

To: UTC

Title: Proposal to encode additional Arabic script characters for Hausa to the UCS

From: Lorna Priest Evans (SIL International), Andy Warren-Rothlin (United Bible Societies)

Date: 26 April 2018

Introduction

Over 46 million people in Nigeria, Benin, Burkina Faso, Cameroon, Chad, etc speak the Hausa [hau] language. Although Hausa has been written using the Latin script since about 1880, and it has had an official orthography in use since the 1930s, Hausa still does not have an adequate standard orthography (Warren-Rothlin, page 274). Additionally, the Latin-script orthographies in Nigeria and Niger are slightly different. Regarding both the Latin orthography and the Arabic script (*ajami*) orthography, Warren-Rothlin says “...it is perhaps surprising that even Roman-script Hausa, far predominant over *ajamin Hausa*, does not yet have an adequate standard orthography. Hausa is also the language most liable to appear in both standard Arabic-script orthographies—Ḥafṣ in the printed *Al-Fijir* newspaper (with adaptations marked by hand on the front page and only irregularly inside), and Warš in the handwritten Tijaniyya booklets...” Wikipedia agrees: “Hausa has also been written in *ajami*, an Arabic alphabet, since the early 17th century. There is no standard system of using *ajami*, and different writers may use letters with different values.” Warren-Rothlin’s explanation that both the Ḥafṣ and Warš traditions (orthographic traditions of the *Qur’ān*) are used for Hausa enables us to understand a bit better why there are differences in *ajami* orthographies (see Table 1).

Hausa characters needed

This proposal is for two characters as used in the Hausa orthography. Both of the characters have a small 3 dot *wagaf* above them. “Wagaf” is the Hausa form of the Arabic word وقعة, “full stop, period”. The Hausa orthography has six characters with the small *wagaf* above them (however, four of them are already encoded in Unicode). Warren-Rothlin (p. 275) calls all the characters using the *wagaf* “glottalized”. He says “This term is used here to refer to a range of sounds, common in Afroasiatic languages, which may be realized as implosives or ejectives.” Warren-Rothlin (p. 276) says “three dots usually smaller than standard *nuqat* may be added above for labialization and below for palatalization.” The orthography we are looking at only uses three dots above (not below). However, Figures 11 and 14 do show examples of the use of three dots below. Table 2 illustrates the contrast between the basic character and the new characters with *wagaf*.

In 2015 a committee of the Ajamin Hausa Bible Translation Project of the Bible Society of Nigeria met to decide on the Hausa *ajami* orthography that they would use for publishing the Bible and other religious literature. Figures 1 and 2 are photos of the whiteboard where they came to agreement on the *wagaf* characters. They made it clear that the vowel must position directly *above* the *wagaf* (despite the fact that many of our samples have the *wagaf* shifted in order to avoid collisions and some examples have the *wagaf* below). However, they also made it clear that they consider the *wagaf* to be a modifier letter rather than part of the base character.

Instead of proposing new characters, the use of U+06DB ARABIC SMALL HIGH THREE DOTS was considered. Pournader (2011) makes it clear that U+06DB is in the list of non-letter-making *harakat*. Unicode annotations also indicate U+06DB as “Koranic”. Both of these issues made it clear that U+06DB is not suitable for use in any practical Hausa orthography (though it seems clear that the use of this character in Hausa as a modifier of Arabic letters derives from its use in Qur’anic Arabic).

While many of these characters could be represented by a base character plus U+06DB ARABIC SMALL HIGH THREE DOTS (or a new character ARABIC MODIFIER WAGAF), this does not follow the principle of one consonant = one

unit that has been prescribed for the Arabic script. See Unicode FAQ articles: “How are Arabic letters represented in Unicode?” and “Why aren’t Arabic *ijam* diacritical marks separately encoded?”. Thus, we believe these characters should be encoded as one unit (despite the fact that the Hausa consider the *wagaf* to be a modifier letter rather than part of the base character).

The following characters are proposed for adding to Unicode. Since the *ajami* style of writing for this region is so different, we have included a column to assist with recognizing the characters in the samples.

