

To: Unicode Technical Committee
From: Neil Patel and Mark Jamra (JamraPatel), Craig Cornelius (Google), Ibrahima Barry, Abdoulaye Barry
Subject: Replacement of Adlam Reference Font in Codesheet to Updated Design
Date: 19 April 2019

1. Introduction

This document describes the changes that have been made to Adlam letterforms by Abdoulaye and Ibrahima Barry since Adlam was proposed ([L2/13-191](#), [L2/14-219](#)) and included in Unicode 9.0. The changes are substantial enough to consider replacing the Unicode reference typeface.

During the 2 year period between the final proposal and the release of Unicode 9.0, an increase in literacy efforts brought new insights from the language community that exposed instances of ambiguity amongst letterforms and highlighted potential legibility concerns. These informed changes to letterforms that the Barrys and the language community hope to incorporate into the Unicode standard.

2. Recommendation

We recommend replacing the reference font in the Adlam Codesheet with either *Ebrima* or *Kigelia* to establish the correct reference for the design of Adlam typefaces going forward. This will ensure that future fonts are produced with the correct letterform model, minimizing the propagation of the out-of-date design. At this time, *Noto* is the only Unicode-compliant Adlam font broadly available and *Ebrima* and *Kigelia* are currently available in a limited fashion. The latter two fonts will be more broadly released in the coming year. As a result, it is a good time to replace the reference typeface in Unicode. Adlam users have been exposed to all iterations of the design through a variety of mobile and web apps, which means there is already a familiarity with the ideal forms within the language community. Also, efforts to make form changes that have some relation to earlier historical models of Adlam create continuity amongst readers.

3. Comparison of Unicode Glyphs to Proposed Glyphs and Other Fonts

KEY

PULAAR – Released 2007, Non-Unicode
 UNICODE – Released 2014

NOTO – *Noto Sans Adlam*, Released 2017
 PROPOSED – *Kigelia*, Released 2018

Name (Pronunciation)	Font	Capital	Small	Notes
		1E900	1E922	
ALIF (A)	PULAAR	ᐃᐃ ᐃ	ᐃᐃ ᐃ	The proposed glyph is more consistent in design with Pulaar.
	NOTO	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	UNICODE	ᐃ.ᐃ.ᐃ ᐃ	ᐃ.ᐃ.ᐃ ᐃ	
	PROPOSED	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
DAALI (DA)	PULAAR	ᐅᐅ ᐅ	ᐅᐅ ᐅ	The proposed glyph is more consistent in design with Pulaar.
	NOTO	ᐅᐅᐅ ᐅ	ᐅᐅᐅ ᐅ	
	UNICODE	ᐅᐅᐅ ᐅ	ᐅ.ᐅ.ᐅ ᐅ	Removed ascenders in medial and final forms to avoid diacritic collision.
	PROPOSED	ᐅᐅᐅ ᐅ	ᐅᐅᐅ ᐅ	
LAAM (LA)	PULAAR	ᐇᐇ ᐇ	ᐇᐇ ᐇ	Vertical line in uppercase helps distinguish from lower case form
	NOTO	ᐇᐇᐇ ᐇ	ᐇᐇᐇ ᐇ	
	UNICODE	ᐇᐇᐇ ᐇ	ᐇ.ᐇ.ᐇ ᐇ	
	PROPOSED	ᐇᐇᐇ ᐇ	ᐇᐇᐇ ᐇ	
MIIM (MA)	PULAAR	ᐉᐉᐉ ᐉ	ᐉᐉᐉ ᐉ	Different form helps distinguish from lowercase form.
	NOTO	ᐉᐉᐉ ᐉ	ᐉᐉᐉ ᐉ	
	UNICODE	ᐉᐉᐉ ᐉ	ᐉ.ᐉ.ᐉ ᐉ	
	PROPOSED	ᐉᐉᐉ ᐉ	ᐉᐉᐉ ᐉ	
BA (BA)	PULAAR	ᐋᐋᐋ ᐋ	ᐋᐋᐋ ᐋ	The proposed glyph is more consistent in design with Pulaar.
	NOTO	ᐋᐋᐋᐋ ᐋ	ᐋᐋᐋᐋ ᐋ	
	UNICODE	ᐋ.ᐋ.ᐋ ᐋ	ᐋ.ᐋ.ᐋ ᐋ	Removed ascenders in medial and final forms to avoid diacritic collision.
	PROPOSED	ᐋᐋᐋᐋ ᐋ	ᐋᐋᐋᐋ ᐋ	
SINNYIYHE (SA)	PULAAR	ᐍᐍᐍ ᐍ	ᐍᐍᐍ ᐍ	The proposed glyph is more consistent in design with Pulaar.
	NOTO	ᐍᐍᐍᐍ ᐍ	ᐍᐍᐍᐍ ᐍ	
	UNICODE	ᐍ.ᐍ.ᐍ ᐍ	ᐍ.ᐍ.ᐍ ᐍ	Final uppercase form is more consistent with other positions.
	PROPOSED	ᐍᐍᐍᐍ ᐍ	ᐍᐍᐍᐍ ᐍ	

