITH FLAG	ᄍ
ᄎ	NKO LETTER LA WITH TOPBAR	ᄎ
ᄏ	NKO LETTER SPIRAL RA	ᄏ
ᄐ	NKO LETTER REVERSED LOOPED NA	ᄐ
ᄑ	NKO LETTER WA WITH TOPBAR	ᄑ
ᄒ	NKO LETTER LA WITH TAIL	ᄒ
ᄓ	NKO LETTER LA WITH DOCKED FLAG	ᄓ
ᄔ	NKO LETTER LA WITH FLAG	ᄔ
ᄕ	NKO LETTER CROOK-SHAPED FA	ᄕ
ᄖ	NKO LETTER DA WITH TAIL	ᄖ
ᄗ	NKO LETTER FA WITH TAIL	ᄗ
ᄘ	NKO LETTER KA WITH LOOPED FLAG AND TAIL	ᄘ
ᄙ	NKO LETTER REVERSED LA WITH FLAG AND TAIL	ᄙ
ᄚ	NKO LETTER BENT A	ᄚ
ᄛ	NKO LETTER REVERSED HA	ᄛ

𐌆		NKO LETTER DA WITH HOOK	dʔ
𐌇		NKO LETTER SA WITH BOTTOM RIGHT EYELET AND HOOK	ʃʔ
𐌈		NKO LETTER KA WITH LOOPED FLAG AND HOOK	ɡʔ
𐌉		NKO LETTER VOICE LABIO-VELAR EJECTIVE	ɡbʔ
𐌊		NKO LETTER DA WITH HORN	d ^h
𐌋		NKO LETTER SA WITH HORN	s ^h
𐌌		NKO LETTER TA WITH HORN	t ^h
𐌍		NKO LETTER SA BAR WITH HORN	z ^h

Clicks

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>	<i>Suggested Phoneme</i>
𐌎		NKO LETTER LINE WITH DOT	ǀ
𐌏		NKO LETTER LINE WITH TWO DOTS VERTICALLY	ǂ
𐌐		NKO LETTER LINE WITH TWO DOTS HORIZONTALLY	ǃ
𐌑		NKO LETTER LINE WITH THREE DOTS DOWNWARD	Ǆ
𐌒		NKO LETTER WITH THREE DOTS UPWARD	ǅ

Vowels

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>	<i>Suggested Phoneme</i>
𐌕		NKO LETTER U WITH RIGHT HOOK	ʊ
𐌖		NKO LETTER U WITH LEFT HOOK	ʉ
𐌗		NKO LETTER I BAR WITH LEFT HOOK	ɪ̥
𐌘		NKO LETTER I BAR WITH RIGHT HOOK	ɪ̥
𐌙		NKO LETTER I WITH DOUBLE HOOK	ɪ̥
𐌚		NKO LETTER I WITH RIGHT HOOK	ɪ̥
𐌛		NKO LETTER I WITH LEFT HOOK	ɪ̥
𐌜		NKO LETTER CANTILEVERED ROUNDED OO	ɔ̥
𐌝		NKO LETTER ROUNDED OO	ɔ̥

Ⓞ		NKO LETTER EE WITH VERTICAL BAR	ə
Ⓟ		NKO LETTER EE WITH HORIZONTAL BAR	ø
Ⓡ		NKO LETTER OO BAR	ə
Ⓢ		NKO LETTER O WITH VERTICAL BAR	ʌ
Ⓣ		NKO LETTER REVERSED CANTILEVERED OO	ɒ
Ⓤ		NKO LETTER REVERSED OO	ɜ
Ⓥ		NKO LETTER EE OO DIGRAPH	œ
Ⓦ		NKO LETTER REVERSE ROUNDED OO	ɐ
Ⓧ		NKO LETTER EE E DIGRAPH	æ
Ⓨ		NKO LETTER EE WITH VERTICAL BAR ABOVE	ɒ
Ⓩ		NKO LETTER REVERSED OO EE DIGRAPH	œ
ⓐ		NKO LETTER E EE DIGRAPH	a