Proposed USV	IPA	Standard naskh style	Kano/Maghribi style of ajami	Proposed character names with figures
08C3	/gy/	غ غغغ	غغغغ	ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (Figures 1,2,3a,3b,6,8,9,12,13,14)
08C4	/ky/	ق ققق	قققق	ARABIC LETTER AFRICAN QAF WITH THREE DOTS ABOVE (Figures 1,2,3c,3d,6,15)

The following characters are also used in this orthography. The size of the three dots above is smaller than for all other characters. However, we believe they are glyph variants to characters already encoded in Unicode. See USV column for the codepoints.

USV	IPA	Standard naskh style	Kano/Maghribi style of ajami	Proposed character names with figures
0751	/b/	ب بثبث	بثبثبث	ARABIC LETTER BEH WITH DOT BELOW AND THREE DOTS ABOVE (Figures 2,7)
069F	/ts/	ظ ظاظظ	ظاظظاظ	ARABIC LETTER TAH WITH THREE DOTS ABOVE (Figures 2,4,5,6)
0763	/ky/	ك ككك	ككككك	ARABIC LETTER KEHEH WITH THREE DOTS ABOVE (Figures 2,4,6)
063F	/y/	ي ييي	ييييي	ARABIC LETTER FARSI YEH WITH THREE DOTS ABOVE (Figures 2,5)

Unicode character Properties

```
08C3;ARABIC LETTER GHAIN WITH THREE DOTS ABOVE;Lo;0;AL;;;;;N;;;;;
08C4;ARABIC LETTER AFRICAN QAF WITH THREE DOTS ABOVE;Lo;0;AL;;;;;N;;;;;
```

Joining type and group for ArabicShaping.txt

The properties for ArabicShaping.txt should be as follows:

```
08C3; AIN WITH DOT ABOVE WITH 3 DOTS ABOVE; D; AIN
08C4; AFRICAN QAF WITH 3 DOTS ABOVE; D; AFRICAN QAF
```

Annotations

The following annotations are recommended for NamesList.txt:

@ Additions for African orthographies

08C3 ARABIC LETTER GHAIN WITH THREE DOTS ABOVE

* Hausa

08C4 ARABIC LETTER AFRICAN QAF WITH THREE DOTS ABOVE

* Hausa

* initial and medial forms of this letter have one dot above

* three dots above is on all forms

Normalization and Confusability Issues

Since the *wagaf* is not considered the same character as U+06DB (small high three dots), there should not be any decomposition nor normalization issues.

ARABIC LETTER GHAIN WITH THREE DOTS ABOVE is potentially confusable with U+063A + U+06DB.

ARABIC LETTER AFRICAN QAF WITH THREE DOTS ABOVE is potentially confusable with U+08BC + U+06DB.

Suggested Collation

Suggested collation is as follows:

08B3 < 08C3 < 0641

08BC < 08C4 < 06A8

Characters proposed in this document are colored in red with the black characters already in the standard.

Core Specification

The following information should be added to the core specification.

The Hausa orthography has six characters with three small dots above them. These three dots are smaller than the normal *nukat* on Arabic script characters. These are:

- 063F ARABIC LETTER FARSI YEH WITH THREE DOTS ABOVE (ىٓ vs ى)
- 069F ARABIC LETTER TAH WITH THREE DOTS ABOVE (ظٓ vs ظ)
- 0751 ARABIC LETTER BEH WITH DOT BELOW AND THREE DOTS ABOVE (ٓٓ vs ٓ)
- 0763 ARABIC LETTER KEHEH WITH THREE DOTS ABOVE (ٓٓ vs ٓ)
- 08C3 ARABIC LETTER AIN WITH DOT BELOW AND WITH THREE DOTS ABOVE
- 08C4 ARABIC LETTER AFRICAN QAF WITH THREE DOTS ABOVE

All other characters should have the standard size of *nukat*.

Samples

Table 1a: Hausa Latin and Ajami orthographies (using a standard naskh style)