		1E906	1E928	
PE (PA)	PULAAR	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	The proposed glyph is more consistent in design with Pulaar.
	NOTO	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	UNICODE	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	PROPOSED	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
		1E907	1E929	
BHE (BHA)	PULAAR	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	Initial and Medial uppercase forms changed to be more consistent across positons
	NOTO	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	UNICODE	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	PROPOSED	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
		1E908	1E92A	
RA (RA)	PULAAR	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	The proposed glyph is more consistent in design with Pulaar.
	NOTO	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	UNICODE	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	Removed ascenders in medial and final forms to avoid diacritic collision
	PROPOSED	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
		1E909	1E92B	
E (E)	PULAAR	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	The proposed glyph is more consistent in design with Pulaar.
	NOTO	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	UNICODE	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	PROPOSED	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
		1E90A	1E92C	
FA (FA)	PULAAR	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	The proposed glyph is more consistent in design with Pulaar.
	NOTO	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	UNICODE	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	PROPOSED	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
		1E90B	1E92D	
I (I)	PULAAR	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	Lowercase medial form gains ascender for improved legibility
	NOTO	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	UNICODE	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	PROPOSED	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
		1E90C	1E92E	
O (O)	PULAAR	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	Readers are accustomed to seeing both closed and open loops for small o. Closed loops are easier to write in medial and final forms
	NOTO	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	UNICODE	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	
	PROPOSED	ᐃᐃᐃ ᐃ	ᐃᐃᐃ ᐃ	

		1E90D	1E92F	
DHA (DHA)	PULAAR	𐌆𐌆𐌆 𐌆	𐌆𐌆𐌆 𐌆	Horizontal line above helps distinguish from lowercase form.
	NOTO	𐌆𐌆𐌆 𐌆	𐌆𐌆𐌆 𐌆	
	UNICODE	𐌆𐌆𐌆 𐌆	𐌆𐌆𐌆 𐌆	Left ascender in small form improves relationship to uppercase
	PROPOSED	𐌆𐌆𐌆 𐌆	𐌆𐌆𐌆 𐌆	

		1E90E	1E930	
YHE (YHA)	PULAAR	𐌇𐌇𐌇 𐌇	𐌇𐌇𐌇 𐌇	
	NOTO	𐌇𐌇𐌇 𐌇	𐌇𐌇𐌇 𐌇	
	UNICODE	𐌇𐌇𐌇 𐌇	𐌇𐌇𐌇 𐌇	
	PROPOSED	𐌇𐌇𐌇 𐌇	𐌇𐌇𐌇 𐌇	

		1E90F	1E931	
WAW (WA)	PULAAR	𐌈𐌈𐌈 𐌈	𐌈𐌈𐌈 𐌈	
	NOTO	𐌈𐌈𐌈 𐌈	𐌈𐌈𐌈 𐌈	
	UNICODE	𐌈𐌈𐌈 𐌈	𐌈𐌈𐌈 𐌈	
	PROPOSED	𐌈𐌈𐌈 𐌈	𐌈𐌈𐌈 𐌈	

		1E910	1E932	
NUN (NA)	PULAAR	𐌉𐌉𐌉 𐌉	𐌉𐌉𐌉 𐌉	Lowercase forms simplified for writing
	NOTO	𐌉𐌉𐌉 𐌉	𐌉𐌉𐌉 𐌉	
	UNICODE	𐌉𐌉𐌉 𐌉	𐌉𐌉𐌉 𐌉	
	PROPOSED	𐌉𐌉𐌉 𐌉	𐌉𐌉𐌉 𐌉	

		1E911	1E933	
KAF (KA)	PULAAR	𐌊𐌊𐌊 𐌊	𐌊𐌊𐌊 𐌊	
	NOTO	𐌊𐌊𐌊 𐌊	𐌊𐌊𐌊 𐌊	
	UNICODE	𐌊𐌊𐌊 𐌊	𐌊𐌊𐌊 𐌊	
	PROPOSED	𐌊𐌊𐌊 𐌊	𐌊𐌊𐌊 𐌊	

		1E912	1E934	
YA (YA)	PULAAR	𐌋𐌋𐌋 𐌋	𐌋𐌋𐌋 𐌋	Consistent use of vertical line standardizes positional variants.
	NOTO	𐌋𐌋𐌋 𐌋	𐌋𐌋𐌋 𐌋	
	UNICODE	𐌋𐌋𐌋 𐌋	𐌋𐌋𐌋 𐌋	Ascenders in lowercase removed for consistency and differentiation from uppercase
	PROPOSED	𐌋𐌋𐌋 𐌋	𐌋𐌋𐌋 𐌋	

		1E913	1E935	
U (U)	PULAAR	𐌌𐌌𐌌 𐌌	𐌌𐌌𐌌 𐌌	Horizontal line above helps distinguish from lowercase form
	NOTO	𐌌𐌌𐌌 𐌌	𐌌𐌌𐌌 𐌌	
	UNICODE	𐌌𐌌𐌌 𐌌	𐌌𐌌𐌌 𐌌	
	PROPOSED	𐌌𐌌𐌌 𐌌	𐌌𐌌𐌌 𐌌	