Elision

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>	<i>Phoneme</i>
’		NKO HIGH TONE VOWEL SYNCOPE SYMBOL	’
‘	07D1	NKO LETTER DAGBASINNA (<i>LOW TONE VOWEL SYNCOPE SYMBOL</i>)	’
’		NKO APOSTROPHE	’

Vowel Modifying Marks

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>
◌̣	07ED	NKO COMBINING SHORT RISING TONE (<i>VOWEL LENGTH MARK</i>)

Basic Tone Marks

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>
◌̣		NKO COMBINING HIGH TONE
◌̤		NKO COMBINING LOW TONE

◌̎	07EB	NKO COMBINING SHORT HIGH TONE (<i>MID TONE</i>)
----	------	---

Compound Tone Marks

<i>Glyph</i>	<i>Code</i>	<i>Character Name</i>
◌̎̎	07EC	NKO COMBINING SHORT LOW TONE (<i>GEMINATION MARK</i>)
◌̎̋		NKO COMBINING LOW HIGH TONE
◌̎̌	07EE	NKO COMBINING LONG DESCENDING TONE (<i>HIGH LOW TONE</i>)
◌̎̍	07EF	NKO COMBINING LONG HIGH TONE (<i>HIGH MID TONE</i>)
◌̎̎̍	07F1	NKO COMBINING LONG RISING TONE (<i>MID LOW TONE</i>)
◌̎̋̍		NKO COMBINING LOW MID TONE
◌̎̋̋		NKO COMBINING LOW LOW TONE
◌̎̌̋		NKO COMBINING HIGH HIGH TONE
◌̎̋̌̋		NKO COMBINING LOW LOW HIGH TONE
◌̎̋̌̍̋		NKO COMBINING LOW LOW HIGH MID TONE
◌̎̋̌̍̌̋		NKO COMBINING LOW HIGH MID TONE
◌̎̋̌̍̌̌̋		NKO COMBINING LOW LOW MID TONE
◌̎̋̌̍̌̌̌̋		NKO COMBINING HIGH HIGH MID TONE
◌̎̋̌̍̌̌̌̌̋		NKO COMBINING HIGH HIGH LOW TONE
◌̎̋̌̍̌̌̌̌̌̋		NKO COMBINING HIGH HIGH LOW MID TONE
◌̎̋̌̍̌̌̌̌̌̌̋		NKO COMBINING HIGH LOW MID TONE
◌̎̋̌̍̌̌̌̌̌̌̌̋		NKO COMBINING MID LOW LOW TONE
◌̎̋̌̍̌̌̌̌̌̌̌̌̋		NKO COMBINING HIGH HIGH DOWN STEP TONE
◌̎̋̌̍̌̌̌̌̌̌̌̌̌̋		NKO COMBINING HIGH HIGH DOWN STEP HIGH TONE
◌̎̋̌̍̌̌̌̌̌̌̌̌̌̌̋		NKO COMBINING HIGH HIGH DOWN STEP HIGH MID TONE
◌̎̋̌̍̌̌̌̌̌̌̌̌̌̌̌̋		NKO COMBINING CONVERT TO LOW TONE
◌̎̋̌̍̌̌̌̌̌̌̌̌̌̌̌̌̋		NKO COMBINING CONVERT TO HIGH TONE

A-2 Pictures from meetings with various African leaders to build support for N'ko Phonetic Extensions



Figure A-2 1: Administrators of the National Language Center in Cameroon during meeting to discuss the N'ko Phonetic Extensions.



Figure A-2 2: Dr. Diakite and Dr. Mugane meeting with African Kings to build support for N'ko Phonetic Extensions.

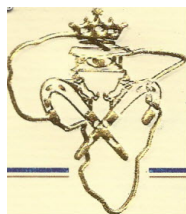


Figure A-2 3: Meeting with African Kings in Guinea to build support for N'ko Phonetic Extensions.