Arab	ا	ا	ب	ب ¹ , ب ² , ب ³	ث	د	د, ط	ظ
USV	064E, 0627	064E 0627	0628	067B, 0751, 0628	062B	062F	0637, 062F	069F
Latn	a	ā, aa	b	ḃ	c	d	ḏ	ts
IPA	/a/	/aː/	/b/	/ḃ/	/tʃ/	/d/	/ḏ/	/ts/ /sʰ/
Arab	ي	پ, (فیبب) ف, ف	غ	غ (غغغ)	ه, ح	خ	ح	س
USV	0649 065C 0670	0641, 08BB, 067E	063A	08C3	062D, 0647	062E	0650	0650 0649
Latn	ē	f	g	gy gw	h	kh	i	ī
IPA	/eː/	/f/	/g/	/gy/ /gw/	/h/ /h̥/	/ħ/	/i/	/iː/
Arab	ج	ك, ك	ك	ك (كفوق), و, ق	ق (ققق)	ض, ل	م	ن (ننن)
USV	062C	0643, 06A9	0763	0642, 08BC, 0643	08C4	0644, 0636	0645	0646, 08BD
Latn	j	k	ky kw	ḳ	ky kw	l	m	n
IPA	/dʒ/	/k/	/ky/ /kw/	/ḳ/	/ḳy/ /ḳw/	/l/	/m/	/n/
Arab		و, و	ر	ص, دس	ش	ت	ـ	و
USV		064F 0648, 064F 0648 0627 0652	0631	0633, 0635	0634	062A	064F	064F 0648
Latn		ō	r	s	sh ⁴ , ch ⁵	t	u	ū
IPA		/oː/	/r/ /r̥/	/s/	/ʃ/	/t/	/u/	/uː/
Arab	و	ي (يبي)	ي (يبي)	ظ, ذ, ز	ع			
USV	0648	06CC	06D1, 063F	0632, 0630, 0638	0639			
Latn	w	y	y ⁴ /y ⁵	z	'			
IPA	/w/	/j/	/y ⁴ / /y ⁵ /	/z/	/ʔ/			

¹ [Ḥafṣ orthography](#)

² [Warš orthography](#)

³ Used in borrowed words or because the sounds are undifferentiated in some regions.

⁴ Used in Nigeria

⁵ Used in Niger

Table 1b: Hausa Latin and Ajami orthographies (using Kano/Maghribi style)

Arab	ا	ا	ب	ب ⁶ , ب ⁷	ت	د	د, ط	ظ
USV	064E, 0627	064E 0627	0628	0751, 0628	062B	062F	0637, 062F	069F
Latn	a	ā, aa	b	ḃ	c	d	ḏ	ts
IPA	/a/	/aː/	/b/	/ḃ/	/tʃ/	/d/	/ḏ/	/ts/ /sʰ/
Arab	ب	پ, (ببھه) ه	گ	(گغغم) م	ه, ه	خ	ی	ی
USV	0649 065C 0670	08BB, 067E	063A	08C3	062D, 0647	062E	0650	0650 0649
Latn	ē	f	g	gy gw	h	kh	i	ī
IPA	/eː/	/f/	/g/	/gy/ /gw/	/h/ /h̥/	/ħ/	/i/	/iː/
Arab	ج	ک	ک	ک, (قفقو) ه	(قفقو) ق	ل	م	(ننر) ن
USV	062C	06A9	0763	08BC, 0643	08C4	0644, 0636	0645	08BD
Latn	j	k	ky kw	ƙ	ky kw	l	m	n
IPA	/dʒ/	/k/	/ky/ /kw/	/kʰ/	/kʰy/ /kʰw/	/l/	/m/	/n/
Arab		و, و	ر	س, س	ش	ت	ی	و
USV		064F 0648, 064F 0648 0627 0652	0631	0633, 0635	0634	062A	064F	064F 0648
Latn		ō	r	s	sh ⁸ , ch ⁹	t	u	ū
IPA		/oː/	/r/ /r̥/	/s/	/ʃ/	/t/	/u/	/uː/
Arab	و	(یوی) ی	(ییشی) ی	ظ, ز	ع			
USV	0648	06CC	063F	0632, 0630, 0638	0639			
Latn	w	y	y ⁸ / y ⁹	z	ʿ			
IPA	/w/	/j/	/ʔ ⁸ / /f/	/z/	/ʔ/			

⁶ Warš orthography

⁷ Used in borrowed words or because the sounds are undifferentiated in some regions.