		1E914	1E936	
JIIM (JA)	PULAAR	ጽጽ ጽ	ጽጽ ጽ	Center connection and staggered height of hoops disambiguated from Tu.
	NOTO	ጽጽ ጽ	ጽጽ ጽ	
	UNICODE	ጽጽ ጽ	ጽጽ ጽ	
	PROPOSED	ጽጽ ጽ	ጽጽ ጽ	

		1E915	1E937	
CHI (CHA)	PULAAR	ጽጽ ጽ	ጽጽ ጽ	
	NOTO	ጽጽ ጽ	ጽጽ ጽ	
	UNICODE	ጽጽ ጽ	ጽጽ ጽ	
	PROPOSED	ጽጽ ጽ	ጽጽ ጽ	

		1E916	1E938	
HA (HA)	PULAAR	ጽጽ ጽ	ጽጽ ጽ	
	NOTO	ጽጽ ጽ	ጽጽ ጽ	
	UNICODE	ጽጽ ጽ	ጽጽ ጽ	
	PROPOSED	ጽጽ ጽ	ጽጽ ጽ	

		1E917	1E939	
QAAF (QA)	PULAAR	ጽጽ ጽ	ጽጽ ጽ	Forms more consistent across positon forms for easier recognition
	NOTO	ጽጽ ጽ	ጽጽ ጽ	
	UNICODE	ጽጽ ጽ	ጽጽ ጽ	Removed ascenders in lowercase medial and final forms avoid diacritic collision
	PROPOSED	ጽጽ ጽ	ጽጽ ጽ	

		1E918	1E93A	
GA (GA)	PULAAR	ጽጽ ጽ	ጽጽ ጽ	Horizontal line above uppercase helps distinguish from lowercase form.
	NOTO	ጽጽ ጽ	ጽጽ ጽ	
	UNICODE	ጽጽ ጽ	ጽጽ ጽ	Removed ascenders in lowercase medial and final forms to avoid diacritic collision
	PROPOSED	ጽጽ ጽ	ጽጽ ጽ	

		1E919	1E93B	
NYA (NYA)	PULAAR	ጽጽ ጽ	ጽጽ ጽ	
	NOTO	ጽጽ ጽ	ጽጽ ጽ	
	UNICODE	ጽጽ ጽ	ጽጽ ጽ	
	PROPOSED	ጽጽ ጽ	ጽጽ ጽ	

		1E91A	1E93C	
TU (TA)	PULAAR	ጽጽ ጽ	ጽጽ ጽ	
	NOTO	ጽጽ ጽ	ጽጽ ጽ	
	UNICODE	ጽጽ ጽ	ጽጽ ጽ	
	PROPOSED	ጽጽ ጽ	ጽጽ ጽ	

		1E91B	1E93D	
NHA (NHA)	PULAAR	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	Extra vertical stroke helps distinguish from lowercase. But can be removed in heavy weights.
	NOTO	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	UNICODE	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	Supplementary letters are not part of the std Pulaar orthography.
	PROPOSED	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	

		1E91C	1E93E	
VA (VA)	PULAAR	NA	NA	Supplementary letters are not part of the std Pulaar orthography.
	NOTO	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	UNICODE	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	PROPOSED	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	

		1E91D	1E93F	
KHA (KHA)	PULAAR	NA	NA	Supplementary letters are not part of the std Pulaar orthography.
	NOTO	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	UNICODE	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	PROPOSED	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	

		1E91E	1E940	
GBE (GBA)	PULAAR	NA	NA	Supplementary letters are not part of the std Pulaar orthography.
	NOTO	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	UNICODE	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	PROPOSED	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	

		1E91F	1E941	
ZAL (ZA)	PULAAR	NA	NA	Supplementary letters are not part of the std Pulaar orthography.
	NOTO	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	UNICODE	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	PROPOSED	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	

		1E920	1E942	
KPO (KPA)	PULAAR	NA	NA	Supplementary letters are not part of the std Pulaar orthography.
	NOTO	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	UNICODE	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	PROPOSED	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	

		1E921	1E943	
SHA (SHA)	PULAAR	NA	NA	Supplementary letters are not part of the std Pulaar orthography.
	NOTO	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	UNICODE	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	
	PROPOSED	ᄀᄀᄀ ᄀ	ᄀᄀᄀ ᄀ	

		1E944	
ALIF LENGTHENER	PULAAR		Proposed shows upper and lower case variants for better fitting
	NOTO		
	UNICODE		
	PROPOSED		
		1E945	
VOWEL LENGTHENER	PULAAR		Showing the upper and lower case stylistic variants in Proposed
	NOTO		
	UNICODE		
	PROPOSED		
		1E946	
GEMINATION MARK	PULAAR		Proposed has upper and lower case stylistic variants. Uppercase mark is wider for better balance.
	NOTO		
	UNICODE		
	PROPOSED		
		1E947	
HAMZA	PULAAR		
	NOTO		
	UNICODE		
	PROPOSED		
		1E948	
CONSONANT MODIFIER	PULAAR		
	NOTO		
	UNICODE		
	PROPOSED		
		1E949	
GEMINATE CONSONANT MODIFIER	PULAAR	NA	
	NOTO		
	UNICODE		
	PROPOSED		
		1E94A	
NUKTA	PULAAR		
	NOTO		
	UNICODE		
	PROPOSED		