Figure A-2 4: King's meeting with Malian Minister in support of N'ko Phonetic Extensions

A-3: DECISION N°02/ML/PBC/CAB/N/23 of October 10, 2023 in support of the Nko-Phonetic Extensions system Nko-IPA writing and teaching within the CPATC.



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DÉCISION N°02/ML/PBC/CAB/N/23 du 10 Octobre 2023 portant soutien à l'écriture Nko-IPA et son enseignement au sein du CPATC.

Le Président du Bureau Continental

- Vu les Statuts du CPATC ;
- Vu les Résolutions de l'Assemblée Générale CPATC, du 10 au 12 septembre 2018, à Abidjan en Côte-d'Ivoire ;
- Vu les Recommandations de la Réunion du Bureau continental tenue les 11 et 12 janvier 2019, à Dahè au Bénin ;
- Vu les Résolutions de l'Assemblée Générale Extraordinaire du CPATC du 27 novembre 2021 tenue à Dahè au Bénin ;

Décide :

Article 1 : Le CPATC a décidé de soutenir les efforts des adeptes du Nko-IPA, allant dans le sens de généraliser l'écriture à toutes les langues africaines.

Article 2 : Dr Boubacar Diakité et son équipe sont chargés de l'initiation et de la formation du collège des rois souhaitant apprendre l'écriture et l'instituer dans leurs communautés.

Article 3 : Dr Diakité exercera cette tâche, cumulativement avec ses fonctions de Conseiller Spécial du Président du CPATC, dans le cadre des dispositions prévues par les textes réglementaires du CPATC et de la Convention citée supra.

Ampliations :

Fait à Cotonou, le 10 octobre 2023

1. Secrétariat Général
2. Autorités Nationales du Mali
3. Autorités Nationales de la Guinée
4. Intéressé
5. Archives/Chrono




Professeur Octave Cossi HOUDEGBE
(Majesté Dada AWIYAN KOKPON)
Roi de Dahè/ Président du CPATC

A-4: Letter from Dr. John Mugane, Director of the Harvard African Language Program (ALP) in support of N'ko Phonetic Extensions

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October 12, 2023

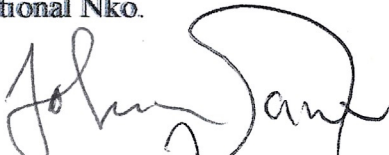
To Whom This May Concern

I, Dr. John Mugane, Director of the Harvard African Language Program (ALP), am pleased to note that Nko script, the most dynamic in West Africa, has reached an unparalleled level of implementation among the West Africans communities. I have been fortunate to invite, many times, the Nko leaders to the Harvard Conference on African Languages in the Disciplines and Professions (ALDP) and I have always been amazed and surprised by the progress of writing in West African countries. I worked with Dr. Boubacar Diakité, a linguist and Nko teacher, to develop the idea of making some African scripts usable at the same time for many languages on the continent. On this ground, Nko has a chance if it is improved as planned by the codification of the Nko-IPA.

In 2015, Dr. Diakité and I traveled to several African countries to promote the use of Nko as an international African script. To this end, we have garnered support from many African traditional leaders ready to take the idea to the African Union. I remember that some of the difficult questions, which were not addressed satisfactorily, were that the Nko script of the time did not have all the sounds and used a lot of diacritics to write unfamiliar sounds. I think that's where the idea of improving the script to allow it to write all the sounds correctly came about.

Therefore, I support this project and look forward to writing Gikuyu, my mother tongue, in the new international Nko.

Sincerely,



John Mugane, Director of African Languages Program
Harvard University, 1280 Mass Ave, 3rd Floor, Cambridge, MA 02138

A-5: L'enseignement Nko au Mali : Réalités, ambitions et perspectives, Dr. Boubacar Diakite, 2021