⁸ Used in Nigeria

⁹ Used in Niger

Table 2: Contrast between the basic character and the characters with wagaf

Naskh style	Kano/Maghribi style	Unicode Character	Hausa word Latin	Hausa word naskh style	Hausa word Kano/Maghribi style
ب بيب	ب بيب	U+0628	bakunan	بَكُونُ	بَكُونُ
ب بيب	ب بيب	U+0751	kebeta	كِبَيْتَ	كِبَيْتَ
ط ططط	ط ططط	U+0637	ɗaya	طَيَّ	طَيَّ
ظ ظظظ	ظ ظظظ	U+069F	tsire	ظِرِّي	ظِرِّي
ك ككك	ك ككك	U+06A9	kuwa	كُو	كُو
ك ككك	ك ككك	U+0763	kwace	كُوْبِي	كُوْبِي
غ غغغ	غ غغغ	U+063A	gamā	غَمَا	غَمَا
غ غغغ	غ غغغ	U+08C3	gyara	غَرَّ	غَرَّ
و و و و	و و و و	U+08BC	karfe	فَرَبِي	فَرَبِي
و و و و	و و و و	U+08C4	kyalle	فَلْبِي	فَلْبِي
ي ي ي ي	ي ي ي ي	U+06CC	dayake	دَيَكِي	دَيَكِي
ي ي ي ي	ي ي ي ي	U+063F	'ya'ya	يَّيَّ	يَّيَّ

Figure 1: Handwritten samples comparing “gw” and “gy” forms.

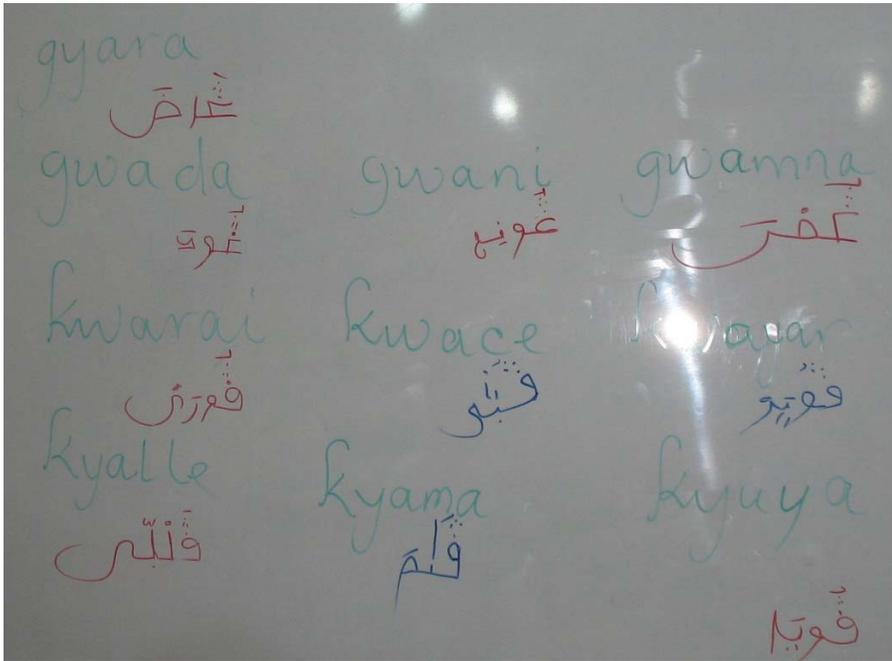


Figure 2: Handwritten samples at 4th orthography workshop

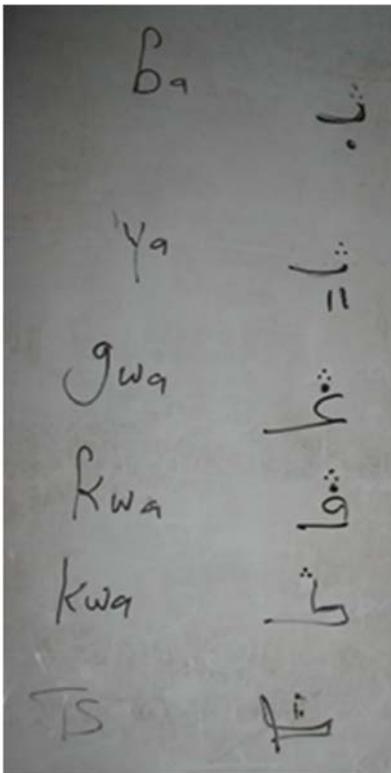


Figure 3a: Islamic 1, Cover. ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (initial), “Maalam Gwanin Gyara ne Kano”.



Figure 3b: Islamic 1, page 9. ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (initial), “gyargyadan”.