		1E950	
0	PULAAR		ɔ
	NOTO		0
	UNICODE		0
	PROPOSED		ɔ

		1E951	
1	PULAAR		ɪ
	NOTO		ɪ
	UNICODE		ɪ
	PROPOSED		ɪ

		1E952	
2	PULAAR		ɨ
	NOTO		ɨ
	UNICODE		ɨ
	PROPOSED		ɨ

		1E953	
3	PULAAR		ɥ
	NOTO		ɥ
	UNICODE		ɥ
	PROPOSED		ɥ

		1E954	
4	PULAAR		ɹ
	NOTO		ɹ
	UNICODE		ɹ
	PROPOSED		ɹ

		1E955	
5	PULAAR		ɸ
	NOTO		ɸ
	UNICODE		ɸ
	PROPOSED		ɸ

		1E956	
6	PULAAR		ɦ
	NOTO		ɦ
	UNICODE		ɦ
	PROPOSED		ɦ
			Form changed to disambiguate from Ha.

1E957			
7	PULAAR	𞤎	
	NOTO	𞤎	
	UNICODE	𞤎	
	PROPOSED	𞤎	

1E958			
8	PULAAR	𞤏	
	NOTO	𞤏	
	UNICODE	𞤏	
	PROPOSED	𞤏	

1E959			
9	PULAAR	𞤐	
	NOTO	𞤐	
	UNICODE	𞤐	
	PROPOSED	𞤐	

1E95E			
EXCLAMATION MARK	PULAAR	NA	Change in form makes it less letter-like and easier to distinguish as punctuation.
	NOTO	𞤑	
	UNICODE	𞤑	
	PROPOSED	𞤑	

1E95F			
QUESTION MARK	PULAAR	NA	Change in form makes it less letter-like and easier to distinguish as punctuation.
	NOTO	𞤒	
	UNICODE	𞤒	
	PROPOSED	𞤒	

4. Usage of Supplementary Characters

The supplementary characters in Adlam are used for loan words and for proper nouns that come from neighboring ethnic groups. While these words are common, their use varies by region. Because the loan sounds are unique to these words and names the changes in the letterforms are not intrinsically confusing because readers can identify the words by their context.

The **𞤎** or **𞤎**(sha) is used in *Aisha* 𞤎𞤎𞤎. It is a very popular name but also in words borrowed mostly from Arabic: 𞤎𞤎𞤎𞤎 (cheick).

The **𞤏** or **𞤏**(kpo) as in *Kpelle* 𞤏𞤏𞤏 name of an ethnic group in the south of Guinea and Liberia. 𞤏𞤏𞤏 (a local bar).

The **𞤐** or **𞤐**(zal) as in *Nzerekore* 𞤐𞤐𞤐𞤐 (town where the Barrys were born), 𞤐𞤐𞤐 (zakat) 𞤐𞤐𞤐 (Zina).

The **𞤑** or **𞤑**(gbe) as in 𞤑𞤑𞤑𞤑 (hometown of a former president) and there are many other names and words in the coastal and Savannah regions with this sound. 𞤑𞤑𞤑𞤑, 𞤑𞤑𞤑.

The **𞤒** or **𞤒**(va) as in 𞤒𞤒𞤒 (velo or bicycle), 𞤒𞤒𞤒 (avion), 𞤒𞤒𞤒 (Vassy).

The **𞤓** or **𞤓**(kha) as in 𞤓𞤓𞤓 (laakhara or hereafter) and used a lot in names and words in the coastal regions. 𞤓𞤓𞤓, 𞤓𞤓𞤓.

5. Supporting Images

	1E90	1E91	1E92	1E93	1E94	1E95
0	Რ 1E900	Ს 1E910	Ტ 1E920	Უ 1E930	Ფ 1E940	Ქ 1E950
1	Ღ 1E901	Ყ 1E911	Შ 1E921	Ჩ 1E931	Ც 1E941	Ძ 1E951
2	Წ 1E902	Ჭ 1E912	Ხ 1E922	Ჯ 1E932	Ჰ 1E942	Ჱ 1E952
3	Ჲ 1E903	Ჳ 1E913	Ჴ 1E923	Ჵ 1E933	Ჶ 1E943	Ჷ 1E953
4	Ჹ 1E904	Ჺ 1E914	᲻ 1E924	᲼ 1E934	Ჽ 1E944	Ჾ 1E954
5	Ჿ 1E905	᳀ 1E915	᳁ 1E925	᳂ 1E935	᳃ 1E945	᳄ 1E955
6	᳅ 1E906	᳆ 1E916	᳇ 1E926	᳈ 1E936	᳉ 1E946	᳊ 1E956
7	᳋ 1E907	᳌ 1E917	᳍ 1E927	᳎ 1E937	᳏ 1E947	᳐ 1E957
8	᳒ 1E908	᳓ 1E918	᳔ 1E928	᳕ 1E938	᳖ 1E948	᳗ 1E958
9	᳙ 1E909	᳚ 1E919	᳛ 1E929	᳜ 1E939		᳝ 1E959
A	᳞ 1E90A	᳟ 1E91A	᳠ 1E92A	᳡ 1E93A		
B	᳣ 1E90B	᳤ 1E91B	᳥ 1E92B	᳦ 1E93B		
C	᳧ 1E90C	᳨ 1E91C	ᳩ 1E92C	ᳪ 1E93C		
D	ᳬ 1E90D	᳭ 1E91D	ᳮ 1E92D	ᳯ 1E93D		
E	ᳱ 1E90E	ᳲ 1E91E	ᳳ 1E92E	᳴ 1E93E		ᳵ 1E95E
F	ᳶ 1E90F	᳷ 1E91F	᳸ 1E92F	᳹ 1E93F		ᳺ 1E95F