L'invention de l'écriture Nko

Nko est une écriture inventée par Solomana Kanté, suite à la publication par Gamal Marwa dans un journal ivoirien que « les langues africaines sont douces à écouter mais ne peuvent être transcrites ». Le jeune Kanté, qui a quitté son village, réputé pour son éducation religieuse, pour se lancer dans le commerce, a vite compris la nécessité de se consacrer à la recherche d'une solution pour écrire, de manière adéquate, les langues africaines. Dans un premier temps, il a essayé d'adapter l'écriture arabe à sa langue maternelle, le maninka, mais c'était très limité, surtout dans les trois dimensions de l'écriture: un système vocalique insuffisant (3 voyelles), un système consonantique qui manquait de sons importants de la langue mandingue. (p, n, ŋ, v etc.), et le système tonal est complètement absent. Après trois ans de tests, l'écriture arabe a été abandonnée. Ce fut alors le tour de l'écriture latine. À son tour, elle n'a pas tardé à montrer ses faiblesses, notamment au niveau des signes diacritiques (ton et accent). Le ton est un élément essentiel de désambiguïsation en lecture et en compréhension. Au bout de quatre ans, Kante, insatisfait de l'écriture latine, renonce à essayer les écritures étrangères et se consacre à l'invention d'une écriture originale, adaptée à sa langue.

L'origine du nom Nko

Après avoir inventé l'écriture, Kanté a songé lui donner un nom rassembleur et générique car il avait constaté que les noms existants contiennent en eux même les germes de la division. C'est ainsi qu'il a évité les noms basés sur les ethnies comme Maninkakan, Bamanankan, Julakan et Mandingokan, ceux basés sur les lieux tel que Segukakan, Wasolonkakan, Khasonkakan, Beledugukakan etc. A leurs places, il trouva un nom que Soundiata avait, à

l'occasion, utilise lors de son discours solennel du grand rassemblement de Kurukanfuga en 1236 en ces termes : « Je m'adresse à vous qui dites **Nko** quand vous parlez ... ». Une seconde raison liée à l'utilisation du nom **Nko** (je dis) est qu'il se distingue des autres noms de langue en ce sens qu'il est une phrase traductible dans toutes les langues africaines. Au vu de ce qui précède, le **Nko** est à la fois une écriture et une langue.

Le système de propagation de l'écriture Nko

Nko a été inventé en Côte d'Ivoire, grandit au Mali et propagé en Guinée. Dès les premières heures de son invention, Kanté a compris que son nouveau-né sera confronté à double rejet de ceux qui sont censé l'embrasser les premiers, notamment les deux catégories d'instruits de ses concitoyens : les arabophiles et les francophiles. Les premiers la rejeteront pour des raisons religieuses tel que « l'Arabe est la langue de la religion musulmane et où les gens du paradis ne parle que l'arabe » ; les seconds la rejeteront pour des raisons de privilèges et de prestiges, car le français leur donne le privilège d'être fonctionnaire, entre autres, et le prestige d'être appelé 'instruit ou intellectuel'. À son entendement, ces deux couches l'adopteront uniquement, d'une part, quand les premiers verront qu'elle a été tolérée par les religieux d'autre cieux, d'où la traduction du Coran et Hadith en Nko dès les premières heures au risque d'être taxée d'une écriture à propension religieuse. Et d'autre part quand les second verront qu'il y'a des connaissances qu'eux ignorent malgré leur multiples diplômes et qualifications d'où l'écriture de nos histoires, tradition et médecine non-conventionnelle. Maintenant ceux qui n'ont aucune raison de la rejeter sont nos parents analphabètes. On les trouve généralement dans les marches et les mines, d'où l'envoi des premiers élèves herboristes formés dans les marches et mines pour vendre les médicaments traditionnels, venter et enseigner le Nko en même temps. C'est ainsi que le Nko a pu gagner du terrain dans nos villes et campagnes.