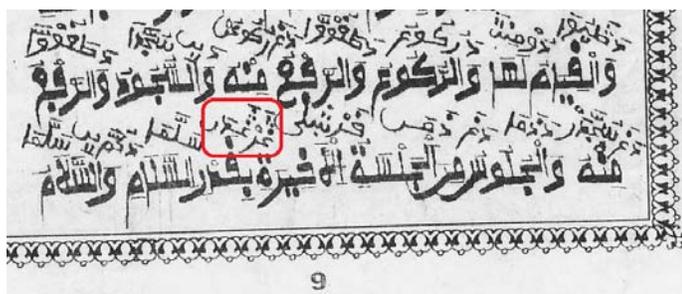


Figure 3c: Islamic 1, page 4. ARABIC LETTER AFRICAN QAF WITH THREE DOTS ABOVE (initial), “ko tsaga ko kyakyat dariya”.

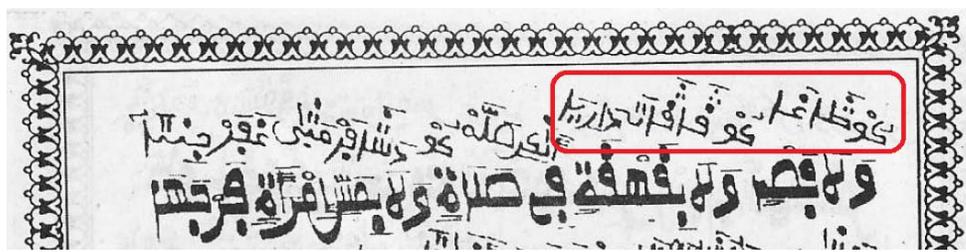


Figure 3d: Islamic 1, page 6. ARABIC LETTER AFRICAN QAF WITH THREE DOTS ABOVE (initial), “kyarya”.

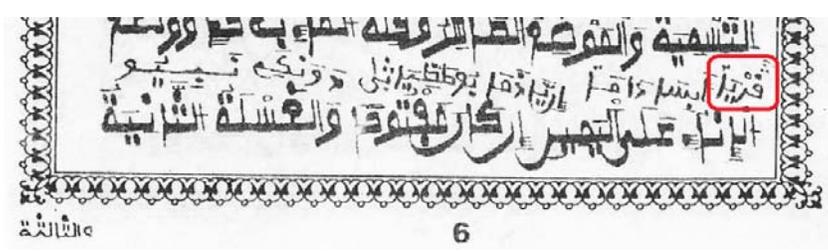


Figure 4: Spellbook C, page 3. ARABIC LETTER TAH WITH THREE DOTS ABOVE (initial), ARABIC LETTER KEHEH WITH THREE DOTS ABOVE (initial and medial), “kwarjini”, “tsamiya”, and “kwana”.



Figure 5: Spellbook C, page 7. ARABIC LETTER TAH WITH THREE DOTS ABOVE (initial), ARABIC LETTER FARSI YEH WITH THREE DOTS ABOVE (initial), “tsari” and “ya'ya”.



Figure 6: Spellbook E, page 2.
 ARABIC LETTER GHAIN WITH
 THREE DOTS ABOVE (initial),
 ARABIC LETTER KEHEH WITH
 THREE DOTS ABOVE (initial,
 medial), ARABIC LETTER TAH
 WITH THREE DOTS ABOVE
 (initial), ARABIC LETTER AFRICAN
 QAF WITH THREE DOTS ABOVE
 (initial), “gwanin”, “kwakwalwar”,
 “tsami”, “kwalba”, and “tsurar”.