	1E90	1E91	1E92	1E93	1E94	1E95
0	Რ 1E900	Ს 1E910	Ტ 1E920	Უ 1E930	Ფ 1E940	Ქ 1E950
1	Ღ 1E901	Ყ 1E911	Შ 1E921	Ჩ 1E931	Ც 1E941	Ძ 1E951
2	Წ 1E902	Ჭ 1E912	Ხ 1E922	Ჯ 1E932	Ჰ 1E942	Ჱ 1E952
3	Ჲ 1E903	Ჳ 1E913	Ჴ 1E923	Ჵ 1E933	Ჶ 1E943	Ჷ 1E953
4	Ჹ 1E904	Ჺ 1E914	᲻ 1E924	᲼ 1E934	Ჽ 1E944	Ჾ 1E954
5	Ჿ 1E905	᳀ 1E915	᳁ 1E925	᳂ 1E935	᳃ 1E945	᳄ 1E955
6	᳅ 1E906	᳆ 1E916	᳇ 1E926	᳈ 1E936	᳉ 1E946	᳊ 1E956
7	᳋ 1E907	᳌ 1E917	᳍ 1E927	᳎ 1E937	᳏ 1E947	᳐ 1E957
8	᳒ 1E908	᳓ 1E918	᳔ 1E928	᳕ 1E938	᳖ 1E948	᳗ 1E958
9	᳙ 1E909	᳚ 1E919	᳛ 1E929	᳜ 1E939	᳝ 1E949	᳞ 1E959
A	᳟ 1E90A	᳠ 1E91A	᳡ 1E92A	᳢ 1E93A	᳣ 1E94A	
B	᳤ 1E90B	᳥ 1E91B	᳦ 1E92B	᳧ 1E93B	᳨ 1E94B	
C	ᳩ 1E90C	ᳪ 1E91C	ᳫ 1E92C	ᳬ 1E93C		
D	᳭ 1E90D	ᳮ 1E91D	ᳯ 1E92D	ᳰ 1E93D		
E	ᳱ 1E90E	ᳲ 1E91E	ᳳ 1E92E	᳴ 1E93E		ᳵ 1E95E
F	ᳶ 1E90F	᳷ 1E91F	᳸ 1E92F	᳹ 1E93F		ᳺ 1E95F

Figure 1 – Comparison of Codesheets from the 2013 Adlam Unicode Proposal (left) and the 2014 Adlam Unicode Proposal (right)

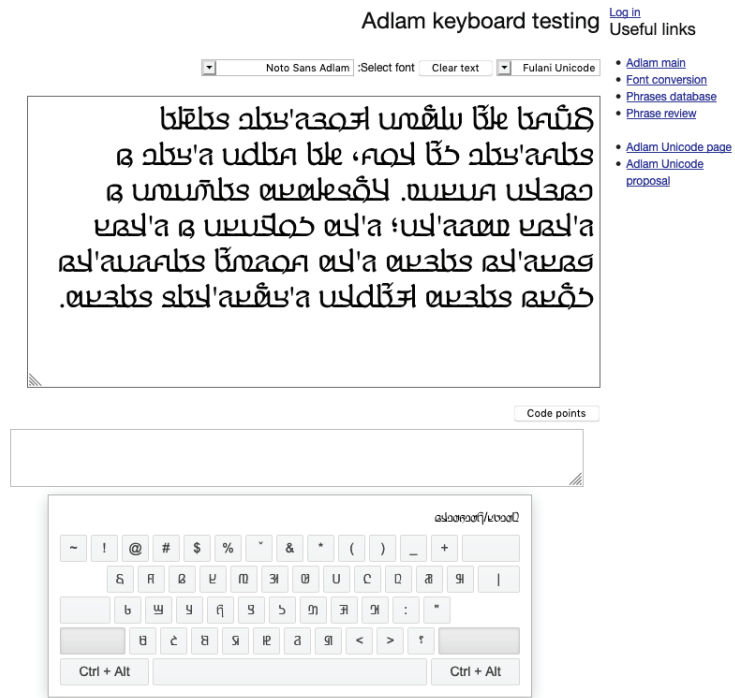


Figure 2 – Adlam Appspot utility by Google allows users to type Adlam text with an on-screen keyboard and convert text from pre-Unicode fonts. This utility uses the Noto Sans Adlam and the three pre-Unicode fonts, Pulaar, Aissata and Fuuta. Dec. 2016