La capacité du Nko à écrire les langues nationales

A l'origine, le Nko désignait un système d'écriture composé de 27 lettres, dont 7 voyelles et une neutre. Bien que l'intention ait été d'écrire toutes les langues africaines, Kanté avait tout naturellement commencé par son propre dialecte qui est le Maninkamorikan de Kankan en République de Guinée. D'autres professeurs du Nko, comme Karamogo Baba Diane, ont par extension, utilisé les diacritiques existants, et autre fois utilisée par Kanté pour marquer les tons, pour représenter des sons non-existants dans le système Maninkamorikan. Le hic étant que les voyelles sont déjà chargées de diacritiques et s'il faut en ajouter autant aux consonnes, ça rendrait la lecture beaucoup plus difficile et confuse. Si pour Kanté des sons humains attestés manquaient, en revanche pour Diane, il y'avait une possibilité effrénée de transcrire l'impossible. Pour ce dernier, le nombre de syllabe qu'il prétend pouvoir écrire dépasserait les possibles sons que l'humain pourrait physiologiquement produire de sorte qu'il n'y avait d'incohérence entre la transcription et les sons. N'étant pas linguistes de formation, tous les deux avaient produit des systèmes fort perfectibles. Ce que Dr. Diakité a tenté de faire, au terme de sa thèse intitulée : *Quelques aspects de la phonologie tonale de Nko*.

À l'origine, Nko faisait référence à un système d'écriture composé de 27 lettres, dont 7 voyelles et une neutre. Bien que l'intention ait été d'écrire toutes les langues africaines, Kanté a naturellement commencé avec son propre dialecte qui est le Maninkamorikan de Kankan en République de Guinée. D'autres professeurs de Nko, comme Karamogo Baba Diane, ont par extension, utilisé des signes diacritiques existants, et à d'autres moments utilisés par Kanté pour marquer les tons, pour représenter des sons inexistants dans le système Maninkamorikan. Le hic, c'est que les voyelles sont déjà chargées de diacritiques et que son ajout a un grand nombre de consonnes rendrait la lecture beaucoup plus difficile et déroutante. Si pour Kanté les sons humains attestés faisaient défaut, en revanche pour Diane, il y avait une possibilité effrénée de retranscrire l'impossible. Pour ce dernier, le nombre de syllabes qu'il prétend pouvoir écrire

Le système consonantique Nko de Kanté :

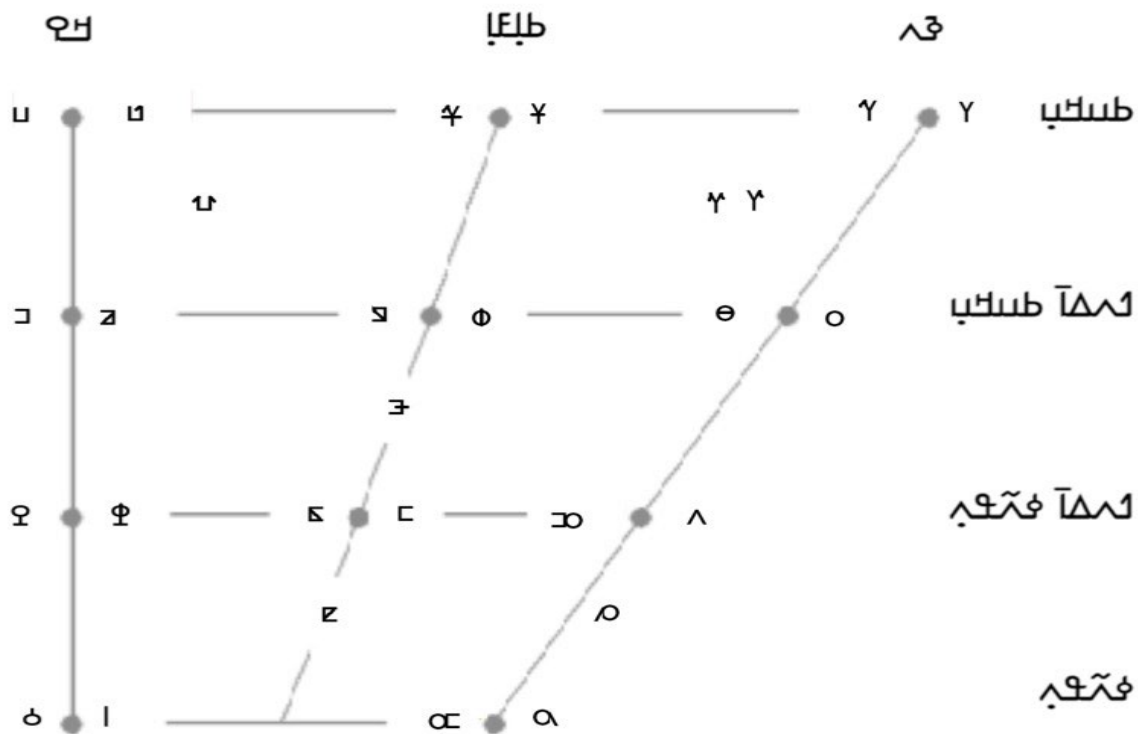
Le système consonantique Nko de Diane :

