1. Introduction
This document describes the changes that have been made to Adlam letterforms by the 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.

2. Brief History
Adlam has been slowly evolving since it was conceived. When Michael Everson drafted the initial Adlam Unicode proposal in 2013 ([L2/13-191]), he used one of typefaces that the Barrys had commisioned in 2008 for the reference characters. Because these fonts were made using Arabic codepoints the typeface was not bimodal. To create a placeholder visual for the uppercase letterforms in the proposal, the lowercase letters were scaled up. When the proposal was updated in 2014 ([L2/14-219]), Everson used a new typeface that was made from an autotrace of Ibrahima's calligraphy. This updated design featured unique shapes for the uppercase and lowercase letters and a complete redesign of many letters. However, this new design was untested at the time. An increase in literacy efforts, which occurred between 2014 and the release of Unicode 9.0 in 2016, brought the updated design to a larger audience and generated feedback that identified instances of ambiguity amongst glyphs and legibility issues. These insights were used to inform an assortment of refinements to the character design.

When Monotype began development of Noto Adlam, the Barrys informed them that they would like to make improvements. However, Monotype did not follow up on the conversation and as a result, Noto was designed closely to the Unicode model. When we (JamraPatel) approached the Barrys for the design of Kigelia in spring of 2017, we spent many months revising the letterforms. After half a dozen or so iterations, we concluded that we needed to meet in person to finalize the forms. During a two day session in April 2018, we worked through all of the glyphs and their postional forms to resolve all of the concerns. These improvements were incorporated into Kigelia and Microsoft’s Ebrima. Monotype has since made changes to Noto to fix some of the more severe legibility issues, but they have not yet incorporated all of the form updates.

3. Overall Comparison of Unicode Glyphs to Revised Glyphs

<table>
<thead>
<tr>
<th>Unicode Reference Font</th>
<th>Microsoft’s Ebrima</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>A B C D E F</td>
<td></td>
</tr>
<tr>
<td>1E90 1E91 1E92 1E93 1E94 1E95</td>
<td></td>
</tr>
</tbody>
</table>
4. Notes on Select Letterforms
The revisions made to the letterforms are quite extensive. Some changes were made for aesthetic reasons but many were made for technical or legibility reasons. Below are a few examples of some of the modified letterforms and their original counterparts to demonstrate the reasoning behind the changes.

Consistency between design across postional forms was improved to reduce confusion for new readers.

Complex characters were simplified by removing extra strokes. This better accommodates heavier weights.

Lowercase letters were increased in height to achieve the desired proportion and open up complex counters. Ascenders were reduced in height to eliminate collisions when diacritics are attached.

Letterforms were simplified to make script connections more intuitive.

Alterations were made to some letters to reduce ambiguity that was confusing readers.

5. Recommendation
We recommend replacing the reference font in the Adlam Codesheet with Ebrima or Kigelia to establish the correct reference for the design of Adlam typefaces. This will ensure that future fonts are produced with the correct letterform model minimizing the propogation of the out-of-date design. At this time, Noto is the only Unicode-compliant Adlam font available publicly with Ebrima and Kigelia slated to be available in the coming year. As a result, it is a good time to replace the reference typeface in Unicode.
### 6. Supporting Images

![Comparison of Codesheets from the 2013 Adlam Unicode Proposal (left) and the 2014 Adlam Unicode Proposal (right)](image_url)

Figure 1. Comparison of Codesheets from the 2013 Adlam Unicode Proposal (left) and the 2014 Adlam Unicode Proposal (right)
Figure 2. Example of design iterations between 2017–2018. Variations are chronologically arranged top to bottom in each example.
Figure 3. Sample pages of notes taken during the Spring 2018 session to finalize all letterforms.