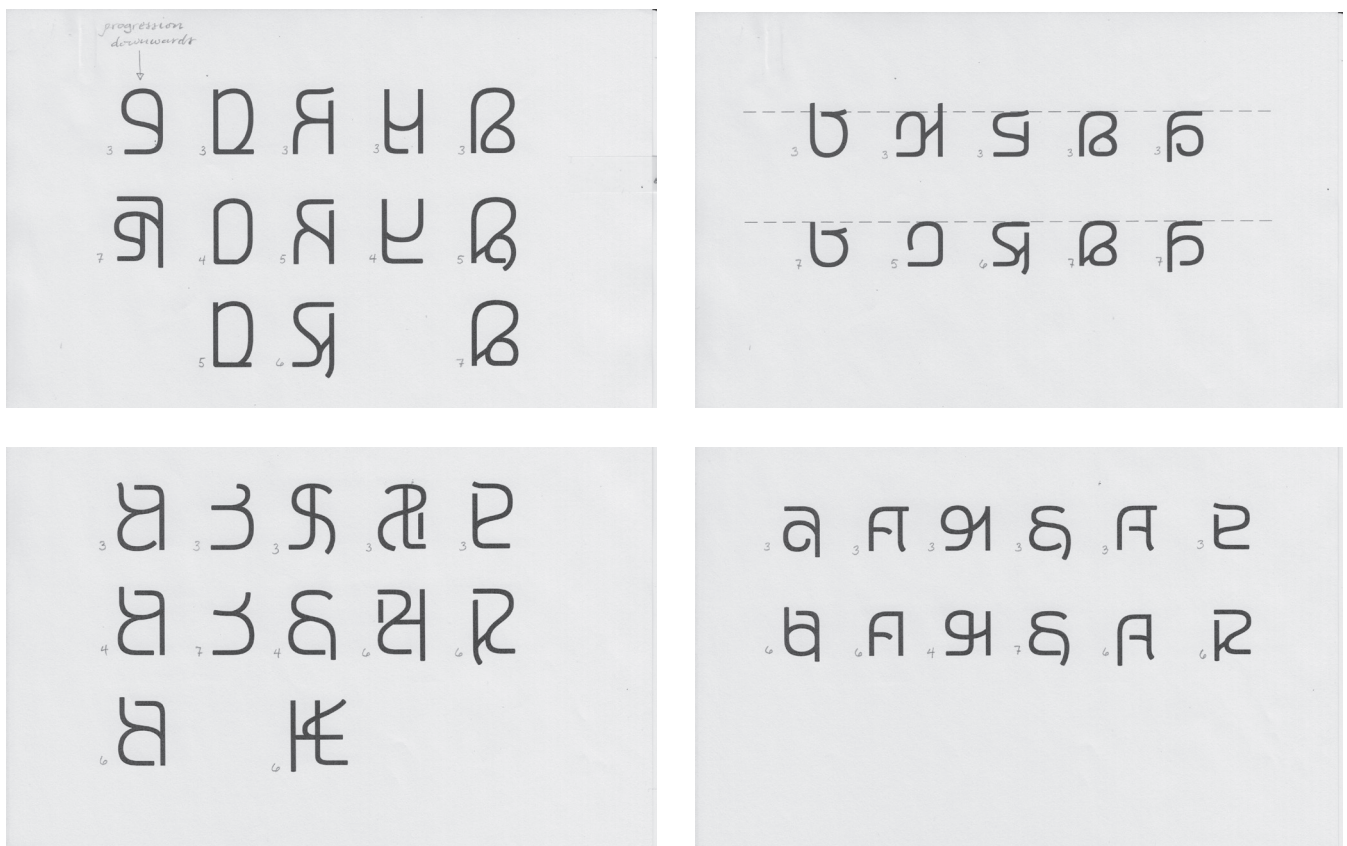


Figure 3 – Example of design iterations between 2017–2018. Variations are chronologically arranged top to bottom in each example.

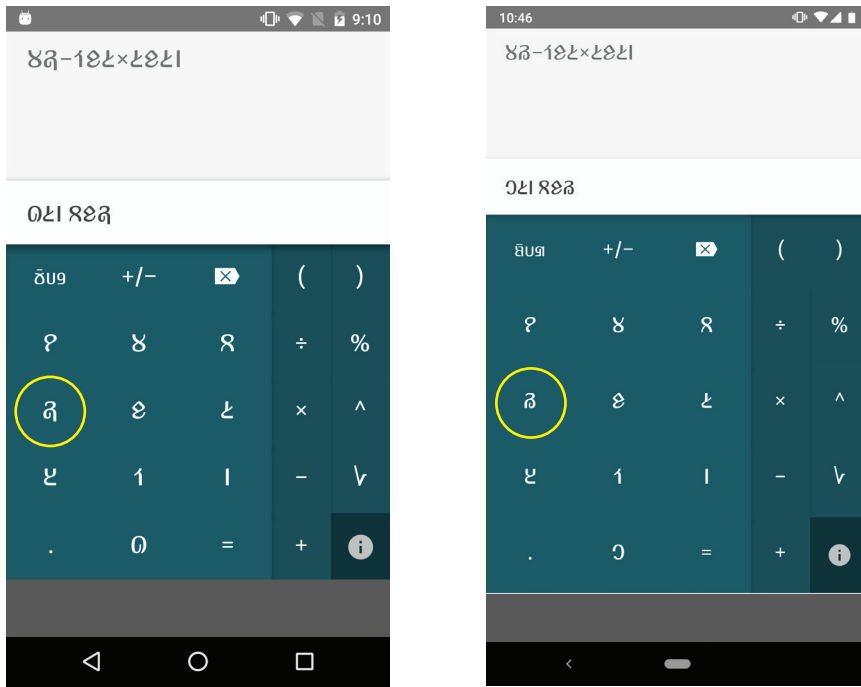


Figure 4 – Adlam Kiimirgal, calculator app. Early version (left) and newer version (right) showing updated numerals. Note: The reversal of the lower part of number six (circled) was an error that was fixed in Kigelia and is slated to be updated in Ebrima. June 2017