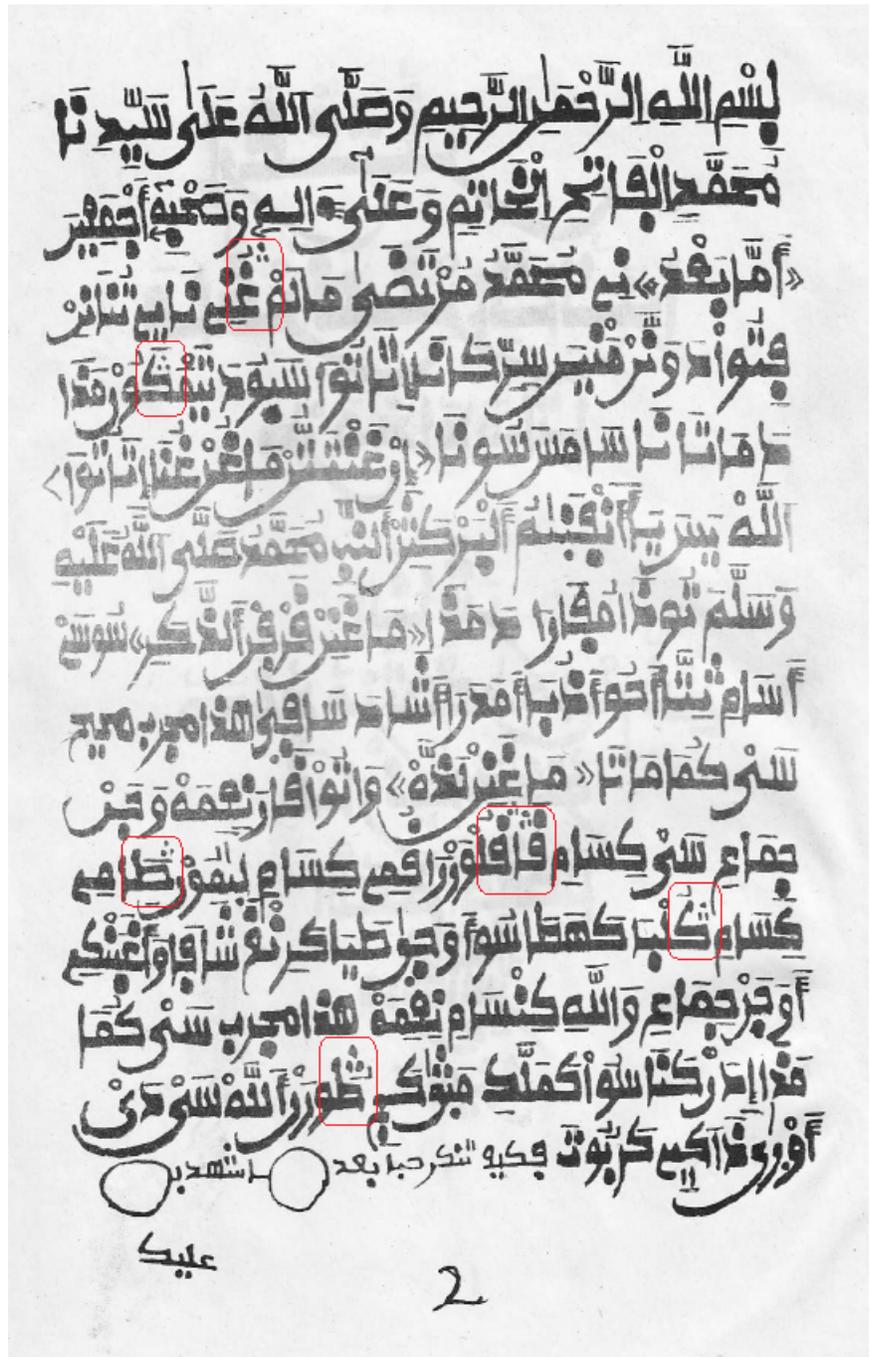


Figure 7: Spellbook R, page 5. ARABIC LETTER BEH WITH DOT BELOW AND THREE DOTS ABOVE (initial), "bargorin".



Figure 8: IslamicAA, page 10. ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (initial and medial) "da dagwawa" and "gwashi".

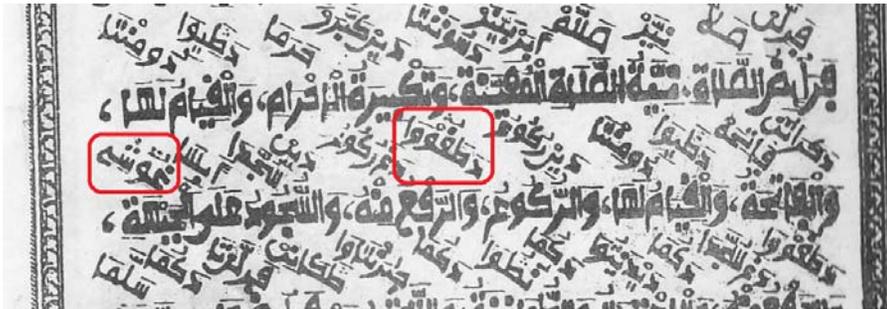


Figure 9: SongBookM, page 7. ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (medial) "su gyara abin".