[illegible]

Diakité, se référant au système Kanté et s'inspirant du système IPA, a pu concevoir un système complet prenant en compte les sons attestés et ceux qui peuvent être éventuellement produits par l'homme. C'est ce système qui sert à transcrire toutes les langues du monde comme le latin IPA.

[illegible]

Système vocalique Nko de Diakité :



Aspects technologiques de l'écriture Nko

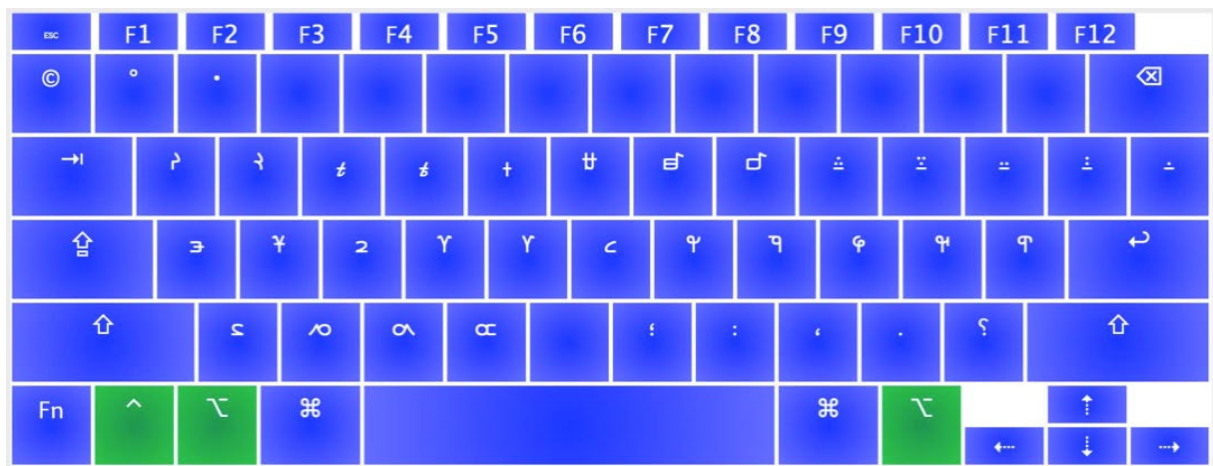
Le Nko tel que conçu par Kanté et Diane est déjà intégré au système Unicode qui permet à tous les outils informatiques (ordinateur, téléphone portable, tablettes) de toutes les plates-formes (IOS, Android et Open Source) d'utiliser le script Nko pour le traitement d'Input et de Output (Entrée et Sortie). En revanche, celui de Diakité est en phase d'introduction dans le système Unicode. Néanmoins, les polices et les claviers pour les langues maliennes sont déjà opérationnels. C'est ainsi qu'un alphabet commun pour les langues nationales du Mali est créé, suivi d'alphabets dérivés pour chacune de nos langues et la liste est ouverte.