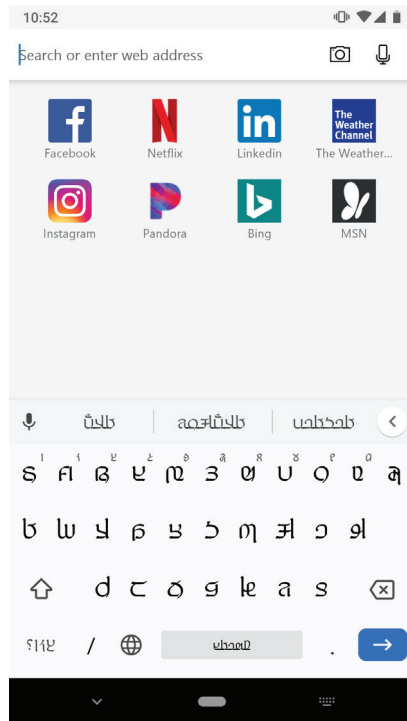


Figure 5 – Google Gboard for Adlam using Noto Sans Adlam. Dec 2017

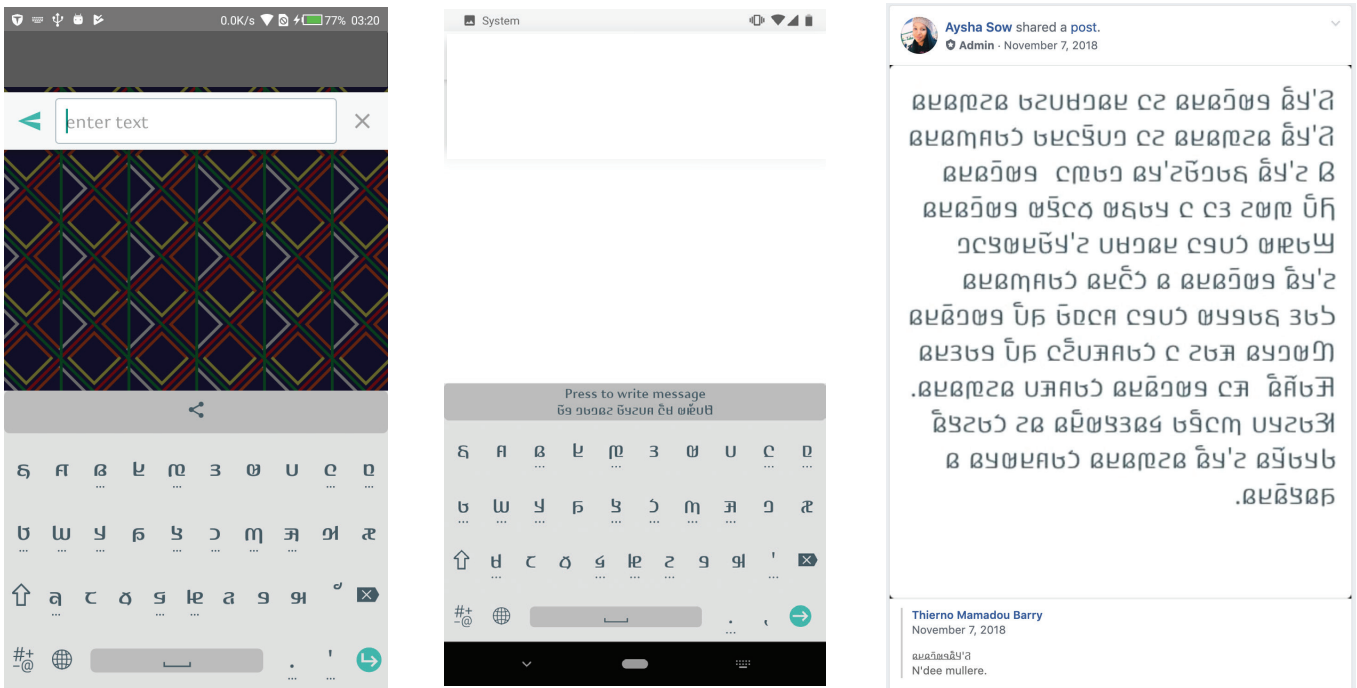


Figure 6 – Tappirgal Adlam, keyboard app. Early version (left) and newer version (center) showing letterforms that were updated while developing Kigelia. The image on the right shows Kigelia being used on Facebook using the text-to-image feature of Tappirgal. March 2018

-Ra - center top.
 E. B - rounded top part remodel bottom
 ↳ kicks up from bottom neutral
 - rest corner based on medi

Fa - make connected to like isol ^{"short"}

O - see drawing.