Figure 10: Spellbook B, page 1. ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (medial).

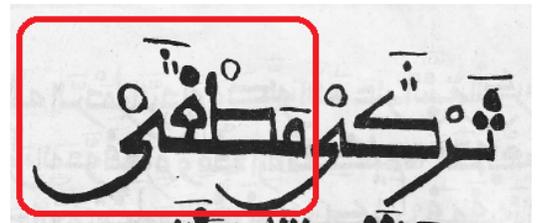


Figure 11: Spellbook F, page 10. Wagaf below Farsi Yeh (initial), "ya'yanta".

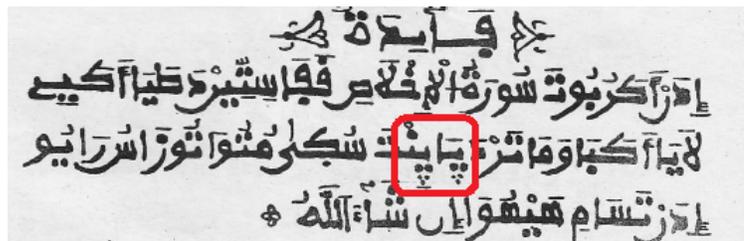


Figure 12: Malam Maniru. ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (all forms).



Figure 13: Malam Maniru. ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (initial and isolate), “gwana” and “agwagwa”.

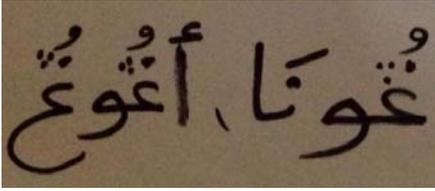


Figure 14: Malam Ali Imam. ARABIC LETTER GHAIN WITH THREE DOTS ABOVE (all forms). This demonstrates that the wagaf can be written below as well.

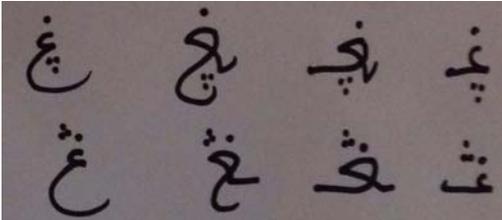
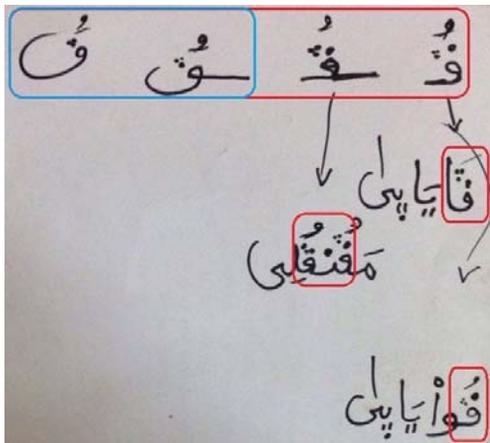


Figure 15: Malam Maniru. ARABIC LETTER AFRICAN QAF WITH THREE DOTS ABOVE (all forms). This example shows isolate and final forms (without single dot) at the far left in blue. There are no sample words because words using isolate or final forms are rare or non-existent.



References

Malam Ali Imam. Handwritten sample acquired 25-NOV-2017.

Malam Maniru. Handwritten sample acquired 25-NOV-2017.

Mumin, Meikal and Kees Versteegh (editors). 2014. *The Arabic Script in Africa: studies in the use of a writing system*. Studies in Semitic Languages and Linguistics. Vol. 71. Koninklijke Brill NV, Leiden, The Netherlands.

Pournader, Roozbeh. 2011. *Letter-making Arabic harakat*. <http://www.unicode.org/cgi-bin/GetMatchingDocs.pl?L2/11-069> accessed 26-Sep-17).

Simons, Gary F. and Charles D. Fennig (eds.). 2017. *Ethnologue: Languages of the World*, Twentieth edition. Dallas, Texas: SIL International. <https://www.ethnologue.com/language/hau> (accessed 6 April 2017).