Clavier pour Nko Phonétique International :

ESC	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	
ሦ	ዐ	ዓ	ኮ	ኮ	ኮ	ኮ	ኮ	ኮ	ኮ	ኮ	ኮ	ኮ	⌫
→	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ
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ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ
Fn	^	ገ	ገ					ገ	ገ		ገ	ገ	ገ

ESC	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	
ገ	\$	£	€	₪	₪	₪	₪	₪	₪	₪	₪	₪	⌫
→	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ
ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ
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ESC	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	
-	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	⌫
→	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ	ገ
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Fn	^	ገ	ገ					ገ	ገ		ገ	ገ	ገ



Clavier Commun pour les langues du Mali :





Clavier dérivé Soninke:



Clavier dérivé Songhoi:



Clavier dérivé Fulfulde:



Conclusion:

Les langues africaines, à travers Nko, sont désormais dotées d'un système d'écriture universel. Il appartient à ceux qui sont au pouvoir aux niveaux national et continental d'adopter une stratégie d'inaliénation de nos langues ; en particulier dans les domaines de la connaissance, de l'information, de la communication, de la science et de la technologie. Cette stratégie consiste à adopter une écriture qui intègre tous les peuples africains. À ce jour, seul le Nko peut le faire et il a déjà fait ses preuves en publiant, continuellement, des centaines de livres par an. La politique et la planification linguistiques relèvent de la responsabilité des gouvernements. Et, il est important de noter que l'origine de l'Écriture est l'Afrique et que les autres continents se sont dotés de systèmes d'écriture qui renforcent leur intégration, affirment leurs identités et confirment leur souveraineté. La question de la langue et de l'écriture est avant tout une question de souveraineté.

MERCI.

**PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹**

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.

Please ensure you are using the latest Form from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title:	<i>Revised Proposal to Encode N'ko Phonetic Extensions for Malian Languages</i>
2. Requester's name:	<i>Boubacar Diakite, Neil Patel</i>
3. Requester type (Member body/Liaison/Individual contribution):	<i>Individual Contribution</i>
4. Submission date:	<i>2/21/2025</i>
5. Requester's reference (if applicable):	
6. Choose one of the following:	
This is a complete proposal:	
(or) More information will be provided later:	<i>X</i>

B. Technical – General

1. Choose one of the following:	
a. This proposal is for a new script (set of characters):	<i>Yes</i>
Proposed name of script:	<i>N'ko Phonetic Extensions</i>
b. The proposal is for addition of character(s) to an existing block:	<i>Yes</i>
Name of the existing block:	<i>N'ko</i>
2. Number of characters in proposal:	<i>59</i>
3. Proposed category (select one from below - see section 2.2 of P&P document):	
A-Contemporary	<i>X</i>
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	
4. Is a repertoire including character names provided?	<i>Yes</i>
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	<i>Yes</i>
b. Are the character shapes attached in a legible form suitable for review?	<i>Yes</i>
5. Fonts related:	
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	<i>JamraPatel</i>
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	
6. References:	
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	<i>Yes</i>
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?	<i>Yes</i>
7. Special encoding issues:	
Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?	

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. 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/reports/tr44/>) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

¹ Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	Yes
If YES explain	<i>Preliminary proposal was review in Jan 2024. This is a revision</i>
2. 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
If YES, with whom?	<i>University of Bamako, Ministère de la Refondation de l'Etat</i>
If YES, available relevant documents:	<i>Section 3: Usage, Section 11: Supplementary Figures, Section 13: Appendices</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	Yes
Reference:	<i>Enclosed</i>
4. The context of use for the proposed characters (type of use; common or rare)	<i>common</i>
Reference:	
5. Are the proposed characters in current use by the user community?	Yes
If YES, where? Reference:	<i>Enclosed</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	No
If YES, is a rationale provided?	
If YES, reference:	
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	No
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character?	Yes
If YES, is a rationale for its inclusion provided?	Yes
If YES, reference:	<i>Section 5: Structure. Part 5: Elision</i>
11. Does the proposal include use of combining characters and/or use of composite sequences?	Yes
If YES, is a rationale for such use provided?	Yes
If YES, reference:	<i>Section 5: Part 4: Vowel Marks and Part 6: Tonal Marks</i>
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	
If YES, reference:	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	
If YES, describe in detail (include attachment if necessary)	No
13. Does the proposal contain any Ideographic compatibility characters?	No
If YES, are the equivalent corresponding unified ideographic characters identified?	
If YES, reference:	