Dha - tighten top right corner.

zhe - fine same treatment as O.

-lana - all like isol.

-k - tighten right corner.

ya - take head treatment to rest also the bottom.

I - make bottom like W

i-im make optically even. lower left side right

Chi - copy isol changes. ^{Do all designs (Nm 01)}

ha - redesign refine vertical to curve. look @ init.

Roet - tighten vertical. - like others.

Ga - track proportions all the top line - important to distinguish init has the correct branding.

Ga medi new connection.

Nga revert to old. (perfect) Nga lowercase connection.

To copy isol for fine strokes connection fine.

-Nha - revert to old.

-va - copy was.

Kha same as Kaf. Kha all same. ^{conn}

Gbe change to Nha + conn.

-Zed redesign with optically balanced. hump like Sec

Kpe kill stroke to connected

She redesign new connection medium.

+Lowercase overall the lowercase letters squished bot. should have the proportion of uppercase.

hard to read & feels off.

lower alt. initial has ~~and~~ and isol has ascender rest low.

da - initial isol tall rest low.

↳ alt/eto will have different medial forms. even for unconnected.

la - bottom right corner very important.

- ~~form~~ style connection like upper case

from - flatter inner curve ^{contrast}

ta - ascender isol, initial. ^{conn/union} rest same height. ↳ same curves.

ra - same ascender treatment. - slope of M like upside down Fa

e - match capital.

fa - ^B round top. aim same optically. ↳ rising curve.

o - match capital. ^{init & isol} fail on final form note in.

dho medial slightly higher ascender but no collision with mark. - unconnected type same.

zhe. minor optical connection good.

evaw - minor tweak for connected. see medi on all even isol.

Figure 7 – Sample pages of notes taken during the Spring 2018 session to finalize all letterforms.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
1E90	ᄀ	ᄁ	ᄂ	ᄃ	ᄄ	ᄅ	ᄆ	ᄇ	ᄈ	ᄉ	ᄊ	ᄋ	ᄌ	ᄍ	ᄎ	ᄏ	■ JamraPatel's Kigelia
	ᄀ	ᄁ	ᄂ	ᄃ	ᄄ	ᄅ	ᄆ	ᄇ	ᄈ	ᄉ	ᄊ	ᄋ	ᄌ	ᄍ	ᄎ	ᄏ	■ Microsoft's Ebrima
1E91	ᄐ	ᄑ	ᄒ	ᄓ	ᄔ	ᄕ	ᄖ	ᄗ	ᄘ	ᄙ	ᄚ	ᄛ	ᄜ	ᄝ	ᄞ	ᄟ	
	ᄐ	ᄑ	ᄒ	ᄓ	ᄔ	ᄕ	ᄖ	ᄗ	ᄘ	ᄙ	ᄚ	ᄛ	ᄜ	ᄝ	ᄞ	ᄟ	
1E92	ᄠ	ᄡ	ᄢ	ᄣ	ᄤ	ᄥ	ᄦ	ᄧ	ᄨ	ᄩ	ᄪ	ᄫ	ᄬ	ᄭ	ᄮ	ᄯ	
	ᄠ	ᄡ	ᄢ	ᄣ	ᄤ	ᄥ	ᄦ	ᄧ	ᄨ	ᄩ	ᄪ	ᄫ	ᄬ	ᄭ	ᄮ	ᄯ	
1E93	ᄰ	ᄱ	ᄲ	ᄳ	ᄴ	ᄵ	ᄶ	ᄷ	ᄸ	ᄹ	ᄺ	ᄻ	ᄼ	ᄽ	ᄾ	ᄿ	
	ᄰ	ᄱ	ᄲ	ᄳ	ᄴ	ᄵ	ᄶ	ᄷ	ᄸ	ᄹ	ᄺ	ᄻ	ᄼ	ᄽ	ᄾ	ᄿ	
1E94	ᄠ	ᄡ	ᄢ	ᄣ													
	ᄠ	ᄡ	ᄢ	ᄣ													
1E95	ᄠ	ᄡ	ᄢ	ᄣ	ᄤ	ᄥ	ᄦ	ᄧ	ᄨ	ᄩ							
	ᄠ	ᄡ	ᄢ	ᄣ	ᄤ	ᄥ	ᄦ	ᄧ	ᄨ	ᄩ							

Figure 8 – Comparison of Ebrima to Kigelia. Ebrima and Kigelia are designed using the same letterform models. Being a system font, Ebrima only includes the unconnected variant of the letters. Note: Corrected form of number six (1E956) is shown in both fonts. Ebrima will be updated in Windows soon. May 2018

ADLaM and Osage keyboard support

Building on the font support we [announced](#) recently, today we're introducing keyboard support for ADLaM and Osage. ADLaM script is used to write Pular/Fulfulde, the language of the Fulani people of West Africa. Osage script is used to write the Osage language spoken by the Osage Nation in Oklahoma.

Here is an example what you'd see on the touch keyboard when using ADLaM:



Figure 9 – Screenshot of the Windows Insider blog announcing Adlam support with Ebrima and accompanying keyboard. Feb 2019