- Spell-book B ('Car'kwai ma'dagwai'; Murtala Gwani; Geranya, Kano) [Kano-Style Warsh, Matameye, Jan 12]
- Spell-book C ('Burdin lilahi'; Murtala Gwani; Geranya, Kano) [Kano-style Warsh, Matameye, Jan 12]
- Spell-book D ('Iza wa'ka'anti'; Murtala Gwani; Geranya, Kano) [Kano-style Warsh, Matameye, Jan 12]
- Spell-book E ('Ingantatu magunguna itatuwa'; Murtala Gwani, Geranya, Kano) [Kano-style Warsh, Matameye, Jan 12]
- Spell-book F ('Asirai daga almajirai'; Ibrahim Halilulai; Geranya, Kano) [Kano-style Warsh, Matameye, Jan 12]
- Spell-book R ('Burdin li'ilahi'; Mustafa Mahammadu Danjinjiri; Mai Addu'a) [Kano-style Warsh, Niamey, Jan 12]
- Spell-book T ('Zoyayin asiri'; Mustafa Mahammadu Danjinjiri; Mai Addu'a) [Kano-style Warsh, Niamey, Jan 12]
- Islamic Teaching 1 (Murtala Gwani; Geranya, Kano) [Kano-style Warsh, Matameye, Mlm Galli, Jan 12]
- Islamic Teaching AA ('Lakhdali' gyaran Sallah; Nasiru Yahaya; Baharu Yalwa, Kano, Tijanniya) [Kano-style Warsh, Matameye, Feb 2012]
- Song-book M ('Bakan damiya'; Al-haji Sa'adu; Yantanzu, Kano) [Kano-style Warsh, Niamey, Jan 12]
- Unicode FAQ. Middle Eastern Scripts and Languages, <http://www.unicode.org/faq/middleeast.html> (accessed 28 March 2018).
- Wikipedia contributors, "Hausa language," *Wikipedia, The Free Encyclopedia*, https://en.wikipedia.org/wiki/Hausa_language (accessed 21 September 2017).
- Warren-Rothlin, Andy. 2014. "West African Scripts and Arabic-Script Orthographies", *The Arabic Script in Africa: Studies in the use of a Writing System*. Edited by Meikal Mumin & Kees Versteegh. Pp. 261-289.

**ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646^{TP10PT}**

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

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

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

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

A. Administrative

1. Title:	Proposal to encode additional Arabic script characters for Hausa to the UCS	
2. Requester's name:	Lorna Priest Evans and Andy Warren-Rothlin	
3. Requester type (Member body/Liaison/Individual contribution):	SIL International and United Bible Societies	
4. Submission date:	24-April-2018	
5. Requester's reference (if applicable):	L2/18-094	
6. Choose one of the following:		
This is a complete proposal:	Yes	
(or) More information will be provided later:		

B. Technical – General

1. Choose one of the following:		
a. This proposal is for a new script (set of characters):	No	
Proposed name of script:		
b. The proposal is for addition of character(s) to an existing block:	Yes	
Name of the existing block:	Arabic Extended-A	
2. Number of characters in proposal:	2	
3. Proposed category (select one from below - see section 2.2 of P&P document):		
A-Contemporary	Y	B.1-Specialized (small collection)
C-Major extinct		B.2-Specialized (large collection)
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?	Yes	
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	Yes	
b. Are the character shapes attached in a legible form suitable for review?	Yes	
5. Fonts related:		
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	SIL International	
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	Lorna_evans@sil.org	
6. References:		
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	Yes	
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?	Yes	
7. Special encoding issues:		
Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?	Yes	
	Included in proposal.	

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 HTU <http://www.unicode.org> UTH 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.

¹⁰ 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? If YES explain	No
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.)? If YES, with whom? If YES, available relevant documents:	Yes <i>See proposal</i> <i>See proposal</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:	Yes <i>See proposal</i>
4. The context of use for the proposed characters (type of use; common or rare) Reference:	Yes <i>See proposal</i>
5. Are the proposed characters in current use by the user community? If YES, where? Reference:	Yes <i>See proposal</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? If YES, is a rationale provided? If YES, reference:	Yes <i>Use existing block</i>
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	Yes
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference:	Yes <i>See proposal</i>
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? If YES, is a rationale for its inclusion provided? If YES, reference:	No
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? If YES, is a rationale for its inclusion provided? If YES, reference:	Yes Yes
11. Does the proposal include use of combining characters and/or use of composite sequences? If YES, is a rationale for such use provided? If YES, reference: Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? If YES, reference:	No
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? If YES, are the equivalent corresponding unified ideographic characters identified? If YES, reference:	No